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174

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Etymology of the scientific names of the extant demoiselle damselflies (Odonata: Calopterygidae)

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Abstract

This publication presents the etymology and other information of all available scientific names given to the extant members of the odonate family Calopterygidae. Of the 33 available genus-group and 329 available species-group names, 21 and 181 names are considered to represent valid genera and species, respectively. The historical development of knowledge of calopterygid diversity is discussed. A synonymic checklist of Calopterygidae is presented, with an annotated list of the author names. A grouping of taxon names according to the meaning of their roots is presented.

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

Introduction

These days, many people interested in dragonflies (as well as other insects) avoid scientific names and prefer to use common names in their own language. This is understandable, since very few people now know even the basics of Latin or Ancient Greek, and therefore find scientific names difficult and meaningless. Similarly, lack of knowledge of the classics is the norm for most modern taxonomists actively naming new species. Therefore, rather than trying to construct descriptive scientific names, they often end up naming the taxon after a person or locality, introducing an eponym or a toponym.

One way to help overcome this problem, is to make the meaning of scientific names clearer by explaining their etymology. During recent decades it has become common practice for taxonomists to provide the etymology of the new scientific names they introduce, often explaining their grammatical form. However, earlier authors seldom did so, hence the etymology of a majority of Odonata names needs to be interpreted.

Numerous specialized publications on the etymology of the scientific names of extant species of Odonata have already been published, beginning with Heinrich Fliedner's (1997) 'Die Bedeutung der wissenschaftlichen Namen europäischer Libellen', which covered the European dragonfly and damselfly species. Other etymological publications with regional species coverage include 'The meaning of the scientific names of Seychelles dragonflies (Odonata)' by Fliedner & Martens (2008), 'The naming of Victoria's dragonflies (Insecta: Odonata)' by Endersby (2012a), and the two books: 'The naming of Australia's dragonflies' (Endersby & Fliedner 2015) and 'The scientific names of North American dragonflies' (Fliedner & Endersby 2019); all these publications use the word 'dragonfly' in the

broad, loose, modern sense, hence also include damselfly names. Other accounts have been published on the etymologies of all scientific odonate names given by individual authors, including: Hermann Burmeister (Fliedner 2006), Robin John Tillyard (Endersby 2012b), John Anthony Linthorne Watson and Günther Theischinger (Endersby 2012c), Friedrich Brauer (Fliedner 2020), Friedrich Ris (Fliedner 2021a) and Leopold Krüger (Fliedner 2021b). A considerable share of the odonate names are eponyms based on the names of individuals, ethnic groups and mythological or fictional characters. These names have been treated in Bo Beolen's (2018) book 'Eponym dictionary of Odonata'. However, as regards the names from mythology and antiquity this publication is not complete. The eponym catalogues by Hämäläinen (2015a; 2016; 2021) cover only the odonate names given after individuals, excluding those from antiquity.

The present publication is the first one to treat the etymology of all names given to the members of a single taxonomic group in the Odonata. The family Calopterygidae – the Demoiselle damselflies, which includes numerous glorious iridescent-winged species – is deserving of this attention given its popularity. To make our point, we wish to present here several facts from the history of odonatology.

- The earliest known European depiction of a dragonfly – dating from the years 1323-1326 – illustrates an obvious *Calopteryx splendens xanthostoma* (Fig. 1).

Fig. 1: An extract from Jean Pucelle's prayer book 'Breviaire de Belleville' from 1323-1326. The damselfly image clearly shows a male of *Calopteryx splendens xanthostoma*.

- The first published paper on an individual odonate species treated *Calopteryx splendens*. This was Wilhelm Homberg's long forgotten 'Observations sur cette sorte d'insectes qui s'appellent ordinairement Demoiselles' from the year 1699. Homberg described in detail the structure of the sexual organs and the mating wheel of *C. splendens* (of course, not using this name) and illustrated for the first time a copulating pair (Fig. 5).

- The only odonate species to which Carolus Linnaeus (1746) gave 'common' names (Lovisa and Ulrica, honouring a Princess; see pp. 97; 148-149) was *Calopteryx virgo*. The same species is also the first odonate to be given common English names. Moses Harris (1780) named it 'King's-fisher', and soon afterwards, in England *C. virgo* became called 'King George', referring to the resemblance of the male's dark blue wings with the dark-blue 'Windsor uniform' in which King George III was so often depicted in satirical cartoons.
- In 1853, Edmond de Selys Longchamps, the 'father of odonatology', started his synoptic publications of the World Odonata with the 'Caloptérygines'. The 'Légion Calopteryx', with 58 species, was the first group to be presented (Selys Longchamps 1853; Selys Longcamps & Hagen 1854).
- The first phylogenetic study on odonates based on molecular analysis was 'A phylogeny of the damselfly genus *Calopteryx* (Odonata) using mitochondrial 16s rDNA markers' by Misof & al. (2000). This was followed by the more extensive paper 'Phylogenetic relationships, divergence time estimation, and global biogeographic patterns of calopterygoid damselflies (Odonata, Zygoptera) inferred from ribosomal DNA sequences' by Dumont & al. (2005).

Being beautiful and charming insects, calopterygid damselflies have long attracted the interest of entomologists and insect hobbyists. On account of this a total of almost 50 available scientific names have been given to the two common European Demoiselle species: *Calopteryx virgo* and *C. splendens*. This is rather inconvenient in taxonomical terms, but rewarding from the etymological viewpoint. The interesting life-history and the fascinating territorial and courtship behaviour of many calopterygids have attracted numerous authors to publish hundreds of papers on their ecology and behaviour, with *Calopteryx maculata* serving as a model for some of the earliest work on sperm competition. A majority of these studies focus on the species of the genus *Calopteryx*, but also some *Hetaerina*, *Mnais* and *Neurobasis* species have been studied.

We hope that this publication, with its philological and historical information, will provide readers with an enjoyable insight into the complex field of nomenclature in this extraordinarily beautiful family of damselflies.

Structure of the publication. In the beginning of this treatise (pp. 5-13) we present a short overview of the progress of knowledge of calopterygid diversity with a focus on the period before the beginning of the 20th century.

A synonymic checklist of all available (in terms of the Code of the zoological nomenclature) genus-group and species-group names of the known extant members of the family Calopterygidae is given on pp. 13-23. The list includes a total of 33 genus-group and 329 species-group names. 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. It should be noted that in some genera, especially in the *Calopteryx splendens*-group, there is no general agreement of the taxonomic status of some taxa. We have ranked *Calopteryx hyalina*, *C. orientalis*, *C. syriaca*, *C. watersoni* and *C. xanthostoma* as subspecies of *C. splendens*, following the present view of Henri Dumont (pers. comm.), who is preparing a revised molecular analysis of *C. splendens*-group.

At present, from the 33 genus-group names, 21 are ranked as valid genera, two have been listed as subgenera and the remaining 10 are synonyms or names rejected as homonyms. From the 329 species-group names, 181 are listed as valid species, 23 as subspecies and 125 as synonyms. A few of the latter are homonyms.

One of the listed names, *pseudosyriaca*, subspecies of *Calopteryx splendens*, is actually unavailable, since in the same publication, it was also ranked as a synonym (of *C. splendens cartvelica*).

We have not included any infrasubspecific names, many of which have been given especially for the European *Calopteryx* species and for the Japanese *Mnais* species; most of the latter were introduced by Asahina (1976c). A few of the infrasubspecific names have been incorrectly listed as available names in some printed publications, including catalogues of the World Odonata, and in some online sources. These include:

- *Calopteryx splendens* var. *faivrei* Lacroix, 1915. The name was given to denote an andromorphic female form: "Var. ♀ *Faivrei*, nov." (Lacroix 1915: 109).
- *Calopteryx virgo* var. *violacea* Dziedzielewicz, 1902. The name "var. *violacea*, mihi" was given to a female wing colour form: "Alis rufo fuscis, violaceo nitentibus, apice late hyalinis" [wings dark reddish brown, shining violet, broadly hyaline at the apex] (Dziedzielewicz, 1902: 129, plate 3, fig. 15).
- *Calopteryx virgo* ab. *fusca* Valle, 1927. As the original definition "ab.♀ *fusca* n. ab." indicates this is an infrasubspecific name for a wing colour form of female (Valle 1927: 7).
- *Calopteryx virgo* ab. *pseudoneurobasis* St. Quentin, 1958. As the original definition 'ab.' indicates this is an infrasubspecific name for an accidental wing colour aberration in male. The fact that the cataloguers have not listed St. Quentin's other name for a different male wing aberration – *Calopteryx virgo* ab. *pseudosplendens* – introduced in the same publication, suggests that they have not consulted the original publication (St. Quentin 1958: 58-59).

After the checklist, annotated lists of the authors and co-authors of the available names are presented for genus- and species-group names respectively (pp. 23-26). These lists consist of 24 and 97 authors, respectively, and include a total of 103 individuals.

The main chapter 'Etymology of the names with notes on the taxa' (pp. 26-153) presents the genus- and species-group names separately in alphabetic order. The name heading (in bold letters) of each taxon entry includes [in square brackets] the status of the name either as a 'recognized' genus or species, a 'recognized' subgenus or subspecies, or as a synonym. In the name headings, the underlined vowels or diphthongs bear the accent. If the rules for accents in Greek and in Latin differ, the Latin rules are valid in the scientific names.

On the second line of each taxon entry follows the citation of the 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 synonymous names is indicated, and the homonyms are noted.

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. 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 these 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.

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), also a reference to the ‘Monographie des Caloptérygines’ (Selys Longchamps & Hagen 1854) is given, since the synopsis was a forerunner of the monography, and the descriptions in the latter are more detailed.

The other contents of the individual taxon entries are rather variable. 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 and German. In taxon entries with joint references to Selys Longchamps (1853) and Selys Longchamps & Hagen (1854), most of the quotations are from the latter publication. However, the source has not always been individually specified.

In most of the taxon entries concerning names which have been given after a locality or an individual person (especially if the person was somehow involved in collecting or making the specimens available for study), some information on the type locality and type material is also included. All names have been treated impartially; the taxonomic status (valid or synonym) of the name has no relevance as regards the contents of the explanation. Actually, most of the longest taxon entries are among the synonymous names, since they contain ‘historical aspects’ and other details which we personally have found interesting. With a few exceptions (such as well known Royal personages), the taxon entries of eponymous names, given after individuals, include brief biographic notes on the eponymee.

The appendix 'Categorisation of the roots of the names' (pp. 172-175) attempts to classify both the genus- and species-group names into different categories.

Notes on the progress of the knowledge of the calopterygid diversity

The calopterygid damselflies (Demoiselles) have a long history in European literature and iconography. They were first illustrated in Medieval religious manuscripts from the 14th and 15th centuries. The oldest known depiction of a Demoiselle was by the French miniaturist Jean Pucelle. It appeared in his liturgical prayer book ‘Bréviaire de Belleville’ dating from 1323-1326. Surprisingly, even this earliest of damselfly illustrations (Fig. 1) can be identified quite reliably to the subspecies level. It appears to show the male of *Calopteryx splendens xanthostoma*. If the insect which informed this drawing was found in Paris, as is probable, the tiny illustration (size 12 mm) may indicate that this insect occurred further north in France than now, apparently due to the warmer climate at that time (Carvalho 2007).

Identifiable illustrations of *C. splendens* males appeared in two manuscripts in the following century, in ‘Les Grandes Chroniques de France’ in 1455 and in ‘Älteres Gebetbuch Maximilians I’ in 1486. Obvious females of *Calopteryx* were illustrated also in some other manuscripts in the same and the following century. For more details, see Kern (2003)

and Kern (2005). Among the oldest paintings depicting a Demoiselle, is a peculiar diptych wood panel 'Les Amants trépassés' (ca 1470) by an unknown artist in southern Germany. The front panel depicts a well-dressed, young, married couple, while the reverse shows the same couple (standing upright) as corpses. On the left foot of the dead woman is an obvious *Calopteryx* female. In the right hand of the man is a male of the dragonfly *Gomphus vulgatissimus* (Carvalho 2007). In their association with the corpses the dragonflies evidently represent the souls of the dead in their progress towards eternal life.

Demoiselles in early zoological publications

The earliest scientific observations on the calopterygids were made in the latter half of the 16th century and these were published by Aldrovandi (1602: 302-305) and Moufet (1634: 64-69). In his book 'De animalibus insectis libri septem' [Seven books on divided animals], the Italian naturalist Ulisse Aldrovandi (1522-1605) presented rough woodcut illustrations of several odonate ('Perla') species with brief descriptive notes. At least four of the illustrations show *Calopteryx* specimens. Two of these depict males of *C. virgo meridionalis*, one may be *C. haemorrhoidalis* male and one cannot be identified. Thomas Moufet's (1553-1604) 'Insectorum theatrum' (which was ready for publication already before 1590, but was not published until 1634) includes several rough illustrations of *Calopteryx* ('*Libellae mediae*') specimens. Both *C. virgo* and *C. splendens* can be recognised from the figures and the text. Moufet presented perhaps the first published subjective praise of the beauty of these damselflies: "*Libellae mediae* maximam naturae elegantiam omni arte majorem commendant." [The medium-sized dragonflies show the elegance of nature which is greater than all art]. The Flemish painter Joris (= George) Hoefnagel (1542-1601) illustrated several paintings of odonates in his 'Animalia Rationalia et Insecta (Ignis)' [Reasonable animals and insects (Fire)] published around 1575-1580. Among them are several paintings of *Calopteryx virgo* specimens, showing both a male (Fig. 2) and females (Fig. 3). His son Jacob Hoefnagel (1573-1632), then aged 19, published his father's work as engravings he and others had executed in a book 'Archetypa studiaque patris Georgii Hoefnagelii' [Archetypes and studies of my father George Hoefnagel] in 1592. These were often allegorical and included devotional texts composed by his father. There are a few calopterygid images, one showing a *C. splendens* male (Fig. 4). Later, Jacob Hoefnagel published copies of the same insects, typically in mirror image and re-arranged, in his 'Diversae insectarum volatilium icones ad vivum' [Diverse pictures of flying insects depicted most accurately according to life], published in 1630. These plates illustrate the insects only, without devotional texts.

Some very detailed observations of the life-history of calopterygid damselflies were made during the 17th century. In a manuscript, titled 'Vögel-, Fisch- und Thierbuch' (dated 1666), Leonhard Baldner (1612-1694), a fisherman and naturalist from Strasbourg, illustrated several dragonflies, including a male and a larva of 'der Bloher Pfaff' [probably meaning 'blue parson']. The illustrated species is clearly *Calopteryx splendens*. Its copulation was briefly described and some surprisingly accurate information was provided on its life history. Baldner stated that the eggs of this species develop in one month and the larvae in two years. Baldner's work was published by Lauterborn (1903); for more details see Lindeboom (1997). Another valuable contribution was published by Wilhelm

Fig. 2: An image depicting *Calopteryx virgo* ♂ extracted from plate 34 of Joris Hoefnagel's 'Animalia Rationalia et Insecta (Ignis)', published around 1575-1580.

Fig. 3: Three *Calopteryx virgo* ♀ illustrated on plate 55 of Joris Hoefnagel's 'Animalia Rationalia et Insecta (Ignis)', published around 1575-1580.

Fig. 4: *Calopteryx splendens* ♂ originally depicted by Joris Hoefnagel and published as an engraving in Jacob Hoefnagel's 'Archetypa studiaque patris Georgii Hoefnagelii' in 1592.

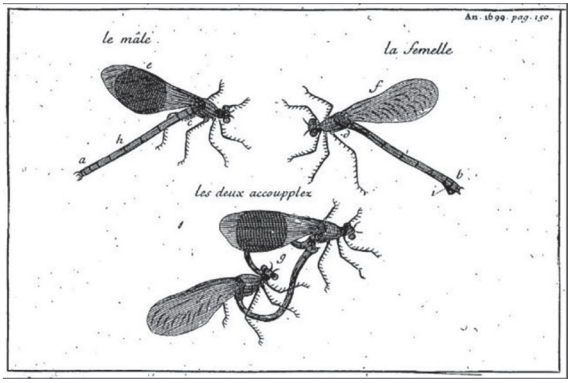

Fig. 5: *Calopteryx splendens* ♂, ♀ and pair in copula, depicted by Wilhelm Homberg in his publication 'Observations sur cette sorte d'Insectes qui s'appellent ordinairement Demoiselles' (1699).

(Guillaume) Homberg (1652-1715), a German born chemist and natural philosopher. His 'Observations sur cette sorte d'insectes qui s'appellent ordinairement Demoiselles' was presented at the Academy of Sciences in Paris on 22 August 1699 (Homberg 1699). The paper described in some detail the sexual organs and the mating wheel of a 'demoiselle', presently known as *Calopteryx splendens* (Fig. 5). This was the first paper on this topic in Odonata, and obviously the first paper devoted to an individual odonate species. It was also the only entomological publication of its author.

John Ray's (1627-1705) posthumously published 'Historia insectorum' (Ray 1710), the first proper taxonomical treatment of insects, was largely based on the collections which Ray and his student and friend Francis Willughby (1635-1672) had made in the 1660's, first in England and Wales and then during their tour of continental Europe in 1663-1666. A large proportion of the species descriptions in 'Historia insectorum' were written by Willughby, whose premature death left Ray to complete and publish the work which they had jointly planned. A total of 23 odonate 'species' were recognized (on pp. 47-53), 13 of them are credited as being Willughby's (FW) contribution. Four of the 'Libella media' species (No 9-12) are calopterygids:

9. *Libella media, corpore partim viridi, partim caeruleo, alis media parte maculis amplissimis è caeruleo nigricantibus* [D. Willughby *atro-purpureis*] *oblitis*. F.W. [medium sized dragonfly, with a partly green, partly blue body, their wings in the middle covered with very large markings flowing from the blue into blackish (D. Willughby: dark purple)] {= *Calopteryx splendens* male}
10. *Libella media, corpore caeruleo, alis ferè totis caeruleo nigricantibus.* [medium sized dragonfly with a blue body, the wings almost totally of a blackish blue] {= *Calopteryx virgo* mature male}
11. *Libella media corpore è viridi caerulescente, alis fulvescentibus, absque maculis*. [medium sized dragonfly with a body flowing from the green into the blue, with tawny wings, without spots] {= *Calopteryx virgo* immature male}
12. *Libella media, corpore viridi, alis fulvescentibus* [*flavescentibus* D. Willughby], *maculis parvis albis prope extremum angulum.* [medium sized dragonfly with a green body, with tawny [becoming golden yellow: D. Willughby] wings, with small white spots near the outermost point] {= *Calopteryx virgo* female}

The Latin word *Libella* (which also has led to the English word 'level') is originally the technical term for an archipendulum, an ancient instrument, precursor of the spirit level, used to check whether a line was horizontal. For the interesting story how this name (and its diminutive form *Libellula*) came into use for odonates from the 16th century onwards, see e.g. Kemner (1942) and Fliedner (2012).

From the Linnaean contributions to the Selysian period

Carolus Linnaeus (1707-1778) used the name *Libellula* already in his first edition of 'Systema naturae' (Linnaeus 1735). However, the first publication where he treated dragonflies in some detail was an article 'Animalia per Sveciam observata' [Animals observed anywhere in Sweden] in a journal issue, which was dated in 1736, but actually published in 1742 (Linnaeus 1742). Here Linnaeus listed 14 *Libella* species using the definitions for the names, which were copied verbatim from Ray (1710). Among these species were two calopterygids: Ray's species '9' and '10' (representing males of *Calopteryx splendens* and *C. virgo*). In 'Fauna svecica' (Linnaeus 1746), listed 16 *Libellula* species, which included the same four calopterygids (No 756-759), which were listed by Ray (1710). Linnaeus presented his own definitions ('names'), but also included Ray's definitions verbatim. In addition, brief descriptions of 3-4 lines were included. In the 10th edition of 'Systema naturae', Linnaeus (1758) presented these four 'taxa' as varieties (α, β, γ, δ) of a single species *Libellula virgo* (= *Calopteryx virgo*). The definitions were identical with

those in 'Fauna svecica'. Among the 18 *Libellula* species recognised by Linnaeus was also another calopterygid, *Libellula chinensis* (= *Neurobasis chinensis*), but it was mistaken as an 'anisopteran' dragonfly, since Linnaeus had not seen any specimen, but based his description on an illustration (see taxon entry *chinensis* on p. 59-60).

The flow of new calopterygid descriptions, especially of the taxa presently ranked as valid species, remained rather slow during the next 95 years until 1853. As shown in the Table 1 and Fig. 6, only 10 species-group names were introduced (by Linnaeus, Drury, Fabricius, Harris and Fourcroy) up to the end of the 18th century. Seven of these taxa are presently

Table 1. Number of the species-group taxa of Calopterygidae described each decade after 1750.

	All taxa	Species	Subspecies	Synonyms
1750-1759	2	2	0	0
1760-1769	0	0	0	0
1770-1779	3	2	0	1
1780-1789	4	2	0	2
1790-1799	1	1	0	0
1800-1809	1	1	0	0
1810-1819	0	0	0	0
1820-1829	4	2	1	1
1830-1839	17	4	1	12
1840-1849	14	3	1	10
1850-1859	56	31	3	22
1860-1869	17	10	1	6
1870-1879	27	18	1	8
1880-1889	8	3	2	3
1890-1899	12	7	0	5
1900-1909	18	9	3	6
1910-1919	26	14	2	10
1920-1929	13	5	0	8
1930-1939	21	8	1	12
1940-1949	8	4	0	4
1950-1959	13	1	2	10
1960-1969	12	10	0	2
1970-1979	2	2	0	0
1980-1989	9	5	2	2
1990-1999	10	9	0	1
2000-2009	15	14	1	0
2010-2019	14	12	2	0
2020-2022	2	2	0	0
	329	**181**	**23**	**125**

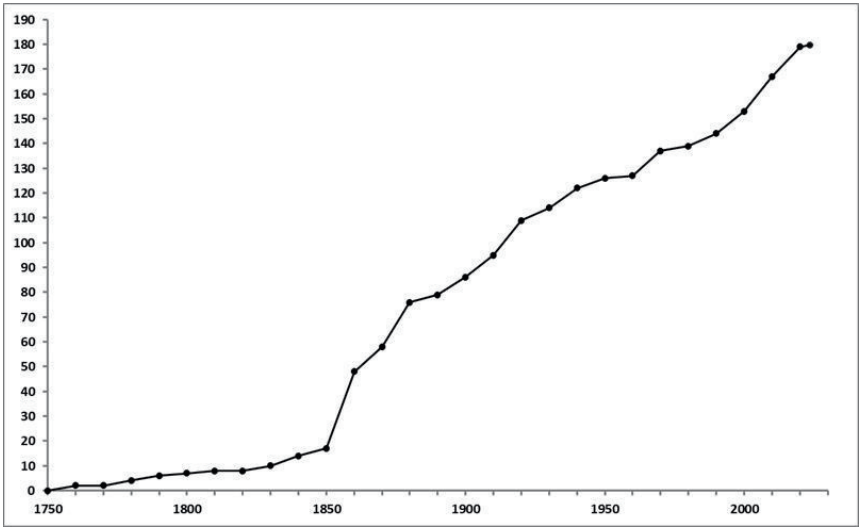

Fig. 6: Cumulative growth of the number of the valid Calopterygidae species, described before 1st January of each year indicated.

ranked as valid species. In addition to the two Linnaean species, these include (using the present binomials) *Calopteryx splendens*, *Sapho ciliata* and three *Hetaerina* species (*caja, titia* and *americana*). During the first half of the 19th century (in 1807-1842) 36 new taxa were named. Presently, only 10 of these are ranked as valid species and 3 as subspecies. In the treatment of the known global odonate fauna, Burmeister (1839) listed 17 species in the genus *Calopteryx*, but two of them were chlorocyphids. In the similar global treatment, Rambur (1842) presented 19 *Calopteryx* species.

In the beginning of the 1850's, a total of 46 species-group names had been introduced, but only 17 of them represented species presently considered valid (Table 1, Fig. 6). From these 46 names, no fewer than 19 had been given to the European *Calopteryx* species. Only 6 of these are presently ranked either as valid species or subspecies. The confusing state of the early nomenclature of the European *Calopteryx* species is illustrated by the fact that it took 70 years before Harris' (1780) name *splendens* came in use as the correct species epithet for *Calopteryx splendens*. It was first used in 'Revue des Odonates ou Libellules d'Europe' by Selys Longchamps & Hagen (1850). From the 27 non-European species named by 1850, only 14 are presently ranked as valid species; these include 3 *Calopteryx* and 3 *Hetaerina* species from North America.

Linnaeus (1758) included all odonates in a single genus *Libellula*. Fabricius (1775) divided this genus into three genera *Libellula*, *Aeshna* and *Agrion*; the last included the two Linnaean species: *virgo* and *puella*.

Then Leach (1815) split *Agrion* into three genera: *Agrion*, *Lestes* and *Calepteryx*; the latter was stated to comprehend "those Agrionida with coloured wings." The genus name was emended to *Calopteryx* by Burmeister (1839), following the spelling used in Charpentier's manuscript, which became published in the following year (Charpentier 1840).

Selys and Hagen describe and classify calopterygid diversity

Edmond de Selys Longchamp's (1813-1900) 'Synopsis des Caloptérygines', published in 1853, was a major contribution to the knowledge of the World fauna of Calopterygoidea (in the old sense). The synopsis was actually an outline of a much more detailed 'Monographie des Caloptérygines', which was published in the following year (Selys Longchamps & Hagen 1854).

The authorship of the Monographie was stated as 'par Edm. de Selys Longchamps, avec la collaboration de M. le Docteur H.A. Hagen'. With a few exceptions, in references to this work, Hermann August Hagen (1817-1893) has been ranked as the second author. In Selys' classification 'Caloptérygines' (*Calopteryginae*) was a subfamily of the family 'Agrionidées' (Agrionidae), the only family in the tribus Zygoptera. In the Synopsis Selys divided 'Caloptérygines' into 7 'légions': Calopteryx, Hetaerina, Euphaea, Dicterias, Libellago, Amphipteryx and Thore, but already in the 'Additions et corrections' of the synopsis (pp. 72-73) and in the Monographie there were only 5 'légions'; Légion Hetaerina had been combined (on Hagen's suggestions) to Légion Calopteryx and Légion Dicterias to Légion Euphaea.

In both publications a total of 100 full species were recognised, 58 of which were in the (combined) Légion *Calopteryx*, which represents the present family Calopterygidae. In the synopsis, eleven new genus-group names were introduced, either as a full genus or as a subgenus; eight of them were authored by Selys and three by Hagen. In the Monographie, the status or taxonomic position of some of these names was changed. These two publications introduced a total of 51 new species-group names (29 authored by Selys and 22 by Hagen). Of these 29 (16 and 13) are presently ranked as valid species and 3 (1 and 2) as subspecies.

The later additions to the 'Synopsis des Caloptérygines' (Selys Longchamps 1859; 1869a; 1873a; 1873b; 1879b) include a total of 34 additional new species-group taxa in the Légion Calopteryx, most named by Selys, but a few also by Hagen, McLachlan and Albarda; a total of 23 of them presently recognised as valid species.

During the last dozen years of the 19th century, several other authors described new calopterygid taxa. These included Karsch, Kirby, Förster, Martin and Krüger. By the end of the 19th century a total of 166 species-group names had been introduced. However, only 86 (52 %) of these are presently ranked as valid species and 10 as subspecies, the remaining 70 are synonyms. At this time, all species from Europe and United States, which are presently recognized as valid, had already been described. Of the presently known Central and South American species, 54 % had been described. The corresponding share of African species was 45 %, and that of Asian and Australasian species 36 %.

In the first catalogue of the World Odonata, Kirby (1890) grouped the calopterygid species into 13 genera: *Agrion* (replacing *Calopteryx* as a junior synonym), *Matrona*, *Umma* (replacing preoccupied name *Cleis*), *Sapho*, *Mnais*, *Psolodesmus*, *Echo*, *Phaon*, *Neurobasis*, *Vestalis*, *Lais*, *Hetaerina* and *Caliphaea*. In these genera, a total of 101 species were listed as valid. All Selysian subgenera were upgraded to the rank of a full genus.

Kirby's (1890) downgrading of the genus name *Calopteryx* as a synonym of the genus *Agrion* (with the Linnaean *Libellula virgo* as its type species) and establishing the genus *Coenagrion* (with the Linnaean *Libellula puella* as type species) were at first ignored by

most authors, but gradually several authors accepted Kirby's acts, but those who did not, continued to use the names *Calopteryx* and *Agrion* in the old sense. This led to a great confusion in the nomenclature of these insects. For details, see Muttkowski (1910), Schmidt (1948), Calvert (1949) and Montgomery (1954). Most British odonatologists, as well as part of the American ones used the names *Agrion* and *Coenagrion*, but most of continental European odonatologists continued to use the names *Calopteryx* and *Agrion* (or from the 1960's *Calopteryx* and *Coenagrion*). A final turning point was in the year 1983, when the name *Calopteryx* was used in the second edition of Cyril O. Hammond's (1983) book 'The dragonflies of Great Britain and Ireland', revised by Robert Merritt. [In the first edition (Hammond 1977) the genus name *Agrion* was still used.] Also, the British Dragonfly Society, formed in 1983, started to use the name *Calopteryx* instead of *Agrion*. Ever since, the use of the names *Calopteryx* and *Coenagrion* has been almost ubiquitous and the genus name *Agrion* has been ignored. This consensus has stabilized the nomenclature of these insects, without intervention by the International Commission on Zoological Nomenclature.

Growth of knowledge of species diversity after 1900

Table 1 and Fig. 6 shows some statistics on the increase in numbers of described taxa without referring to the contributions by individual authors. Information on authors' contributions is given on pages 23-26.

As shown in Table 1 and Fig. 6, knowledge of the world calopterygid diversity increased considerably in the first half of the 20th century. Of the 86 described new taxa, 40 are presently ranked as valid species. Half (20) of these valid species are from Asia, 11 from South or Central America, 8 from Africa and one from New Guinea. By 1950, the number of species which are presently considered valid had increased to 126, i.e. 70 % of the currently known species had been named.

In the second half of the 20th century, a total of 46 new taxa were named. These include 27 valid species, of which 14 are from Asia, 11 from South America, 1 from Africa and 1 from New Guinea. By the end of 1999, 153 valid species had been described, corresponding to 85 % of the presently known species.

Since 2000, no fewer than 28 new species and 3 new subspecies have been described. Of the 28 valid species, 18 are from Asia, 8 from South and Central America, one from Africa and one from New Guinea. The fact that during the last 20 years as many new species were described as during the previous 50 years is remarkable. As regards the Asian species, the increase is largely due to increased field work in Indochina and southern China, one of the major hotspots of calopterygid diversity. This was facilitated by the emergence of a young generation of odonate taxonomists in China and Vietnam, as well as the opening of those countries (as well as Laos) to visiting foreign entomologists. Of the presently (up to 31 May 2022) described 181 species, recognized here as valid, 75 (42 %) occur in the New World and 106 in the Old World (58 %). Of the Old World species, 20 occur in Africa, 81 in Eurasia (3 of them in Europe) and 5 in Australasia (in New Guinea and Sulawesi). A few undescribed calopterygid species from South America and Asia, available in various museum collections, still remain to be described. Undoubtedly a few more still wait for their discovery in their tropical haunts. Furthermore, more extensive

molecular studies will provide a better understanding of the classification of these insects, and changes in the present status of the individual taxa are inevitable in near future.

Synonymic checklist of Calopterygidae

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 **Calopterygidae** Selys, 1850

Archineura Kirby, 1894

Syn. *Leucopteryx* Fraser, 1933

Archineura hetaerinoides (Fraser, 1933)

Archineura incarnata (Karsch, 1892) *

Syn. *Archineura basilactea* Kirby, 1894

Archineura maxima (Martin, 1904)

Atrocalopteryx Dumont, Vanfleteren, De Jonckheere & Weekers, 2005

Atrocalopteryx atrata (Selys, 1853) *

Syn. *Calopteryx grandaeva* Selys, 1853

Syn. *Calopteryx smaragdina* Selys, 1853

Syn. *Calopteryx longipennis* Selys in Selys & Hagen, 1854

Syn. *Vestalis tristis* Navás, 1932

Atrocalopteryx atrocyana (Fraser 1935)

Atrocalopteryx auco Hämäläinen, 2014

Atrocalopteryx coomani (Fraser, 1935)

Atrocalopteryx fasciata Yang, Hämäläinen & Zhang, 2014

Atrocalopteryx laosica (Fraser, 1933)

Atrocalopteryx melli (Ris, 1912)

– *Atrocalopteryx melli melli* (Ris, 1912)

– *Atrocalopteryx melli orohainani* Guan, Han & Dumont, 2012

Atrocalopteryx oberthueri (McLachlan, 1894)

Syn. *Agrion grahami* Needham, 1930

Bryoplathanon Garrison, 2006

Bryoplathanon globifer (Hagen in Selys, 1853) *

Caliphaea Hagen in Selys, 1859

Syn. *Notholestes* MacLachlan, 1887

Caliphaea angka Hämäläinen, 2003

Caliphaea confusa Hagen in Selys, 1859 *

Syn. *Notholestes elwesi* McLachlan, 1887

Caliphaea consimilis McLachlan, 1894
Caliphaea hermannkunzi Zhang & Hämäläinen, 2020
Caliphaea nitens Navás, 1934
Caliphaea thailandica Asahina, 1976

Calopteryx Leach, 1815
Syn. *Agrion* Fabricius, 1775
Syn. *Sylphi*s Hagen in Selys, 1853
Syn. *Anaciagrion* Kennedy, 1920
Calopteryx aequabilis Say, 1840
Syn. *Calopteryx hudsonica* Hagen, 1877
Syn. *Calopteryx aequabilis yakima* Hagen, 1889
Syn. *Agrion aequabile coloradicum* Cockerell, 1913
Syn. *Agrion aequabile californicum* Kennedy, 1917
Calopteryx amata Hagen, 1889
Calopteryx angustipennis (Selys, 1853)
Syn. *Sylphi*s *elegans* Hagen in Selys, 1853
Calopteryx cornelia Selys, 1853
Calopteryx dimidiata Burmeister, 1839
Syn. *Calopteryx apicalis* Burmeister, 1839
Syn. *Calopteryx cognata* Rambur, 1842
Calopteryx exul Selys, 1853
Calopteryx haemorrhoidalis (Vander Linden 1825)
Syn. *Calopteryx* (*haemorrhoidalis*) *papyreti* Selys in Selys & Hagen, 1854
Syn. *Calopteryx haemorrhoidalis occasi* Capra, 1945
Syn. *Calopteryx haemorrhoidalis asturica* Ocharan, 1983
Syn. *Calopteryx haemorrhoidalis almogravensis* Hartung, 1996
Calopteryx japonica Selys, 1869
– *Calopteryx japonica japonica* Selys, 1869
– *Calopteryx japonica altaica* Belyshev, 1955
Calopteryx maculata (Palisot de Beauvois, 1807)
Syn. *Agrion virginica* Westwood in Drury, 1837
Syn. *Calopteryx holosericea* Burmeister, 1839
Syn. *Calepteryx materna* Say, 1840
Syn. *Calepteryx opaca* Say, 1840
Syn. *Calopteryx papilionacea* Rambur, 1842
Syn. *Calopteryx maculata floridana* Huggins, 1927
Calopteryx samarcandica Bartenev, 1912
Syn. *Calopteryx unicolor* Bartenev, 1912

Syn. *Calopteryx maracandica* Bartenev, 1913

Calopteryx splendens (Harris, 1780)

– *Calopteryx splendens splendens* (Harris, 1780)

Syn. *Libellula ludovicea* Fourcroy, 1785

Syn. *Agrio cellaris* Selys, 1831

Syn. *Agrio virescens* Selys, 1831

Syn. *Agrion parthenias* Burmeister, 1839

– *Calopteryx splendens amasina* Bartenev, 1912

– *Calopteryx splendens ancilla* Hagen in Selys, 1853

Syn. *Calopteryx splendens tuempeli* Scholz, 1908

Syn. *Calopteryx splendens johanseni* Belyshev, 1955

Syn. *Calopteryx splendens caprai* Conci in Conci & Nielsen, 1956

– *Calopteryx splendens balcanica* Fudakowski, 1930

– *Calopteryx splendens cretensis* Pongracz, 1911

– *Calopteryx splendens hyalina* Martin, 1909

– *Calopteryx splendens intermedia* Selys, 1887

Syn. *Calopteryx intermedia persica* Bartenev, 1912

Syn. *Calopteryx intermedia cecilia* Bartenev, 1912

Syn. *Calopteryx splendens cartvelica* Bartenev, 1930

Syn. *Calopteryx splendens pseudosyriaca* Buchholtz, 1955 [unavailable name]

– *Calopteryx splendens mingrelica* Selys, 1869

Syn. *Calopteryx splendens ciscaucasica* Bartenev, 1925

– *Calopteryx splendens njuja* Kosterin & Sivtseva, 2009

– *Calopteryx splendens orientalis* Selys, 1887

Syn. *Calopteryx transcaspica* Bartenev, 1912

Syn. *Calopteryx splendens shachrudicus* Bartenev, 1916

Syn. *Calopteryx orientalis risi* Schmidt, 1954

– *Calopteryx splendens syriaca* Rambur, 1842

– *Calopteryx splendens taurica* Selys, 1853

– *Calopteryx splendens tschaldirica* Bartenev, 1909

Syn. *Agrion splendens erevanense* Akramowski, 1948

– *Calopteryx splendens waterstoni* Schneider, 1984

– *Calopteryx splendens xanthostoma* (Charpentier, 1825)

Syn. *Agrion splendens pfeifferi* Götz, 1923

Calopteryx virgo (Linnaeus, 1758) *

– *Calopteryx virgo virgo* (Linnaeus, 1758)

Syn. *Libellula splendeo* Harris, 1780

Syn. *Agrio cyaneus* Selys, 1831

Syn. *Agrio oeneus* Selys, 1831
Syn. *Calepteryx anceps* Stephens, 1835
Syn. *Calepteryx ludoviciana* Stephens, 1835
Syn. *Agrion vesta* Charpentier, 1840
Syn. *Calopteryx inornata* Selys, 1840
Syn. *Calopteryx virgo britannica* Conci, 1952
Syn. *Calopteryx virgo padana* Conci in Conci & Nielsen, 1956
– *Calopteryx virgo feminalis* Kosterin, 2017
– *Calopteryx virgo festiva* (Brullé, 1832)
Syn. *Agrion colchicum* Eichwald, 1837
– *Calopteryx virgo meridionalis* Selys, 1873
Syn. *Agrion nicaeensis* Risso, 1826
Syn. *Calopteryx virgo occitanica* Walker, 1853

Echo Selys, 1853
Syn. *Climacobasis* Laidlaw, 1902
Echo candens Zhang, Hämäläinen & Cai, 2015
Echo margarita Selys, 1853 *
Syn. *Echo margarita tripartita* Selys, 1879
Echo modesta Laidlaw, 1902
Syn. *Climacobasis lugens* Laidlaw, 1902
Echo perornata Yu & Hämäläinen, 2012
Echo uniformis Selys, 1879
Syn. *Echo iricolor* Krüger, 1898

Hetaerina Hagen in Selys, 1853
Hetaerina amazonica Sjöstedt, 1918
Hetaerina americana (Fabricius, 1798)
Syn. *Lestes basalis* Say, 1840
Syn. *Hetaerina basalis* Hagen in Selys, 1859
Syn. *Hetaerina californica* Hagen in Selys, 1859
Syn. *Hetaerina pseudamericana* Walsh, 1864
Syn. *Hetaerina scelerata* Walsh, 1864
Syn. *Hetaerina texana* Walsh, 1864
Hetaerina auripennis (Burmeister, 1839)
Syn. *Hetaerina divina* Hagen in Selys & Hagen, 1854
Syn. *Hetaerina purpurea* Selys in Selys & Hagen, 1854
Hetaerina aurora Ris, 1918
Hetaerina brightwelli (Kirby, 1823)

Hetaerina caja (Drury, 1773) *
– *Hetaerina caja caja* (Drury, 1773)
– *Hetaerina caja dominula* Hagen in Selys, 1853
Hetaerina calverti Vega-Sánchez, Mendoza-Cuenca & González-Rodríguez, 2020
Hetaerina capitalis Selys, 1873
?Syn. *Hetaerina maxima* McLachlan, 1879
Syn. *Hetaerina tolteca* Calvert, 1901
Syn. *Hetaerina capitalis colombiana* Navás, 1923
?Syn. *Hetaerina smaragdalis* De Marmels, 1985
Hetaerina charca Calvert, 1909
Hetaerina cruentata (Rambur, 1842)
Syn. *Calopteryx luteola* Rambur, 1842
Syn. *Hetaerina cruentata brasiliensis* Selys, 1853
Syn. *Hetaerina cruentata lineata* Hagen in Selys, 1853
Hetaerina curvicauda Garrison, 1990
Hetaerina duplex Selys, 1869
Hetaerina dutati Machado, 2017
Hetaerina erythrokalamus Garrison, 1990
Hetaerina flavipennis Garrison, 1990
Hetaerina fuscoguttata Selys, 1879
Hetaerina gallardi Machet, 1989
Hetaerina hebe Selys, 1853
Syn. *Hetaerina sanguinolenta* Hagen in Selys, 1853
Hetaerina indeprensa Garrison, 1990
Hetaerina infecta Calvert, 1901
Hetaerina laesa Hagen in Selys, 1853
Syn. *Hetaerina klugi* Schmidt, 1943
Syn. *Hetaerina papavarina* Fraser, 1946
Hetaerina longipes Hagen in Selys, 1853
Syn. *Hetaerina carnifex* Hagen in Selys, 1853
Syn. *Hetaerina carnifex fulgens* Selys, 1853
Hetaerina majuscula Selys, 1853
Hetaerina medinai Rácenis, 1968
Hetaerina mendezi Jurzitza, 1982
Hetaerina miniata Selys, 1879
Hetaerina moribunda Hagen in Selys, 1853
Hetaerina mortua Hagen in Selys, 1853
Hetaerina occisa Hagen in Selys, 1853

Syn. *Hetaerina macropus* Selys, 1853
Syn. *Hetaerina occisa albistigma* Hagen in Selys, 1853
Syn. *Hetaerina heterosticta* Selys in Selys & Hagen, 1854
Syn. *Hetaerina occisa asticta* Selys, 1873
Syn. *Hetaerina occisa sublimbata* Selys, 1873
Hetaerina pilula Calvert, 1901
Hetaerina proxima Selys, 1853
Hetaerina rosea Selys, 1853
Syn. *Hetaerina donna* Selys, 1873
Hetaerina rudis Calvert, 1901
Hetaerina sanguinea Selys, 1853
Hetaerina sempronia Hagen in Selys, 1853
Hetaerina simplex Selys, 1853
Syn. *Hetaerina perplex* Selys, 1869
Hetaerina titia (Drury, 1773)
Syn. *Calopteryx tricolor* Burmeister, 1839
Syn. *Hetaerina septentrionalis* Selys, 1853
Syn. *Hetaerina tricolor limbata* Selys, 1853
Syn. *Hetaerina rupinsulensis* Walsh, 1862
Syn. *Hetaerina rupamnensis* Walsh, 1864
Syn. *Hetaerina* (?*titia*) *bipartita* Selys, 1873
Hetaerina vulnerata Hagen in Selys, 1853
Hetaerina westfalli Rácenis, 1968

Iridictyon Needham & Fisher, 1940
Iridictyon myersi Needham & Fisher, 1940 *
Iridictyon trebbaui Rácenis, 1968

Matrona Selys, 1853
(Subgenus ***Matrona*** Selys, 1853)
Matrona annina Zhang & Hämäläinen, 2012
Matrona basilaris Selys, 1853 *
Syn. *Matrona kricheldorffi* Karsch, 1892
Matrona cyanoptera Hämäläinen & Yeh, 2000
Matrona japonica Förster, 1897
Syn. *Calopteryx okinawana* Matsumura, 1931
Matrona mazu Yu, Xue & Hämäläinen in Yu & al., 2015
Matrona nigripectus Selys, 1879
(Subgenus ***Divortia*** Yu, Xue & Hämäläinen in Yu & al., 2015)

Matrona corephaea Hämäläinen, Yu & Zhang, 2011
Matrona oreades Hämäläinen, Yu & Zhang, 2011 *
Matrona taoi Phan & Hämäläinen, 2011

Matronoides Förster, 1897
Matronoides cyaneipennis Förster, 1897 *

Mnais Selys, 1853
Mnais andersoni McLachlan in Selys, 1873
Syn. *Mnais earnshawi* Williamson, 1904
Mnais costalis Selys, 1869
Syn. *Mnais strigata nawai* Yamamoto, 1956
Mnais gregoryi Fraser, 1924
Syn. *Mnais maclachlani* Fraser, 1924
Syn. *Mnais semiopaca* May, 1935
Mnais icteroptera Fraser, 1929
Mnais incolor Martin, 1921
Mnais mneme Ris, 1916
Syn. *Mnais earnshawi thoracicus* May, 1935
Mnais pruinosa Selys, 1853 *
Syn. *Mnais strigata* Hagen in Selys, 1853
Mnais tenuis Oguma, 1913
Syn. *Mnais auripennis* Needham, 1930
Syn. *Mnais decolorata* Bartenev, 1913
Syn. *Mnais pieli* Navás, 1936
Mnais yunosukei (Asahina, 1990)

Mnesarete Cowley, 1934
Syn. *Lais* Hagen in Selys 1853
Mnesarete aenea (Selys, 1853)
Mnesarete astrape De Marmels, 1989
Mnesarete borchgravii (Selys, 1869)
Mnesarete cupraea (Selys, 1853)
Syn. *Mnesarete scintilla* Rácenis, 1968
Mnesarete devillei (Selys, 1880)
Mnesarete drepane Garrison, 2006
Mnesarete ephippium Garrison, 2006
Mnesarete fulgida (Selys,1879)
Mnesarete fuscibasis (Calvert, 1909)
Mnesarete grisea (Ris, 1918)

Mnesarete guttifera (Selys, 1873)
Mnesarete hauxwelli (Selys, 1869)
Mnesarete hyalina (Hagen in Selys, 1853) *
Mnesarete lencionii Garrison, 2006
Mnesarete loutoni Garrison, 2006
Mnesarete machadoi Garrison, 2006
Mnesarete marginata (Selys, 1879)
Mnesarete mariana Machado, 1996
Mnesarete metallica (Selys, 1869)
Syn. *Mnesarte* (sic) *hincksi* Fraser, 1946
Mnesarete pruinosa (Hagen in Selys, 1853)
Mnesarete pudica (Hagen in Selys, 1853)
– *Mnesarete pudica pudica* (Hagen in Selys, 1853)
– *Mnesarete pudica phryne* Costa 1986
Mnesarete rhopalon Garrison, 2006
Mnesarete smaragdina (Selys, 1869)
Mnesarete williamsoni Garrison, 2006

Neurobasis Selys, 1853
(Subgenus ***Neurobasis*** Selys, 1853)
Neurobasis anumariae Hämäläinen, 1989
Neurobasis australis Selys, 1897
– *Neurobasis australis australis* Selys, 1897
Syn. *Neurobasis* (*chinensis*) *australis paradisearum* Förster, 1898
Syn. *Neurobasis leopoldi* Fraser, 1932
– *Neurobasis australis misoolensis* Lieftinck, 1955
Neurobasis awamena Michalski, 2006
Neurobasis chinensis (Linnaeus, 1758) *
Syn. *Agrion nobilitata* Fabricius, 1777
Syn. *Calopteryx disparilis* Rambur, 1842
Neurobasis daviesi Hämäläinen, 1993
Neurobasis florida (Hagen in Walker, 1853)
Neurobasis ianthinipennis Lieftinck, 1949
Neurobasis kaupi Brauer, 1867
Syn. *Neurobasis kaupi pavo* Lieftinck, 1955
Neurobasis kimminsi Lieftinck, 1955
Neurobasis longipes Hagen, 1887
Neurobasis luzoniensis Selys, 1879
Neurobasis subpicta Hämäläinen, 1990

(Subgenus ***Sinobasis*** Hämäläinen & Orr in Orr & Hämäläinen, 2007)
Neurobasis anderssoni Sjöstedt, 1926 *

Noguchiphaea Asahina, 1976
Noguchiphaea laotica Sasamoto, Yokoi & Souphanthong, 2019
Noguchiphaea mattii Do, 2008
Noguchiphaea yoshikoae Asahina, 1976 *

Ormenophlebia Garrison, 2006
Ormenophlebia imperatrix (McLachlan, 1878) *
Ormenophlebia regina (Ris, 1918)
Ormenophlebia rollinati (Martin, 1897)
Ormenophlebia saltuum (Ris, 1918)

Phaon Selys, 1853
Syn. *Prophaon* Fraser, 1941
Phaon camerunensis Sjöstedt, 1900
Syn. *Phaon fraseri* Pinhey, 1962
Phaon iridipennis (Burmeister, 1839) *
Syn. *Phaon iridipennis fuliginosus* Hagen in Selys, 1879
Syn. *Sapho* (*Phaon*) *iridipennis occidentalis* Förster, 1906
Phaon rasoherinae Fraser, 1949

Psolodesmus McLachlan, 1870
Psolodesmus mandarinus McLachlan, 1870 *
– *Psolodesmus mandarinus mandarinus* McLachlan, 1870
– *Psolodesmus mandarinus dorothea* Williamson, 1904
Psolodesmus kuroiwae Oguma, 1913

Sapho Selys, 1853
Sapho bicolor Selys, 1853
Syn. *Sapho superba* Sjöstedt, 1917
Sapho ciliata (Fabricius, 1781) *
Sapho fumosa Longfield, 1932
Syn. *Umma infumosa* Fraser, 1951
Sapho gloriosa McLachlan in Selys, 1873
Sapho orichalcea McLachlan, 1869
Syn. *Sapho venusta* Karsch, 1889
Sapho puella (Sjöstedt, 1917)

Umma Kirby, 1890
Syn. *Cleis* Selys, 1853

Umma cincta (Hagen in Selys, 1853) *
Umma declivium Förster, 1906
Umma electa Longfield, 1933
Syn. *Umma distincta* Longfield, 1933
Umma femina Longfield, 1947
Umma gumma Dijkstra, Mézière & Kipping in Dijkstra & al., 2015
Umma longistigma (Selys, 1869)
Umma mesostigma (Selys, 1879)
Syn. *Umma fuscomarginalis* Sjöstedt, 1900
Syn. *Umma splendida* Navás, 1922
Umma mesumbei Vick, 1996
Umma purpurea Pinhey, 1961
Umma saphirina Förster, 1916

Vestalaria May, 1935
Vestalaria miao (Wilson & Reels, 2001)
Vestalaria smaragdina (Selys, 1879) *
Vestalaria velata (Ris, 1912)
Syn. *Vestalis virens* Needham, 1930
Vestalaria venusta (Hämäläinen, 2004)
Vestalaria vinnula Hämäläinen, 2006

Vestalis Selys, 1853
Syn. *Vestinus* Kennedy, 1920
Vestalis amabilis Lieftinck, 1965
Vestalis amaryllis Lieftinck, 1965
Vestalis amethystina Lieftinck, 1965
Vestalis amnicola Lieftinck, 1965
Vestalis amoena Hagen in Selys, 1853
Vestalis anacolosa Lieftinck, 1965
Vestalis anne Hämäläinen, 1985
Vestalis apicalis Selys, 1873
Vestalis atropha Lieftinck, 1965
Vestalis beryllae Laidlaw, 1915
Vestalis gracilis (Rambur, 1842)
Vestalis luctuosa (Burmeister, 1839) *
Syn. *Calopteryx formosa* Rambur, 1842
Vestalis lugens Albarda in Selys, 1879
Vestalis melania Selys, 1873

Vestalis nigrescens Fraser, 1929

Syn. *Neurobasis apicalis* Kirby, 1891

Vestalis submontana Fraser, 1934

Syn. *Vestalis apicalis amaena* Fraser, 1929

Syn. *Vestalis gracilis amaena* Fraser, 1929

Syn. *Vestalis gracilis montana* Fraser, 1934

Sapho (Mnais) nigra Selys in Selys & Hagen, 1854

An available name, but *nomen dubium*. Probably either a senior synonym of *Calopteryx japonica* Selys, 1869 or a junior synonym of *Atrocalopteryx atrata* (Selys, 1853).

List of authors of the genus-group names

The first figure after each person indicates the total number of genus-group names introduced or co-introduced. The figure in brackets indicates the number of those names which are presently ranked to represent valid genus. 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. 1 (1) [1976]
Cowley – John Cowley (1909-1967). Great Britain. 1 (1) [1934]
Dumont – Henri Jean François Dumont (b. 1942). Belgium. 1 (1) [2005]
Fabricius – Johann Christian Fabricius (1745-1808). Denmark. 1 (-) [1775]
/Fisher – Elisabeth Gault Fisher (1909-2000). United States. 1 (1) [1940]
Förster – Johann Friedrich Nepomuk Förster (1865-1918). Germany. 1 (1) [1897]
Fraser – Frederic Charles Fraser (1880-1963). Great Britain. 2 (-) [1933, 1941]
Garrison – Rosser William Garrison (b. 1948). United States. 2 (2) [2006]
Hagen – Hermann August Hagen (1817-1893). Germany/United States. 4 (2) [1853, 1859]
Hämäläinen – Matti Kalevi Hämäläinen (b. 1947). Finland. 2 (-) [2007, 2015]
/Jonkheere – Johan F. De Jonckheere. Belgium. 1 (1) [2005]
Kennedy – Clarence Hamilton Kennedy (1879-1952). United States. 2 (-) [1920]
Kirby – William Forsell Kirby (1844-1912). Great Britain. 2 (2) [1890, 1894]
Laidlaw – Frank Fortescue Laidlaw (1876-1963). Great Britain. 1 (-) [1902]
Leach – William Elford Leach (1791-1836). Great Britain. 1 (1) [1815]
May – Eduard May (1905-1956). Germany. 1 (1) [1935]
McLachlan – Robert McLachlan (1837-1904). Great Britain. 2 (1) [1870, 1887]
Needham – James George Needham (1868-1957). United States. 1 (1) [1940]
/Orr – Albert George Wilson Orr (b. 1953). Australia. 1 (-) [2007]
Selys – Michel Edmond de Selys Longchamps (1813-1900). Belgium. 8 (7) [1853]
/Vanfleteren – Jacques R. Vanfleteren (b. 1945). Belgium. 1 (1) [2005]
/Weekers – Peter H.H. Weekers. Belgium. 1 (1) [2005]

/Xue – Jun-li Xue (b. 1988). China. 1 (-) [2015]

Yu – Xin Yu (b. 1973). China. 1 (-) [2015]

List of authors of the species-group names

The first figure after each person indicates the total number of taxa described or co-described. The figure in brackets indicates the number of those taxa which are presently ranked as a full species. The persons marked with a slash [/] have described taxa only as a co-author, not as the sole or the first author.

Akramowski – Nikolai Nikolaevich Akramovski (1906-1991). Armenia. 1 (-) [1948]

Albarda – Johan Herman Albarda (1826-1898). Netherlands. 1 (1) [1879]

Asahina – Syoziro Asahina (1913-2010). Japan. 3 (3) [1976, 1990]

Bartenev – Alexandr Nikolaevich Bartenev (1882-1946). Russia. 12 (1) [1909-1930]

Belyshev – Boris Fedorovich Belyshev (1910-1993). Russia. 2 (-) [1955]

Brauer – Friedrich Moritz Brauer (1832-1904). Austria. 1 (1) [1867]

Brullé – Gaspard Auguste Brullé (1809-1873). France. 1 (-) [1832]

Buchholtz – Christiane Buchholtz (b. 1926). Germany. 1 (-) [1955]

Burmeister – Carl Hermann Conrad Burmeister (1807-1892). Germany/Argentina. 8 (4) [1839]

/Cai – Qing-hua Cai (b. 1964). China. 1 (1) [2015]

Calvert – Philip Powell Calvert (1871-1961). United States. 6 (5) [1901, 1909]

Capra – Felice Capra (1896-1991). Italy. 1 (-) [1945]

Charpentier – Toussaint de Charpentier (1779-1847). Germany. 2 (-) [1825, 1840]

Cockerell – Theodore Dru Alison Cockerell (1862-1948). Great Britain/United States. 1 (-) [1913]

Conci – Cesare Conci (1920-2011). Italy. 3 (-) [1952, 1956]

Costa – Janira Pedreira Martins Costa (1941-2018). Brazil. 1 (-) [1986]

De Marmels – Jürg Carl De Marmels (b. 1950). Switzerland/Venezuela. 2 (1) [1985, 1989]

Dijkstra – Klaas-Douwe Benediktus Dijkstra (b. 1975). Netherlands. 1 (1) [2015]

Do – Do Manh Cuong (b. 1979). Vietnam. 1 (1) [2008]

Drury – Dru Drury (1725-1803). Great Britain. 2 (2) [1773]

/Dumont – Henri Jean François Dumont (b. 1942). Belgium. 1 (-) [2012]

Eichwald – Carl Eduard von Eichwald (1795-1876). Latvia/Russia. 1 (-) [1837]

Fabricius – Johann Christian Fabricius (1745-1808). Denmark. 3 (2) [1777-1798]

/Fisher – Elisabeth Gault Fisher (1909-2000). United States. 1 (1) [1940]

Förster – Johann Friedrich Nepomuk Förster (1865-1918). Germany. 6 (4) [1897-1916]

Fourcroy – Antoine François de Fourcroy (1755-1809). France. 1 (-) [1785]

Fraser – Frederic Charles Fraser (1880-1963). Great Britain. 17 (9) [1924-1951]

Fudakowski – Józef Fudakowski (1893-1969). Poland. 1 (-) [1930]

Garrison – Rosser William Garrison (b. 1948). United States. 11 (11) [1990, 2006]

/Gonzáles-Rodríques – Antonio Gonzáles-Rodríques (b. 1972). Mexico. 1 (1) [2020]

Götz – Wilhelm Heinrich Jakob Götz (1902-1979). Germany. 1 (-) [1923]

Guan – Zhao-ying Guan (b. 1982). China. 1 (-) [2012]

Hagen – Hermann August Hagen (1817-1893). Germany/United States. 31 (17) [1853-1889]

Hämäläinen – Matti Kalevi Hämäläinen (b. 1947). Finland. 18 (18) [1985-2020]

/Han – Bo-ping Han (b. 1965). China. 1 (-) [2012]

Harris – Moses Harris (1730-1787). Great Britain. 2 (1) [1780]

Hartung – Matthias Hartung (b. 1953). Germany. 1 (-) [1996]

Huggins – John R. Huggins. United States. 1 (-) [1927]

Jurzitza – Gerhard Roman Anton Jurzitza (1929-2014). Germany. 1 (1) [1982]

Karsch – Ferdinand Anton Franz Karsch (later Karsch-Haack) (1853-1936). Germany. 3 (1) [1889, 1892]

Kennedy – Clarence Hamilton Kennedy (1879-1952). United States. 1 (-) [1917]

/Kipping – Jens Kipping (b. 1965). Germany. 1 (1) [2015]

Kirby – William Kirby (1759-1850). Great Britain. 1 (1) [1823]

Kirby – William Forsell Kirby (1844-1912). Great Britain. 2 (-) [1891, 1894]

Kosterin – Oleg Engelsovich Kosterin (b. 1963). Russia. 2 (-) [2009, 2017]

Krüger – Leopold Karl Wilhelm Krüger (1861-1942). Germany. 1 (-) [1898]

Laidlaw – Frank Fortescue Laidlaw (1876-1963). Great Britain. 3 (2) [1902, 1915]

Lieftinck – Maurits Anne Lieftinck (1904-1985). Netherlands. 10 (8) [1949-1965]

Linnaeus – Carolus Linnaeus (Carl von Linné) (1707-1778). Sweden. 2 (2) [1758]

Longfield – Cynthia Longfield (1896-1991). Great Britain/Ireland. 4 (3) [1932-1947]

Machado – Angelo Barbosa Monteiro Machado (1934-2020). Brazil. 2 (2) [1996, 2017]

Machet – Philippe Machet (b. 1953). France. 1 (1) [1989]

Martin – René Martin (1846-1925). France. 4 (3) [1897-1921]

Matsumura – Shōnen Matsumura (1872-1960). Japan. 1 (-) [1931]

May – Eduard May (1905-1956). Germany. 2 (-) [1935]

McLachlan – Robert McLachlan (1837-1904). Great Britain. 9 (7) [1869-1894]

/Mendoza-Cuenca – Luis Felipe Mendoza-Cuenca (b. 1969). Mexico. 1 (1) [2020]

/Mézière – Nicolas Maximilien Armand Mézière (b. 1980). France. 1 (1) [2015]

Michalski – John Charles Michalski (b. 1963). United States. 1 (1) [2006]

Navás – Longinos Navás (1858-1938). Spain. 5 (1) [1922-1936]

Needham – James George Needham (1868-1957). United States. 4 (1) [1930, 1940]

Ocharan – Francisco Javier Ocharan Larrando (1946-2019). Spain. 1 (-) [1983]

Oguma – Kan (Mamoru) Oguma (1886-1971). Japan. 2 (2) [1913]

Palisot de Beauvois – Ambroise Marie François Joseph Palisot de Beauvois (1752-1820). France. 1 (1) [1807]

Phan – Phan Quoc Toan (b. 1984). Vietnam. 1 (1) [2011]

Pinhey – Elliot Charles Gordon Pinhey (1910-1999). Great Britain. 2 (1) [1961, 1962]

Pongrácz – Alexander (Sándor) Pongrácz (1888-1945). Hungary. 1 (-) [1911]
Rácenis – Janis Rácenis (1915-1980). Latvia/Venezuela. 4 (3) [1968]
Rambur – Jules Pierre Rambur (1801-1870). France. 8 (2) [1842]
/Reels – Graham Thomas Reels (b. 1964). Great Britain. 1 (1) [2001]
Ris – Friedrich Ris (1867-1931). Switzerland. 7 (7) [1912-1918]
Risso – Joseph Antoine Risso (1777-1845). France. 1 (-) [1826]
Sasamoto – Akihiko Sasamoto (b. 1977). Japan. 1 (1) [2019]
Say – Thomas Say (1787-1834). United States. 4 (1) [1840]
Schmidt – Erich Walther Schmidt (1890-1969). Germany. 2 (-) [1943, 1954]
Schneider – Wolfgang Schneider (1953-2019). Germany. 1 (-) [1984]
Scholz – Eduard Joseph Rudolf Scholz (1873-1926). Germany. 1 (-) [1908]
Selys – Michel Edmond de Selys Longchamps (1813-1900). Belgium. 67 (39) [1831-1897]
/Sivtseva – Lena Valentinovna Sivtseva. Russia. 1 (-) [2009]
Sjöstedt – Bror Yngve Sjöstedt (1866-1948). Sweden. 6 (4) [1900-1926]
/Souphanthong – Vilaysak Souphanthong (1955-2020). Laos. 1 (1) [2019]
Stephens – James Francis Stephens (1792-1852). Great Britain. 2 (-) [1835]
Vander Linden – Pierre Léonard Vander Linden (1797-1831). Belgium. 1 (1) [1825]
Vega-Sánchez – Yesenia Margarita Vega-Sánchez (b. 1989). Mexico. 1 (1) [2020]
Vick – Graham Spencer Vick (b. 1947). Great Britain. 1 (1) [1996]
Walker – Francis Walker (1809-1874). Great Britain. 1 (-) [1853]
Walsh – Benjamin Dann Walsh (1808-1869). United States. 5 (-) [1862, 1864]
Westwood – John Obadiah Westwood (1805-1893). Great Britain. 1 (1) [1837]
Williamson – Edward Bruce Williamson (1877-1933). United States. 2 (-) [1904]
Wilson – Keith Duncan Peter Wilson (b. 1953). Great Britain. 1 (1) [2001]
/Xue – Jun-li Xue (b. 1988). China. 1 (1) [2015]
Yamamoto – Yukio Yamamoto (1929-2010). Japan. 1 (-) [1956]
Yang – Guo-hui Yang. China (b. 1970). 1 (1) [2014]
/Yeh – Wen-Chi Yeh (b. 1965). Taiwan. 1 (1) [2000]
/Yokoi – Naoto Yokoi (b. 1956). Japan. 1 (1) [2019]
Yu – Xin Yu (b. 1973). China. 4 (4) [2011-2015]
Zhang – Hao-miao Zhang (b. 1982). China. 5 (5) [2011-2020]

Etymology of the names with notes on the taxa

Genus-group names

Agrion [genus – informally suppressed name]
Agrion Fabricius, 1775 [Orig. *Agrion*]
Present status. Formally correct name, but replaced by *Calopteryx* Leach, 1815.
Gr. ἄγριος [agrios] –α –ον = living in the fields / wild {neuter}

Obviously this name was chosen because these insects live in 'the fields' rather than domestic areas, unlike for instance house flies (see Fliedner 1997: 26; Fliedner 2006: 7). Fabricius (1775) established this genus to house the two species, which Linnaeus (1758) presented in his second group of species "Oculi distantes remotique" [Eyes standing apart and being remote], i.e. *Libellula virgo* and *L. puella*. Later, after Leach (1815) had introduced the genus name *Calepteryx* for "those *Agrionida* with coloured wings", leading authors (such as Rambur, Selys Longchamps and Hagen) included *puella* in the genus *Agrion* and *virgo* in the genus *Calopteryx* (the original spelling emended). Kirby (1890) pointed out that the correct type species of *Agrion* is *virgo*, and he downgraded the genus *Calopteryx* Leach, 1815 as a synonym of genus *Agrion* and established the genus *Coenagrion* with *puella* as its type species. This caused a great confusion in the odonate nomenclature, since some authors followed Kirby's practice and the others continued to use the genus name *Calopteryx*. Since 1983, it has been a common and almost unanimously accepted practice among odonatologists to suppress (unofficially) the genus-group name *Agrion* and use the names *Calopteryx* Leach, 1815 (type species *C. virgo*) and *Coenagrion* Kirby, 1890 (type species C. *puella*). For details, see, pp. 11-12.

Reference. Fabricius (1775: 425).

Anaciagrion [synonym]

Anaciagrion Kennedy, 1920 [Orig. *Anaciagrion* genus nov.].

Present status. Synonym of *Calopteryx* Leach, 1815.

Gr. ἄναξ [anax] = lord / master / master of the house + *–agrion* see the foregoing entry {neuter}

In his brief definition of this genus Kennedy wrote: "Type – *Agrion* (*Calopteryx*) *cornelia* Selys. This new genus includes the single beautiful species *cornelia*. It differs from *Agrion* in that Cu2a is 5-6 cells long, as against a length of 2-4 cells in *Agrion* and it is directed entad and caudad towards the anal field of the wing." 'Anaci' in its name seems to indicate the large size and handsome appearance of the species; the species is larger than the most '*Agrion* (*Calopteryx*)' species known at that time. Presently *Anaciagrion* is ranked as a synonym of *Calopteryx*, but the molecular studies (Guan & al. 2012) suggests that *C. cornelia* (endemic to Japan) forms a sister group of the other *Calopteryx* species. This suggests that *Anaciagrion* might deserve a subgeneric status.

Reference. Kennedy (1920: 83).

Archineura [genus]

Archineura Kirby, 1894 [Orig. *Archineura*, gen. nov.]

Gr. ἀρχή [archē] = beginning, origin + νεῦρον [neuron] = sinew, tendon [in entomology: wing vein] {feminine}

This genus was designated to include a new species *Archineura basilactea* (a synonym; see entry *basilactea*) from 'Foo Chow' (Fujien, China), on which Kirby wrote: "… one of the largest and most remarkable species of Agrionidae [= Calopterygidae] known; and I am somewhat surprised to find that it does not appear to have previously described." There are some other odonate generic names beginning with *Archi-*; in most cases there is an evolutionary concept behind the name, *Archiargiolestes* Kennedy, 1925 or *Archi-*

petalia Tillyard, 1917. Kirby had earlier named *Archibasis* Kirby, 1890, where it is not clear what it should mean, if not, that the base of the stalked wings begins near the origin of the quadrilateral. In case of *Archineura* obviously an archaic character of the wing venation, such as the very dense reticulation at wing base, is behind the name.

Reference. Kirby (1894: 84).

Atrocalopteryx [genus]

Atrocalopteryx Dumont, Vanfleteren, De Jonckheere & Weekers, 2005 [Orig. *Atrocalopteryx* n. g.]

Lat. *ater –tra –trum* = black, dark, dark-coloured + the genus name *Calopteryx* {feminine}

The new genus was established (based on results of molecular studies) to include *Calopteryx atrata* Selys, 1853 as the type species. No other species was specified, but the authors stated: "The east Palaearctic *Atrocalopteryx* (2.7 My old) accommodates the former '*Calopteryx*' *atrata*, and possibly a few other little-known Chinese '*Calopteryx*'."

Reference. Dumont & al. (2005: 360).

Bryoplathanon [genus]

Bryoplathanon Garrison, 2006 [Orig. *Bryoplathanon* new genus]

Gr. βρύω [bryō] = to be full to bursting + πλάθανον [plathanon] = plate or mould for baking bread {neuter}

Author's etymology reads: "Bryo—Greek for swelling; plathanon, a neuter noun—Greek for plate. The generic name refers to the prominent midventral tubercle on abdominal segment". In both sexes of *B. globifer*, the type (and single) species in its genus, the ventral side of first abdominal segment is furnished with a prominent, upright hairy tubercle.

Reference. Garrison (2006: 7).

Caliphaea [genus]

Caliphaea Hagen in Selys, 1859 [Orig. Genre *Caliphæa*, Hagen]

Gr. καλός [kalos] = beautiful; *–phaea* goes back to the name *Euphaea* Selys, 1840 {feminine}

Euphaia is a Greek female name, derived from the adjective εὐφαής [euphaēs] = very bright. When Selys Longchamps (1840) gave the name for the exotic genus *Euphaea*, he had at hand a male specimen of *Euphaea variegata* (Rambur, 1842) from Java, rather than *Calopteryx holosericea* Burmeister, 1839, as he thought (see entry *holosericea*). *Euphaea variegata* male has bright, shining metallic coloration on the hindwing, which explains the generic name given by Selys. While studying the *Caliphaea* specimen Hagen and Selys were uncertain whether *Caliphaea* should be placed in Légion Calopteryx or Légion Euphaea: "La *Caliphaea* est tellement intermédiaire entre la légion des *Calopteryx* et celle des *Euphaea*, qu'il est difficile de décider à laquelle des deux elle appartient." In Selys' later classification (Selys Longchamps 1873a), *Caliphaea* was grouped as one of the six full genera in Légion Calopteryx. However, the etymology of its name can be interpreted as: *Cali-phaea*, "a pretty new genus of Euphaeids".

Reference. Selys Longchamps (1859: 439).

Calopteryx [genus]

Calopteryx Leach, 1815 [Orig. Genus *Calepteryx* Leach's MSS]

Gr.καλός –ή –όν [kalos] = beautiful + πτέρυξ [pteryx] = wing {feminine}

The name refers to the beautiful "coloured" wings of these damselflies. Leach divided Fabricius' (1775) genus *Agrion* into three genera: *Agrion*, *Lestes* and *Calepteryx*. These genera were placed in the family Agrionida within the order Neuroptera. Leach's definition of *Calepteryx* reads: "Wings coriaceo-membraneceous, without a real stigma, in place of which is sometimes an irregular opaque spot. Abdomen of the male furnished with a forceps-like appendage. *Obs.* This genus comprehends those *Agrionida* with coloured wings." However, Leach did not list any species by their names. The name is Latinised from the combination of two Greek words in juxtaposition, the feminine form of the adjective and the term for 'wing', which linguistically is not correct for a compound noun. The emended spelling *Calopteryx* was first published by Burmeister (1839), but the emendation was actually made by Toussaint de Charpentier, who was well versed in the ancient languages. Burmeister had consulted Charpentier's manuscript of 'Libellulinae Europaeae descriptae' (Charpentier 1840) and he gave credit to Charpentier by introducing the name as '*Calopteryx* Charp.' Hagen (1840) tried to return to Leach's original genus name, but distorted it into *Callepteryx* by a linguistically inappropriate emendation. Hagen probably thought that the name was derived from the Greek neuter κάλλος [kallos] = beauty. Later he used solely the emended form *Calopteryx*.

Recently some authors have used the authorship 'Leach *in* Brewster, 1815' for *Calopteryx* and the other odonate genera named by Leach. However, the 'in-structure' is unnecessary, since David Brewster was not the (sole) author of the "The Edinburgh Encyclopaedia" (in which Leach's contribution was published). Brewster 'conducted' the compilation and publishing of the encyclopaedia "with the assistance of gentlemen eminent in science and literature". These gentlemen were not identified in connection of the accounts they authored. Therefore, in formal terms, Leach's account 'Entomology' was anonymous. Should the Recommendation 51E of the Code be followed to the letter (which we personally do not recommend!), the authorship citation should be presented in square brackets: [Leach, 1815].

Reference. Leach (1815: 137).

Cleis [synonym]

Cleis Selys, 1853 [Orig. Sous-genre *Cleis*, De Selys; à Genre *Phaon*, De Selys]

Present status. Homonym of *Cleis* Guerin, 1831 (in Lepidoptera). Replaced by the name *Umma* Kirby, 1890.

Gr. Κλείς [Kleïs] = female proper name {feminine}

Selys introduced the genus-group names *Cleis*, *Sapho* and *Phaon*, all for African species, in the same publication. These names were taken from the history of Greek antiquity and are linked with the famous female lyric poet Sappho (c. 630-c. 570 BC) from Lesbos (see entries *Sapho* and *Phaon*). In an inscription from the 3rd century, Kleïs is mentioned as the name of Sappho's mother and that of her daughter as well, who also is referred to in two of the fragments of Sappho's remaining poetry.

In Selys' original (1853) classification *Cleis* (with *Cleis cincta* Hagen as the only species) was a subgenus of the genus *Phaon*, but already in the 'Additions et corrections' of the synopsis (pp. 72-73) Selys placed it as a subgenus of the genus *Echo*.

Reference. Selys Longchamps (1853: 22); Selys Longchamps & Hagen (1854: 55).

Climacobasis [synonym]

Climacobasis Laidlaw, 1902 [Orig. *Climacobasis*, gen. nov.]

Present status. Synonym of *Echo* Selys, 1853.

Gr. κλῖμαξ –ακος [klīmax, –akos] = ladder / staircase + βάσις [bāsis] - … base, pedestal {feminine}

The name undoubtedly refers to the symmetrical position of the crossveins in the median space at the wing base. Laidlaw's definition of the genus begins as follows: "Basal area of wings reticulated." The description of the type species *Climacobasis lugens* includes a figure of the male forewing. *Climacobasis lugens* is synonym of *Echo modesta*, a species described by Laidlaw in the same publication (see entries for *lugens* and *modesta*). Molecular studies are needed to provide support as to whether or not *Climacobasis* and *Echo* (type species *Echo margarita* Selys, 1853) really form a monophyletic group. If not, the genus *Climacobasis* might be valid. The structure of penis of *E. margarita* clearly differs from that in other species presently placed in *Echo* (Yu & Hämäläinen, 2012; Zhang & al., 2015).

Reference. Laidlaw (1902: 85).

Divortia [subgenus]

Divortia Yu, Xue & Hämäläinen in Yu & al., 2015 [Orig. *Divortia* Yu, Xue & Hämäläinen subgen. nov.]

The name refers to Lat. *divortium* = divorce / point of separation / separation (see below) {feminine}

The etymology reads: "*Divortia*, a noun derived from the Latin *divortium*, signifying the generic separation of these species from the remainder of *Matrona*." This word formation does not correspond to the linguistic rules, but is valid as a zoological name. The type species of *Divortia* is *Matrona oreades* Hämäläinen, Yu & Zhang, 2011. The splitting of the genus *Matrona* Selys, 1853 into two subgenera was based on the results of molecular analysis, supported by morphological differences.

Reference. Yu & al. (2015: 480).

Echo [genus]

Echo Selys, 1853 [Orig. Genre *Echo*, De Selys]

Gr. ἠχώ [ēchō] = *echo*; (personified: a mountain nymph punished by Hera, see below) {feminine}

In ancient mythology Echo originally was a mountain nymph. The Augustean poet Ovidius in the 3rd book of his metamorphoses tells us that Echo was told by Jupiter (Gr. Zeus), the supreme god, to detain his jealous wife Juno (Gr. Hera) with long conversations when she tried to catch him in one of his numerous love affairs. When Juno found that out she cursed

Echo so that the nymph could no longer speak by herself, but only repeat the most recently spoken words directed at her. Later the nymph fell in love with Adonis; but when she tried to win him over (which was difficult due to her handicap) the pretty youth rejected her and fled. Affected badly by this failure Echo hid in the woods denying all food. Her remains turned into rocks, with just her voice still being heard reproducing the last spoken words.

To name a taxon after a character from ancient mythology would coincide with Selys' and Hagen's practice of naming calopterygid genera after historical or mythological female characters from Greek and Roman antiquity. Recently, Hämäläinen & al. (2020) provided another explanation for the etymology of the name *Echo*. Selys had selected this name to house a single species *Echo margarita* (see entry *margarita*). As the species' French name 'Écho Marguerite' (1854) indicates, the species epithet was a dedication to his late daughter Marguerite, who had died a few months earlier at the age of four years. Hämäläinen & al. concluded that the genus name *Echo* was not referring to ancient myth, but as a combination with the species epithet – *Echo margarita* – it signifies 'a memory of Marguerite'. This is in accordance with a figurative meaning of the French word 'écho' – something which, by association, suggests a memory of something else. An illustration and some entries in Selys' diary seem to support this interpretation. The personal significance of this binomial for Selys is also evident from the fact that he selected the name *Echo* (given to a species with only a single female specimen of uncertain provenance) for the name of one of his five full calopterygid genera rather than using the name *Mnais* or *Sapho*, which were classified as subgenera of the genus *Echo*. In both of these subgenera there were two species available with known males. Obviously, before Marguerite's death Selys had used *Sapho* as the name of the full genus; see the entry *nigra*.

Reference. Selys Longchamps (1853: 19); Selys Longchamps & Hagen (1854: 55).

Hetaerina [genus]

Hetaerina Hagen in Selys, 1853 [Orig. Genre *Hetærina*, Hagen]

Gr.ἑταίρα [hetaira] = companion / courtesan + Lat. suffix *–inus –a –um* = related to, like a … {feminine}

Hetairai in ancient Greece were an upper class of prostitutes who not only provided sexual services, but also were skilled in playing the flute or the lyre, accomplished dancers and knowledgeable in poetry, philosophy or science. Thus, they could enchant men and contribute to their entertainment and conversations at the banquets for men from the first circles, where respectable women were not allowed. Hetairai were not permitted to be citizens of the towns where they lived; their legal status could vary; many were slaves who usually tried to be released from slavery, others were freedwomen or metics (citizens of other towns who had certain rights in their place of residence). Much about the life of these women is known from depictions on Greek vases, but also from literature, especially ancient comedy. Some of these courtesans were very famous and rich, but that was not regularly so (cf. entries *Mnesarete* and *Lais*).

The name *Hetaerina* was introduced in the same publication, in which both Selys and Hagen gave other genus-group names for calopterygids (*Mnais*, *Lais*) from the same topic group. In selecting these names, Selys and Hagen followed the tradition of earlier authors (such as Linnaeus and Charpentier) to use feminine names for the species of this damselfly

group. Selys' (1854) French name for the genus was 'Hetérine'.

Reference. Selys Longchamps (1853:27); Selys Longchamps & Hagen (1854: 86).

Iridi̲ctyon [genus]

Iridictyon Needham & Fisher, 1940 [Orig. *Iridictyon*, new genus]

Gr. Ἶρις [i̲ris] = rainbow + δίκτυον [di̲ktyon] = fishing net, hunting net / lattice work {neuter}

The genus *Iridictyon* was established for a new species *Iridictyon myersi*, discovered from mountains in British Guiana. The name points to the very dense reticulation of the wings ("Wings broad with dense venation"), which are iridescent ("Wings hyaline with black veins, the membrane with iridescent violet reflections").

Reference. Needham & Fisher (1940: 1).

La̲is [synonym]

Lais Hagen in Selys 1853 [Orig. Sous-genre *Laïs*, Hagen; à Genre *Hetærina*, De Selys]

Present status. Homonym of *Lais* Gistl, 1848 (in Tunicata). Replaced by the name *Mnesarete* Cowley, 1934.

Gr. Λαΐς [Lais] = female name, probably referring to λαός [la̲os] = men, people {feminine}

Lais is a typical ancient Greek courtesan name. It either means 'the commonly known' or is derived from a semitic word meaning 'lioness'. Two famous courtesans of this name are known from the 4th century BC. The elder one, residing at Corinth, was notorious for her high fees, and her lovers included the philosophers Diogenes and Aristippos. Her tomb showed a lioness tearing a ram apart, an allusion to her profession. The younger one, born at Hyccara in Sicily, was the daughter of Timandra, who had been the mistress of the Athenian politician Alcibiades. At the age of seven she was brought to Corinth by the Athenian commander Nikias. The orator Demosthenes and the painter Apelles are said to have been among her clients. Later she followed a lover to Thessalia, where according to tradition she was killed by jealous women in a sanctuary of Aphrodite.

Reference. Selys Longchamps (1853: 27); Selys Longchamps & Hagen (1854: 87).

Leuco̲pteryx [synonym]

Leucopteryx Fraser, 1933 [Orig. *Leucopteryx hetaerinoides* gen. et sp. nov.]

Present status. Homonym of *Leucopteryx* Packard, 1901 (in Lepidoptera); synonym of *Archineura* Kirby, 1894).

Gr. λευκός [leuko̲s] = light, bright, clear / white; πτέρυξ [pte̲ryx] = wing {feminine}

The genus name points to "a patch of opaque chalky white at the base of each hindwing" of the male specimens (from Laos) of *Leucopteryx hetaerinoides* available to Fraser.

Reference. Fraser (1933: 125).

Matro̲na [genus]

Matrona Selys, 1853 [Orig. Sous-genre *Matrona*, De Selys; à Genre *Calopteryx*, Leach]

Lat. *matrona* = married woman, wife, matron {feminine}

In ancient Rome a *matrona* was a freeborn woman who by her marriage had become her

husband's ward and protégé. Unlike Greek wives, she also accompanied her husband to receptions and banquets. She had to supervise the household and to educate the children. She was allowed to attend theatre and circus plays. In court she could act as proponent or as witness if she was accompanied by her tutor. The freer position of matronae in society, compared to the women of other peoples, was explained by the Romans by the fact that the abducted Sabine women at the time of Romulus had made peace between their relatives and their abductors, who had already won them over by treating them well. Selys' French name for the genus was 'Matrone'.

Reference. Selys Longchamps (1853: 17); Selys Longchamps & Hagen (1854: 52).

Matronoi̲des [genus]

Matronoides Förster, 1897 [Orig. *Matrona* (*Matronoides*)]

Lat. *matrona* = married woman, wife, matron + Gr. –οίδης [–oi̲dēs] = like a … {feminine}

This genus-group name was first published in a confusing way in the connection of the description of the species '*Matrona* (*Matronoides*) *cyaneipennis*' by Förster (1897a: 101-103). Förster wrote: "Ich besitze leider augenblicklich keine ächte *Matrona* De Selys in meiner Sammlung; es scheint mir aber ein neues Genus vorzuliegen, für welches ich den Namen *Matronoides* vorschlagen möchte und dessen genauere Begründung ich zutreffenden Falles nachtragen werde." Thus, the genus-group combination was only provisional, and it was already corrected a few months later when Förster (1897b: 204) presented a proper diagnosis of '*Matronoides*, nov. subgen. de Caloptérygine'. In the attached classification Förster presented both *Matronoides* and *Matrona* as subgenera of *Neurobasis*. He wrote: "Dans ma 4e note sur la faune Indo-australe, j'ai décrit une nouvelle espèce de Caloptérygines du mont Kina-Balu au nord de Bornéo, sous le nom de *Matronoides cyaneipennis*. Ne possédant pas alors d'espéce de *Matrona*, genre voisin, je me suis permis de fonder le sous-genre nouveau *Matronoides*. Depuis ce temps, M. de Selys, qui possède aussi la *M. cyaneipennis*, m'a fait remarquer que mon genre *Matronoides* est intermédiare entre le genre *Matrona* Selys et *Neurobasis* Selys, et j'ai trouvé très juste l'opinion de ce savant." In his texts Förster confusingly mixed the terms 'genus' and 'subgenus'. The name *Matronoides* points to the resemblance of *M. cyaneipennis* with species of the genus *Matrona*.

Reference. Förster (1897a: 101; 1897b: 204).

Mna̲is [genus]

Mnais Selys, 1853 [Orig. Sous-genre *Mnaïs*; De Selys; à Genre *Echo*, De Selys]

Mnais seems to be a Greek courtesan's name, referring to μνάομαι [mna̲omai] = to woo, to court, or to μνᾶ [mna̲] = a mina, that means a sum of 100 drachmai (a drachma being more than a labourer's wages for one day of work) {feminine}

As no famous courtesan of that name is known from antiquity, Selys found it probably in some literary text of his time.

Reference. Selys Longchamps (1853: 20); Selys Longchamps & Hagen (1854: 63).

Mnesa̲rete [genus]

Mnesarete Cowley, 1934 [Orig. *Mnesarete* nom. nov.; for *Lais* Selys, 1853]

Gr. female name, combined from μνησ(ι)– [mnēs(i)–] = remembering + ἀρετή [aretē] = goodness, virtue {feminine}

Mnesarete was the real name of the famous Greek courtesan Phryne from the 4th century BC, before she chose that profession (cf. entry *phryne*). This is mentioned by Cowley when he explained the choice of his replacement name for the preoccupied *Lais*: "Mnesarete is the proper name of Phryne, equally famous with Lais". So this is another name from antiquity referring to a charming female being.

Reference. Cowley (1934: 201)

Neurobasis [genus]

Neurobasis Selys, 1853 [Orig. Genre *Nevrobasis*, De Selys]

Gr. νεῦρον [neuron] = sinew, tendon [in entomology: wing vein] + βάσις [basis] = base, pedestal {feminine}

The name points to a feature of the wing venation: there are several crossveins in the basal space ("espace basilaire réticule"), whereas in the genera *Calopteryx* and *Vestalis* there are none. In Selys' original (1853: 17) classification, *Neurobasis* (with *N. chinensis*, L. as the only species) formed its own genus, but in the 'additions et corrections' of the same paper (Selys 1853: 73) *Neurobasis* was downgraded to a subgenus of the genus *Phaon* De Selys. Selys' French name was 'Nevrobase'.

Reference. Selys Longchamps (1853: 17); Selys Longchamps & Hagen (1854: 72).

Noguchiphaea [genus]

Noguchiphaea Asahina, 1976 [Orig. *Noguchiphaea* gen. nov.]

Noguchi is a Japanese family name; *–phaea* goes back to the name *Euphaea* Selys, 1840 (cf. entry *Caliphaea*) {feminine}

Asahina described a new species *Noguchiphaea yoshikoae* from male specimens collected in northern Thailand. Both the genus and species names refer to the same person: "The name of this beautiful insect was dedicated to the late Miss Yoshiko Noguchi who served as secretary for fifteen years in sustaining the Entomological Society of Japan, and for more than twenty years as an assistant researcher to the development of the Entomology Department, National Institute of Health, Tokyo." For further information on Yoshiko Noguchi, see entry *yoshikoae*.

Reference. Asahina (1976b: 388).

Notholestes [synonym]

Notholestes MacLachlan, 1887 [Orig. *Notholestes* n. g.]

Present status. Synonym of *Caliphaea* Hagen in Selys, 1859.

Gr. νόθος [nothos] = bastard / spurious + λῃστής [lēistēs] = robber (here referring to the genus *Lestes*) {masculine}

The genus was defined for a new species (*Notholestes elwesi*) from Darjeeling, India. The definition begins: "Resembling a large *Lestes* in form, stature and coloration." Following a presentation of some structural details, it reads: "It appears to me that in general characters this genus is more nearly allied to the Amazonian *Dicterias* than to others of the same

group from India, … No doubt there is also relationship with the Indian *Bayadera*,…" At the end, McLachlan states: "The Himalayan region seems particularly fertile in odd forms of *Calopterygina*." A 'spurious *Lestes*' is one of these oddities.

Reference. McLachlan (1887: 31).

Ormenophlebia [genus]

Ormenophlebia Garrison, 2006 [Orig. *Ormenophlebia* new genus]

Gr. ὅρμενος [ormenos] = shoot, sprout / stem, stalk; φλέψ (stem φλεβ–) [phleps / phleb–] = vein / artery + –ιος –ία –ιον = –ed {feminine}

The given etymology reads: "*Ormeno* – Greek for stem; *phlebia*, a feminine noun – Greek for vein. The generic name refers to the long, narrow wings." Type species: *Lais imperatrix* McLachlan.

In the description of the genus it reads: "wings as in *Mnesarete*, but longer, hyaline, venation black."

Reference. Garrison (2006: 8).

Phaon [genus]

Phaon Selys, 1853 [Orig. Genre *Phaon*, De Selys]

Gr. Φάων [Phaōn] (≈ the shining one) in mythology: ferryman on Lesbos, beloved by Sappho {masculine}

Phaon was said to have been a goodhearted boatman who provided transport between the island of Lesbos and the mainland. When one day he was asked by the goddess Aphrodite disguised as an old woman to ferry her across free of charge, he did so. As a reward, she gave him an ointment that made him the most beautiful of all men. The famous poetess Sappho (see entry *Sapho*), who came from Lesbos, was associated with him in a story that lacks any historical reality: After falling passionately in love with him, it is said that when she was not heard, she threw herself into the sea from a rock on the island of Leucas to end her torment. This matter is treated by the Roman poet Ovid in one of his poems (Heroides XV). Selys established this taxon alongside with the subgenus *Cleis* (see entry), which also pertains to the poetess from Lesbos.

Reference. Selys Longchamps (1853: 22; Selys Longchamps & Hagen (1854: 68).

Prophaon [synonym]

Prophaon Fraser, 1941 [Orig. *Prophaon* gen. n.]

Present status. Synonym of *Phaon* Selys, 1853.

Gr. prefix προ– [pro–] with nouns denotes position before or in front / priority in rank (here prior in evolution) {masculine}

Fraser had studied a single male specimen from Doula (Cameroon), which he had identified as *Phaon camereunica* Sjöstedt. [The species name was a misspelling of '*camerunensis*'.] Fraser wrote: "This species, by its highly organized pterostigma and its broader anal field, 3 cells, then 2 cells deep in its more distal part, falls between *Phaon* and *Umma* and, I think, deserves generic rank which I now give under the name of *Prophaon*. It is distinguished from *Phaon* by the pterostigma fully developed instead

of absent or rudimentary and by the presence of a rudimentary branch to the anal vein which is reflected basally as in *Umma* etc. Genotype *Phaon camereunica* Sjöstedt." From this we can see that Fraser chose his name not in the usual way, like e.g. Kennedy (1920: 87-88), who called a taxon which he assessed as evolutionarily prior to *Ischnura* and *Enallagma* as '*Proischnura*' (≈ preceding *Ischnura*), but by listing features that are more advanced in evolution than those of *Phaon*, the name must be interpreted as 'superior to *Phaon* in evolution'.

Pinhey (1962: 143) presented *Prophaon* as a synonym of *Phaon*, but considered '*camereunica* sensu Fraser' as a distinct species from Sjöstedt's *camerunensis* and proposed the name *fraseri* (see entry) for the new taxon.

Reference. Fraser (1941: 40).

Psolodesmus [genus]

Psolodesmus McLachlan, 1870 [Orig. *Psolodesmus*, n. g.]

Gr. ψόλος [psolos] = soot, smoke + δεσμός [desmos] = band (to fasten something) {masculine}

McLachlan described the new genus and species *Psolodemus mandarinus* from a single male specimen (see entry *mandarinus*). The genus name refers to the colour pattern of the male wings: "Wings similar in form and coloration; the basal half (or rather more) subhyaline, smoky; afterwards there is a broad, oblique, semi-opaque, white band; apical portion (one fourth of the entire length) blackish brown with brassy reflections". The features taken up by the generic name are the 'smoky' wing basis, and the adjacent white opaque band. However, in selecting the name, McLachlan chose a wrong word, since the Greek desmos can only mean a band to fasten something, not a stripe in a pattern, as would have been necessary in this case.

Reference. McLachlan (1870: 165).

Sapho [genus]

Sapho Selys, 1853 [Orig. Sous-genre *Sapho*, De Selys; à Genre *Echo*, De Selys]

Gr. Σαπφώ [Sapphō] = Greek poetess (ca 600 BC) {feminine}

The high esteem in which the poet Sappho was held in ancient Greece is reflected in the fact that she was often referred to simply as "the poetess", just as "the poet" referred to the famous Homer. The philosopher Plato declared her the 10th Muse. In stark contrast to this is how little we actually know about her life, and only a fraction of her poetry has come down to us. She was born in Eresos on Lesbos into a wealthy noble family, but seems to have soon moved to the larger town of Mytilene. Her mother's name was said to have been Cleis (see entry *Cleis*), as later it was that of a daughter. Her father died when she was seven years old. But what was his name we do not know (for him ten names have been passed down in later sources). An inscription from the 3rd century BC tells us that she was exiled to Sicily for some time, certainly not due to personal activities, but to the involvement of her family in power struggles of the noble parties. After her return to Mytilene, she gathered a circle of young girls around her, to whom she imparted a literary and musical education, fine etiquette and elegance of dress. In this circle there was a close relationship and a cordial tone that made people suspect homosexual activities later, and that poems mentioning Cleis did not refer to her daughter, but to a female lover.

Sappho was the subject of legends from early on: The Greek poet Menander (ca 300 BC) already claimed that Sappho threw herself into the sea from the Leucadian Rock out of unrequited love for the mythological ferryman Phaon (see entry *Phaon*). The story could be due to the fact that both were known to have a relationship with Lesbos, and that Phaon was considered the founder of an Aphrodite sanctuary on Leucas.

In modern times Sappho became the protagonist of operas, such as one by Charles Gounod, which premiered in Paris in 1851 (as did one by his teacher Anton Reicha in 1822, also in Paris). This opera may have been the inspiration for Selys' choice of the name *Sapho*, at least the name was spelled similarly as by Reicha and Gounod.

Reference. Selys Longchamps (1853: 21; Selys Longchamps & Hagen (1854: 57).

Sinobasis [subgenus]

Sinobasis Hämäläinen & Orr in Orr & Hämäläinen, 2007 [Orig. Subgenus *Sinobasis* Hämäläinen & Orr, subgen. nov.]

Lat. *Sinae* (pl.) = China + *–basis* as a reference to *Neurobasis* (see entry *Neurobasis*) {feminine}

The subgenus [of genus *Neurobasis* Selys, 1853] was established for *Neurobasis anderssoni* Sjöstedt, 1926, a species from China, which differs in many respects from the other species of *Neurobasis*. The etymology reads: "*Sino*: pertaining to China, *basis*: here used as a contrived stem noun (feminine) to signify affinity with *Neurobasis*, as is the fashion with zoological nomenclature (ordinarly signifying a base or pedestal)."

Reference. Orr & Hämäläinen (2007: 21).

Sylphis [synonym]

*Sylphi*s Hagen in Selys, 1853 [Orig. Sous-genre *Sylphi*s, Hagen; à Genre *Calopteryx*, Leach]

Present status. Synonym of *Calopteryx* Leach, 1815.

Paracelsus (1493-1541) created the names *Sylphe* (masc.) and *Sylphides* (f. pl.; sg. *Sylphi*s) for aerial spirits, living in the forests (Lat. *silvae*) {feminine}

These spirits were propagated by hermetic literature and later were introduced into arts. In 1832 a romantic ballet 'La Sylphide' was first performed in Paris with the famous ballerina Marie Taglioni (1804-1884) in the leading role. The impact of this work was so great that until the 20th century a slender, graceful young girl was called a sylphid in several European languages. Undoubtedly, also the choice of the genus name for an 'elegant' narrow winged damselfly was inspired by this work of art. Actually, the name *Sylphi*s was proposed by the German zoologist and botanist Count Johann Centurius Hoffmannsegg (1766-1849), from whose collection (in 'Mus. Berlin') the holotype ♀ of *Sylphis elegans* Hagen, 1853 (see entry *elegans*) – from "probablement de l'*Amérique septentrionale*" – originated. In Selys Longchamps & Hagen (1854: 21) it reads: "Décrite d'après un exemplaire communiqué à M. Hagen sous le nom manuscrit de genre Sylphis (*Hoffmansegg*)." Selys' French name for the genus was '*Sylphi*de'. The two *Sylphi*s species, Hagen's *elegans* and Selys' *angustipennis*, turned out to represent female and male of the same species, for which Hagen (1861: 56), as the first reviser, selected the name *angustipennis*.

Reference. Selys Longchamps (1853: 8; Selys Longchamps & Hagen (1854: 19).

Umma [genus]

Umma Kirby, 1890 [Orig. Genus *Umma*; (replacing preoccupied *Cleis*, Selys)]

This name is based on the Arabic أُمّة [Ummah], which means an Islamic supra-national community with a common history {feminine}

W. F. Kirby was a recognized folklorist. His wide interests in this topic included also Islamic culture. He authored the book 'The new Arabian nights. Select tales, not included by Galland and Lane' (1883), and later contributed to Richard E. Burton's series 'The book of the Thousand Nights and a Night'. In 1890, only two *Umma* species were known: *U. cincta* from Guinea and *U. mesostigma* from Cameroon. Islam was (and still is) the major religion in Guinea, and it was also firmly established in Cameroon.

Reference. Kirby (1890: 100).

Vestalaria [genus]

Vestalaria May, 1935 [Orig. *Vestalaria* n. g.]

Lat. *Vestalis* = virgin priestess of Vesta, the goddess of the hearth, home, and family in Roman religion + *–arius –a –um* = belonging to, pertaining to {feminine}

This genus was formed to separate the Oriental taxa *Vestalis s. smaragdina* and *V. smaragdina velata* from the genus *Vestalis*, based on differences in wing venation and in the structure of penis. The genus name *Vestalaria* refers to its connection to the name *Vestalis*.

Reference. May (1935b: 207).

Vestalis [genus]

Vestalis Selys, 1853 [Orig. Genre *Vestalis*, De Selys]

Lat. *Vestalis* = virgin priestess of Vesta, the goddess of the hearth, home, and family in Roman religion {feminine}

The cult of the goddess Vesta (cf. entry *vesta*) was of eminent importance, as the Romans saw the careful observance of the cult as a guarantee for the continuity of the state. So the six virgin priestesses of the goddess were very well respected. They were chosen by the Pontifex Maximus, the highest priest, at the age of six to ten and had to serve for 30 years. Their duties consisted of continuously maintaining the temple fire, fetching water from a distant sacred spring for cleaning the temple, preparing sacrificial grit, which was essential in religious ceremonies, and participating in certain rituals for other gods. They lived in a building near the temple. As the only women they were free from male guardianship and in public they were accompanied by a lictor (state bodyguard), as was otherwise only the case with the highest state officials. Loss of virginity was punishable by death.

Selys placed the three *Vestalis* species, known to him, into two groups: (1) *V. luctuosa*-group, (2) *V. gracilis*-group. The latter included also *V. amoena*. Kirby (1890) selected *V. luctuosa* as the type species of the genus. Selys' French name was 'Vestale'.

Reference. Selys Longchamps (1853: 24; Selys Longchamps & Hagen (1854: 79).

Vestinus [synonym]

Vestinus Kennedy, 1920 [Orig. *Vestinus* genus nov.]

Present status. Synonym of *Vestalis* Selys, 1853.

Lat. *Vestinus* = member of an ancient Italic tribe on the Adriatic Sea; also surname of prominent Romans from the first century AD (see below) {masculine}

C.H. Kennedy justified his decision to establish a new genus for *Vestalis gracilis* (type species) and *V. amoena* by saying that "the lobes of the penis are approximated and parallel"; furthermore two details in wing venation and the hyaline wings were stated as distinguishing features from *Vestalis* (type species *V. luctuosa*). The new genus name had to be masculine, and obviously Kennedy wanted it to be as similar to *Vestalis* as possible. From where he got the name *Vestinus* is not clear; possibly he just discovered the word in a Latin dictionary – referring to an ancient mountain tribe from the Abruzzi (renowned for the production of excellent cheese). However, it is also possible that Kennedy remembered the name from the writings of the Roman historian Tacitus. In his annals (15, 68-69) Tacitus reports, that M. Iulius Vestinus Atticus had been a friend of Nero, but had offended him by criticising him roughly. So Nero forced his suicide (like he did with his earlier teacher and counsellor, the philosopher Seneca, whose death is reported by Tacitus a little before), and one year later married in third marriage Vestinus' widow Statilia Messalina. The other prominent Vestinus, most probably the father of Vestinus Atticus, had been of equestrian rank and a close confidant of the emperor Claudius; but as he is mentioned by Tacitus only once, he is less likely to have been chosen as the eponym of Kennedy's new taxon.

Reference. Kennedy (1920: 83).

Species-group names

aenea [species]

Mnesarete aenea (Selys, 1853) [Orig. *Laïs ænea*, De Selys; Selys' classification: Genre *Hetaerina*, Hagen; sous-genre *Laïs*, Hagen]

Lat. *aëneus –a –um* = brazen, made of bronze, bronze-coloured, of copper {declinable adjective}

The species epithet refers to the colour of the body of both sexes: "corps bronzé violet ou cuivre rouge brilliant, surtout chez la femelle". Selys' (1854) French name for this species was 'Lais bronzée'.

Reference. Selys Longchamps (1853: 28); Selys Longchamps & Hagen (1854: 91).

aequabilis [species]

Calopteryx aequabilis Say, 1840 [Orig. *Calepteryx æquabilis*]

Lat. *aequabilis –is –e* = equal, similar {declinable adjective}

The epithet probably refers to the anal appendages being almost of equal diameter for whole length: "anal processes curved inwards, and towards the tip a little downwards, of equal diameter, excepting that on the inner side they are a little dilated beyond the middle."

Reference. Say (1840: 33).

albistigma [synonym]

Hetaerina occisa albistigma Hagen in Selys, 1853 [Orig. *Hetærina occisa*, Hagen; Race. *H. albistigma*, Hagen]

Present status. Synonym of *Hetaerina occisa* Hagen in Selys, 1853.

Combination of Lat. *albus –a –um* = white and Gr. στίγμα [stigma] = tattoo-mark, mark, spot {neuter}

The name refers to the white pterostigmata in female wings. In the description of *H. occisa* it reads: “Ptérostigma petit (ou irrégulièrement nul), noir, plus pâle au milieu”, whereas for its ‘race’ *albistigma* it reads: “ptérostigma assez grand, blanc”. So, in Hagen’s specimens, which he named *albistigma*, the pterostigma was lighter (and larger) than in the specimens he identified as typical *occisa*.

Reference. Selys Longchamps (1853: 45); Selys Longchamps & Hagen (1854: 146).

almogravensis [synonym]

Calopteryx haemorrhoidalis almogravensis Hartung, 1996 [Orig. *Calopteryx haemorrhoidalis almogravensis* ssp. nov.]

Present status. Synonym of *Calopteryx haemorrhoidalis* (Vander Linden, 1825).

Lat. *–ensis –is –e* = pertaining to (often in geographic context) {declinable adjective}

A toponym. The name, an adjective derived from Almograve (a locality name of Arabic origin), refers to the type locality of the taxon: Almograve, Odemira, Beja District in southern Portugal, where the taxon author Matthias Hartung collected the type series on 20 September 1980.

Reference. Hartung (1996: 54).

altaica [subspecies]

Calopteryx japonica altaica Belyshev, 1955 [Orig. *Calopteryx vigro* [sic!] *altaica* Belyshev subsp. nov.]

Lat. *Altaicus –a –um* = pertaining to the Altai mountains {declinable adjective}

A toponym. Named after the type locality: the mouth of Lebed River in north-eastern Altai in Russia, where the taxon author B.F. Belyshev collected the type series on 4 July 1948.

Reference. Belyshev (1955a: 388).

amabilis [species]

Vestalis amabilis Lieftinck, 1965 [Orig. *Vestalis amabilis* spec. nov.]

Lat. *amabilis–is –e* = amiable, lovely, lovable {declinable adjective}

The name is a typical subjective characterisation of the amiability of a calopterygid damselfly, in this genus first used by Hagen (1853) in the species epithet of *Vestalis amoena*, a species with which Lieftinck compared his new taxon.

Reference. Lieftinck (1965: 349).

amaena [synonym]

Vestalis apicalis amaena Fraser, 1929 [Orig. *Vestalis apicalis amæna* subsp. nov.]

Present status. Homonym of *Vestalis amoena* Hagen in Selys, 1853. [Replaced by the trinomial *Vestalis apicalis submontana* Fraser, 1934; see entry *submontana*.]

The epithet *amaena* was incorrectly given instead of *amoena* [Lat. *amoenus –a –um* = beautiful, charming, lovely] (cf. ancient Lat. *caeruleus* → medieval Lat. *coeruleus* etc.) {declinable adjective}

In Fraser's original name the letters a and e were in ligation = *amæna*. The wrong orthography may have been due to the unjustified emendation of the species name of *Vestalis amoena* in Selys Longchamps & Hagen (1854: 82); for details, see entry *amoena*.

Reference. Fraser (1929: 584).

amaena [synonym]

Vestalis gracilis amaena Fraser, 1929 [Orig. *Vestalis gracilis amæna* subsp. nov.]

Present status. Homonym of *Vestalis amoena* Hagen in Selys, 1853. [Replaced by the trinomial *Vestalis gracilis montana* Fraser, 1934; see entry *montana*.]

For the etymology, see the previous entry.

Reference. Fraser (1929: 583).

amaryllis [species]

Vestalis amaryllis Lieftinck, 1965 [Orig. *Vestalis amaryllis* spec. nov.]

Gr. Ἀμαρυλλίς [Amaryllis] is a female name from ancient bucolic literature which might mean something like 'the sparkling one' {noun in apposition}

The Greek poet Theocritus (3rd century BC) in his third poem introduces a shepherd Tityros who tries to win over a girl of this name who is not willing to answer to his pleas. In the eclogues of the Roman poet Vergilius Tityrus has been successful and the gifts which led to a success are mentioned. Later Ovidius in his 'Art of Love' mentions that in his times such gifts would no longer be effective. The epithet is best known as the name of the plant genus *Amaryllis* Linnaeus, 1753.

Reference. Lieftinck (1965: 345).

amasina [subspecies]

Calopteryx splendens amasina Bartenev, 1912 [Orig. *Calopteryx amasina* sp. n.]

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

A toponym. The adjective *amasina* refers to the type locality of the taxon. Amasia (Amaseia), presently known as Amasya, is a city in northern Turkey and the capital of the Amasya province on the southern coast of the Black Sea. In ancient times Amaseia was the capital of Pontos region. The taxon was described on basis of 5 ♂♂ and 9 ♀♀, received from Kenneth John Morton (1858-1940).

Reference. Bartenev (1912b: 138; in reprint p. 74).

amata [species]

Calopteryx amata Hagen, 1889 [Orig. *Calopteryx amata* Hagen, nov. spec.]

Lat. *amatus –a –um* = beloved {declinable past participle}

Although the description does not include any subjective comment on the attractiveness of this damselfly, the name undoubtedly refers to the charming appearance of this narrow-

winged damselfly species.

Reference. Hagen (1889: 244).

amazonica [species]

Hetaerina amazonica Sjöstedt, 1918 [Orig. *Hetærina amazonica* n. sp.]

Lat. *Amazonicus–a–um* = pertaining to the Amazonas (a locality named after a fabulous tribe of female warriors) {declinable adjective}

A toponym. Named after the type locality: Manaos (Manaus) in Amazonas, Brazil, where the type series was collected ("im Walde und einem Bach ausserhalb der Stadt erbeutet") by Per Abraham Roman (1872-1943) in July-August 1914.

Reference. Sjöstedt (1918: 36).

americana [species]

Hetaerina americana (Fabricius, 1798) [Orig. *Agrion americana*]

Lat. *Americanus –a–um* = American {declinable adjective}

A toponym. Named after the type locality: 'Habitat in America.' The continent was named after the Italian explorer Amerigo Vespucci (1451-1512). The rather pronounced vagueness of this toponym for a member of the present genus *Hetaerina* could not be foreseen by Fabricius, since he knew less than 100 odonate species, very few of which were from America. According to Zimsen (1964: 623), Fabricius described this species based on four specimens from 'America'. The specimens were originally in the collection of Jacob Hübner (1761-1826).

Reference. Fabricius (1798: 287).

amethystina [species]

Vestalis amethystina Lieftinck, 1965 [Orig. *Vestalis amethystina* spec. nov.]

Lat. *amethystinus–a–um* = of the colour of amethyst (violet blue), adorned with amethysts (word borrowed from Greek) {declinable adjective}

Although not directly stated in the description, the name refers to the colour of wings of this species and its close congeners. In his introduction to the *Vestalis amoena*-group, Lieftinck (1965: 328) wrote: "The sexes are similar and have the body of an intense emerald-green, the abdomen often rather more golden or bronze, and both possess semi-transparent wings with a delicate purplish or lilac iridescence".

It might be of interest, that the Greek name of the gemstone originally meant 'not drunken' or 'without drunkenness' as there was a conviction that the precious stone could antagonise the effects of alcohol. So there were drinking vessels made of amethyst for those who could afford it.

Reference. Lieftinck (1965: 343).

amnicola [species]

Vestalis amnicola Lieftinck, 1965 [Orig. *Vestalis amnicola* spec. nov.]

Lat. *amnis* = running water, current, river, stream; + *–cola* = inhabitant of ... {noun in apposition}

The species epithet refers to the habitat of this species, as well as that of all other calopterygids. In his revision of the *Vestalis amoena*-group, Lieftinck (1965) named six new species, the species names of all of them starting with letter 'a', as in *amoena*. This was surely intentional.

Reference. Lieftinck (1965: 349).

amoena [species]

Vestalis amoena Hagen in Selys, 1853 [Orig. *Vestalis amœna*, Hagen]

Lat. *amoenus–a–um* = charming, lovely, beautiful {declinable adjective}

In the original description, the species epithet had letters o and e in ligation = *amœna*, but in the more detailed description in 1854, the species epithet was incorrectly emended to *amæna*, and a French name 'Vestale agréable' [= charming] was given. [See above the entries '*amaena*' for a note on this misspelling.]

Reference. Selys Longchamps (1853: 25); Selys Longchamps & Hagen (1854: 82).

anacolosa [species]

Vestalis anacolosa Lieftinck, 1965 [Orig. *Vestalis anacolosa* spec. nov.]

Gr.κῶλον [kō̲lon] = limb, member of the body; ἄ-κωλος [a̲-kōlos] = without limbs, mutilated; ἀν-άκωλος [an-a̲kōlos] = (≈ not totally without members) docked, curtailed {adjective}

This adjective has only one common ending for masculine and feminine genders (-ος).

It seems that in naming this species Lieftinck, philologically incorrectly, but very recognisably, added an *–a* to the Greek adjective to make feminine gender unmistakable. The epithet refers to the rudimentary shape of the inferior appendages in male, specified in the key (p. 336) as follows: "Inf. app. rudimentary: lateral processes reduced to blunt subtriangular tubercles".

Reference. Lieftinck (1965: 353).

anceps [synonym]

Calopteryx anceps Stephens, 1835 [Orig. *Calepteryx anceps*]

Present status. Synonym of *Calopteryx* v. *virgo* (Linnaeus, 1758).

Lat. *anceps* = ambiguous, uncertain / two faced {adjective}

The epithet refers to James Francis Stephens' hesitation about the status of this taxon (from Coombe wood in London): "It is with some reluctance I give this as a new species, but the extraordinary neuration of the wings demands such a proceeding". The description includes: "wings broad, wholly of an uniform pale brown, with extremely numerous palish nervures reducing the areolets to about one-third the size of those in the ordinary species." Selys Longchamps (1846) pointed out that *anceps* is a teneral male of *C. virgo* "(junior = *C. vesta*, Charp.)", but did not mention his own synonymic taxon name for teneral *C. virgo*: *Calepteryx inornata* Selys, 1840 (see entries *vesta* and *inornata*).

Reference. Stephens (1835: 80).

ancilla [subspecies]

Calopteryx splendens ancilla Hagen in Selys, 1853 [Orig. *Calopteryx splendens*, Harris;

Race prussienne (C. *ancilla*, Hagen)]

Lat. *ancilla* = maid servant, slave girl {noun in apposition}

This epithet follows the 'female theme' in naming of the taxa in this genus. The original description was very brief. The detailed description of 'Race de Prusse' (in 1854) did not include the taxon name *ancilla*. Both descriptions note the presence of andromorph females in this taxon: "Variété accidentelle à ailes opaques depuis le quadrilatère." Hagen had observed these unusual females in the Königsberg area in Prussia, and they were first reported in 'Revue des Odonates ou Libellules d'Europe' (Selys Longchamps & Hagen 1850: 141) as "Variété femelle accidentelle". It is probable that these dark winged females played a role in Hagen's name selecting. In those days, in Prussia the female servants usually wore a dark apron (both in the house and abroad), in contrast with women of higher social status (cf. Fliedner 1997: 91). The name *ancilla* (maid servant), referring to the dark winged females of *C. splendens*, could allude to the difference of the appearance of the female servants and women of higher classes (green winged females of *C. splendens*).

Later, the name *ancilla* was generally used, incorrectly, to denote the andromorph female form, although the name was given to a taxon with the status of a subspecies: 'Race prussienne'. For details, see Schmidt (2006).

Reference. Selys Longchamps (1853: 13); Selys Longchamps & Hagen (1854: 39; the name *ancilla* not used).

andersoni [species]

Mnais andersoni McLachlan in Selys, 1873 [Orig. *Mnais Andersoni*, Mac Lachl.; Selys' classification: Genre *Echo*, De Selys; sous-genre *Mnais*, De Selys]

Although not stated in the original description, the epithet is an eponym named after John Anderson (1833-1900), who collected the type material in Yunnan (China) in May or June 1868. {noun in the genitive case}

Reference. Selys Longchamps (1873a: 472).

Notes on the eponymee. John Anderson (1833-1900) was a Scottish zoologist and anatomist, who gained an MD degree at the University of Edinburgh in 1862. In 1864 he moved to India, and worked as the curator of the Indian Museum in Calcutta in 1865-1887. After returning to Britain, he made zoological collections in Egypt. For his obituary, see Anon. (1901). For more details on his life and achievements, see for instance Moore (2004) and Wikipedia.

anderssoni [species]

Neurobasis anderssoni Sjöstedt, 1926 [Orig. *Neurobasis Anderssoni* n. sp.]

An eponym named after Johan Gunnar Andersson (1874-1960). {noun in the genitive case}

He was the donor of the type material, which was collected in "Lien–Cheng–Hsien" in Fujian (China) in May 1921. It is not known whether Andersson himself collected the specimens. The original, brief description appeared as a preliminary note (Vorläufige Mitteilung), which was followed three years later by a detailed description including a coloured plate of both sexes.

Reference. Sjöstedt (1926: 247); Sjöstedt (1929: 293).

Notes on the eponymee. Dr Johan Gunnar Andersson (1879-1960) was a Swedish geologist, polar explorer and archaeologist. He worked as a geologist in China in 1914-1924 and was involved in palaeontological and archaelogical research. Among his greatest achievements in China was the discovery of the Neolithic Yangshao culture in Henan with its unique painted pottery. In 1926 he founded the Museum of Far Eastern Antiquities (Östasiatiska museet) in Stockholm, and worked as its director until 1939. For his early autobiography, see Andersson (1933) and for his obituary, see Karlgren (1961). More details on his life and achievements are available in Wikipedia.

angka [species]

Caliphaea angka Hämäläinen, 2003 [Orig. *Caliphaea angka* spec. nov.]

A toponym named after the type locality at Doi Inthanon mountain in the Chiang Mai province of Thailand. {a noun in apposition}

The published etymology reads: “The name *angka* (noun in apposition) is derived from the Thai words ‘Ang’ and ‘Ka’. ‘Ang Ka’, meaning the ‘tub-shaped pond where crows flocked’, is the famous swampy basin near the top of Doi Inthanon (alt. 2565 m) and the source of streams where the new species occurs. Doi Inthanon was formerly called ‘Doi Ang Ka’ or ‘Doi Ang Ka Luang’.” The holotype ♂ was collected (at the altitude of ca 1600 m) by the taxon author Matti Hämäläinen on 18 May 1999.

Reference. Hämäläinen (2003: 451).

angustipennis [species]

Calopteryx angustipennis (Selys, 1853) [Orig. *Sylphis angustipennis*, De Selys; Selys’ classification: Genre *Calopteryx*, Leach; sous-genre *Sylphis*, Hagen]

Lat. *angustus –a –um* = narrow + *–pennis –is –e* (in compounds) = winged {declinable adjective}

The name refers to the narrow wings: “Ailes très-étroites, pointues, hyalines uniformément d’un vert clair.” The French name given by Selys was ’Sylphide angustipenne’.

Reference. Selys Longchamps (1853: 9); Selys Longchamps & Hagen (1854: 21).

anne [species]

Vestalis anne Hämäläinen, 1985 [Orig. *Vestalis anne* sp. n.]

Named after the female given name Anne {a noun in apposition}, which is a form of the Latin name Anna, derived from the Hebrew Hannah (meaning ’grace’). In the Netherlands, France and Scotland ’Anne’ (derived from the German ’arn’ names (meaning ‘eagle’) has also been used as a male name (for instance, Maurits Anne Lieftinck). No etymology was given in the original description, but an explanation for selecting this epithet is given here. Since Selys had selected the genus name *Vestalis* after the ancient Roman Vestal virgins, the author wanted to use a female name for his new species. Anne was chosen for various reasons, allegedly because most other species names in this genus start with the letter *a*.

Reference. Hämäläinen (1985: 346).

annina [species]

Matrona annina Zhang & Hämäläinen, 2012 [Orig. *Matrona annina* sp. n.]

Named after the female given name Annina. {a noun in apposition}

The etymology reads: "The specific epithet *annina* is a noun in apposition, from 'Annina', a diminutive form of the female personal name 'Anna', which derives from the Hebrew 'Hannah'."

Since Selys' genus name *Matrona* refers to the Latin word for a respectable married woman, the authors selected the feminine name Annina (not named after any individual person) for the epithet as it sounds well with the genus name.

Reference. Zhang & Hämäläinen (2012: 286).

anumariae [species]

Neurobasis anumariae Hämäläinen, 1989 [Orig. *Neurobasis anumariae* spec. nov.] (Fig. 7).

An eponym named after the taxon author's daughter Anu-Mari: "The species is dedicated to my daughter Anu-Mari." The Philippine species was named in celebration of her first birthday, with the description being published in the same day (23 June 1989). {noun in the genitive case}

Reference. Hämäläinen (1989: 1).

Notes on the eponymee. Anu-Mari Tanskanen (née Hämäläinen) (b. 1988) gained an MA degree at the University of Helsinki in 2015. She is currently working as a Finnish language teacher.

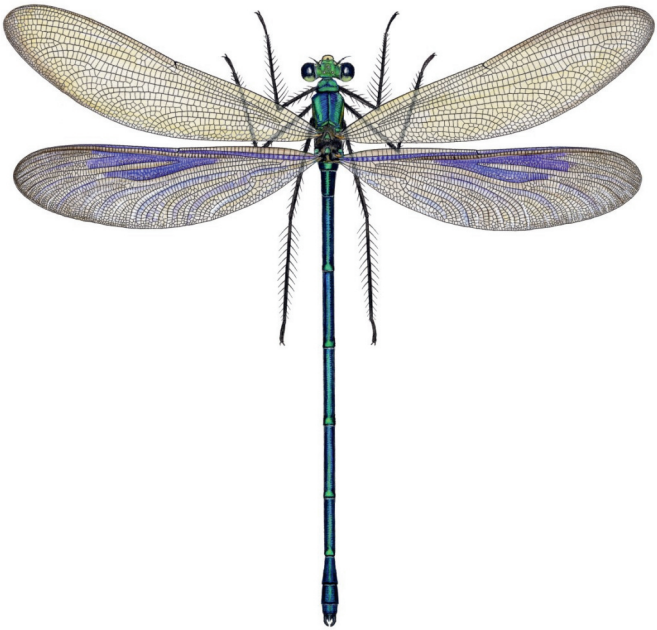

Fig. 7: *Neurobasis anumariae* ♂. Artwork by A.G. Orr (2006). (© A. G. Orr).

apicalis [synonym]

Calopteryx apicalis Burmeister, 1839 [Orig. *Calopteryx apicalis*]

Present status. Synonym of *Calopteryx dimidiata* Burmeister, 1839.

Lat. *apex*, *–icis* = top, point, summit; + *–alis –is –e* = pertaining to {declinable adjective}

The name refers to the opaque wing tips of male sex: "♂, alarum apice fusco, ♀, alis unicoloribus". [♂ with a dark apex of the wings, ♀ with unicoloured wings].

Reference. Burmeister (1839: 827).

apicalis [synonym]

Vestalis apicalis (Kirby, 1891) [Orig. *Neurobasis apicalis*, sp. n.]

Present status. Secondary homonym of *Vestalis apicalis* Selys, 1873, and synonym of *Vestalis nigrescens* Fraser, 1929).

Lat. *apex*, *–icis* = top, point, summit; + *-alis –is –e* = pertaining to {declinable adjective}

The epithet refers to the darkened wing tips in male: "Wings iridescent-hyaline, front wings shining with magenta, and hind wings with coppery-green in the sunlight; tips of all the wings dusky." Kirby wrote: "It is to be regretted that Mr. Green only obtained one damaged specimen [from 'Nawala-pittia, Ceylon'] of this handsome species, which resembles an *Echo* in its markings, though its neuration clearly shows it to be a *Neurobasis*." Soon, Kirby (1893: 558) synonymized his *Neurobasis apicalis* with *Vestalis apicalis* Selys.

Reference. Kirby (1891: 204).

apicalis [species]

Vestalis apicalis Selys, 1873 [Orig. *Vestalis apicalis*, De Selys]

Lat. *apex*, *–icis* = top, point, summit; + *-alis –is –e* = pertaining to {declinable adjective}

The darkened wing tips are at the base of the name: "Ailes étroites hyalines; le huitième apical environ subitement noirâtre (cette partie longue de 6 mm)". Selys also stated that the colour pattern of the wings resembles that of *Calopteryx apicalis*.

Reference. Selys Longchamps (1873b: 612).

asticta [synonym]

Hetaerina occisa asticta Selys, 1873 [Orig. *Hetærina occisa* variété nouvelle *asticta*]

Present status. Synonym of *Hetaerina occisa* Hagen in Selys, 1853.

Latinised feminine form of Gr. ἄστικτος–ος –ον [astiktos –os –on] = not marked (with) {declinable adjective}

The lack of pterostigma in the male sex has led to the name. Selys discussed the variability of *Hetaerina occisa*: "Le ptérostigma varie; il peut surmonter deux cellules (variété *macropus*) une cellule (*occisa* type), une-demi cellule (variété *heterosticta*) ou être tout à fait nul comme chez trois exemplaires de Putla (Mexique), variété que je propose de nommer *asticta*."

Reference. Selys Longchamps (1873a: 481; 1873b: 613).

astrape [species]

Mnesarete astrape De Marmels, 1989 [Orig. *Mnesarete astrape* spec. nov.]

Gr. ἀστράπη [astr<u>a</u>pe] = flash of lightning, lightning {noun in apposition}

Astrape is also a goddess of lightning and thunder in Greek mythology. The author did not provide an etymology, but he kindly informed us that the species epithet refers to the colourful appearance of this damselfly: "(♂) labrum with violet luster; clypeus and top of head with blue reflections"; "Abdomen completely black, dorsally with metallic blue luster"; (♀) "clypeus and top of head with an opaque bluish violet and green luster."

Reference. De Marmels (1989: 13).

ast<u>u</u>rica [synonym]

Calopteryx haemorrhoidalis asturica Ocharan, 1983 [Orig. *Calopteryx haemorrhoidalis asturica*, nueva subespecie]

Present status. Synonym of *Calopteryx haemorrhoidalis* (Vander Linden, 1825).

Lat. *Asturicus –a –um* = belonging to Asturias {declinable adjective}

A toponym named after the type locality: Asturias, the autonomous community in northern Spain. The taxon author Francisco Javier Ocharan had collected the holotype at 'municipal de Luanco (Asturias, España)' on 8 July 1980, as well as a long series of other specimens in several other locations in Asturias.

Reference. Ocharan (1983: 4).

atr<u>a</u>ta [species]

Atrocalopteryx atrata (Selys, 1853) [Orig. *Calopteryx atrata*, De Selys]

Lat. *atratus –a –um* = blackened; clothed in black {declinable past participle}

The species was named for the largely black body and wings: (♂) "Tête mediocre, noire… Prothorax noir… Thorax d'un noir mat profond… dessous de l'abdomen noir mat... ailes assez larges, arrondies, opaques, noirâtres (chatoyant en vert foncé chez le mâle), réticulation noirâtre"; (♀) "Presque semblable au mâle pour la coloration du corps et des ailes, mais moins brillante." The French name given by Selys for this species was 'Caloptéryx noircie'.

Reference. Selys Longchamps (1853: 16); Selys Longchamps & Hagen (1854: 48).

atrocy<u>a</u>na [species]

Atrocalopteryx atrocyana (Fraser 1935) [Orig. *Agrion atrocyana*, sp. nov.]

Lat. *ater –tra –trum* = black, dark, dark-coloured + *cyaneus* = dark blue, sea blue {declinable adjective}

The epithet refers to the dark wings with striking bluish shine: (♂) "Wings of great breadth, far more so than in *Matrona*, markedly rounded at apex … opaque black throughout with a steely blue reflex above and below"; (♀) "Similar to male in all respects save sexual characters." In linguistic terms the name is not correctly formed, it should read *atrocyanea*.

Reference. Fraser (1935: 330).

<u>a</u>tropha [species]

Vestalis atropha Lieftinck, 1965 [Orig. *Vestalis atropha* spec. nov.]

Latinised feminine form of Gr. ἄτροφος –ος –ον [<u>a</u>trophos –os –on] = ill-fed, non-viable

(of infants) {declinable adjective}

The shape of the inferior appendages of male is at the base of the name: “This new species is the smallest of the *Vestalis amoena* group and can be at once distinguished from its allies by the long upcurved superior anal appendages and the curiously emaciated form of the inferior pair. The name is an allusion to the atrophied condition of the latter.” In the key (p. 337) it reads: ”Inf. app. of the usual breadth basally but soon narrowed to form extremely thin, shrivelled, thread-like processes reaching back scarcely as far as the interior subapical tubercle of sup. app.”

Reference. Lieftinck (1965: 351).

auco [species]

Atrocalopteryx auco Hämäläinen, 2014 [Orig. *Atrocalopteryx auco* spec. nov.]

The epithet of this species, first collected by the taxon author Matti Hämäläinen in Huu Lien, northern Vietnam on 9 June 2008, originates from Vietnamese mythology. {noun in apposition}

The etymology reads: “The specific epithet *auco* is named after Âu Cơ, a character in the Vietnamese mythology. Âu Cơ was a young, beautiful mountain fairy who fell in love with Lac Long Quân (the Dragon Lord of Lac). They married and she gave birth to an egg sac from which hatched a hundred children known collectively as Bach Viet, the ancestors of the Vietnamese people. Âu Cơ is widely honoured as the mother of Vietnamese civilization.”

Reference. Hämäläinen (2014: 562).

auripennis [species]

Hetaerina auripennis (Burmeister, 1839) [Orig. *Calopteryx auripennis*]

Lat. *aurum* = gold + *–pennis –is –e* = winged {declinable adjective}

The brief description of a single female specimen includes the words: “alis aureo-fulvis, venis viridi-aeneis” [wings golden-yellow with green-bronze veins]. The name evokes the golden ochre colour of the wing base of the female.

Reference. Burmeister (1839: 827).

auripennis [synonym]

Mnais auripennis Needham, 1930 [Orig. *Mnais auripennis* sp. n.]

Present status. Synonym of *Mnais tenuis* Oguma, 1913.

Lat. *aurum* = gold +*–pennis –is –e* = winged {declinable adjective}

Needham’s brief and inadequate description of a few lines, includes statements: “yellow winged species” and “the wings are yellow”. According to Asahina (1975a: 130), Needham’s description was not based on the study of the type series, which consists of a male and female specimen labelled “Hangchow (Chekiang), 15 May 1928”, but obviously Needham described a male from Szechuan (Sichuan). However, according to Asahina also the type pair has pale yellowish wings.

Reference. Needham (1930: 208).

aurora [species]

Hetaerina aurora Ris, 1918 [Orig. *Hetaerina aurora* n. sp.]

Lat. *aurora* = (goddess of) dawn, daybreak, sunrise {noun in apposition}

The species epithet probably refers to the goddess of the dawn in the Roman mythology and Latin poetry. In the same paper Ris (1918a) named a few other species with epithets from mythology, such as *Cora irene*, obviously named after Eirene, a goddess of peace in the Greek mythology.

Reference. Ris (1918a: 58).

australis [species]

Neurobasis australis Selys, 1897 [Orig. *Neurobasis chinensis* Race *australis* Selys (inédite).]

Lat. *australis –is –e* = southern {declinable adjective}

Referring to the range of this 'race' of *N. chinensis* compared with that of its other 'races'. Selys recognized five races of *N. chinensis*, among them 'Race *australis*' from Waigeo and Aru islands off the western part of New Guinea. Both locations are in the southern hemisphere (the type location Waigeou partly so); thus selecting the name *australis* was appropriate, especially since Selys had a wrong idea of the distribution of the taxon *florida* Hagen, 1853, which in fact as a Javan endemic has a more 'southern' total range than *australis*. Or, perhaps Selys simply chose a name *australis* in relation to the geographical location of China, to which country the species name *chinensis* refers.

Reference. Selys Longchamps (1897: 428).

awamena [species]

Neurobasis awamena Michalski, 2006 [Orig. *Neurobasis awamena* sp. nov.]

Named after a people group living in the Southern Highlands province of Papua New Guinea. {noun in apposition}

The etymology reads: "The name is a noun in apposition and acknowledges the Awamena people of the Foi tribe, who inhabit the region in which it was first collected." The first specimens (including holotype ♂) were collected in Pimaga area by the taxon author John Michalski on 26-27 July 1994.

Reference. Michalski (2006: 186).

balcanica [subspecies]

Calopteryx splendens balcanica Fudakowski, 1930 [Orig. *Calopteryx splendens balcanica*. Apfelbeck in litt.]

Lat. *Balcanicus –a –um* = belonging to the Balkan (peninsula, mountains, states) {declinable adjective}

The name of this subspecies refers to the Balkan peninsula. 'Balkan' is Turkish and means 'mountain'. The type locality of this taxon is Trebinje in the southern part of the present Bosnia Herzegovina, where the type series was collected by Dr Viktor Apfelbeck (1859-1934; Director of the Institute of Biology and Medical Entomology in Sarajevo). The author wrote: "Das Prioritätsrecht der Benennung dieser sehr schönen Form gehört

Herrn Dr. Apfelbeck, welcher sie *balcanica* in seiner Korrespondenz nannte." However, this does not qualify Apfelbeck as the author of the name, since he is not responsible for the description of the taxon and its publication.

Reference. Fudakowski (1930: 57).

basalis [synonym]

Lestes basalis Say, 1840 [Orig. *Lestes basalis*]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798).

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

The description includes statements: "Wings sanguineous at base" and "wings … basal fourth, bright sanguineous", referring to the blood red basal spot in male wings.

Reference. Say (1840: 35).

basalis [synonym]

Hetaerina basalis Hagen in Selys, 1859 [Orig. *Hetærina basalis*, Hagen]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798); secondary homonym of *Lestes basalis* Say, 1840; see above).

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

The epithet refers to the differences of the blood red basal spot in male wings when compared with *H. americana*: "La tache basale sanguine est plus convexe en dehors et beaucoup plus étendue."

Reference. Selys Longchamps (1859: 441).

basilactea [synonym]

Archineura basilactea Kirby, 1894 [Orig. *Archineura basilactea*, sp. n.]

Present status. Synonym of *Archineura incarnata* (Karsch, 1892).

Gr. βάσις [basis] = base, pedestal (also Latin) + Lat. *lacteus–a–um* = of milk, milky, full of milk {declinable adjective}

The epithet refers to the milky coloured area at wing base of the single, teneral male specimen available for study: "Wings yellowish hyaline, with rufous nervures; costal nervure blackish; costal area of a deeper yellow; basal third of all the wings below the principal radius suffused with milky white."

Reference. Kirby (1894: 86).

basilaris [species]

Matrona basilaris Selys, 1853 [Orig. *Matrona basilaris*, De Selys; Selys' classification: Genre *Calopteryx*, Leach; sous-genre *Matrona*, De Selys]

Lat. *basilaris –is –e* = pertaining to the base {declinable adjective}

Characters of the wing base have evoked this name: the median (basal) space being reticulated with two rows of cells in both sexes and in male a distinctive area of wing base appearing milky when viewed from an oblique angle, owing to the presence of bluish-white crossveins. In the characterisation of his new subgenus *Matrona* (established for

a single species: *basilaris* from 'Nord de la Chine') Selys (1854: 52) wrote: "Le groupe unique (*M. basilaris*) sur lequel j'ai fondé ce sous-genre ne comprend jusqu'ici qu'une seule espèce, très-remarquable par son espace basilaire biréticulé et par le coloration laiteuse des nervules de la moitié basale des ailes." Selys' French name of this species was 'Matrone basilaire'.

Reference. Selys Longchamps (1853: 17); Selys Longchamps & Hagen (1854: 53).

beryllae [species]

Vestalis beryllae Laidlaw, 1915 [Orig. *Vestalis beryllae*, n. sp.]

(Fig. 8)

Gr.βήρυλλος (fem.)[bē̲ryllos] = beryl, gem of sea green colour {noun in the genitive case}

The epithet has been thought to refer to the colour of the body of the species: "The body is entirely metallic green in colour, save for ..." But by there is a problem: *beryllus*, the Latin form of the word, which can be masculine or feminine in gender, could never have the ending *–ae*. Unless the name is just linguistically incorrect, there remains only one solution. Since the form indicates a genitive singular feminine, the name is an eponym dedicated to a woman or girl named Beryl, perhaps with an implied pun on the green gemstone which forms the base of the given name. Who this Beryl might have been is unclear, but a dedication to a female person whose identity is not explained is consistent with Laidlaw's nomenclatorial practice, as in 1913 he described two species of *Amphicnemis* as *louisae* and *madelenae* and in 1915 an *Epithemis mariae* and in 1916 a *Ceriagrion rubiae* without mentioning to whom they are dedicated. However, it has been concluded that at least two of the names refer to his daughters Mary Louisa and Ruby.

Reference. Laidlaw (1915: 273).

Fig. 8: *Vestalis beryllae* ♂. Artwork by A.G. Orr (1995). (© A.G. Orr).

bi̲color [species]

Sapho bicolor Selys, 1853 [Orig. *Sapho bicolor*, De Selys; Selys' classification: Genre *Echo*, De Selys; sous-genre *Sapho*, De Selys]

(Fig. 9).

Lat. *bi-color* = two-coloured {adjective}

The epithet points to the colour of wings in both sexes: hyaline with the *apica*l one fourth opaque: "♂ Ailes hyalines incolores; un peu plus du quart apical subitement noir violet chatoyant"; "♀ Ailes hyalines un peu salies; un peu plus du quart *apica*l lavé de jaunâtre sale". Selys' French name of this species was 'Sapho bicolore'.

Reference. Selys Longchamps (1853: 21); Selys Longchamps & Hagen (1854: 61).

Fig. 9: *Sapho bicolor* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

bi̲partita [synonym]

Hetaerina titia bipartita Selys, 1873 [Orig. *Hetærina titia*, Drury. Race? *Hetærina bipartita*, De Selys]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

Lat. *bi-partitus –a –um* = bipartite, divided in two parts {declinable adjective}

In the single male specimen of *bipartita* (from Nicaragua) studied by Selys, the dark brown coloration in wings is less extensive than in the specimens of *H. titia* from Honduras and Mexico, known to Selys. In *bipartita* the dark and hyaline parts are more equally divided, thus justifying the species epithet.

Reference. Selys Longchamps (1873a: 481).

borchgravii [species]

Mnesarete borchgravii (Selys, 1869) [Orig. *Hetaerina borchgravii*, De Selys]

An eponym named after Paul de Borchgrave d'Altena (1827-1901), who collected the type series in Tijuca, near Rio de Janeiro, Brazil, in 1859-1861. {noun in the genitive case}

Reference. Selys Longchamps (1869a: 658).

Notes on the eponymee. Count Paul Edmond Joseph de Borchgrave d'Altena (1827-1901) was Selys' nephew and close friend. He was son of Selys' stepsister Coralie (née Smits) from the first marriage of Selys' mother Marie Denise (née Candolphe). Paul de Borchgrave d'Altena was an aide to King Leopold II of Belgium, finally rising to be the 'Chef de Cabinet du Roi' in 1895-1900. During his time as Belgian ambassador to Brazil from September 1859 to June 1861, he collected dragonflies for Selys in the surroundings of Rio de Janeiro. According to the data in Selys' diaries (see Caulier-Mathy & Haesenne-Peremans 2008) he collected (or purchased) ca 220 specimens of dragonflies and an unspecified number of Lepidoptera. Selys also named several other new odonate species from his material.

brasiliensis [synonym]

Hetaerina cruentata brasiliensis Selys, 1853 [Orig. *Hetærina cruentata*, Ramb. Race de Brésil: (*H. brasiliensis*, De Selys.)]

Present status. Synonym of *Hetaerina cruentata* (Rambur, 1842).

Lat. *Brasiliensis –is –e* = Brazilian {declinable adjective}

The species was named for the locality where the type specimen was incorrectly thought to originate: "La race *brasiliensis* ne m'étant connue que par un mâle unique envoyé par M. Clausen (sic), je ne puis affirmer si ses charactères sont constants." [Peter Claussen (1804–1855), a Dane residing in Minas Gerais, sent specimens to Selys from Brazil in 1842 and 1843.] Garrison (1990: 206) listed *H. brasiliensis* as synonym of *H. cruentata* and suggested that the type specimen of *brasiliensis* is probably mislabelled and does not originate from Brazil. A later study of the holotype at IRSN has confirmed Garrison's suspicions on both counts. The label attached to the specimen includes a locality name 'Mérida', a location in Venezuela.

Reference. Selys Longchamps (1853: 40); Selys Longchamps & Hagen (1854: 130).

brightwelli [species]

Hetaerina brightwelli (Kirby, 1823) [Orig. *Agrion brightwelli*]

An eponym named after Thomas Brightwell (1787-1868), whose collection included the holotype ♂ specimen from 'Brazil': "Nomen dedi in honorem D. Brightwell Norvicensis, insectorum collectoris indefessi, felicis; indagatoris acuti, docti" [I have given the name in honour of D. Brightwell from Norwich, an indefatigable and successfull collector; a shrewd, erudite investigator]. {noun in the genitive case}

Reference. Kirby (1823: 107).

Notes on the eponymee. Thomas Brightwell (1787-1868), was a well-known solicitor and a public figure in Norwich in England. He was a non-conformist and advocate of religious liberty and Mayor of Norwich in 1837. Brightwell was a skilled amateur naturalist. He com-

piled a fine collection of insects, mainly Coleoptera, which he donated to the Norwich museum in around 1844. For years he was in correspondence with the eminent entomologist William Kirby (1759-1850), and in one *occasio*n paid him a visit. In 1840, Brightwell published an ecclesiastical book 'Notes on the Pentateuch, selected from the exegetical parts of Rosenmuller's Scholia'. In his later years Brightwell focussed his interest in 'Infusoria', minute aquatic creatures, including protists, algae and rotifers. In 1848 he published a book 'Sketch of a fauna Infusoria for east Norfolk'. Later, in 1853-1858 he published a few papers on the Diatoms, describing several new species. In 1862 he was nominated as the President of the Microscopical Society in Norwich for life. Cecilia Lucy Brightwell (1811-1875) – a recognized author, painter and engraver – wrote a book on her father 'Memorials of the life of Mr. Brightwell of Norwich' (Brightwell, 1869).

britannica [synonym]

Calopteryx virgo britannica Conci, 1952 [Orig. *Calopteryx virgo britannica* subsp. n.]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758).

Lat. *Britannicus –a –um* = British, referring to locality {declinable adjective}

A toponym. The syntype series (9 ♂♂ and 1 ♀) originates from New Forest, Hampshire, England: "Localitá tipica: Inghilterra, Hampshire, New Forest." Conci justified the need to recognise a new subspecies for the British populations of *C. virgo* by the narrower wing shape of female (in the single female specimen he had studied) compared with the wings of female specimens from Finland, which he considered to represent the typical *C. v. virgo*. (The description includes photos of the ♀ wings of both forms.) In male wings the difference was stated to be very slight, at most. Fraser (1953) and Longfield (1953) immediately criticized Conci's subspecies splitting and downgraded *britannica* to synonymy.

Reference. Conci (1952: 67).

caja [species]

Hetaerina caja (Drury, 1773) [Orig. *Libellula Caia*]

A female name from Roman classical antiquity. {noun in apposition}

The original spelling of the epithet is *Caia*, but Burmeister (1839) and later authors have used the spelling *caja*. The Latin name *Caia* is a first name of a female, a counterpart to the most frequent male first name *Gaius*, the abbreviation of which is *C.*, for it had been in use long before the letter G had been introduced ca. 300 BC. In classical times the name *Gaia* was only used in legal terminology for each matron [i.e. married woman]. For instance in the wedding ceremony the bride was to say: "Ubi tu Gaius ego Gaia [where you are the Gaius" I will be your female counterpart]. Most of the 20 odonate names introduced by Dru Drury in 1773-1782 are female names from classical antiquity. At that time there was a great enthusiasm for this era, and operas, plays and novels, presently only known to specialists, were full of such names. Drury's coloured illustration of *Caia* shows a male specimen from 'South America'.

Reference. Drury (1773: 82-83, pl. XLV, fig. 2; species name given in the Index).

californica [synonym]

Hetaerina californica Hagen in Selys, 1859 [Orig. *Hetærina californica*, Hagen]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798).

Lat. *Californicus –a –um* = Californian, referring to location {declinable adjective}

A toponym. The holotype ♂ originates from northern California: “Le nord de la Californie. (Collect. Hagen).”

Reference. Selys Longchamps (1859: 440).

californicum [synonym]

Agrion aequabile californicum Kennedy, 1917 [Orig. *Agrion aequabile californicum*, new variety]

Present status. Synonym of *Calopteryx aequabilis* Say, 1840.

Lat. *Californicus –a –um* = Californian, referring to location {declinable adjective}

A toponym. The type locality is ‘Blue Lake, Humboldt County, California’, where the holotype ♂ and allotype ♀ were collected by Frederick W. Nunenmacher (1870-1946) on 6 May 1911. Presently this taxon is usually ranked as synonym of *aequabilis* (similarly as ssp. *yakima* and ssp. *coloradicum*), but as suggested by Westfall & May (2006: 58) further study would be needed to judge whether the isolated western populations could be ranked as valid subspecies.

Reference. Kennedy (1917: 484).

calverti [species]

Hetaerina calverti Vega-Sánchez, Mendoza-Cuenca & González-Rodríguez, 2020 [Orig. *Hetaerina calverti* sp. nov.]

An eponym named after Philip Powell Calvert (1871-1961). {noun in the genitive case}

The etymology reads: “This species was named in honor to Dr. Philip P. Calvert because he was the first scientist to analyze and illustrate the shape of the cerci of the new species and for his prominent contribution to the odonatology of the Neotropics.” {noun in the genitive case}

Reference. Vega-Sánchez & al. (2020: 489).

Notes on the eponymee. Dr Philip Powell Calvert (1871-1961) was an American entomologist and a specialist of neotropical dragonflies. In 1892-1939 he taught zoology at the University of Philadelphia, being a full Professor of Zoology in 1912-1939. He edited the journal Entomological News for 51 years (1893-1943). He authored over 300 papers and notes on Odonata in 1889-1961. His major publications include ‘Catalogue of the Odonata (dragonflies) of the vicinity of Philadelphia, with an introduction to the study of this group of insects’ (1893), the Odonata parts in ‘Biologia Centrali-Americana’ (1901-1908), ‘Contributions to a knowledge of the Odonata of the Neotropical region, exclusive of Mexico and Central America’ (1909) and ‘The neotropical species of the “subgenus Aeschna” sensu Selysii 1883 (Odonata)’ (1956). He described c. 260 new species and 18 new genera of Odonata. For his biography, see e.g. Rehn (1962), White (1984), Fliedner & Endersby (2019). For his complete bibliography, see Schmieder & Phillips (1951), with additions by Schmieder (1962). For details on his work in ‘Biologia Centrali-Americana’, see Garrison (2008).

camerunensis [species]

Phaon camerunensis Sjöstedt, 1900 [Orig. *Phaon camerunensis* n. sp.]

Lat. *Camerunensis –is –e* = pertaining to Cameroon (referring to location) {declinable adjective}

The type series (2 ♂♂ and 1 ♀) was collected by Sjöstedt himself during his expedition to northwestern Cameroon in 1890-1892. Only the female specimen is furnished with detailed collecting data: 'Bonge 21.XI.1891'.

Reference. Sjöstedt (1900: 48).

candens [species]

Echo candens Zhang, Hämäläinen & Cai, 2015 [Orig. *Echo candens* sp. nov.]

Lat. *candens*: see below {present participle}

The eymology reads: "The species epithet *candens* is an adjective derived from the Latin verb *candere*, which means 'to glow shining white'. This refers to the distinctive white pruinescence on the head and dorsum of the synthorax in the male of this species."

Reference. Zhang & al. (2015: 108).

capitalis [species]

Hetaerina capitalis Selys, 1873 [Orig. *Heterina* (sic) *capitalis*, De Selys. Race de la *majuscula* ?]

Lat. *capitalis –is –e* = belonging to the head, concerning the head (=life) {declinable adjective}

Selys' description does not provide other characters related to the head than two minor colour details of labrum and epistome in female. Therefore, the epithet *capitalis* must refer to the Latin term *poena capitalis* [= death penalty], beheading, which spills blood, similarly coloured as the wing bases of male in this species. For the earlier names of this theme, see entry *carnifex*.

Reference. Selys Longchamps (1873a: 482).

caprai [synonym]

Calopteryx splendens caprai Conci in Conci & Nielsen, 1956 [Orig. *Calopteryx splendens caprai* Conci, n. subsp.]

Present status. Synonym of *Calopteryx splendens ancilla* Hagen, 1853.

An eponym named after Felice Capra (1896-1991). {noun in the genitive case}

The author, Cesare Conci, wrote: "Denominiamo questa razza in onore dell'amico Dr. Felice Capra, autore di preziose osservazioni sulle razze delle *Calopteryx* italiane" [We name this race in honour of our friend Dr. Felice Capra, author of valuable observations on the Italian *Calopteryx* races]. The type material was stated to originate from "Italia, Mantova, Bosco Fontana", without naming the collector. Nor did Maibach (1987) name the collector while stating that the type series includes holotype ♂, allotype ♀, and 11 ♂♂ and 13 ♀♀ paratypes.

Reference. Conci & Nielsen (1956: 60).

Notes on the eponymee. Felice Capra (1896-1991) was an Italian entomologist. His studies

on medicine and surgery at the University of Turin were interrupted by WW1, and in 1920 he converted to studying biology, graduating in December 1923 with a thesis (unpublished) on the Italian species of the coccinellid genus *Scymnus*. He worked as a curator of the Museo Civico di Storia naturale in Genoa in 1924-1958. In 1976, he was nominated as 'Honorary curator for life' of this museum. Capra published a total of 143 papers (1915-1989), mainly on Italian insects. Besides Coccinellidae, he also worked on Orthoptera and related small orders, Odonata and cave faunas. He described 42 new species and 10 new subspecies of insects, among them *Calopteryx haemorrhoidalis occasi*. Capra fought in WW1 as a lieutenant and WW2 as a major. For his detailed biographies and complete bibliography, see Baccetti (1993) and Poggi (1993).

carnifex [synonym]

Hetaerina carnifex Hagen in Selys, 1853 [Orig. *Hetærina carnifex*, Hagen]

Present status. Synonym of *Hetaerina longipes* Hagen in Selys, 1853.

Lat. *carnifex* = executioner, hangman {noun in apposition}

Clearly, an allusion to beheading which is spilling blood, similarly red coloured as are the wing bases of male of this species: "Tache basale sanguine des supérieures … Tache basale des inférieures brune entre la costale et la médiane, rougeâtre." In addition to the name *carnifex*, in the same publication Hagen named six other *Hetaerina* species using the same 'beheading and blood' theme: *laesa, moribunda, mortua, occisa, sanguinolenta* and *vulnerata*. Moreover, Selys named a species as *sanguinea*. Obviously, this theme was triggered by Rambur's (1842) name *cruentata*, meaning 'bloodstained' (see entry *cruentata*). Selys' French name for *H. carnifex* was 'Hètérine carnassiére' (= carnivorous), which is not a direct translation of the Latin 'carnifex'. Later, Selys Longchamps (1873a) named one more species in this theme: *Hetaerina capitalis*.

Reference. Selys Longchamps (1853: 37); Selys Longchamps & Hagen (1854: 123).

cartvelica [synonym]

Calopteryx splendens cartvelica Bartenev, 1930 [Orig. *Calopteryx splendens cartvelica* biot. nov.)

Present status. Synonym of *Calopteryx splendens intermedia* Selys, 1887.

Lat. *Cartvelia* is an historic name for Georgia (in the Caucasus region) + suffix *– icus –a –um* = pertaining to (often in geographic sense) {declinable adjective}

The syntype series includes specimens from "Kodshory, in der Nähe von Tiflis", 7 July 1912, Nevadovsky [leg.] and from "Georgia, Dushet-District, Muchrani", 15-25 July 1921 and 24-25 July 1922, A. Iliinsky [leg.].

Reference. Bartenev (1930b: 524).

cecilia [synonym]

Calopteryx intermedia cecilia Bartenev, 1912 [Orig. *Calopteryx intermedia cecilia* subsp. n.]

Present status. Synonym of *Calopteryx splendens intermedia* Selys, 1887.

Lat. *C(a)ecilia* = female member of the Caecilii clan, an influential plebeian family in ancient Rome {noun in apposition}

Bartenev did not provide any etymology for this taxon, described on specimens collected near Baku in the present Azerbaijan in 1902 and 1911. In Roman antiquity C(a)ecilia indicated a relationship to the plebeian clan of the Caecilii. A *Caecilia* from the 3rd century, a virgin martyr, was canonised as Saint of music. So Cecilia (Cecile, Cecily) now is a female given name in several European languages. According to Oleg Kosterin (pers. comm.), this name is not in use in Russia. It is unlikely that Bartenev would have honoured some Western lady. Maybe the name *cecilia* was selected to accompany the Roman epithet in another name in the genus – *Calopteryx cornelia* Selys, 1853 – a species also treated in the same voluminous monograph of the genus.

Reference. Bartenev (1912b: 131; in reprint p. 67).

cellaris [synonym]

Agrion cellaris Selys, 1831 [Orig. *Agrio cellaris* (mihi), la Louise (Geoff.)]

Present status. Synonym of *Calopteryx* s. *splendens* (Harris, 1780).

Lat. *cella* = store room, cell + *–(a)ris –is –e* = relating to {declinable adjective}

The brief description by Edmond de Selys Longchamps (aged 17 years) for this taxon, collected in the Liège region in Belgium, reads: "*Agrio* [sic] *cellaris (mihi)*, la Louise (Geoff.). Ailes transparentes; un espace bleuâtre arrondi sur le milieu; corps d'un bleu verdâtre brillant." The etymology of the name is unclear, perhaps Selys tried to refer to some detail in wing venation, such as the presence of numerous antenodal cells compared with non-Calopterygid damselflies. He was not aware that Fourcroy (1785) had already given a scientific name for Geoffrey's species 'La Louise' from Paris region – *Libellula ludovicea* (see entry *ludovicea*). Hämäläinen (2015c) pointed out the existence of this long-forgotten name and concluded that it represents the male sex of *C. splendens*.

Reference. Selys Longchamps (1831: 58).

charca [species]

Hetaerina charca Calvert, 1909 [Orig. *Hetærina charca* sp. nov,]

An eponym after a people group, Charca. {noun in apposition}

Calvert wrote: "The specific name is taken from that of a human tribe of the neighborhood." The type series (7 ♂♂ and 8 ♀♀) was collected in Chulumani and Coroico in western Bolivia, collected by William Josiah Gerhard (1873-1958) in 1898-1899. The indigenous Charca people lived in the same area in western Bolivia prior the arrival of the Spaniards.

Reference. Calvert (1909: 86).

chinensis [species]

Neurobasis chinensis (Linnaeus, 1758) [Orig. *Libellula chinensis*]

Lat. *Chinensis –is –e* = Chinese (referring to locality) {declinable adjective}

Linnaeus' description of *Libellula chinensis* reads: "L(ibellula) alis superioribas testaceo-obsoletis; secudariis viridibus apice fuscis. Edw. av. 112, t. 112. Habitat in China" [A dragonfly the fore wings of which are obsoletely brickcoloured, the secondary ones green, dark at tip … It lives in China].

The description was based on a short text and colour painting by George Edwards (1694-

1773) published in the third volume of 'A natural history of birds' (Edwards 1750: 112). The main subject of plate 112 is the male "Golden bird of paradise", presently known as the Masked Bowerbird, *Sericulus aureus* (Linnaeus, 1758). To the right of the bird, added purely as ornament, is a flying odonate with green hindwings. The figure is sketchy, with the head too narrow and robust, and the abdomen too short. It is little wonder Linnaeus did not see its relationship with *Libellula virgo*, placing it instead among the Anisoptera. Edward's text reads: "The fly is in the collection of Robert Nesbit, M.D. Fellow of the College of Physicians, and of the Royal Society, London. The body and under wings are of a fine shining green, having a lustre of polished metal; the tips of the wings and their under sides dusky or black; the upper wings are of a light-brown colour, very thin and transparent. It was brought from China."

According to Article 72.5.6 of the Code, the male specimen in Robert Nesbit's (1697-1761) collection must be considered as the holotype of *chinensis*. Most likely the specimen came from the Canton area in southern China, and is presently lost (see Orr & Hämäläinen, 2007: 5-10).

Reference. Linnaeus (1758: 545).

ciliata [species]

Sapho ciliata (Fabricius, 1781) [Orig. *Agrion ciliata*]

Lat. *ciliatus –a –um* = with ciliae (thin hair), with lashes, ciliate {declinable adjective}

Referring to the conspicuous, long setae in legs. The brief description included the sentences: "pedibus ciliatis nigris" and "Pedes valde ciliati, nigri" [with ciliate black feet / feet very ciliate, black]. That time, Fabricius knew only five species of damselflies (*Agrion*), and obviously, among them, the setae were proportionally longest in this species.

Reference. Fabricius (1781: 528).

cincta [species]

Umma cincta (Hagen in Selys, 1853) [Orig. *Cleis cincta*, Hagen]

Lat. *cinctus –a –um* = girded, surrounded, encircled with something {declinable past participle}

The epithet refers to the hyaline wings being bordered by slightly darker veins: "ailes un peu élargies, hyalines, un peu irisées, à peine limbées de brun" and "le bord extreme de l'aile limbé de brun en forme de frange à l'extrémité (commençant un peu avant le ptérostigma et descendant le long du bord postérieur jusqu'au dessous du nodus. Cette bordure n'a pas 1/2 millimètre d'épaisseur; sur les ailes inférieures on voit aussi 1'apparence de 6-10 petits points irréguliers bruns." Selys' French name was 'Cleis ceinte' (= girdled Cleis).

Reference. Selys Longchamps (1853: 23); Selys Longchamps & Hagen (1854: 56).

ciscaucasica [synonym]

Calopteryx splendens ciscaucasica Bartenev, 1925 [Orig. *Calopteryx splendens ciscaucasica* Bartenef]

Present status. Synonym of *Calopteryx splendens mingrelica* Selys, 1869.

Lat. *ciscaucasicus –a –um* = on this side of the Caucasus mountains, referring to location {declinable adjective}

A toponym. Described from several specimens of both sexes collected in northern Caucasus, at rivers flowing from Golubye [Blue] Lakes in the Khudakurt valley in Terskaya Province, Nal'chik District, in July and August 1917. The locality is in the Kabardino-Balkarian Republic which is a constituent of the Russian Federation.

Reference. Bartenev (1925: 45; in reprint p. 18).

cognata [synonym]

Calopteryx cognata Rambur, 1842 [Orig. *Calopteryx cognata*, mihi.]

Present status. Synonym of *Calopteryx dimidiata* Burmeister, 1839.

Lat. *cognatus –a –um* = sprung from the same stock, related by blood, kindred {declinable adjective}

Rambur described this species from a female specimen from North America and compared it with females of *Calopteryx ludoviciana* (sensu Selys, 1840; = *splendens*) from Europe. "Ressemblant beaucoup à la femelle de la *Ludoviciana*". The name refers to the similarity of the females of these two species.

Reference. Rambur (1842: 222).

colchicum [synonym]

Agrion colchicum Eichwald, 1837 [Orig. *Agrion colchicus*]

Present status. Synonym of *Calopteryx virgo festiva* (Brullé, 1832).

Lat. *Colchicus –a –um* = pertaining to Colchis, referring to location {declinable adjective}

In Greco-Roman geography Colchis (Greek: Κολχίς [Kolchi̱s]) was the name for a region in the southern Caucasus on the region east of the Black Sea: Mingrelia and Abchasia. This species was described from specimen(s) which the author Karl Eduard von Eichwald had seen at a small forest stream near Ssatschura in Mingrelia on 15 May 1826. "Auch Libellen waren hier in Menge, einige grün metallisch glänzend *), andere blau von gleicher Grösse, ... Diese grüne Art schien mir neu zu seyn, ihr Charakter is folgender: *Agrion colchicus*, ... ". Then follows Latin description in 8 lines of a female insect. An English translation is presented here (keeping the lines as in the Latin text):

"*Agrion colchicus*, bronze green, the thorax of a deeper
bronze colour marked with furrows between the bronze green areas, beneath cloudy
blue, the body bronze green above, the last very small
segments a little tumid, yellowish, the wings all alike widened
behind the middle with rounded tips, growing dark bronze green,
all of them marked in front with a small marginal spot; feet
black, cloudy blue beneath, equipped with long hair-
shaped bristles in front; the wing veins short."

Reference. Eichwald (1837: 272).

colombiana [synonym]

Hetaerina capitalis colombiana Navás, 1923 [Orig. *Hetaerina capitalis* Sel. var. *colombiana* nov.]

Present status. Synonym of *Hetaerina capitalis* Selys, 1873.

Lat. *Colombianus –a –um* = from Colombia {declinable adjective}

The name refers to the type location. The description was based on a male specimen with following collecting data: “Patria. Colombia: Muzo, Oct. 1918, H. Apolinar (Coll. m).”

Reference. Navás (1923: 10).

colorадicum [synonym]

Agrion aequabile coloradicum Cockerell, 1913 [Orig. *Agrion æquabile coloradicum* Nov.]

Present status. Synonym of *Calopteryx aequabilis* Say, 1840.

Lat. *Coloradicus –a –um* = pertaining to Colorado {declinable adjective}

The name refers to the type location: “However, on September 30, 1907, Mr. G. Hite took a male at Overland Lake, in the Canadian Zone of Boulder County, Col[orado].”

Reference. Cockerell (1913: 173).

confusa [species]

Caliphaea confusa Hagen in Selys, 1859 [Orig. *Caliphæa confusa*, Hagen)

(Fig. 10).

Lat. *confusus –a –um* = confounded / mingled, mixed, blended {declinable past participle}

The species epithet refers to Selys’ and Hagen’s uncertainty about the taxonomic position of this species from Nepal. They were hesitant whether the genus *Caliphaea* should be placed to the Légion Calopteryx or to the Légion Euphaea (see entry *Caliphaea*). Selys (1859: 439) wrote: “La *Caliphaea* est tellement intermédiaire entre la légion des Calopteryx et celle des Euphaea, qu’il est difficile de décider à laquelle des deux elle appartient.”

Reference. Selys Longchamps (1859: 440).

Fig. 10. *Caliphaea confusa* ♂. Artwork by A.G. Orr (2020). (© A.G. Orr).

consimilis [species]

Caliphaea consimilis McLachlan, 1894 [Orig. *Caliphæa consimilis*, sp. n.]

Lat. *consimilis –is –e* = entirely similar, very like {declinable adjective}

Referring to the similarity of the two known species in the genus *Caliphaea*, *C. confusa* from Nepal and *C. consimilis* from Sichuan, McLachlan wrote: "*C. consimilis* is very similar, and the same description would apply almost equally well to either (the types of *consimilis* are still more mature), except that the inferior appendages appear to be formed in a different manner, and that there are two nervures in the quadrilateral instead of one."

Reference. McLachlan (1894: 434).

coomani [species]

Atrocalopteryx coomani (Fraser, 1935) [Orig. *Agrion coomani*, sp. nov.]

Fraser did not provide any etymology of the name, nor did he give the collector's name, but the epithet of this species, found in Tonkin, was undoubtedly named after Albert Joseph Maria de Cooman (1880-1967), who collected insects in Tonkin in the first half of the 20th century. {noun in the genitive case}

Reference. Fraser (1935: 331).

Notes on the eponymee. Albert Joseph Marie de Cooman (1880-1967) was a Belgian Jesuit priest and a coleopterist. He was ordained a priest in 1902. In 1903 the 'Paris Foreign Missions Society' sent him to Tonkin (in French Indochina), where he worked for 39 years as a missionary priest among Muong people in a small village on the shore of the Black River (Song Da) in Hoa Binh province. During the Japanese occupation, all missionaries were regrouped in Hanoi in 1942. In 1946, after the death of Octave Piel (see entry *pieli*), de Cooman was invited to curate the entomological collections of the Musée Heyde in Shanghai. In June 1951 de Cooman returned to France, having only visited twice for short holidays in 1923 and 1937. During his stay in Tonkin, de Cooman collected tens of thousands of insect specimens, especially beetles. In spite of the difficult conditions, in 1929 he began studying the taxonomy of the beetle family Histeridae, and gradually became a recognized specialist of these beetles. In his 43 research papers on these beetles (1929-1956), de Cooman named 15 new genera and described 103 new species. Over 100 new species and 11 new genera of Coleoptera have been named after him. For his biography, see Gomy (1987).

corephaea [species]

Matrona corephaea Hämäläinen, Yu & Zhang, 2011 [Orig. *Matrona corephaea* Hämäläinen, Yu & Zhang, spec. nov.]

Lat. *Corephaea*: latinised from Gr. κόρη [kore] and φαιός–ά –όν,[phaios –a –on] see below {noun in apposition}

The etymology reads: "The specific epithet, *corephaea*, (a Latinized form of the Greek compound κορη= 'maiden' and φαια 'dusky'), = 'dusky maiden', in reference to the dark brownish wings of this damselfly species. A noun in apposition." This is one of the names in damselflies referring to a young female as in Linnaeus' *virgo*.

Reference. Hämäläinen & al. (2011: 25).

cornelia [species]

Calopteryx cornelia Selys, 1853 [Orig. *Calopteryx cornelia*, De Selys]

(Fig. 11).

Lat. *Cornelia* = female from the family of the Cornelii, the best known being the mother of the Gracchus brothers Tiberius and Gaius {noun in apposition}

Selys did not provide any etymology, but gave the French name 'Caloptéryx Cornélie' for this species. Since none of Selys' female relatives had this name, it is obvious that Selys selected this name from Roman classical antiquity to fit to the feminine theme in the names of the calopterygid damselflies, created already by Linnaeus with his epithet *virgo*. Cornelia was painted by many artists in the 18th century because of the anecdote that, when asked why she wore hardly any jewellery, she answered pointing to her sons "These are my ornaments".

Reference. Selys Longchamps (1853: 15); Selys Longchamps & Hagen (1854: 47).

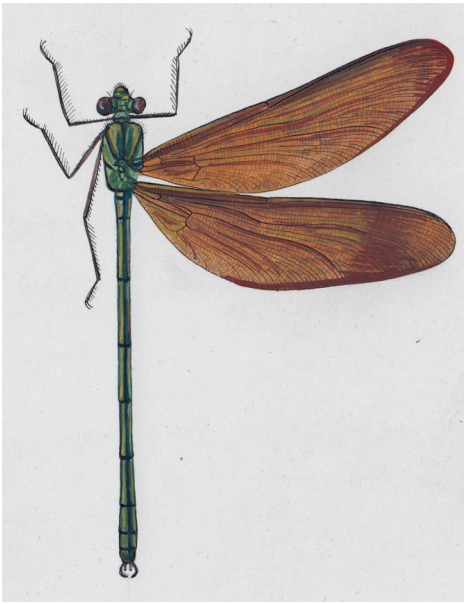

Fig. 11: *Calopteryx cornelia* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

Fig. 12: *Mnais costalis* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

costalis [species]

Mnais costalis Selys, 1869 [Orig. *Mnais costalis*, De Selys; Selys' classification: Genre *Echo*, De Selys; sous-genre *Mnais*, De Selys]

(Fig. 12).

Lat. *costalis –is –e* = concerning the costa {declinable adjective}

The name refers to a character in wings of the orange winged male form. Selys described: "♂ Adulte. … Ptérostigma car-

min. Les cellules costales fauve opaque depuis le nodus jusqu'à mi-chemin du ptérostigma. … ♂ Jeune. … Ptérostigma et les cellules costales opaques blanchâtres."

Reference. Selys Longchamps (1869a: 651).

cretensis [subspecies]

Calopteryx splendens cretensis Pongracz, 1911 [Orig. *Calopteryx splendens* Harr. var. *cretensis* nov.]

Lat. *Cretensis –is –e* = from Crete, referring to the type locality {declinable adjective}

A toponym. The type material (of both sexes) was collected in Crete (Heracleion, Knossos) by Lajos Biró (1856-1931) in June 1906.

Reference. Pongrácz (1911: 324).

cruentata [species]

Hetaerina cruentata (Rambur, 1842) [Orig. *Calopteryx cruentata*, mihi]

Lat. *cruentatus –a –um* = bloodstained / tinged with red (cruor = (clotting) blood) {declinable past participle}

The epithet refers to the blood red spot at wing base in the male. Rambur's Latin diagnosis reads: "Fusco-rufescens; alis sub-rufescentibus, basi sanguineis, apice tenuiter fuscis ♂" [Dark reddish; with slightly reddish wings, blood red at the base, the tips thinly dark brown ♂]. The longer French descriptions includes: "Ailes… avec une grande tache sur la base, couleur de sang, qui peut devenir rousse sur les inférieures." Rambur compared the species with '*Calopteryx caja*'. Selys' (1854) French name for *cruentata* was 'Hétérine ensanglantée'.

Reference. Rambur (1842: 228).

cupraea [species]

Mnesarete cupraea (Selys, 1853) [Orig. *Laïs cupraea*, De Selys]

Incorrect form of Lat. *cupreus –a –um* = of copper, coppery {declinable adjective}

In the original description it reads: "corps bronzé violet". In Monographie (1854) the French name 'Laïs cuivrée' was given. Later Selys Longchamps (1869: 653) described the body colour as follows: "Corps bronzé à reflets cuivre rouge très-vif et violet". So, obviously the name refers to the coppery body colour.

Reference. Selys Longchamps (1853: 28); Selys Longchamps & Hagen (1854: 92).

curvicauda [species]

Hetaerina curvicauda Garrison, 1990 [Orig. *Hetaerina curvicauda* n. sp.]

Lat. *curvus –a –um* = crooked, curved, bent + *cauda* = tail (in entomology: abdomen; appendage) {noun in apposition}

The published etymology reads: "*curvicauda*: curva -Latin that which is bent; cauda -Latin for appendage. Refers to the extraordinary shape of the distal process of the inferior appendage, seen in lateral view."

Reference. Garrison (1990: 207).

cyaneipennis [species]

Matronoides cyaneipennis Förster, 1897 [Orig. *Matrona* (*Matronoides*) *cyaneipennis* n. sp.] (Fig. 13).

Lat. *cyaneus –a –um* = dark blue, sea blue + *–pennis –is –e* = winged {declinable adjective}

The species epithet refers to striking blue wings of the male of this beautiful damselfly: "Flügel breit, ihr Hinterrand stark gerundet, vollkommen dunkel-braun mit Ausnahme des Vorderrandes der 10-12 ersten Costalzellen, welcher punktartig ungefärbt erscheint, oberseits mit herrlich blauem Reflexe. Unterseite der Vorderflügel glänzend dunkelblau, der Hinterflügel glänzend dunkelgrün … Vaterland: Diese wunderwolle Art fliegt am Kini-Balu-Berge in Nord-Borneo."

Reference. Förster (1897a: 101).

Fig. 13: *Matronoides cyaneipennis* ♂. Artwork by A.G. Orr (2006). (© A.G. Orr).

cyaneus [synonym]

Agrion cyaneus Selys, 1831 [Orig. *Agrio cyaneus* (mihi), l'Hèléne (Geoff.)]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758).

Lat. *cyaneus –a –um* = dark blue, sea blue {declinable adjective}

The name given by the 17-year-old Edmond de Selys Longchamps for a male damselfly from the Liège region in Belgium (cf. *cellaris*) refers to the wing colour. The brief description reads: "*Agrio* [sic] *cyaneus (mihi)*, l' Hèléne (Geoff.). Ailes sans taches, opaques, d'un bleu verdâtre foncé ainsi que le corps." This description fits with the mature male of *Calo-*

pteryx virgo. Reference to 'l' Hélène (Geoff.)' is incomprehensible, since Geoffrey (1762) does not have such a name among the odonates listed. The linguistically correct spelling of the name should have been *Agrion cyaneum*.

Reference. Selys Longchamps (1831: 58).

cyanoptera [species]

Matrona cyanoptera Hämäläinen& Yeh, 2000 [Orig. *Matrona cyanoptera* sp. nov.]

Lat. *cyanus* = a kind of lapis lazuli (blue gem stone) + *–pterus –a –um* = winged (both words borrowed from Greek) {declinable adjective}

The published etymology reads: "Blue winged, characterizing the extensive bluish shine visible on both sides of male wings." For some reason, this well-known and common Taiwanese species had for long time remained without a proper taxon name, although Matsumura (1907) had listed it as '*Matrona formosana*' and '*Matrona coerulea*'. However, since no description was included, these names are *nomina nuda*. Lieftinck & al. (1984: 11) listed it as '*Matrona basilaris* subsp.'

Reference. Hämäläinen & Yeh (2000: 2).

daviesi [species]

Neurobasis daviesi Hämäläinen, 1993 [Orig. *Neurobasis daviesi* sp. n.]

An eponym named after David Allen Lewis Davies (1923-2003). {noun in the genitive case}

The published etymology reads: "The new species is named after Dr D.A.L. Davies (Cambridge, U.K.) to appreciate his diligent efforts to search for dragonfly rarities in different corners of the globe." Allen Davies had added the first known series (collected in 1975, obviously by R.B. Rodriquez) of this Palawan endemic species to his collection. The two later series (1980, 1982), which include the holotype, were received by M.A. Lieftinck and are preserved at RMNH.

Reference. Hämäläinen (1993: 135).

Notes on the eponymee. Dr David Allen Lewis Davies (1923-2003) was a professional research biochemist and immunologist and a world leader in transplantation antigen studies (1960s). After military service in 1943-1945 in WW2 (promoted to Captain in 1945), he studied at Cambridge University and the University of London, receiving Doctor of Science degrees from both. He worked as a biochemist in several institutes (1949-1988) and became Professor of immunology at Queen Elisabeth College, University of London (1975-1980). In 1950's he developed vacuum drying methods for preserving insect and plant samples. His interest in dragonflies became a consuming passion, especially in the last 30 years of his life. His aim was to obtain representatives of as many genera and species as possible for his synoptic dragonfly collection. For this he travelled widely to all corners of the globe in search of rarities. By collecting and exchanging specimens he gradually amassed a large collection, presently housed in the Cambridge University Museum of Zoology. He published 40 articles on dragonflies (1981-2003), including papers on taxonomy and, with Pamela Tobin, a checklist of the dragonfly species of the world, the first of its kind since 1890. He described or co-described 14 new dragonfly species or subspecies, most of them from New Caledonia and Yunnan, both localities where he had collected. For his obituary, see Vick (2003) and Venning & al. (2003).

declivium [species]

Umma declivium Förster, 1906 [Orig. *Umma declivium* n. sp. (*Cleis* De Selys).]

Lat. *declivium* = of the sloping ... [gen. pl. of *declivis –is –e*. = inclining downwards, sloping] {noun in the genitive case}

The name refers to a venational character which separates the *Umma* and *Sapho* species: "Innerer Ast des Sector inferior trianguli fein, wie bei den übrigen Ummaarten schräg nach innen und hinten gerichtet, dann nach innen gebogen. (Bei *Sapho* ist er dick, senkrecht auf den Hinterrand gerichtet.)"

Reference. Förster (1906b: 51).

decolorata [synonym]

Mnais decolorata Bartenev, 1913 [Orig. *Mnais decolorata* sp. n.]

Present status. Synonym of *Mnais tenuis* Oguma, 1913.

Lat. *decoloratus –a –um* = decoloured, lost its colour {declinable adjective}

The hyaline wings of the males are at the base of the name: "Wings transparent; neuration light yellow." The single male specimen studied (from 'China, Kansu') represents a hyaline winged male form.

Reference. Bartenev (1913a: 306).

devillei [species]

Mnesarete devillei (Selys, 1880) [Orig. *Laïs Devillei* Selys, 1880]

(Fig. 14).

An eponym named after Émile de Ville (1836-1881). {noun in the genitive case}

He collected the type series in Baisa, Ecuador in the 1870's: "Parmi les Odonates recueillis dans la République de l'Èquateur par M. Émile De Ville, consul à Quito (aujourd'hui consul à Zansibar) se trouvent plusieurs *Hetærina* du sous-genre *Laïs*, dont une est nouvelle."

Reference. Selys Longchamps (1880: L).

Notes on the eponymee. Émile Clement Napoléon de Ville was born in Liège (Belgium) on 31 May 1836 as the son of Jean-Baptiste de Ville, former professor at the industrial school of Liège and of Marie Joséphine de Ville (née Thiry). He completed a term of service in the company

Fig. 14. *Mnesarete devillei* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

of gunsmiths, then became a clerk-trader before settling as a gunsmith in Quito. In 1869 he was nominated as honorary Belgian consul in Quito, where he stayed at least until 1878. On 31 December 1879 he was nominated Belgian consul in Zanzibar with a salary. He arrived in Zanzibar in the beginning of May 1880, but soon after died there on 4 January 1881. De Ville was a keen amateur archaeologist. In 1878 he gave a fine collection of American antiquities (285 objects) to the Porte de Hal Museum in Brussels. In Ecuador he also collected zoological material for the Royal Belgian Institute of Natural Sciences and some private scientists, including Selys. According to Selys' diary (see Caulier-Mathy & Haesenne-Peremans 2008), de Ville had sent him odonate specimens from Ecuador on at least two occasions, in October 1870 and on 30 November 1875. The latter consignment contained a total of 900 specimens, including this new species. De Ville visited Selys in Liège on 9 January 1877 and they met again at a congress in Brussels on 26 September 1879. On 23 February 1880 Selys participated in a dinner arranged in honour of de Ville, who after two weeks would leave to Zanzibar to become a consul there with a salary of 18 000 francs. Taxa dedicated to him include the eagle subspecies *Spizaetus isidori devillei* Dubois, 1874 and the frog species *Pristimantis devillei* (Boulenger, 1880). In the literature determining eponyms he is often confused with the French zoologist and explorer Émile Deville (1824-1853), who participated in an expedition to South America in 1843-1847.

dimidiata [species]

Calopteryx dimidiata Burmeister, 1839 [Orig. *Calopteryx dimidiata*]

Lat. *dimidiatus –a –um*: past participle of *dimidio* = to divide into two equal parts {declinable past participle}

This must allude to the fact that in the female (male was unknown to Burmeister), the wings seem to be divided, since their distal parts are black whereas the proximal parts are only shadowed: "*C. dimidiata*: aenea, alis infumatis, in apice late nigris" [*C. dimidiata*: bronze, with smoky wings, broadly black at the apex].

Reference. Burmeister (1839: 829).

disparilis [synonym]

Calopteryx disparilis Rambur, 1842 [Orig. *Calopteryx disparilis*, mihi.]

Present status. Synonym of *Neurobasis chinensis* (Linnaeus, 1758).

Lat. *disparilis –is –e* = dissimilar, different {declinable adjective}

Rambur selected this epithet, since his description pointed out some differences between the new species and his other new species *Calopteryx gracilis* Rambur, 1842 (= *Vestalis gracilis*): "De la grandeur de la *Gracilis*, et lui ressemblant beaucoup; different par..." As pointed out by Orr & Hämäläinen (2007: 10), '*Calopteryx disparilis*' is a composite species, the female being same as *Neurobasis chinensis*, and the male something else. Selys noticed this fact, since in 'Monographie des Caloptérygines' (Selys Longchamps & Hagen 1854, p. 73) the citation to this taxon in the synonymic list of *Neurobasis chinensis* was given as follows: *Calopteryx disparilis*; Ramb., no 11 (♀). Selys' citation could be accepted as selection of the female specimen as lectotype. Selys never commented on the identity of the male *disparilis* (possibly the same as *Vestalis gracilis*), and it fell into oblivion.

Reference. Rambur (1842: 224).

distincta [synonym]

Umma distincta Longfield, 1933 [Orig. *Umma distincta*, sp. n.]

Present status. Synonym of *Umma electa* Longfield, 1933.

Lat. *distinctus –a –um* = separated, separate, distinct, different {declinable past participle}

Longfield compared this species with *Umma electa*, another new species described in the same paper, and pointed out some differences. The chosen epithet reflects her decision to keep the two species distinct. Two extracts of the published text: "*Umma distincta* closely resembles *Umma electa*, forming a distinct group with the latter as instanced by…" and "It differs from *U. electa* by the smaller dimensions; the much greener colouring of the whole insect."

Reference. Longfield (1933: 139).

divina [synonym]

Hetaerina auripennis divina Hagen in Selys & Hagen, 1854 [Orig. … le nom de *divina*.]

Present status. Synonym of *Hetaerina auripennis* (Burmeister, 1839).

Lat. *divinus –a –um* = divine / (also:) admirable {declinable adjective}

Hagen believed that there might be two races in *Hetaerina auripennis*: "M. Hagen croit qu'il existe deux races distinctes; …". Divina was given as a provisional name should a smaller male specimen, which Hagen had studied, prove to represent a distinct taxon: "S'il y avait deux espèces, c'est à la plus petite que M. Hagen entend conserver le nom de *divina*." [For information on the holotype of *divina*, see Garrison & von Ellenrieder 2019: 11]. In the discussion of the differences of the two possible races, three *Hetaerina* taxa were included: *hebe*, '*hera*, Hagen' (a *nomen nudum*, which Selys equated with *caja* Drury) and *sanguinolenta*. Of these Hebe and Hera are deities from antiquity; so Hagen may have chosen *divina* as a provisional name so that it might match with these. But just as well it could be one of the many names given by Hagen which remain enigmatic (cf. Fliedner & Endersby 2019: 8).

Reference. Selys Longchamps & Hagen (1854: 112).

dominula [subspecies]

Hetaerina caja dominula Hagen in Selys, 1853 [Orig. *Hetærina dominula*, Hagen]

Lat. *dominula* = diminutive of *domina* = a mistress, dame, lady, she who rules {noun in apposition}

The selection of the epithet is in accordance with Drury's species name for *Hetaerina caja* (*caia*), taken from Roman classical antiquity; see entry *caja*. In Selys Longchamps & Hagen (1854) it reads: "La *dominula* a les formes de la *caja*, avec l'ensemble de la coloration de la *divina*. Nous commencerons par la comparer à la *caja*, à laquelle M. Hagen avait d'abord cru qu'elle pouvait appartenir comme race locale." Selys' French name was 'Hétérine dominule´.

Reference. Selys Longchamps (1853: 33), Selys Longchamps & Hagen (1854: 107).

donna [synonym]

Hetaerina donna Selys, 1873 [Orig. *Hetærina donna*, De Selys]

Present status. Synonym of *Hetaerina rosea* Selys, 1853.

Italian *donna* = lady, dame, woman {noun in apposition}

The original meaning of this Italian name is closer to 'lady of the home' and it was a title of respect, equivalent to Don for men. The epithet has the same meaning as in the species names of *Hetaerina caja* and *H. dominula*.

Reference. Selys Longchamps (1873a: 478).

dorothea [subspecies]

Psolodesmus mandarinus dorothea Williamson, 1904 [Orig. *Psolodesmus dorothea* n. sp.]

An eponym named after Dorothea Kellerman Williamson (1848-1928): "Named for my mother, Dorothea Kellerman Williamson." {noun in apposition}

Williamson had received the type series (3 ♂♂ and 2 ♀♀), collected in Formosa (Taiwan), from the American clergyman Rev. Henry Loomis (1839-1920), who was a missionary in Japan. The specimens were obviously collected by an anonymous Chinese sea captain, a friend of Loomis, who had resided in Formosa in 1896-1898. According to a book by Loomis' daughter (Loomis 1923: 102-108), in 1896 Loomis had helped the captain (who in his youth had lived in the United States for 9 years) to be released when he was held as a POW in Hiroshima, and to avoid extradition from Japan to China, where he faced a death penalty as a traitor. Later, back in China, the captain (whom Loomis went to visit in Beijing in 1913) became an influential figure in the service of Yuan Shikai, the first President of the Republic of China (1912-1915) and Emperor of the short-lived Empire of China in 1915-1916. Unfortunately, this captain's name was not given in the book.

Reference. Williamson (1904b: 249).

Notes on the eponymee. Dorothea ("Dora") Kellerman (1848-1928) was married to Alonzo Wesley ("Lent") Williamson (1845-1914) in September 1875. Both were from Ohio, but moved to Indiana, living in Bluffton from 1879. Lent Williamson worked in hardware business. They had three sons and one daughter, the oldest of them being Edward Bruce Williamson (1877-1933), see entry *williamsoni*.

drepane [species]

Mnesarete drepane Garrison, 2006 [Orig. *Mnesarete drepane* new species]

Gr. δρεπάνη [drepanē] = sickle / reaping-hook {noun in apposition}

The given etymology reads: "*drepane* (Greek) for sickle, in reference to the scimitarlike cerci", referring to the shape of the superior appendages of male.

Reference. Garrison (2006: 23).

duplex [species]

Hetaerina duplex Selys, 1869 [Orig. *Hetaerina duplex*, De Selys]

Lat. *duplex* = twofold, double {adjective}

The epithet apparently refers to the two distinct postoccipital tubercles (one on each side) in female: "Tubercules de l'occiput distincts". This character separates the species from *Hetaerina simplex* Selys, 1853: "♀ Analogue à celle de la *simplex*. Distincte par sa taille, les tubercules postoculaires et les 28 nervules antécubitales."

Reference. Selys Longchamps (1869a: 656).

dutati [species]

Hetaerina dutati Machado, 2017 [Orig. *Hetaerina dutati* sp. nov.]

The name of this species from State of Pará in Brazil is a compound eponym, named jointly after the author's son Eduardo Ribeiro Machado (b. 1972) and daughter-in-law Tatiana Aquino e Bandeira de Mello (b. 1987). {noun in apposition}

The etymology reads: "Dutati, noun in apposition. A compound of 'Du', nickname of Eduardo, and 'Tati', nickname of Tatiana. Named in honour of my son Eduardo Ribeiro Machado and his wife Tatiana Aquino Barbosa de Melo [sic] on the occasion of their marriage on 21st April 2017."

Reference. Machado (2017: 266).

Notes on the eponymees. Eduardo Ribeiro Machado (b. 1972) gained a degree in physics at the Federal University of Minas Gerais in 1995 and has been working in the Brazilian Central Bank since 1998. He actively collected Odonata during his childhood and youth, helping his father in the discovery of some new species, including *Rionaeschna eduardoi* (Machado, 1984), named after him. His wife Tatiana Aquino e Bandeira de Mello (b. 1987) graduated at the same university as an architect in 2009 and currently works at an architecture firm. They live in Belo Horizonte, Brazil, and have two children.

earnshawi [synonym]

Mnais earnshawi Williamson, 1904 [Orig. *Mnais earnshawi*, new species.]

Present status. Synonym of *Mnais andersoni* McLachlan in Selys, 1873.

An eponym named after Ralph Allen Earnshaw (1876-1940). {noun in the genitive case}

Williamson wrote: "The species is named for Mr. R.A. Earnshaw, Toungy, to whose friendly interest in obtaining material for me it is a pleasure to testify." Earnshaw collected the type series after 1899 in the "Karenni" or "Toungy" district in Burma.

Reference. Williamson (1904a: 185).

Notes on the eponymee. The American Ralph Allen Earnshaw was born in Illinois on 4 April 1876. From the end of the 19th century until his death he operated a timber business in Burma, where he was also renowned as a big game hunter. He collected several thousand specimens of dragonflies for Williamson in 1899-1911. He died in Toungoo (Burma) on 23 November 1940.

electa [species]

Umma electa Longfield, 1933 [Orig. *Umma electa*, sp. n.]

Lat. *electus –a –um* = picked, select, choice, excellent {declinable past participle}

Longfield did not give any explanation for the choice of the name, but it may allude to the 'excellency' of the colour pattern of this damselfly. The description includes definitions such as "brilliant royal-blue", "livid colour", "emerald-green" and "bright metallic lilac".

Reference. Longfield (1933: 139).

elegans [synonym]

Sylphis elegans Hagen in Selys, 1853 [Orig. *Sylphis elegans*, Hagen; Selys' classification: Genre *Calopteryx*, Leach; sous-genre *Sylphi*s, Hagen]

Present status. Synonym of *Calopteryx angustipennis* (Selys, 1853).

Lat. *elegans* = elegant, slender {adjective}

The name undoubtedly refers to the charming and elegant appearance of this large, narrow-winged and long-legged damselfly, as suggested by Selys' French name 'Sylphide élégante' for it.

Reference. Selys Longchamps (1853: 9), Selys Longchamps & Hagen (1854: 20).

elwesi [synonym]

Notholestes elwesi McLachlan, 1887 [Orig. *Notholestes elwesi*, n. sp.]

Present status. Synonym of *Caliphaea confusa* Hagen in Selys, 1859.

An eponym named after Henry John Elwes (1846-1922). {noun in the genitive case}

Elwes collected the type specimen (♂) in Darjeeling during his expedition to India and Sikkim in 1880 with his brother-in-law Frederick DuCane Godman (1834-1919), the husband of his late sister. McLachlan wrote: "Hab.: Darjiling [India]; one ♂ given to me by H.J. Elwes, Esq., F.L.S., by whom it was captured."

Reference. McLachlan (1887: 32).

Notes on the eponymee. Henry John Elwes (1846-1922) was a British botanist, entomologist and ornithologist, who travelled widely in different parts of the world collecting mainly Lepidoptera and plants. His publications include a folio sized 'A monograph of the genus Lilium' (1880) and 'The trees of Great Britain and Ireland' (1906-1913), a 7 volume book written together with Augustine Henry. His autobiography 'Memoirs of travel, sport and natural history' was published posthumously in 1930. For more details on Elwes, see Wikipedia.

ephippium [species]

Mnesarete ephippium Garrison, 2006 [Orig. *Mnesarete ephippium* new species]

Latinised from Gr. ἐφίππιον [ephippion] = saddle cloth, saddle {noun in apposition}

The name refers to structure of 8th and 9th abdominal segments of male. The given etymology reads: "*ephippium*—Greek for saddle, in reference to the longitudinally depressed middorsal carina on abdominal segments 8 and 9 of male." The description reads: "Abdomen cupreous becoming darker on sides; posterior margins of segments 7 and 8 medially emarginated, lateral margins of these segments raised, middorsal carina on posterior 0.5 of 7 and 8 strongly recessed." [Here the given '7 and 8' should read '8 and 9'.]

Reference. Garrison (2006: 25).

erevanense [synonym]

Agrion splendens erevanense Akramowski, 1948 [Orig. *Agrion splendens erevanense* subsp. nova]

Present status. Synonym of *Calopteryx splendens tschaldirica* Bartenev, 1909.

Lat. *erevanensis –is –e* = from Yerevan (capital of Armenia) {declinable adjective}

A toponym. The taxon was described from an unspecified number of specimens (including larvae) from many locations in Armenia, including 'Erevan'. According to Asmus Schröter (in litt.) this taxon is best treated as synonym of *Calopteryx splendens tschaldirica* Bartenev, 1909.

Reference. Akramowski (1948: 139).

erythrokalamus [species]

Hetaerina erythrokalamus Garrison, 1990 [Orig. *Hetaerina erythrokalamus*, n. sp.]

Gr. ἐρυθρός–ά –όν [erythros] = red + κάλαμος [kalamos] = reed (and things made of it, e.g. reed pipe / fishing rod / reed-pen / limed twig) / plants which are neither shrub nor bushes {noun in apposition}

The etymology reads: "*erythrokalamus*: erythros – Greek for red, kalamus – Greek for sedge. The damselfly resembles a piece of red sedge." Here the word sedge means a 'fly' used in fly fishing.

Reference. Garrison (1990: 210).

exul [species]

Calopteryx exul Selys, 1853 [Orig. *Calopteryx exul*, De Selys]

Lat. *ex(s)ul* = a banished person, exile, wanderer {noun in apposition}

Selys was hesitant whether the hyaline winged Algerian *Calopteryx* specimens which he had named as distinct species *exul* really represents a species distinct from *splendens*. In 1854 he wrote: "Peut-ètre la *C. exul* n'est-elle qu'une race de la *C. splendens* méridionale, qu'elle représenterait à Alger." Selys' French name for *exul* was 'Caloptéryx exilée'. Obviously, the 'exiled' distribution of this taxon in a different continent than the other '*splendens*' forms was the reason for the name.

Reference. Selys Longchamps (1853:12), Selys Longchamps &Hagen (1854: 34).

fasciata [species]

Atrocalopteryx fasciata Yang, Hämäläinen & Zhang, 2014 [Orig. *Atrocalopteryx fasciata* Yang, Hämäläinen & Zhang, sp. nov.]

Lat. *fascia* = band, bandage, swathe, girth, fillet + *–(a)tus –a –um* = provided with {declinable adjective}

The published etymology reads: "The specific epithet *fasciata*, a Latin adjective meaning 'banded', refers to the opaque, brownish transverse band in the central part of the wings." The description of male wings includes: "Wings lightly tinted with amber brown, with distinct dark brown, opaque, transverse bands centrally."

Reference. Yang & al. (2014: 389).

femina [species]

Umma femina Longfield, 1947 [Orig. *Umma femina* sp. n.]

Lat. *fēmina* = female, woman {noun in apposition}

No etymology was given, but the epithet may have been selected, since the author had only two female specimens (from Angola) available for study. Since the genus name *Umma* (derived from Arabic 'Ummah') means a supra-national community with a common history (see entry *Umma*), the binomial might be interpreted to mean a community of females. However, this may not have been Longfield's purpose.

Reference. Longfield (1947: 20).

feminalis [subspecies]

Calopteryx virgo feminalis Kosterin, 2017 [Orig. *Calopteryx virgo feminalis* Kosterin, subspecies nova]

L. *feminalis –is –e* is a combination of the suffix *–alis –is –e* = concerning the … with the old Latin word *femen* (stem *femin-*), a synonym of *femur* = thigh {declinable adjective}

In naming this Caucasian subspecies Kosterin re-used the unavailable infrasubspecific name *femina*lis, which Bartenev (1910: 35) had given as the name for the female specimens (from north of Sochi) with distinct darkened wing apex: '*Calopteryx virgo* L var. ♀ *feminalis* nov.' Later, Bartenev (1930a: 51) confirmed the name's infrasubspecific status by using the combination '*Calopteryx virgo festiva* var. *feminalis* Bart.' Neither, Bartenev nor Kosterin provided any etymology. As suggested by Schröter & al. (2015: 312-313) Bartenev may have thought the word '*feminalis*' to mean 'referring to females only'.

Reference. Kosterin (2017: 50).

festiva [subspecies]

Calopteryx virgo festiva (Brullé, 1832) [Orig. *Agrion festiva* Br.]

(Fig. 15).

Lat. *festum* = feast; *festivus* = ceremonious, pretty (*–ivus –a –um* = connected with, suitable for) {declinable adjective}

The epithet refers to the 'pretty' appearance of this damselfly: "Le mâle est entièrement bleu d'un trés-brillant." Coloured illustrations of both sexes were included.

Reference. Brullé (1832: 103).

Fig. 15: *Calopteryx virgo festiva* ♂, scanned from plate 33 in Brullé (1832), where it is called *Agrion festiva*.

flavipennis [species]

Hetaerina flavipennis Garrison, 1990 [Orig. *Hetaerina flavipennis* n. sp.]

Lat. *flavus –a –um* = golden yellow, reddish yellow, flaxen-colored, blonde + *–pennis –is –e*

(in compounds) = winged {declinable adjective}

The etymology reads: "*flavipennis*: flavus - Latin for yellow, penna - Latin for wing." In both male and female the wings are described to have the "membrane strongly flavescent" and "The female is most similar to *H. laesa*, but the honey-yellow wing coloration of *H. flavipennis* will easily distinguish this species."

Reference. Garrison (1990: 211).

florida [species]

Neurobasis florida (Hagen in Walker, 1853) [*Calopteryx sinensis* Var. *florida*, Hagen]

Lat. *floridus –a –um* = abounding with flowers, flowery / blooming, beautiful {declinable adjective}

The name obviously refers to the 'flourishing', pretty, appearance of this damselfly with colourful metallic green hind wings in males. For more details of the confusing taxonomic history of this Javan species, see Orr & Hämäläinen (2007: 30).

Reference. Walker (1853: 603); Selys Longchamps & Hagen (1854: 76).

floridana [synonym]

Calopteryx maculata floridana Huggins, 1927 [Orig. *Calopteryx maculata floridana* new subspecies]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

Lat. *Floridanus –a –um* = pertaining to Florida {declinable adjective}

A toponym. The epithet of this provisionally named taxon ["Should the contention hold good that the individuals of *Calopteryx maculata* in and near Florida constitute a subspecies, I propose as a name *Calopteryx maculata floridana* new subspecies."] refers to the provenance of the type specimen in "Gunntown, Levy County, Florida" (United States), collected by Philip Laurent (1858-1942) on 1-6 April 1922.

Reference. Huggins (1927: 364).

formosa [synonym]

Calopteryx formosa Rambur, 1842 [Orig. *Calopteryx formosa*, mihi]

Present status. Synonym of *Vestalis luctuosa* (Burmeister, 1839).

Lat. *formosus –a –um* = finely formed, beautiful, handsome {declinable adjective}

Like many other epithets given to calopterygid species, the name refers to the colourful appearance of this insect. A few extracts from the description: "Mâle d'un vert bleu très-foncé ... Ailes d'un brun violet ou verdâtre, plus ou moins brilliant"; "Femelle … Ailes plus grandes que chez le mâle, roussâtres ou d'un roussâtre doré."

Reference. Rambur (1842: 225).

fraseri [synonym]

Phaon fraseri Pinhey, 1962 [*fraseri* n. n.]

Present status. Synonym of *Phaon camerunensis* (Sjöstedt, 1900).

An eponym named after Frederic Charles Fraser (1880-1963). {noun in the genitive case}

Fraser (1941: 40) had identified a male specimen from Doula (Cameroon) as '*Prophaon camereunica* (Sjöst.)'. *Prophaon* was a new genus name and the species name was a misspelling of Sjöstedt's '*camerunensis*'. Pinhey wrote: "The present Author has examples of both *camerunensis* and '*camereunica*', which are in fact distinct species. It is suggested here that '*camereunica*' be renamed *fraseri* n. n. - Author (1961)." However, Pinhey was wrong in thinking they were two distinct species.

Reference. Pinhey (1962: 143, footnote); Fraser (1941: 40).

Notes on the eponymee. Lieutenant-Colonel Dr Frederic Charles Fraser (1880-1963) was an English physician (gained MD in 1904) who worked in the Indian Medical Service from 1907-1933. He was a prolific odonate taxonomist, having authored over 300 papers on dragonflies from 1917-1963. His *magnum opus* was the 3-volume book on Odonata (1933-1936) in the series 'The Fauna of British India, including Ceylon and Burma'. After returning to England in 1933, his research focused mainly on the African odonates, but he also published a key to Australian Odonata in 1960. He named ca 80 new genera and described ca 560 new species and subspecies in Odonata. However, about one third of his new species, and many of his genera, are synonyms. For his obituary, see Brown (1963) and Kimmins (1963). His odonatological bibliography was published by Montgomery (1988). Other recent biographies of him are included in the works by Endersby & Fliedner (2015: 75-76), Beolens (2018: 140-142) and Fliedner & Endersby (2019: 38-39).

fulgens [synonym]

Hetaerina carnifex fulgens Selys, 1853 [Orig. *Hetærina carnifex*, Hagen; Race: (*H. fulgens*, De Selys.)]

Present status. Synonym of *Hetaerina longipes* Hagen in Selys, 1853.

Lat. *fulgens* = shining, bright, dazzling, glistening {present participle}

Referring to the colourful appearance of this species: "les reflets cuivre violet de l'épistome, et cuivre rouge du vertex, du prothorax et du devant du thorax sont plus vifs."

Reference. Selys Longchamps (1853: 38); Selys Longchamps & Hagen (1854: 124).

fulgida [species]

Mnesarete fulgida (Selys, 1879) [Orig. *Laïs fulgida*, De Selys (Race d'*ænea*?)]

Lat. *fulgidus –a –um* = flashing, glittering, shining {declinable adjective}

Referring to the brilliant shine of the body of this species: (♂) "et que la coloration de l'abdomen est d'un cuivre rouge be*auco*up plus brillant que chez l'*aenea*"; (♀) "Semblable au mâle pour la coloration … le corps à reflets cuivreux vifs."

Reference. Selys Longchamps (1879b: 365).

fuliginosus [synonym]

Phaon iridipennis fuliginosus Hagen in Selys, 1879 [Orig. *Phaon iridipennis*, Burm. Race: *fuliginosus*, Hagen]

Present status. Synonym of *Phaon iridipennis* (Burmeister, 1839).

Lat. *fuliginosus –a –um* = full of soot, sooty {declinable adjective}

The brief description reads: "Ressemble tout à fait au type pour la coloration, n'en différant

que par l'absence complète de ptérostigma. J'ai eu sous les yeux plus de vingt exemplaires se répartissant entre les deux formes. *Phaon iridipennis* , Burm. (Type.) ♂ avec un ptérostigma brun, … *Phaon fuliginosus* , Hagen. ♂ et ♀ sans ptérostigma." The description does not give any clue why this epithet was selected. Possibly, Hagen's specimens had a darker body than in those he ranked as *iridipennis*.

Reference. Selys Longchamps (1879b: 359).

fumosa [species]

Sapho fumosa Longfield, 1932 [Orig. *Sapho fumosa*, sp. n.]

Lat. *fumosus –a –um* = full of smoke, smoky {declinable adjective}

The epithet refers to the darkened wing apex in both sexes, more distinctly in male: (♂) "The tips of all four wings are smoked with dark brown, which reaches more than halfway to the nodus in the fore-wings, and rather less than halfway in the hind-wings"; (♀) "The extreme tips of all four wings lightly smoked with brown."

Reference. Longfield (1932: 206).

fuscibasis [species]

Mnesarete fuscibasis (Calvert, 1909) [Orig. *Hetærina fuscibasis* sp. nov.]

Lat. *fuscus –a –um* = dark, swarthy, dusky, tawny + *basis* = base, point of attachment / pedestal (borrowed from Greek) {noun in apposition}

The epithet points to the colour of male wings: "Wings dark brown for their entire width from base to nodus, uncoloured beyond."

Reference. Calvert (1909: 81).

fuscoguttata [species]

Hetaerina fuscoguttata Selys, 1879 [Orig. *Hetærina fuscoguttata*, Selys]

Lat. *fuscus –a –um* = dark, swarthy, dusky, tawny + *guttatus –a –um* = spotted, speckled, dappled [*gutta* = a drop] {declinable adjective}

The name is due to the apical blackish brown spots on male wings: "Une gouttelette terminale brun noirâtre aux quatre ailes, un peu plus forte aux inférieures" and "Par la présence d'une gouttelette noire au bout des quatres ailes, elle forme une nouvelle subdivision parmi les espèces sans ptérostigma, analogue à la subdivision de l'*occisa* parmi les espèces avec ptérostigma."

Reference. Selys Longchamps (1879a: xxi).

fuscomarginalis [synonym]

Umma fuscomarginalis Sjöstedt, 1900 [Orig. *Umma fuscomarginalis* n. sp.]

Present status. Synonyn of *Umma mesostigma* (Selys, 1879).

Lat. *fuscus –a –um* = dark, swarthy, dusky, tawny; *margo*, *–inis* =an edge, brink, border, margin; *–(a)lis* = pertaining to {declinable adjective}

The name describes the dark coloured costal field, *apica*d the nodus, which forms a conspicuous dark border on the outer wing border in male (the only sex described). In the 'diagnosis' of the new species it reads: "das postnodale Costalfeld grössenteils schwarzbraun,

eine sehr charakteristische, in die Augen springende dunkle Borte am vorderen, äusseren Flügelrand bildend." The description includes: "das posnodale Costalfeld ist, mit Ausnahme des unteren Teiles am Nodus, schwarzbraun, eine charakterische dunkle Borte an dem äusseren Vorderrande der Flügel bildend."

Reference. Sjöstedt (1900: 45).

gallardi [species]

Hetaerina gallardi Machet, 1989 [Orig. *Hetaerina gallardi*, n. sp.]

An eponym named after Jean-Yves Gallard (b. 1943). {noun in the genitive case}

Machet wrote: "Je dédie cette nouvelle espèce à mon ami Jean-Yves Gallard, à qui revient tout le mérite d'avoir capturé l'ensemble du matériel qui fait l'objet de cette note." Gallard collected the type series in Cacao, Château d'eau, French Guiana in 1987-1988 (the holotype ♂ on 17 July 1988).

Reference. Machet (1989: 95).

Notes on the eponymee. Jean-Yves Gallard (b.1943) is a French lepidopterologist and visual arts teacher living in Cayenne, French Guiana. He is a specialist of butterflies of the family Riodinidae, of which he has described numerous new species in various publications since 1989. In 2017 he authored the book 'Les Riodinidae de Guyane'. For more info, see e.g. Beolens (2018: 146) and Wikipedia.

globifer [species]

Bryoplathanon globifer (Hagen in Selys, 1853) [Orig. *Laïs globifer*, Hagen]

Lat. *globus* = a round body, ball, sphere, globe + *–fer –fera –ferum* = bearing a ... {declinable adjective}

The epithet refers to the prominent, upright, setose tubercle on the midventral portion of the first abdominal sternite in both sexes: (♂) "1er segment prolongé en dessous en un grand tubercule globuleux excavé sur ses côtes, tout couvert de poils jaunâtres dirigés en arrière"; (♀) "1er segment très-court, portant en dessous un tubercule comme chez le mâle, mais plus petit, noir, non cilié." Selys' French name was 'Laïs globifère'.

Reference. Selys Longchamps (1853: 27); Selys Longchamps & Hagen (1854: 88).

gloriosa [species]

Sapho gloriosa McLachlan in Selys, 1873 [Orig. *Sapho gloriosa*, Mac Lachl. (in litteris). Selys' classification: Genre *Echo*, De Selys; sous-genre *Sapho*, De Selys]

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

No unambiguous explanation for the species name can be traced from the description, but the epithet undoubtedly refers to the gloriousness of this handsome, large damselfly with broad wings: "Taille très-grande, robuste. Ailes arrondies, les inférieures très-elargies au milieu." McLachlan did not have a mature male (with deep bluish wings) available, but he described the wings of a semi-mature male as follows: "Ailes gris enfumé semi-hyalines, à reflets violets avec une bande opaque médiane transverse blanc laiteux."

Reference. Selys Longchamps (1873b: 611).

gracilis [species]

Vestalis gracilis (Rambur, 1842) [Orig. *Calopteryx gracilis*, mihi]

Lat. *gracilis –is –e* = thin, slight, slender, slim, meagre, lean {declinable adjective}

The name is due to the long and slender abdomen of the male of this damselfly: “abdomine gracili, elongato in mare appendicibus superioribus apice dilatatis” [with a slim abdomen, in the male elongated, the superior appendages dilated at the apex]; “Abdomen très-grêle et linéaire, surtout chez le mâle.”

Reference. Rambur (1842: 224).

grahami [synonym]

Agrion grahami Needham, 1930 [Orig. *Agrion grahami* sp. n.]

Present status. Synonym of *Atrocalopteryx oberthueri* (McLachlan, 1894).

An eponym named after David Crockett Graham (1884-1961). {noun in the genitive case}

Graham collected the type material in ‘Suifu’ (Sichuan, China), possibly in 1922.

Reference. Needham (1930: 195).

Notes on the eponymee. Dr David Crockett Graham (1884-1961), an American Baptist minister, worked as a missionary in Szechuan (Sichuan) from 1911-1948, staying mostly in Suifu and Chengtu. He returned to the United States three times for post-graduate studies in divinity, and gained a Ph.D. degree in 1927. In China he developed into a highly respected naturalist, archaeologist and anthropologist. Beginning in 1919, he supplied the Smithsonian Institution with nearly 400 000 zoological specimens, mostly insects. Over 230 new species have been described from his material. For more details of his life and achievements, see Wikipedia.

grandaeva [synonym]

Calopteryx grandaeva Selys, 1853 [Orig. *Calopteryx grandaeva*, De Selys]

Present status. Synonym of *Atrocalopteryx atrata* (Selys, 1853).

Lat. *grandaevus –a –um* = of great age, old {declinable adjective}

The actual author of this taxon from China was Hagen, and the statement of Selys as the author in the original description was a lapsus (but which cannot be formally emended). Walker (1853: 601) and Selys Longchamps & Hagen (1854: 50) correctly named Hagen as the author. It is unknown why Hagen selected the epithet *grandaeva* for this species, of which only one teneral female specimen was available. Selys, who had not studied the specimen gave a French name ‘Calopteryx agée’ [Aged Calopteryx] for it. Perhaps the name was meant in an evolutionary sense. Although the Latin word refers to individual old age, Hagen – being no philologist – might have taken it to mean ‘ancient’. Lack of the pseudopterostigmata (“pas de faux ptérostigma blanc chez la femelle”) in the *Calopteryx atrata* – group, in which Selys (1853:15) placed *grandaeva* may have been seen as an archaic feature.

Reference. Selys Longchamps (1853: 16); Selys Longchamps & Hagen (1854: 50).

gregoryi [species]

Mnais gregoryi Fraser, 1924 [Orig. *Mnais gregoryi*, sp. nov.]

An eponym named after John Walter Gregory (1864-1932). {noun in the genitive case}

He and his son C.J. Gregory collected the type specimens (2 ♂♂) “near Chitsung, Yangtse Valley” during their expedition to the north-western parts of Yunnan (China), starting and ending in Bhamo (Burma) on 7 May and 8 September 1922, respectively. They wrote a book on this expedition: ‘To the Alps of the Chinese Tibet’ (Gregory & Gregory 1923).

Reference. Fraser (1924: 455).

Notes on the eponymee. Dr John Walter Gregory (1864-1932) was a prominent English geologist, geographer and explorer. He was Professor of Geology at Glasgow University in 1904-1929. His major achievements were in the study of the glacial geology and geography of Australia and East Africa. Gregory published over 300 papers, including ca 20 books. For more details, see Wikipedia.

gr̲isea [species]

Mnesarete grisea (Ris, 1918) [Orig. *Lais grisea* n. sp.]

Medieval Lat. *griseus –a –um* = grey {declinable adjective}

The epithet refers to the whitish-grey pruinosity on the body of the mature male of this species. In the key to to males of the genus *Lais* (Ris 1918a: 40) wrote on *L. grisea*: “Hautfärbung schwarz, durch dünne Bereifung grau”. The description of male includes: “Occiput schwarz, dünn weisslich bereift … Dünne weissliche Bereifung, die sich auf dem vorderen Abfall der Stirn zu einer Art Querstreif verdichtet … Sehr dünne, fast gleichmässige weissliche Bereifung des ganzen Thorax … Abdomen schlank, ganz schwarz, matt, dorsal sehr dünn, ventral etwas dichter weisslich bereift.”

Reference. Ris (1918a: 41).

g̲umma [species]

Umma gumma Dijkstra, Mézière & Kipping in Dijkstra & al., 2015 [Orig. *Umma gumma* Dijkstra, Mézière & Kipping, sp. nov.]

The binomial name of this species forms an eponym referring to the studio album by the English rock band Pink Floyd, released by Harvest Records on 7 November 1969. The etymology reads: “Name refers to the classic 1969 Pink Floyd album ‘Ummagumma’ (noun in apposition).”

Reference. Dijkstra & al. (2015: 457).

gutt̲ifera [species]

Mnesarete guttifera (Selys, 1873) [Orig. *Lais guttifera*, De Selys]

Lat. *gutta* = a drop; *–fer –fera –ferum* = bearing a … {declinable adjective}

The epithet refers to the small dark dot at the apex of male hindwing of this species: “Une petite gouttelette apicale noirâtre aux ailes inférieures.”

Reference. Selys Longchamps (1873a: 475).

haemorrhoid̲alis [species]

Calopteryx haemorrhoidalis (Vander Linden 1825) [Orig. *Agrion hæmorrhoidalis*]

Lat. *haemorroida* = the piles, haemorrhoids, derived from Gr. αἱμορροΐδες [haimorrhoi̲des] (pl.) = {veins} liable to shed blood (Gr. α̲ἷμα [ha̲ima]) + *–alis–is –e* = pertaining to {declinable adjective}

The name refers to the vivid reddish colour of the underside of the tip (S 8-10) of male abdomen: “abdominis tribus ultimis segmentis et praecedentis apice subtùs sanguineis” [the last three abdominal segments and that before the tip bloodred underneath].

Reference. Vander Linden (1825: 34).

hauxwe̲lli [species]

Mnesarete hauxwelli (Selys, 1869) [Orig. *Lais Hauxwelli*, De Selys]

An eponym named after John Hauxwell (1827-?), who collected the holotype (♂) in Upper Amazonas (Pebas) in the 1860’s: “Patrie: Peba sur le haut Amazone (par M. Hauxwell). (Coll., Mac Lachlan.)” {noun in the genitive case}

Reference. Selys Longchamps (1869a: 654).

Notes on the eponymee. John Hauxwell (1827-?) was an English naturalist and collector, who spent most of his life in the upper Amazon basin in Peru. Hauxwell accompanied Alfred Russel Wallace and Henry Walter Bates during a sojourn in Barra do Rio Negro in March 1850 (Wallace 1853: 175). Bates (1863: 236) called him “Mr. Hauxwell, an English bird-collector”. According to James Orton (1870: 227), who met him in Pebas in December 1867, Hauxwell had at that time lived in the Amazon for 30 years. Hauxwell served as Mayor of Pebas for about ten years. He collected large numbers of birds, mammals and other vertebrates, insects and plants (mostly in Pebas, but also elsewhere in Peru and Ecuador; his bird collecting site ‘Loretoyacu in Peru’ is now in Colombia), which ended up in various museums and private collections. He is known to have been active in Pebas until at least 1886. Many sources give 1919 as the year of his death, but this is probably incorrect.

he̲be [species]

Hetaerina hebe Selys, 1853 [Orig. *Hetærina hebe*, De Selys]

Gr. Ἥβη [He̲bē] = goddess of youth or prime of life {noun in apposition}

This name has its origin in the Greek mythology, where Hebe is the daughter of Zeus and his wife Hera. Hebe was thought to serve nectar and ambrosia to the gods which maintained their eternal youth. When Heracles was taken up among the gods after his death she became his wife. In Argos where Hera, the Protectress of Marriage, was the main goddess, Hebe was also worshipped in her temple and it was believed that she took care of young brides.

Selys’ French name for it is ‘Hètérine Hébé’. It could be noted here that Hagen had a label name *Hetaerina hera* for some specimens in his collection. This name was undoubtedly given after Zeus’ wife Hera. The name appeared first as a synonym of *Hetaerina caja* in Selys Longchamps (1853: 32), and later also in Selys Longchamps & Hagen (1854: 106). However, since no description was included, the name *hera* is a *nomen nudum*.

Reference. Selys Longchamps (1853: 34); Selys Longchamps & Hagen (1854: 112).

hermannku̲nzi [species]

Caliphaea hermannkunzi Zhang & Hämäläinen, 2020 [Orig. *Caliphaea hermannkunzi* Zhang & Hämäläinen, sp. nov.]

An eponym named after Hermann Kunz (1935-2020). {noun in the genitive case}

The etymology reads: “The species epithet *hermannkunzi* is a masculine noun in the genitive case. It is named after the late Hermann Kunz (6.6.1935 – 5.1.2020), the father of Bernd Kunz (Langenburg, Germany), who has provided financial support for the first author’s field work via the International Dragonfly Fund (IDF). Bernd Kunz selected this epithet in gratitude for the lifelong support he received from his father for his odonatological activities.”

Reference. Zhang & Hämäläinen (2020: 103).

Notes on the eponymee. Hermann Hans Emil Kunz (1935-2020) was a German engineer. He worked on non-flammable products, such as fabrics, insulation foams and brake pads. In the lead up to the ban of asbestos in Germany in 1993, he was involved in inventing alternative materials to replace asbestos in various products. In this work, he made several visits to Japan, where a company called Tombo needed his skills. After retirement, he visited Japan twice as a tourist to meet his Japanese colleagues and friends. Nature and photography were Hermann Kunz’s great passions. He contributed to many nature conservancy projects in his home region in Northeast Württemberg. In 1983, he helped his son Bernd Kunz to construct a garden pond. Within the first year, already 16 species of Odonata were photographed at the pond, and the son’s lifelong passion for dragonflies had started. In 1985, Hermann Kunz drove his son to Forbach to attend the annual meeting of the Gesellschaft deutschsprachiger Odonatologen (GdO), and Bernd joined the society. Hermann Kunz was always interested in his son’s pursuits and he read and commented on his manuscripts on various topics. He never stood in the front line, but always supported others, encouraging their success. To his dying day he financially supported Wikipedia and some other social projects.

hetaerinoides [species]

Archineura hetaerinoides (Fraser, 1933) [Orig. *Leucopteryx hetaerinoides* gen. et sp. nov.]

See entry *Hetaerina*; Gr. –οίδης –ης –ες [–οϊδēs –ēs –es] = like a {adjective}

This large species was described on the basis of 3 ♂♂ and 1 ♀ specimen from Laos, collected by Dr Arthur Francis George Kerr (1877-1942) on 10 April 1932. Fraser did not give any explanation for his choice of the species name. It is hard to say whether a character in the hind wing of *hetaerinoides* male (a dense, dark reticulation against an opaque chalky white basal patch), somehow resembling that at the base of fore wing in the species of the New World genus *Hetaerina* (a dense reticulation on the red basal patch), played any role in the selection of the name.

Reference. Fraser (1933: 125).

heterosticta [synonym]

Hetaerina heterosticta Selys in Selys & Hagen, 1854 [Orig. *H. heterosticta*]

Present status. Synonym of *Hetaerina occisa* Hagen in Selys, 1853.

Latinised from Gr. ἕτερος –α –ον [heteros] = different + στικτός –ή –όν [stiktos] = spotted, tattooed {declinable adjective}

The name refers to the rudimentary pterostigmata in specimens – close to *H. occisa* – which Selys had thought to represent a distinct new taxon: “Le jeune àge, que j’ai signalé d’après un couple des Paranas de St. Urban, m’avait paru appartenir à une espèce dif-

férente, que j'avais nommée *H. heterosticta*, à cause de son ptérostigma presque nul, mais M. Hagen a reconnu que celle partie varie d'une manière semblable chez l'espèce type." The name *heterosticta* is available, although Selys gave to understand that it is within the variability of *H. occisa*.

Reference. Selys Longchamps & Hagen (1854: 146).

hincksi [synonym]

Mnesarete hincksi Fraser, 1946 [Orig. *Mnesarte* (sic) *hincksi* sp. n.]

Present status. Synonym of *Mnesarete metallica* (Selys, 1869).

An eponym named after Walter Douglas Hincks (1906-1961). {noun in the genitive case}

The etymology reads: "The species is named after Mr. W.D. Hincks in acknowledgement of his work in entomology." In the introductory text of the paper Fraser wrote: "This paper is a continuation of a series which was initiated by Mr. W.D. Hincks (1934, Ent. Rec. 46: 77) and was intended to deal with a large collection of Odonata from Peru and Colombia which he then possessed but which he has since generously presented to the Leeds Museum." The description was based on a single ♂ specimen collected in Umbria, Southeast Colombia, on 6 January 1931.

Reference. Fraser (1946: 26).

Notes on the eponymee. Walter Douglas Hincks (1906-1961) was an English entomologist. Originally a trained chemist, he became interested in entomology and was invited to work as Honorary Curator of Entomology at the Yorkshire Museum (1942-1947). He worked at the Manchester Museum from 1947 to the end of his life, first as Assistant Keeper and from 1957 onwards as Keeper. He was a world authority on the Order Dermaptera, or earwigs, a group he became interested in the early 1930's. His ca 70 publications on these insects include 'A systematic monograph of the Dermaptera of the World'. This book series was planned to include six parts, but only two parts were published in 1955 and 1959. His other major research topics included the beetles of the families Passalidae and Chrysomelidae. For biographic info on him, see Miles (2015: 8-12) and Wikipedia.

holoserīcea [synonym]

Calopteryx holosericea Burmeister, 1839 [*Calopteryx holosericea*]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

Gr. ὅλος –η–ον [hŏlos] = whole, entire, complete; σηρικός –ή –όν [sērikŏs] = silken; Lat. *–eus –a –um* = (adjective denoting a property) {declinable adjective}

The epithet points to the silken appearance of the male wings, which are nearly completely opaque with dark bluish shine: "♂, alis atro-holoseniceis (sic)" [♂, with dark-coloured completely silken wings].

The specimens were mislabelled to originate from Java, rather than from America. This error caused a confusion, when Selys established the genus *Euphaea* Selys, 1840. For details, see Fliedner (2021a: 105) and entry *Caliphaea*.

Reference. Burmeister (1839: 828).

hudsŏnica [synonym]

Calopteryx hudsonica Hagen, 1877 [Orig. *Calopteryx hudsonica*]

Present status. Synonym of *Calopteryx aequabilis* Say, 1840.

Lat. *Hudsonicus –a –um* = pertaining to Hudson, in this case the Hudson Bay area {declinable adjective}

A toponym named after the type location. Hagen presumed that the female specimen from the Hudson Bay area in Canada ["les contrées de la Baye d'Hudson"], which Selys Longchamps (1854: 30-31) had described as the female of '*Calopteryx virginica* Westwood', represented a new species. Hagen named it *hudsonica*, based on Selys' previous description. Hagen did not provide any own descriptive text, but he also stated to have two incomplete teneral male specimens of *hudsonica*.

Reference. Hagen (1877: 22).

hyalina [subspecies]

Calopteryx splendens hyalina Martin, 1909 [Orig. *Calopteryx splendens* Harris, var. *hyalina*.]

Lat. *hyalinus –a –um* = made of glass, hyaline [adopted from Greek] {declinable adjective}

Referring to the hyaline wings of the male: "mais avec les ailes entièrement limpides ou teintées de jaunâtre, sans aucune trace de coloration bleue."

Reference. Martin (1909: 213).

hyalina [species]

Mnesarete hyalina (Hagen in Selys, 1853) [Orig. *Laïs hyalina*, Hagen]

Lat. *hyalinus –a –um* = made of glass, hyaline [adopted from Greek] {declinable adjective}

The name points to the largely hyaline wings of the male: (1853) "ailes assez étroites, hyalines; le bout des inférieures un peu sali, brunâtre" and (1854) "Ailes de la même longueur, mais plus étroites, tout-à-fait hyalines, le bout extrême des postérieures à peine un peu sali, brunâtre." Selys' French name for this species was 'Laïs hyaline'.

Reference. Selys Longchamps (1853: 28); Selys Longchamps & Hagen (1854: 92).

ianthinipennis [species]

Neurobasis ianthinipennis Lieftinck, 1949 [Orig. *Neurobasis ianthinipennis*, sp. n.]

(Fig. 16 on p. 86).

Gr. ἰάνθινος –η –ον [ianthinos] = coloured like a violet + Lat. *–pennis –is –e* (in compounds) = winged {declinable adjective}

To understand this name it is necessary to consider first the difference between the colour violet itself and the colour of a violet, which may vary to several nuances of blue, including ultramarine and lighter shades of blue. This species was named after the colour reflected by the males wings. In the description (in a key, p. 15-18) it reads: "Adult colour of hind-wing: …; by reflected light only the basal opaque area very brilliant metallic ultramarine or lyons blue, more rarely slightly intermingled with green (capri-blue)." In that key the species is contrasted to *N. australis* where the reflection on that part of the wing is "metallic-green or blue-green". In the introductory text (p. 22) the taxon is contrasted to *N. kaupi*, in which the reflected colour is much deeper: "As to the colour of the conspicuous hindwing patch, adult males of *ianthinipennis* always lack the deep blue-violet or violet-ultramarine hue that

is characteristic for *kaupi*, whilst the non-iridescent opaque areas are distinctly darker."

Reference. Lieftinck (1949: 22).

Fig. 16. *Neurobasis ianthinipennis* ♂. Artwork by A.G. Orr (2006). (© A.G. Orr).

icteroptera [species?]

Mnais icteroptera Fraser, 1929 [Orig. *Mnais icteroptera*, sp. n.]

Gr. ἴκτερος [ikteros] = jaundice + *–pterus –a –um* = winged (Latinised from Greek) {declinable adjective}

The name is based on the yellowish wing colour of the male: "Wings uniformly rich golden yellow throughout from base to apex, with a satiny reflex; reticulation red." The taxonomic status of this poorly known taxon is uncertain. It was described from a single male specimem from 'Kalaw, Chin Hills, Burma'.

Reference. Fraser (1929: 592).

imperatrix [species]

Ormenophlebia imperatrix (McLachlan, 1878) [Orig. *Lais imperatrix*, n. sp.]

(Fig. 17).

Lat. *imperatrix* = she who rules, empress {noun in apposition}

The species was described on basis of four female specimens from Ecuador. The epithet obviously points to the superior size of the specimens (wing span 87-90 mm and abdomen length 48-50 mm), as compared with the other *Lais* species, known at that time: "This magnificent species is the largest of the genus, exceeding *L. globifera* (sic), and with broader wings."

Reference. Mc Lachlan (1878: 85).

Fig. 17: *Ormenophlebia imperatrix* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

incarnata [species]

Archineura incarnata (Karsch, 1892) [Orig. *Echo incarnata*]

(Cover picture).

Lat. *incarnatus –a –um* = flesh-coloured [originally: been made flesh (≈ become man in Christian language) {declinable adjective}

The large carmine-red patches on the wing bases of the male appear to be on the base of the name of this magnificent Chinese species: “alis hyalinis, nitidis, tertia parte basali pulcherrime chermesina vel rosea” [the wings hyaline, shining, their basal third part most prettily crimson or rosy] and “die Flügel sind glasig, glänzend, im Wurzel-Drittel jedoch undurchsichtig und prachtvoll matt roth, bei einem der beiden Exemplare tief carminroth, bei den andern rosenroth.”

Reference. Karsch (1892: 455).

incolor [species]

Mnais incolor Martin, 1921 [Orig. *Mnais incolor*, n. sp.]

Lat. *incolor* = colorless {adjective}

The name refers to the hyaline wings of both male and female: (♂) “Ailes étroites, longues (38 mm), hyalines, avec une très légère teinte safranée à l’extrême base … La ♀ semblable au malê.”

The male syntype represents the hyaline winged male form of this species known only from Laos. The other male colour form – ‘*Mnais yvonna* Martin, *nomen nudum*’ (see Asahina 1974) – specimens of which are here for the first time linked to the species *Mnais incolor*) has most of both wings dark opaque, with only the base and apex hyaline; a striking contrast to the species epithet *incolor*. For photo of this dark winged male colour form, see for ‘*Mnais* sp. 1’ in Yokoi & Souphanthong (2014: 28).

Reference. Martin (1921: 96).

indeprensa [species]

Hetaerina indeprensa Garrison, 1990 [Orig. *Hetaerina indeprensa* n. sp.]

Lat. *indeprensus–a –um* = unobserved, undiscovered, undetected {declinable adjective}

The published etymology reads: “*indeprensa*: Latin – unobserved, undiscovered.” The name signifies that the species has remained unknown in nature for so long. It was discovered on 6 October 1986, when Paul J. Spangler (1924-2010) and Oliver S. Flint, Jr. (1931-2019) collected a male specimen at Caverna do Tatajuba in Para State in Brazil.

Reference. Garrison (1990: 216).

infecta [species]

Hetaerina infecta Calvert, 1901 [Orig. *Hetærina infecta*, sp. n.]

Lat. *infectus –a –um* = not done, unfinished {declinable adjective}

The author gives this etymology: “The specific name refers to the rudimentary ♂ inferior appendages.” The descriptive text reads: “Inferior appendages rudimentary, with a terminal pencil of hairs.” Accordingly, the Latin term was chosen, as if the species had not been completed when it came into existence.

Reference. Calvert (1901: 38).

infumosa [synonym]

Sapho infumosa (Fraser, 1951) [Orig. *Umma infumosa*, n. sp., or race ?]

Present status. Synonym of *Sapho fumosa* Longfield, 1932.

Lat. prefix *in–* = un–, not …; *fumosus –a –um* = full of smoke, smoky {declinable adjective}

Fraser wrote: “This new species or race is founded on two males in the Paris Museum, labelled ‘Nzo, Nion, Nimba (Guinée), M. Lamotte, 11.vi.[19]42’ ”. He compared the specimens with the type series of *Umma fumosa* (with the apex of all wings distinctly darkened; see entry *fumosa*). In his brief description Fraser failed to present the detail (and reason for the species epithet) that in the two *infumosa* specimens the wing tips are not markedly darkened. As regards to this wing character *Sapho fumosa* is rather variable.

Reference. Fraser (1951: 98).

inornata [synonym]

Calopteryx inornata Selys, 1840 [Orig. *Calepteryx inornata* (cal. terne).]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758).

Lat. *inornatus–a –um* = unadorned, without ornament. {declinable adjective}

Selys recognized three ‘varieties’ in *Calepteryx virgo*, differing in their wing colour: “Les ailes présentent trois variétés principales qui semblent passer de l’une à l’autre.” The description of male of Var. α included: “Ailes d’un brun un peu roussâtre, colorées également, non opaques.” In the discussion it says: “La Var. α du mâle et de la femelle, qui pourrait bien former une espèce distincte[1], se trouve dans toute l’Europe, depuis le nord de l’Italie jusqu’en Suede.” The added footnote reads: “On pourrait la nommer *Calepteryx inornata* (cal. terne).” So, the name *inornata* refers to the wings being less colourful than in the mature specimens (especially males), which were presented as Var. γ: (♂) “Ailes opaques, d’un bleu foncé brillant ou d’un vert bleuâtre.” Similarly, as Charpentier (1840), Selys’ incorrectly thought the mature and teneral males of *virgo* to represent distinct species. Charpentier (1840) used the name *vesta* for the teneral specimens. In Selys Longchamps (1843: 158), Selys ‘voluntarily’ gave up the name *inornata* in favour of *vesta*: “Ainsi que je le soupçonnais en 1839, ce *Calopteryx* est distinct du *C. virgo*, cependant comme M. Toussaint de Charpentier a figuré et décrit cette espèce peu de temps après, je renonce volontiers au nom de *C. inornata* que j’avais proposé éventuellemente à cette époque.” However, in fact Selys’ name may have become available earlier (in March 1840) than Charpentier’s name. Since, both names are mere synonyms of *C. virgo*, the possible priority of *inornata* is rather irrelevant.

Reference. Selys Longchamps (1840: 130).

intermedia [subspecies]

Calopteryx splendens intermedia Selys, 1887 [Orig. race *intermedia*]

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

The new name was introduced in an account on ‘*Calopteryx splendens* Harris’, which Selys divided into seven races. In the ‘Race *xanthostoma* Charp. (méridionale)’ section

he wrote: “Je rapporte encore avec doute à la race *xanthostoma* un mâle unique pris à Akbès (Syrie) par M. l’abbé David; l’espace terminal opaque est très étendu, commençant une quinzaine de cellules avant le nodus (de sorte que la base hyaline des ailes n’occupe que les deux tiers environ de la base ou nodus). Cette variété que l’on devrait appeler race *intermedia* si elle n’est pas accidentelle, pourrait être confondue avec certains individus de la race méridionale de la *virgo* (de Corse, de Biarritz) mais chez ces derniers l’espace hyalin est un peu sali et les ailes plus larges.” The name points to a wing character; in *intermedia* the opaque area in male wings extends closer to the wing base than in *xanthostoma*, thus being ‘intermediate’ between the situation in *xanthostoma* and in *virgo meridionalis*.

Reference. Selys Longchamps (1887: 39).

iricolor [synonym]

Echo iricolor Krüger, 1898 [Orig. *Echo iricolor* n. sp.]

Present status. Synonym of *Echo uniformis* Selys, 1879.

Lat. *iris* = rainbow [borrowed from Gr.] + *–color* = coloured {adjective}

Krüger’s *Echo iricolor* was a conditional name (given in the account on ’*Echo uniformis* Selys’) in the case that the specimens (9 ♂♂, 4 ♀♀) from Sinabong in Sumatra would prove distinct from *Echo uniformis* Selys, 1879, a species which had been described rather inadequately from a single male specimen from Sumatra. The following year Krüger (1899: 330), after Selys Longchamps (1898: 335) had redescribed *E. uniformis* in detail from new specimens of both sexes, could confirm that his specimens belong to *E. uniformis*, and state that *iricolor* is a synonym. The base for the name *iricolor* was the iridescent wings: (♂) “Die Flügel sind hyalin … oben und unten prächtig blau bis violett irisierend”; (♀) “Die ganzen Flügel sind gelb, besonders Basis und Vorderrand, hyalin, oben und unten schön violett bis carmin irisirend.”

Reference. Krüger (1898: 72).

iridipennis [species]

Phaon iridipennis (Burmeister, 1839) [Orig. *Calopteryx iridipennis*]

Lat. *iris* (stem *irid–*) = rainbow [borrowed from Gr.] + *–pennis –is –e* = winged {declinable adjective}

The name describes the bluish glimmering on the fore wing: “alis anticis limbo luteo: disco coeruleo-micante, posticis luteis totis; stigmatibus omnibus fulvis” [the fore wings with a yellow edge, the surface glistening blue, the hind wings totally yellow; all the pterostigmata tawny].

Reference. Burmeister (1839: 827).

japonica [species]

Calopteryx japonica Selys, 1869 [Orig. *Calopteryx japonica*, De Selys]

Lat. *Japonicus –a –um* = Japanese {declinable adjective}

A toponym. Selys named this species on basis of a single male from “le Japon. (Coll. Selys)”. Based on the information given in Selys Longchamps (1883: 82), we can conclude that

this holotype was among the specimens of Japanese Odonata which he had purchased at the International World Exhibition in Paris in 1867. The lot included several new species. The Japanese specimens originated from the collection of Yoshio Tanaka (1838-1916).

Reference. Selys Longchamps (1869a: 647).

japonica [species]

Matrona japonica Förster, 1897 [Orig. *Neurobasis* (*Matrona*) *basilaris* Selys. Sous-race *japonica* Foerster]

Lat. *Japonicus –a –um* = Japanese {declinable adjective}

A toponym. The origin of the type material was given as "Patrie: Japon (types ♂ ♀, coll Foerster)". According to Garrison & al. (2003: 5) the ♂ syntype is available at UMMZ (Ann Arbor). It bears Förster's labels: "Staudinger vdt/1897 ♂ / Yokohama / Japan" and "*Matrona* / *basilaris* de Selys / var. *japonica* / Förster ♂ ad." ['vdt' is the abbreviation of 'vendidit' (= sold)]. The whereabouts of the ♀ syntype is not known. Förster purchased numerous odonate specimens from the German insect-dealing firm Staudinger & Bang-Haas. The given locality name 'Yokohama' in the label does not refer to the actual collecting location. According to Asahina (1962: 9) the ♂ type originates from Okinawa.

Reference. Förster (1897b: 208).

johanseni [synonym]

Calopteryx splendens johanseni Belyshev, 1955 [Orig. *Calopteryx splendens johanseni* Belyshev, subsp. nova]

Present status. Synonym of *Calopteryx splendens ancilla* Hagen in Selys, 1853.

An eponym named after Bodo Germanovich Ioganzen (1911-1996). {noun in the genitive case}

The given etymology reads (translated from Russian): "The form described is named *Calopteryx splendens johanseni* Belyshev, subsp. nova in honour of B.G. Ioganzen (Tomsk) who nurtured my odonatological studies." Since Ioganzen was a Russian German, the Western spelling of his name was used. The taxon was named on basis of a single ♀ specimen collected near Barnaul city in southern Siberia by B.F. Belyshev on 11 July 1952.

Reference. Belyshev (1955b: 27).

Notes on the eponymee. Dr Bodo Germanovich Ioganzen (1911-1996) was a famous Russian ichthyologist and hydrobiologist, one of the founders of ecology as a science in the USSR, and an 'Honoured Scientist of the Russian Federation' (1995). From 1935, he worked first as an Associate Professor and then from 1945 as Professor at the Tomsk State University and as Head of the Department of Ichthyology and Hydrobiology. In 1964-1971 he was also the Rector of the Tomsk Pedagogical Institute. His 800 plus scientific publications include several books, among them the textbook 'Basics of Ecology', which was for a long time the only one of its kind in Russia. For his biography, see Galgina (2005).

kaupi [species]

Neurobasis kaupi Brauer, 1867 [Orig. *Neurobasis Kaupi* mihi]

An eponym named after Johann Jakob Kaup (1803-1873). {noun in the genitive case}

The description of the species was based on a male and female specimen from Celebes (= Sulawesi), which were among the material which Kaup had sent to Brauer. The *N. kaupi* specimens were collected by Baron Hermann von Rosenberg (1818-1888), evidently somewhere in the northern part of Celebes (see Schneider 2004: 78; Orr & Hämäläinen 2007: 51).

Reference. Brauer (1867: 293).

Notes on the eponymee. Johann Jakob Kaup (1803-1873) was a distinguished German zoologist and palaeontologist. After brief studies in Göttingen and Heidelberg universities, he spent two years at the 'Rijksmuseum van natuurlijke Historie' in Leiden, working mainly on amphibians and fishes. Since 1830 he worked at the 'Naturalien-Cabinet' in the 'Grossherzogliches Museum' in Darmstadt, becoming its Inspector in 1840. His ca 160 publications include the early book 'Skizzirte Entwickelungs-Geschichte und natürliches System der europäischen Thierwelt' (1829) and the renowned 'Beiträge zur näheren Kenntniss der urweltlichen Säugethiere' (issued in five parts in 1854-1861). Among his entomological publications are four papers on the beetle family Passalidae (1868-1871), which include descriptions of 76 new species. For further information on Kaup and his legacy, see the special issue of Kaupia edited by Gruber & Schneider (2004).

kimminsi [species]

Neurobasis kimminsi Lieftinck, 1955 [Orig. *Neurobasis kimminsi*, sp. n.]

An eponym named after Douglas Eric Kimmins (1905-1985). {noun in the genitive case}

Lieftinck wrote in the description of this New Guinean species: "*N. kimminsi* is so different from its allies that it can be at once recognized as a distinct species. When, after completion of my previous paper, I visited the British Museum collection in 1948, I found that it had already been kept apart from the others by Mr. Donald (sic) E. Kimmins, to whom I am now gratefully dedicating this beautiful insect."

Reference. Lieftinck (1955: 163).

Notes on the eponymee. Douglas Eric Kimmins (1905-1985) was an English entomologist employed at the British Museum (Natural History) for his entire professional career from 1925-1970. In 1958 he was promoted to Principal Scientific Officer, although he had no university degree or other formal training in entomology. At the BMNH he curated the group of insect orders included under the Linnaean name 'Neuroptera', which included Odonata. He published ca 260 papers, in which ca 650 new insect species were described, including 44 Odonata. He published four lists of type-specimens of Odonata in the British Museum (Natural History) (1966-1970). For his obituary, see Barnard (1986). His odonatological bibliography was included in Gambles (1975).

klugi [synonym]

Hetaerina klugi Schmidt, 1943 [Orig. *Hetaerina Klugi* n. sp.]

Present status. Synonym of *Hetaerina laesa* Hagen in Selys, 1853.

An eponym named after Guillermo G. Klug (1875-1945). {noun in the genitive case}

Klug collected the holotype ♂ at Iquitos (Peru) in August 1929. Schmidt wrote: "Benannt zu Ehren des trefflichen Sammlers Klug in Iquitos, dem viel auch hier erwähntes Material zu verdanken ist."

Reference. Schmidt (1943: 252).

Notes on the eponymee. Guillermo Klug (1875-1945) was a German (Stuttgart born) naturalist, who settled in Peru in 1924. He worked first in the service of Dr Harvey Bassler (1883-1950), an American geologist, who spent ten years (1921-1931) in northern Peru for the Standard Oil Company. Bassler also made extensive biological collections. Subsequently, Klug, based in Iquitos, became a competent plant collector. He provided plenty of samples (from Peru and Colombia) mainly to the museums in US and made detailed notes and interesting botanical observations. Klug also collected many butterflies for museums, dealers (such as Staudinger & Bang-Haas and Eugène Le Moult) and private entomologists. He supplied Le Moult with numerous *Morpho* specimens. Various museums also include large numbers of dragonfly specimens collected by Klug in Peru in 1930's and early 1940's.

kricheldorffi [synonym]

Matrona kricheldorffi Karsch, 1892 [Orig. *Matrona Kricheldorffi*]

Present status. Synonym of *Matrona basilaris* Selys, 1853.

An eponym named after Franz Kricheldorff (1854-1924). {noun in the genitive case}

Karsch wrote: "Diese neue Art ist nach Herrn Franz Kricheldorff benannt, welcher die beiden hier beschriebenen neuen Arten in China selbst erbeutet hat." He collected the type specimens (1 ♂, 1 ♀) at "Omi-shan, p. Kiating, China occidentalis " [= Emeishan, Sichuan, China] in 1890. The other new species collected by him was *Echo incarnata*, presently known as *Archineura incarnata* (Karsch, 1892).

Reference. Karsch (1892: 456).

Notes on the eponymee. Franz Kricheldorff (1854-1924) was a German insect collector and dealer living in Berlin. He was hired by the English entomologist John Henry Leech (1862-1900) to go to China to assist Antwerp Edgar Pratt (1850-1920) in collecting insects (mainly Lepidoptera and Coleoptera) in Sichuan province. Kricheldorff accompanied Pratt from March 1889 to October 1890. However, most of the time they collected separately. The westernmost place they visited was Ta-tsien-lu at the border of Tibet. Pratt's (1892) book 'To the snows of Tibet through China' contains many references to Kricheldorff. Franz Kricheldorff worked in the insect dealing firm of his brother, Albert Kricheldorff (1852-1924), in Berlin, which was taken over by Albert's son Adolf Kricheldorff in 1921. In many published accounts of Pratt's expedition (such as Zimmer 2006: 292), Adolf Kricheldorff has been incorrectly credited as being his travelling companion. One reason for this is that in his book Pratt always wrote of 'Mr. Kricheldorff', never revealing his Christian name.

kuroiwae [species]

Psolodesmus kuroiwae Oguma, 1913 [Orig. *Psolodesmus dorothea kuroiwae* Matsumura et Oguma, nov. subsp.]

An eponym named after Hisashi Kuroiwa (1858-1930). {noun in the genitive case}

He collected the type specimens in 'Loo-Choo' [the Ryukyu islands]. According to Asahina (1961) the type material includes 3 ♂♂ and 3 ♀♀ specimens, from which Asahina selected a ♂ specimen as lectotype; it bears label "Yayeama, VIII. 1907". For differences in the Japanese and English (Oguma 1913b) versions of the paper and for the correct authorship of the name, see Hämäläinen & Sasamoto (2021).

Reference. Oguma (1913a: 313); Oguma (1913b: 153).

Notes on the eponymee. Hisashi Kuroiwa (1858-1930) was a Japanese naturalist, born in Kochi Prefecture. He worked first as a teacher at Sagawa junior high school (in Kochi Prefecture). After moving to Okinawa in 1892, he taught natural history and agriculture at Okinawa junior high school, and later became the head of Kunigamigun-Kumiai-Agricultural school. He enthusiastically surveyed the geography and the fauna and flora of Shikoku Island and the Ryukyu Archipelago. The animals he was especially interested in included insects, snakes and fishes. In addition, he put considerable energy into agricultural improvements, especially for sugar cane and other crops. For more information on Kuroiwa, see Iwai (1997).

laesa [species]

Hetaerina laesa Hagen in Selys, 1853 [Orig. *Hetærina læsa*, Hagen]

Lat. *laesus –a –um* = hurt, wounded, injured, damaged (past participle of *laedo*) {declinable past participle}

The species name is obviously an allusion to blood spilling out from a wound, a common theme in many names given by Hagen and Selys to the *Hetaerina* species (cf. entry *capitalis*), referring to the variable sized reddish coloured spots at base and at tip of male wings. The more detailed (1854) description of the single available (teneral) male specimen of *laesa* indicates that this specimen has red apical spots both in fore and hind wing: “Ailes plus grandes que chez la *caja*; le bout des inférieures plus obtus, avec une tache anguleuse rouge; une semblable très-petite, à peine visible, au bout des supérieures. Tache basale sanguine des supérieures petite, commençant à la sous-médiane, finissant avec le quadrilatère, et touchant le bord postérieur; le reste de la base lavée de jaunâtre. Ailes inférieures un peu jaunes à la base; une couleur plus brune s’avance dans l’espace entre la sous-costale et la médiane.” Selys’ French name was ‘Hétérine lésée’.

Reference. Selys Longchamps (1853: 36); Selys Longchamps & Hagen (1854: 119).

laosica [species]

Atrocalopteryx laosica (Fraser, 1933) [*Calopteryx laosica* sp. nov.]

Lat. *laosica* – meant as Laotian, which would be *Laoticus –a –um*) {declinable adjective}

A toponym for a species discovered in Laos: “Habitat. – One male from Muang Cha, Laos, about 1100 m, April 17, 1932.” The specimen was collected by Dr Arthur Francis George Kerr (1877-1942), an Irish physician and botanist. Fraser named (in 1932-1933) three odonate species and one subspecies after him.

Reference. Fraser (1933: 128).

laotica [species]

Noguchiphaea laotica Sasamoto, Yokoi & Souphanthong in Sasamoto & al., 2019 [Orig. *Noguchiphaea laotica* Sasamoto, Yokoi & Souphanthong, sp. n.]

Lat. *Laoticus –a –um* = from Laos, Laotian {declinable adjective}

A toponym referring to the type locality. The etymology reads: “The species name is a Latin adjective referring to the country Laos in which the type locality is situated (officially: the Lao People’s Democratic Republic).” The type material was collected by Naoto Yokoi

at Lon San in the Saysomboun Province of Laos on 25 October 2008 and 12 October 2010; the holotype ♂ at the latter date.

Reference. Sasamoto & al. (2019: 61).

lencionii [species]

Mnesarete lencionii Garrison, 2006 [Orig. *Mnesarete lencionii* new species]

An eponym named after Frederico Augusto de Atayde Lencioni (b. 1970). {noun in the genitive case}

The given etymology reads: "Named for my friend and diligent worker on the Neotropical Zygoptera, Frederico A. A. Lencioni, who collected the holotype, allotype and several paratypes." The holotype ♂ was collected at Córrego Vassununga – Luiz Antonio, São Paulo State, Brazil, on 16 June 2001.

Reference. Garrison (2006: 32).

Notes on the eponymee. Frederico Augusto de Atayde Lencioni (b.1970) is a Brazilian odonatologist. He gained a degree in Biology at the University of Mogi das Cruzes in 1996. Since 1993 he has worked as a civil servant at the São Paulo State Court of Justice. He authored the two volume book 'Damselflies of Brazil: An illustrated identification guide' (2005 and 2006). The first volume (of the 3 planned volumes) of the revised edition of this book was published in 2017. In 2022 he published a revision of the genus *Leptagrion*. His 22 publications on Odonata include descriptions of 23 new species and six new genera of damselflies.

leopoldi [synonym]

Neurobasis leopoldi Fraser, 1932 [Orig. *Neurobasis leopoldi* sp. nov.]

Present status. Synonym of *Neurobasis australis* Selys, 1897.

An eponym honouring the Belgian Prince Léopold, who later became King Léopold III of the Belgians and reigned from 1934-1951. {noun in the genitive case}

The holotype ♂ (the single specimen available) was collected at Waideri River in the eastern coast of Vogelkop Peninsula in New Guinea on 5 March 1929 during a private expedition to various islands of the Netherlands East Indies, arranged for Prince Léopold and his wife Princess Astrid (1905-1935). The royal couple travelled incognito, using the pseudonyms 'Count and Countess de Réthy'. For more details of this expedition, see Hämäläinen & Orr (2017: 64-65). King Léopold (1901-1983) was a keen amateur entomologist and social anthropologist.

Reference. Fraser (1932: 12).

limbata [synonym]

Hetaerina tricolor limbata Selys, 1853 [Orig. *Hetærina tricolor*, Burm. Race. (*H. limbata*, De Selys.)]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

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

The name refers to the brown opaque spot bordering the hind wing tip of male. In *limbata* the opaque coloring is more extensive than in *tricolor*. Selys' more detailed (1854) description of *limbata* states: "et le bout des ailes plus largement limbé de brun; cette couleur

aux ailes inférieures commence dès le ptérostigma." For *tricolor* it reads (1853): "limbe brun du bout des ailes etroit." The race *limbata* was described from a single male specimen from "Géorgie américaine".

Reference. Selys Longchamps (1853: 43); Selys Longchamps & Hagen (1854: 137).

lineata [synonym]

Hetaerina cruentata lineata Hagen in Selys, 1853 [Orig. *Hetærina cruentata*, Ramb. Race. (*H. lineata*, Hagen).]

Present status. Synonym of *Hetaerina cruentata* (Rambur, 1842).

Lat. *linea* = a linen thread, string / line + *–(a)tus –a –um* = equipped with {declinable adjective}

This 'race' was very inadequately described: "Race. ♀ Taille grande, 25-27 antécubitales (*H. lineata*, Hagen)." Since some descriptive details were included, the name is available. In the 1854 monograph Selys no longer accepted it as a valid 'race': "M. Hagen avait d'abord pensé que les trois femelles grandes et robustes de la Colombie formaient une espèce, qu'il avait nommée *lineata*, mais un nouvel examen ne m'a fait voir aucune différence avec les types de Venezuela." The name *lineata* undoubtedly refers to the wide brownish-yellow, non-metallic stripe between the two metallic stripes on synthorax of the species *H. cruentata*: "la suture humerale est le centre d'une large bande orangée."

Reference. Selys Longchamps (1853: 40); Selys Longchamps & Hagen (1854: 129).

longipennis [synonym]

Calopteryx longipennis Selys in Selys & Hagen, 1854 [Orig. *C. longipennis* (De Sélys)]

Present status. Synonym of *Atrocalopteryx atrata* (Selys, 1853).

Lat. *longus –a –um* = long + *–pennis –is –e* = winged, with … wings {declinable adjective}

In the original (1853) description of *Calopteryx atrata*, China and Japan were given as the provenance. In the 1854 monograph (p. 50), Selys provides more details of the type series: "Décrite d'après beaucoup d'exemplaires de la *Chine* que j'ai reçus des Entomologistes anglais. Le jeune âge d'après deux exemplaires mâles du *Japon*, communiqués par le Musée des Pays-Bas." Selys gave a separate description of the teneral male specimens from Japan [collected by Philipp von Siebold] and states: "Croyant ces exemplaires distincts, je les avais d'abord nommés *C. longipennis* (De Sélys)." As regards the wing shape, *A. atrata* is rather variable within its range. Although not stated by Selys, the name *longipennis* seems to refer to the proportionally slightly narrower wings in the Japanese specimens compared with those from China. Giving the fact that the lectotype of *A. atrata* should be selected from the mature male specimens from the Shanghai area in China, the name *longipennis* is available for the Japanese specimens, should they prove to represent a distinct taxon. Lieftinck (1971: 97-98) presents the status of *longipennis* as follows: "Synonymous with, or a subspecies of, *C. atrata* Selys."

Reference. Selys Longchamps & Hagen (1854: 50).

longipes [species]

Hetaerina longipes Hagen in Selys, 1853 [Orig. *Hetærina longipes*, Hagen]

Lat. *longus –a –um* = long + *–pes* = with ... feet, ... footed {adjective}

The species name refers to the long legs in both sexes: (♂) “Pieds noirs, très-longs (tibias postérieurs 8$^{1/2}$ - 10 ^{mm}” (1853); “Pieds noirs, très-longs, surtout les postérieurs” (1854) and (♀) “Pieds bronzés, très-longs (tibias postérieurs 10 ^{mm})” (1853); “Pieds à tibias encore plus longs que chez le mâle (vert bronzé)” (1854). Selys’ French name was ‘Hétérine longipède’. In spite of the name selected by Hagen, the legs of *longipes* are not longer than in the other species in the genus, and thus not of any diagnostic value.

Reference. Selys Longchamps (1853: 37); Selys Longchamps & Hagen (1854: 121).

longipes [species]

Neurobasis longipes Hagen, 1887 [Orig. *Neurobasis longipes*; ‘Abart aus *Neurobasis chinensis*’]

Lat. *longus –a –um* = long + *–pes* = with ... feet, footed {adjective}

This refers to the unusually long legs of this species among its congeners: “Es würde diese Abart sonst nicht auffällig sein, aber ihre Füsse sind auffällig länger and dünner: die Hinterschienen 14 mm lang, die Vorderschienen so lang wie die Hinterschienen von Nr. 1 – 4 [other ‘Abart’s’] ... Immerhin macht diese Abart einen sehr auffälligen Eindruck.” The description was based on a single teneral male specimen from ‘Mindai, Borneo’. According to the labels attached to the holotype (kept at MCZ, Cambridge), it was collected in ‘Kininoiari (?), Mindai, Borneo, on 22 August 1882 (Garrison & von Ellenrieder 2019: 13); the name of the collector is unknown. According to Bock (1881: 241, 328) Mindai – a “village” consisting of two miserable huts – is located, ten miles from Laboehan, in the Amontai [Amuntai] district in southern Kalimantan. The explorer Carl Bock stayed in this village in the first half of February 1879.

Reference. Hagen (1887: 648).

longistigma [species]

Umma longistigma (Selys, 1869) [Orig. *Sapho longistigma*, De Selys]

Lat. *longus –a –um* = long + Gr.στίγμα [stigma] = tattoo-mark, mark, spot {noun in apposition}

The species name is due to the long (five times longer than wide) pterostigma in the wings of the holotype male: “Ptérostigma allongé, cinq fois aussi long que large, brun un peu pruineux (long de 2 mm).” The female sex was unknown to Selys.

Reference. Selys Longchamps (1869a: 650).

loutoni [species]

Mnesarete loutoni Garrison, 2006 [Orig. *Mnesarete loutoni* new species]

An eponym named after Jerry A. Louton (b. 1944). {noun in the genitive case}

The given etymology reads: “Named for my friend, Jerry Louton, who collected the holotype, allotype and many of the paratypes.” The holotype ♂ and allotype ♀ were collected in Madre de Dios in Peru on 29 September 1987 and 20 September 1988, respectively.

Reference. Garrison (2006: 34).

Notes on the eponymee. Dr Jerry A. Louton (b.1944) is an American limnologist and odonatologist, who was awarded a PhD degree by the University of Tennessee in 1982. He worked as a museum information technology specialist at the Department of Entomology

of the Smithsonian Institution. He conducted biodiversity surveys of the Odonata of Peru on several *occasi*ons from 1987-1997. Louton is a co-author (with Rosser W. Garrison and Natalia von Ellenrieder) of the books 'Dragonfly genera of the New World: An illustrated and annotated key to the Anisoptera' (2006) and 'Damselfly genera of the New World: An illustrated and annotated key to the Zygoptera' (2010).

luctuosa [species]

Vestalis luctuosa (Burmeister, 1839) [Orig. *Calopteryx luctuosa* de Haan]

Lat. *luctuosus –a –um* = full of sorrow, causing sorrow, sorrowful, lamentable, mournful {declinable adjective}

The uniform brownish black wings ("alis fusco-nigris") of male must have evoked the name of this species, which was briefly described on one specimen of each sex from Java. Burmeister credited the authorship of the name to Wilhelm de Haan (1801-1855), a Dutch zoologist, who was the first Keeper of the invertebrates in the Rijksmuseum in Leiden. However, the brief description also included the name '*Agr. malachiticum* de Haan, in litt.'. So, the name *luctuosa* was obviously coined by Burmeister himself, but he wanted to give credit to de Haan who had recognized it as a new species. Anyway, this recognition does not make de Haan the author of the name,

Reference. Burmeister (1839: 828).

ludovicea [synonym]

Libellula ludovicea Fourcroy, 1785 [Orig. *Libellula ludovicea*]

Present status. Synonym of *Calopteryx s. splendens* (Harris, 1780).

Lat. *Ludoviceus –a –um* = pertaining to *Ludovica* (see below) {declinable adjective}

Ludovica is the female form of *Ludovicus*, the Latin form of a Germanic name meaning something like 'glorious fighter'. A famous bearer of the name was the Emperor of the Frankish Empire, Charlemagne's son Louis the Pious (in a slightly different form, the name already appears more than three centuries earlier in *Chlodovechus* (engl. and fr. Clovis), the founder of the Frankish kingdom). That emperor's name became *Louis* in French, to which a female form *Louise* (German Luise, Swedish Lovisa) was formed.

In his book on the insects of the Paris area in France, Étienne-Louis Geoffroy (1762) listed and described a total of 16 odonate species using only French species names. Among them were two calopterygids that he called 'La louise' and 'L'ulrique'. Geoffroy's description, and his references to earlier publications and illustrations, indicate that 'La louise' refers to the male of *Calopteryx splendens*. In the account of 'L'ulrique' (clearly describing a female sex), a reference to *Libellula virgo* in Linnaeus (1758) was given. It is evident that Geoffroy had adopted these names from Linnaeus' 'Fauna svecica' (1746), where the names 'Lovisa' (Swedish form of Louise) and 'Ulrica' were given as common (vulgo) names. (These 'vulgo' names like the later binomial Latin names provided convenient alternatives to the long polynomial diagnostic names.) Both names were dedications to Luise Ulrike (Lovisa Ulrika), Princess of Prussia (1720-1782); see entry *virgo*.

Antoine François de Fourcroy (1785) introduced formal binomial scientific names to those species for which Geoffroy had given only French names. For 'La louise' a new name *Libellula ludovicea* was introduced and 'L'ulrique' was presented with the Linnaean name

Libellula virgo. Fourcroy's description of *L. ludovicea* includes: "corpore viridi coeruleo nitido, alis medio coerulescentibus, basi & apice albidis margine immaculato" [the body shining greenish blue, the wings bluish in the middle, whitish at the base and at the apex, the margin without a spot]. A description which clearly fits to the male of *C. splendens*.

Therefore, in a 'roundabout way', the name *ludovicea*, given 39 years after Linnaeus' dedication, also honours Princess Luise Ulrike, who had died three years earlier as a rather unpopular Queen Dowager of Sweden.

Reference. Fourcroy (1785: 343).

ludovicia<u>n</u>a [synonym]

Calepteryx ludoviciana Stephens, 1835 [Orig. *Calepteryx Ludoviciana*]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758) [*Calepteryx ludoviciana* (sensu Selys, 1840) refers to *Calopteryx s. splendens* (Harris, 1780)].

Lat. *Ludovica* (see foregoing entry) + *–ianus–a –um* = of ..., related to {declinable adjective}

The name '*Ludoviciana* Leach MSS' first appeared in Stephens' (1829: 308) catalogue, as the second species in the genus *Calepteryx* (the first being *C. Virgo*). However, since no description was given, the name was a *nomen nudum*. Several references to earlier publications, including illustrations of male damselflies, suggest that Leach's manuscript name refers to *C. splendens*. Moreover, Stephens listed both *Libellula splendens* and *Calepteryx Ludovicia* (sic) as 'synonyms' of *Ludoviciana*.

In the introduction Stephens (1829: iv) wrote: "I have also introduced such MS. names as are in general use in the more extensive collections, so far as circumstances will permit." Thus, Leach must have labelled some specimen(s) at the British Museum collections with this name. Leach may just have emended Fourcroy's name *ludovicea*. This name (incorrectly spelled as *ludovicia*) was listed (along *virgo*) in the genus *Calepteryx* by Samouelle (1819a: 410) and Samouelle (1819b: 8). Given the fact that George Samouelle was Leach's assistant, who followed Leach's views in his classification and nomenclature, it is certain that Leach knew Fourcroy's name *ludovicea*. Later, Stephens (1835: 79) made the name *ludoviciana* available by giving a proper description of the species *Calepteryx ludoviciana*. He presented three varieties of this species with "wings variable in colour". Confusingly, the characters of all these varieties fit to *C. virgo*, rather than to *C. splendens* as could be expected from his 1829 publication. On the other hand, two of Stephens' five varieties of '*C. virgo*' refer to *C. splendens*, var. α being a male and δ a female, indicating that Stephens, like all other earlier authors, had great difficulties in classifying the *Calopteryx* taxa.

Selys Longchamps' (1840: 131) diagnosis of '*Calepteryx ludoviciana* (Leach)', a species for which he gave the French name 'Caleptéryx Louise', included: "Ailes un peu étroites, hyalines, avec une bande transverse d'un vert bleuâtre chez le mâle, ou avec les nervures d'un vert brillant et un faux parastigma blanc, souvent nul chez la femelle." Selys' description fits well to *C. splendens* and coincides with Fourcroy's *Libellula ludovicea*, and perhaps also with the specimens which Leach had labelled as *ludoviciana*. But, strictly in the formal terms, Selys' *ludoviciana* must be considered as a 'misidentification', due to Stephens' previously published, erroneous interpretation of the identity of Leach's manuscript name. It should be noted here that in the same publication (1840: 129), Selys ranked *Libellula splendens* as a synonym of *C. virgo*. Later, Selys Longchamps (1846: 225) kept *Calopteryx*

ludoviciana as a synonym of *C. splendeo*, but perhaps the spelling *splendeo* was a mere lapsus instead of *splendens*. Anyway, in Selys Longchamps & Hagen (1850: 138), the present status of the name *Calopteryx splendens* (Harris) was finally established. Similarly, as *ludovicea*, also the name *ludoviciana* goes back to Linnaeus' (1746) dedication to Princess Luise Ulrike, who later (1751-1771) was the Queen Consort of Sweden, wife of King Adolf Frederick (1710-1771).

Reference. Stephens (1835: 79); Selys Longchamps (1840: 131).

lugens [synonym]

Climacobasis lugens Laidlaw, 1902 [Orig. *Climacobasis lugens*, sp. n.]

Present status. Synonym of *Echo modesta* Laidlaw, 1902.

Lat. *lugens* = mourning / wearing mourning apparel [present participle of *lugeo* = to mourn, lament, bewail, deplore] {present participle}

The description was based on a male specimen, which F. F. Laidlaw himself had collected in 'Kwala Aring' in Kelantan (in the Malay Peninsula) in September 1899. The description includes some statements on black colour: "Pterostigma ... very black. ... Head. Lower lip, base of the mandibles, and upper lip black. ... Prothorax dark green, almost black; Thorax. Dark metallic green above, with all the sutures and the interalar space black; under surface and legs sooty black with long hairs. ... Abdomen dull brownish black." Since black is the usual colour of mourning, the above-mentioned characters might be in the base of the name *lugens*, which refers to mourning or being dressed for mourning.

However, since the most striking feature in the mature male of this hyaline winged damselfly (= *Echo modesta*) is the conspicuous, square, milky white patch in front of the head ("Between the eyes, running forward as far as the epistome, is a remarkable square milky-white patch of considerable size, taking up in fact the greater part of the vertex"), another possibility should also be considered. Could this conspicuous white head ornament be an allusion to 'white mourning'? In many cultures it has been a common habit to wear white clothes, especially to mourn the death of young children and unmarried woman. In Europe, this tradition emerged in France in the 16th century, and it became a custom for the French queens to wear white mourning clothes. The white mourning garb of Mary, the Queen of Scots and the former queen of France (1542-1587), is especially well known. Laidlaw's work on his manuscript coincides with the death of Queen Victoria on 22 January 1901. Following the queen's instructions, white had a major role in her funeral. She was dressed in white dress, her white wedding veil draped over her face. Her coffin, covered with a white shroud, was carried by white horses. This royal funeral spectacle may have triggered Laidlaw's name selection, but unfortunately he did not leave any definite clue as to what he had in mind.

The following year, Laidlaw (1903: 191), having received further specimens from the Malay peninsula, concluded that his *Climacobasis lugens* ♂ and *Echo modesta* ♀, described in the same paper, represented the male and female of the same species, and he selected the name *Echo modesta*, apparently based on page priority.

Reference. Laidlaw (1902: 85).

lugens [species]

Vestalis lugens Albarda in Selys, 1879 [Orig. *Vestalis lugens*, Albarda]

Lat. *lugens* = mourning / wearing mourning apparel [present participle of *lugeo* = to mourn, lament, bewail, deplore] {present participle}

The name undoubtedly refers to the uniform blackish appearance of the male: “Les ailes en entier noir opaque à reflet bronzé cuivreux. Corps noir mat en entier, excepté la face qui est d’un noir luisant et la première moitié de l’abdomen en dessus, qui est un peu brune mais nullement acier ni verdâtre.” Later, Albarda (1887: 5) described this species in Dutch and included coloured illustrations of male and female.

Reference. Selys Longchamps (1879b: 361).

luteola [synonym]

Calopteryx luteola Rambur, 1842 [Orig. *Calopteryx luteola*, mihi.]

Present status. Synonym of *Hetaerina cruentata* (Rambur, 1842).

Lat. *luteolus –a –um* = yellowish (dimin. of *luteus –a –um* = yellow) {declinable adjective}

Rambur described this species from a single female specimen, incorrectly labelled from Martinique. The species epithet refers to the yellowish colour of wings: “alis angustis luteolis” [with narrow yellowish wings] and “Ailes étroites, ayant une légère teinte de jaune roussâtre, plus foncée au bord antérieur, surtout vers la base.”

Reference. Rambur (1842: 223).

luzoniensis [species]

Neurobasis luzoniensis Selys, 1879 [Orig. *Nevrobasis kaupi luzoniensis*]

Lat. *Luzoniensis –is –e* = Luzonian {declinable adjective}

A toponym named after the type locality, Luzon Island in the Philippines: “Les exemplaires des Philippines (Luçon) pris par le professeur Semper.” Dr Carl Gottfried Semper (1832-1893) had collected a few specimens of both sexes somewhere in central or northeastern Luzon in 1859-1861 (Orr & Hämäläinen 2007: 42). In spite of the original trinomial, Selys considered *kaupi* as a race of *N. chinensis*.

Reference. Selys Longchamps (1879b: 360).

machadoi [species]

Mnesarete machadoi Garrison, 2006 [Orig. *Mnesarete machadoi* new species]

An eponym named after Angelo Barbosa Monteiro Machado (1934-2020). {noun in the genitive case}

The etymology reads: “Named for Dr Angelo Barbosa Monteiro Machado, my friend and worker on the Brazilian Odonata who has helped me in the form of advice and specimens for over 20 years.”

Reference. Garrison (2006: 35).

Notes on the eponymee. Dr Angelo Barbosa Monteiro Machado (1934-2020) was a distinguished Brazilian neuroanatomist, odonatologist, environmentalist and author of popular books for children and adolescents. He was appointed Assistant Professor (1966) and later (1981) Professor of Neuroanatomy at the Institute of Biological Sciences of the Universidade Federal de Minas Gerais. Then, in 1987-2004 he worked as Associate Professor of Entomology in the Department of Zoology of the same Institute. His major medical publication

was the textbook 'Neuroanatomia functional' (1974, with 3rd edition in 2014). His well over 80 papers on the taxonomy of Brazilian and other Neotropical Odonata (1953-2019) include descriptions of ca. 100 new species and 11 new genera of Odonata. His nearly 40 children's books (since 1987) raised awareness of the need to protect forests, other natural resources, animals and plants among young generation. For his biographies and obituaries, see e.g. Mitre (2005), De Carvalho (2013), Pinto (2016), Kiauta (2020), Pinto & al. (2020) and Meira & al. (2021).

maclachlani [synonym]

Mnais maclachlani Fraser, 1924 [Orig. *Mnais maclachlani*, sp. nov.]

Present status. Synonym of *Mnais gregoryi* Fraser, 1924 [*maclachlani* is hyaline winged male colour form of *gregoryi*].

An eponym named after Robert McLachlan (1837-1904). {noun in the genitive case}

Fraser did not give any etymology or explanation for his choice of name for this species, but clearly the dedication recognised McLachlan's work on Odonata, including the fauna of the areas close to the type locality of the new species ("south of Puti" in Yunnan). In the same paper Fraser (1924: 455-457) misidentified some *Matrona* specimens as McLachlan's *Calopteryx oberthueri*, and incorrectly transferred *oberthueri* to the genus *Matrona*.

Reference. Fraser (1924: 458).

Notes on the eponymee. Robert McLachlan (1837-1904) was an English entomologist, a specialist on Trichoptera, Neuroptera and Odonata. He was among the first editors of the Entomologist's Monthly Magazine (from 1864 to 1903). He authored several books such as: 'A catalogue of British Neuroptera' (1870) and 'Monographic revision and synopsis of the Trichoptera of the European fauna' (1874, 1880). In his numerous papers on Odonata, he described nearly 90 new species and eleven genera from all over the world, nearly one third of them being calopterygoid species. He was a close collaborator of Edmond de Selys Longchamps. In his will Selys left McLachlan a considerable sum for reviewing and cataloguing his (Selys') Odonata collection, but due to his own ill-health McLachlan was unable to accept the bequest. For his obituaries, see e.g, Kirby (1904) and Anonymous (1905).

macropus [synonym]

Hetaerina macropus Selys, 1853 [Orig. *Hetærina macropus*, De Selys]

Present status. Synonym of *Hetaerina occisa* Hagen in Selys, 1853.

Gr. μακρός –ά –όν [makros] = long + –πους [–pus] = –footed {adjective}

The name points to the long legs of the male: "Pieds noirs, très longs." Selys' (1854) French name is 'Hétérine macrope'.

Reference. Selys Longchamps (1853: 44); Selys Longchamps & Hagen (1854: 141).

maculata [species]

Calopteryx maculata (Palisot de Beauvois, 1807) [Orig. *Agrion maculata*]

(Fig. 18 on p. 102).

Lat. *maculatus –a –um* = tainted, stained, spotted (*macula* = spot, stain; *–atus –a –um* = equipped with {declinable adjective}

The species was described on the basis of an aberrant male specimen from the United States. As seen in the illustration (Fig. 18) included in the original description, in the apical part of all four wings of this specimen are groups of 'cells' which lack opaque coloration, thus looking like pale spots. Having only this single male available, Palisot de Beauvois selected a species name pointing to this (anomalous) character; not to the white *pseudo*pterostigmata of the female, as presented in some sources. [See also the entry *papilionacea*]. The description reads: "Agrion maculée. Corps vert, brillant: ailes brunes, foncées, mouchetées de blanc. Agrion maculata. Corpore viridi, nitente: alis fuscis, subnigris, albomaculatis" [Spotted Agrion. The body shining green, the wings dark, almost black, spotted white]. The added note reads: "On pendra peut-être cette espèce pour une variété de l' Agrion *Vierge*, en la rapprochant de la *Libellula Viridi-Sericea*, *alis subfuscis; puncto marginali albo* [Green silken dragonfly, with rather dark wings with a white marginal spot] Geoff. Mais outre que l'individu que je décris a été troúvé en Amérique, les ailes sont souvent marquées chacune de deux taches. Dans la supposition même que les entomologistes ne voulussent la considérer que comme une variété, il m'a paru qu'il était à propos de la faire connaître."

Reference. Palisot de Beauvois (1807: 85).

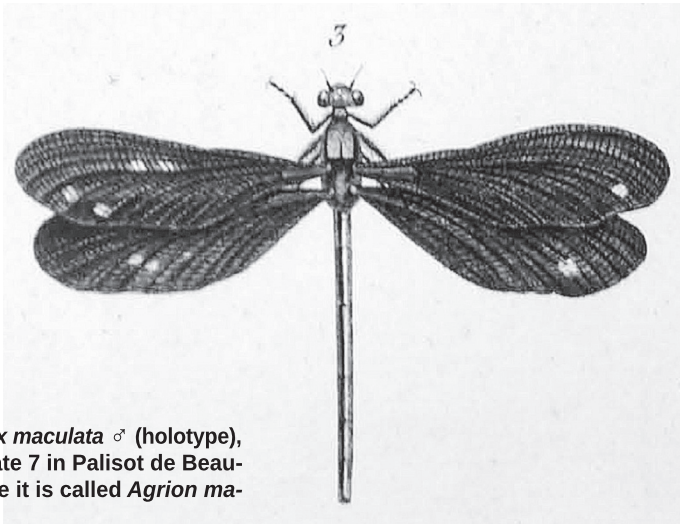

Fig. 18. *Calopteryx maculata* ♂ (holotype), scanned from plate 7 in Palisot de Beauvois (1807), where it is called *Agrion maculata*.

majuscula [species]

Hetaerina majuscula Selys, 1853 [Orig. *Hetærina majuscula*, De Selys]

(Fig. 19 on p. 103).

Lat. *maiusculus –a –um* = somewhat larger; (diminutive of *maior* = greater, larger) {declinable adjective}

Referring to the large size of the male of this species (female was unknown) compared with most of its congeners: "Taille plus grande que celle des autres *Hetærina* proprement

dites." Selys' French name was 'Hétérine majuscule'.

Reference. Selys Longchamps (1853: 47); Selys Longchamps & Hagen (1854: 151).

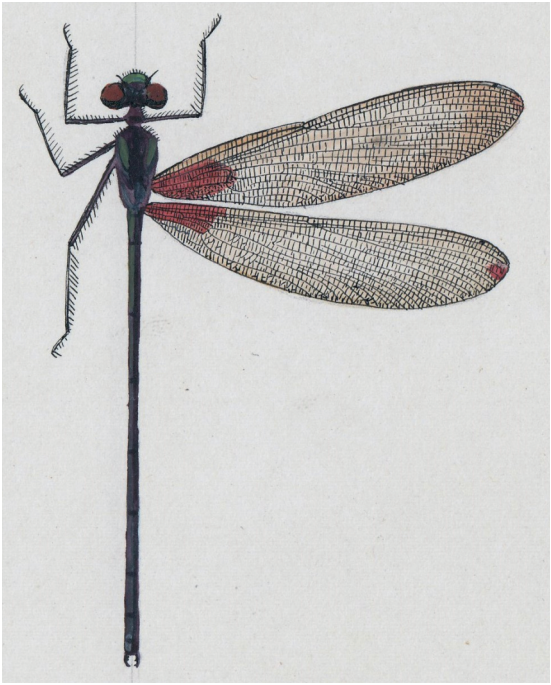

Fig. 19: *Hetaerina majuscula* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

mandarinus [species]

Psolodesmus mandarinus McLachlan, 1870 [Orig. *Psolodesmus mandarinus*, n. sp.]

Lat. *mandarinus* = mandarin (Chinese bureaucrat) [Latinised from Old Portuguese 'mandarin'] {noun in apposition}

This species was described from a single male specimen in the collection of the British Museum. The specimen was labelled to originate from "Amoy, in China". Amoy (now Xiamen), is a small island off the southeastern part of the Fujian coast. Since *P. mandarinus* has never been found in the continental China, the given locality of the holotype is undoubtedly incorrect. The specimen must have been collected somewhere in the northern part of Formosa (= Taiwan), and the obvious collector is Robert Swinhoe (1836-1877), who since 1855 worked as a British consul both in Amoy and Formosa, and became a recognized ornithologist and naturalist.

The handsome appearance of this large damselfly (the wingspan of holotype is 94 mm) must be in basis of the name *mandarinus*, which refers to mandarins, the bureaucratic scholars in the history of China. McLachlan wrote: "This fine insect somewhat reminds one of *Echo margarita* in its coloration, but is nearly half as large again."

Reference. McLachlan (1870: 166).

maracandica [synonym]

Calopteryx maracandica Bartenev, 1913 [Orig. *Calopteryx maracandica* nom. nov. (*Calopteryx samarcandica* Bartenev, 1912)]

Present status. Synonym of *Calopteryx samarcandica* Bartenev, 1912.

Gr. Μαράκανδα [Marakanda] = Samarkand (city in Uzbekistan); -ικός –ή –όν = pertaining to (Latinized: *–icus –a –um*) {declinable adjective}

Introducing the new name *maracandica* to replace the available name *samarcandica* was an unjustified act in the terms of the Code. While reporting on a series of 8 male specimens from Derbent [a village in Surkhan-Darya Province of Uzbekistan], collected on 4-7 June 1912, Bartenev wrote (translated from Russian): "So far I provisionally attribute all specimens to the same species *Calopteryx samarcandica*, just changing its name, according to the suggestion by A.P. Semenov-Tyan-Shanskiy (in a letter), to *Calopteryx maracandica*." Obviously, Semenov-Tyan-Shanskiy (1827-1914), a famous Russian geographer, thought that the ancient city name would look more elegant as the name of this fine damselfly.

Reference. Bartenev (1913b: 185).

margarita [species]

Echo margarita Selys, 1853 [Orig. *Echo margarita*, De Selys]

(Fig. 20).

Margarita = given name in Latin and several European languages, derived from Lat. *margarita* = pearl [borrowed from Greek] {noun in apposition}

An eponym. Selys' French name 'Écho Marguerite' for this species and some entries in his diary (see Hämäläinen 2013; Hämäläinen & al. 2020) show that the species name was a dedication to Selys' daughter Valentine Emilie Marguerite, who had died of meningitis a few months earlier, on 14 May 1852 at the age of four years. (She was born on 6 February 1848). Here the name Marguerite means daisy. As pointed out, by assigning it to the generic name *Echo*, the binomial *Echo margarita* can be interpreted to mean 'a memory of Marguerite'; for more details, see entry *Echo*.

Reference. Selys Longchamps (1853: 19); Selys Longchamps & Hagen (1854: 67).

Fig. 20: *Echo margarita* ♀. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

marginata [species]

Mnesarete marginata (Selys, 1879) [Orig. *Laïs marginata*, De Selys]

Lat. *marginatus –a –um* = provided with borders (past part. of *margino* = provide with borders) {declinable past participle}

The species epithet refers to the hind wing of male, which is bordered with distinct dark colour: “Ailes étroites, hyalines, à réticulation noire, … le bout des inférieures fortement limbé de fuligineux obscur.” The holotype male from eastern Peru still remains the only known specimen of this species.

Reference. Selys Longchamps (1879b: 366).

mariana [species]

Mnesarete mariana Machado, 1996 [Orig. *Mnesarete mariana*, sp. n.]

Angelo Machado wrote: “Dedico esta libélula à minha neta Mariana, nascida quando este trabalho estava sendo elaborado” [I dedicate this dragonfly to my granddaughter Mariana, born when this work was being prepared]. The author and his sons Paulo Augusto Ribeiro Machado (Mariana’s father) and Eduardo Ribeiro Machado had collected three male specimens of this new species in Bahia State of Brazil on 21 April 1995. The manuscript was submitted on 16 August 1996. That time Mariana was 4 months old. When the description was published in December 1996, Mariana was 7 months old. She is the youngest person who has been honoured with a dragonfly eponym. {noun in apposition}

Reference. Machado (1996: 621).

Notes on the eponymee. Mariana Fonseca Machado (b. 13 April 1996) is a Brazilian film director and photographer. She graduated (2014) in Media Studies (with emphasis in Film Studies) at UFMG - Federal University of Minas Gerais. Since 2016 she has worked on independent productions and has made several films, art and music videos, performances and extensive work with photography. Her first film “Ângelo” was released at the 9th Mostra Ecofalante de Cinema (2020), the most prestigious Latin American film festival dedicated to the social-environmental thematic. Later, it was exhibited in several international and national festivals. This film is a biopic of her grandfather Angelo Machado, a renowned Brazilian zoologist, scientist, writer and environmentalist (see entry *machadoi*). The film was her response to the great honour bestowed by her grandfather in naming the beautiful damselfly species *Mnesarete mariana* after her.

materna [synonym]

Calopteryx materna Say, 1840 [Orig. *Calopteryx materna*]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

Lat. *maternus –a –um* = of a mother, maternal {declinable adjective}

Say gave the name *materna* for the female damselfly specimen from “the interior parts of Virginia”, which Drury (1770: 114) had identified, described and illustrated (Plate XLVIII, fig. 2) using the Linnaean name *Libellula virgo* (forma gamma), presently known as female of *Calopteryx virgo*. Say’s brief description reads: “Wings steel-blue, with a tinge of brown; a white, opaque, costal spot near the tip.” Obviously, the name *materna* just follows the Linnaean practice to use feminine names for damselflies (*virgo* and *puella*).

Reference. Say (1840: 32).

mattii [species]

Noguchiphaea mattii Do, 2008 [Orig. *Noguchiphaea mattii* sp. nov.]

An eponym named after Matti Kalevi Hämäläinen (b. 1947). {noun in the genitive case}

The given etymology reads: "The species is named after Matti Hämäläinen (Espoo, Finland), who is well known for his many publications on oriental odonates, and who has supported my research on the Vietnamese dragonflies." The species was described from a male specimen, which the taxon author Do Manh Cuong had collected at Hon Ba mountain in Khan Hoa Province in southern Vietnam on 29 April 2006.

Reference. Do (2008: 21).

Notes on the eponymee. Dr Matti Kalevi Hämäläinen (b.1947) is a Finnish entomologist. He was appointed as Docent ('Associate Professor') of Agricultural Zoology at the University of Helsinki in 1978, and in 2010 as Honorary Corresponding Researcher of the Naturalis Biodiversity Center (Leiden, the Netherlands). His research work on Odonata has focused mainly to the taxonomy and biodiversity of the Oriental fauna. An integral part of his research programme has been the collection of extensive fresh material on ca 40 expeditions to several countries in South-east and East Asia (since 1982). His over 200 publications on Odonata include descriptions of ca 90 new species, most of them damselflies of the families Platycnemididae, Calopterygidae, Euphaeidae and Chlorocyphidae. He has authored or co-authored several books, including 'Atlas of the dragonflies of Thailand' (1999), 'The metalwing demoiselles (*Neurobasis* & *Matronoides*) of the Eastern tropics' (2007), 'A photographic guide to the dragonflies of Singapore' (2010) and 'Demoiselle damselflies – winged jewels of silvery streams' (2013).

maxima [synonym?]

Hetaerina maxima McLachlan, 1879 [Orig. *Hetærina maxima*.]

Present status. Possible synonym of *Hetaerina capitalis* Selys, 1873.

Lat. *maximus –a –um* = the greatest, the largest {declinable adjective}

This species was described from a single teneral female specimen from Costa Rica. The length of the hind wing of this specimen is 40 mm and the wingspan 83 mm. McLachlan wrote: "It is the largest yet known, the size being only occasionally attained by the ♂ of the anomalous *H. Borchgravi*." Garrison (1990: 205) surmised that *H. maxima* is an aberrant female of *H. capitalis*. Its overall large body size may be correlated with the unusually high altitude of the type locality.

Reference. McLachlan (1879: 244).

maxima [species]

Archineura maxima (Martin, 1904) [Orig. *Echo maxima* nov. sp.]

Lat. *maximus –a –um* = the greatest, the largest {declinable adjective}

Described on basis of a single female specimen, collected by Hans Fruhstorfer (1866-1926) in 'Than Moi, Tonkin' [Dong Mo, Lang Son province, Vietnam] between 11 June and 19 July 1900. The name refers to the size of the species: "Abdomen 66 millimètres aile infér.

50 millimètres … Cette espèce remarquable par sa taille gigantesque semble bien appartenir au genre *Echo*. Elle resemble par la coloration du corps et le pterostigma à une *Echo uniformis* énorme." According to Hämäläinen (2015b), the wing span of the pinned holotype is 107 mm and the total length 84 mm. Hindwing length is 53 mm and abdomen length (incl. appendages) is 68 mm. No other specimen of this magnificent damselfly has ever been found, and the species may have become extinct before the male sex could become known.

Reference. Martin (1904: 219).

mazu [species]

Matrona mazu Yu, Xue & Hämäläinen in Yu & al., 2015 [Orig. *Matrona* (*Matrona*) *mazu* Yu, Xue & Hämäläinen, sp. nov.]

An eponym. {noun in apposition}

The etymology of this species, obviously endemic in Hainan, reads: "Named after Mazu, a legendary Chinese woman Lin Moniang, who lived in Fujian in 960–987 during the Song Dynasty. In south-eastern coastal regions of China, including Hainan, Mazu is widely worshipped as a goddess of the sea, who protects fishermen and sailors."

Reference. Yu & al. (2015: 482).

medinai [species]

Hetaerina medinai Rácenis, 1968 [Orig. *Hetearina medinai* sp. n.]

An eponym named after Gonzalo Medina Padilla (1930-2009). {noun in the genitive case}

Rácenis wrote: "Dedicamos esta especie al compañero y amigo, quien nos acompañó en la expedición universitaria a la región del Auyantepui, ornitólogo y conservacionista venezolano, Lic. Gonzalo Medina Padilla" [We dedicate this species to our colleague and friend, who accompanied us on the university expedition to the Auyantepui region, Venezuelan ornithologist and conservationist, Lic. Gonzalo Medina Padilla]. The holotype and most of the paratypes were collected by Janis Rácenis and Francisco Fernandez Yepez in Guayaraca-Auyantepui in southern Venezuela in April 1956.

Reference. Racenis (1968: 160).

Notes on the eponymee. Gonzalo Medina Padilla (1930-2009) was a Venezuelan ornithologist and vertebrate biologist. After graduating in 1957, he worked as the chief of the Rancho Grande Biological Station in the Henri Pittier National Park, and as the curator of the Station's museum until 1981. He expanded the bird and mammal collections as part of the National Wildlife Inventory Program and also donated his own bird collection to the museum. Since 1976 the collections were expanded to include amphibians and reptiles. Medina Padilla published several research papers on the birds of mammals of Venezuela.

melania [species]

Vestalis melania Selys, 1873 [Orig. *Vestalis melania*, De Selys]

Gr. μελανία [melania] = blackness, black cloud {noun in apposition}

The species epithet refers to the blackish appearance of the single male and female specimens (both teneral) from Luzon, which Selys had available: "Ailes en entier d'un gris enfumé foncé, un peu irisées, réticulation noirâtre, très serrée. Corps noir en entier, à peine un

peu plus clair à la poitrine et sous l'abdomen. Pieds noirâtres, longs." Should Selys have had mature specimens in hand, this Philippine damselfly with beautifully colored, iridescent, wings would surely bear another name, instead of the gloomy *melania*. The upper surface of male wings has a striking, intense dark blue or sometimes greenish shine, whereas the female wings reflect a strong violet shine.

Reference. Selys Longchamps (1873a: 474).

melli [species]

Atrocalopteryx melli (Ris, 1912) [Orig. *Calopteryx Melli* nova spec.]

An eponym named after Rudolf Emil Mell (1878-1970). {noun in the genitive case}

He collected the type series (3 ♂♂ and 2 ♀♀) in 'Tsa-Yiu-San' in Guangdong, China, in June-August 1911. In the introduction, the collector's name was incorrectly written as 'C. Mell'.

Reference. Ris (1912: 55).

Notes on the eponymee. Rudolf Emil Mell (1878-1970) was a German school teacher of science and physical education, who emigrated to China in September 1908. In the following year he founded a German-Chinese Secondary School in Canton (now Guangzhou), and was headmaster until 1921. In China, Mell made large collections of vertebrates and insects in various locations in Guangdong, and he also collected in Dali (Yunnan). He also kept a private zoo. In March 1921 Mell left for holidays in Germany, but could no longer return to China. In 1931 he sold his zoological collections (over 150 000 specimens; the majority of them insects) to the Zoological Museum in Berlin. Mell authored several publications on birds and insects and described ca 300 new taxa, mostly Lepidoptera (however about half of them were synonyms). In 1947-1960 he authored three books based on his time in China. In 1924 he received a honorary doctor degree from the University of Rostock. For his biography, see Rieck (2005) and Tillack (2019).

mendezi [species]

Hetaerina mendezi Jurzitza, 1982 [Orig. *Hetaerina mendezi* spec. nov.]

An eponym. {noun in the genitive case}

The species was named in memory of Bernabé Mendéz (1934-1968), a ranger of the Iguazu National park in Misianes, Argentina. He was shot dead by a group of poachers while on duty on 14 April 1968. Jurzitza wrote: "Sie ist dem Andenken an Guardaparque Bernabe Mendez gewidmet, der am 14, April 1968 im Dienste für den Nationalpark Iguazú der Kugel eines Wilderers zum Opfer fiel." The species was described from a series (8 ♂♂, 1 ♀), which the taxon author Gerhard Jurzitza had collected on Rio Iguazú within the boundaries of the same national park. The holotype male was collected on 7 February 1979.

Reference. Jurzitza (1982: 41).

Notes on the eponymee. Bernabé Mendéz (1934-1968) was the first park ranger to be killed on duty in Argentina. He is regarded as a martyr to the conservation movement and has become an emblem of the protection of nature in Argentina. A waterfall (Salto Bernabé Mendéz) in the Iguazú National Park has been named after him.

meridionalis [subspecies]

Calopteryx virgo meridionalis Selys, 1873 [Orig. Race: *meridiona*lis, De Selys; à (*Calo-*

pteryx) *virgo*, L.]

Lat. *meridionalis –is –e* = southern, meridional {declinable adjective}

In formal terms, this taxon name became available only after Selys had listed it as 'Race *meridionalis*, De Selys' in his 'Liste des Caloptérygines décrites dans le Synopsis et ses trois Additions'. Earlier, in Selys Longchamps & Hagen (1850: 138); Selys Longchamps (1853: 14); Selys Longchamps & Hagen (1854: 44), he had called this taxon simply with the French expression: 'Race méridionale'. The name refers to the southern distribution of this subspecies within the whole range of *C. virgo*. Selys did not have a definite idea of the range of this 'race', and he included also south-western England to it: (1850) "J'ai reçu cette race de la *virgo* de la Provence, des Pyrénées et de sud-ouest de l'Angleterre."; (1854) "Cette race se trouve dans le sud ouest de l'Angleterre, à Bordeaux, dans les Pyrénées et en Provence." Maibach (1987: 154) designated a male specimen (in Selys' collection) from Pyrenees as the lectotype, which makes Pyrenees the type locality. [For senior synonyms of this name, see entries *nicaeensis* and *occitanica*.]

Reference. Selys Longchamps (1873a: 509).

mesostigma [species]

Umma mesostigma (Selys, 1879) [Orig. *Cleis mesostigma*, De Selys]

Gr. μέσος –η –ον [mesos] = middle, in the middle + στίγμα [stigma] = tattoo-mark, mark, spot {noun in apposition}

The species epithet points to the intermediate length of pterostigmata in male of this species, as compared with the long and short pterostigmata in its congeners *longistigma* and *cincta*, respectively: "Ce n'est probablement qu'une simple race de la *longistigma* … Le seul caractère qui l'en distingue, c'est le ptérostigma qui est plus court, long de $1_{1/2}^{mm}$ seulement, tandis que chez la *longistigma* il a 2 à $2_{1/2}^{mm}$ et chez la *cincta* à peine 1 millimètre."

Reference. Selys Longchamps (1879b: 358).

mesumbei [species]

Umma mesumbei Vick, 1996 [Orig. *Umma mesumbei* sp. nov.]

An eponym named after Otto Mesumbe (b. 1970). {noun in the genitive case}

Mesumbe assisted the author during his field work at Mount Kupe in Cameroon in March-April 1995 and collected part of the type series on 1 April 1995. Vick acknowledged him as follows: "Especial thanks should go to Otto Mesumbe and Elvis who assisted with the work at the MKFP [Mount Kupe Forest Project]: they helped with guiding us on the forest trails and gave great help with collecting the material. Otto is continuing with this work now that we are back in the UK."

Reference. Vick (1996: 170).

Notes on the eponymee. Otto Mesumbe (b. 1970), a local farmer in Nyasoso, Cameroon, was employed as a guide by the Mount Kupe Forest Project (MKFP) in the early 1990's. In 1995-2003, he participated as guide and efficient collector in the five expeditions of the Cameroon Dragonfly Project, headed by Graham S. Vick. Mesumbe helped also Chris Wild in his studies on snakes and amphibians at Mount Kupe, funded by the Center for Reproduction of En-

dangered Species of the Zoological Society of San Diego. With Wild's help, Otto Mesumbe and his family moved to California in 2006. Mesumbe studied at the California State University to qualify as a nurse. Presently he lives in Fremont California and works as a senior nurse in a hospital.

metallica [species]

Mnesarete metallica (Selys, 1869) [Orig. *Lais metallica*, De Selys]

Lat. *metallicus –a –um* = of or belonging to metal, metallic [borrowed from Greek] {declinable adjective}

The reflecting metallic sheen of the body of the syntypes (1 ♂, 1 ♀) appears to be behind this name: "Corps brun foncé à reflets cuivre rouge clair."

Reference. Selys Longchamps (1869a: 654).

miao [species]

Vestalaria miao (Wilson & Reels, 2001) [Orig. *Vestalis miao* sp. nov.]

The species epithet refers to a people group: "Named after the Miao (Hmong) people who live at the hilltop areas of Diaoluoshan." {noun in apposition}

The holotype was collected at Diaoluoshan (Hainan, China) by taxon author K. D. P. Wilson on 25 May 1999. In China, most Miao people live in the mountains of several provinces in the southern part of the country, including Guangxi and Hainan.

Reference. Wilson & Reels (2001: 155).

mingrelica [subspecies]

Calopteryx splendens mingrelica Selys, 1869 [Orig. une nouvelle race que je nomme *mingrelica*]

Lat. suffix *–icus –a –um* = pertaining to; for Mingrelia see below {declinable adjective}

Mingrelia is an historic province of Georgia bordering on the Black Sea south of Abkhasia. The name of the taxon is a toponym referring to the type locality of this subspecies, described from two male specimens from Mingrelia. These specimens were in a lot of 40 odonate specimens (of 10 species), which Théophile-Louis Deyrolle (1844-1923) had collected in Mingrelia in 1868. The collector was a recognized painter and a member of a family who owned the well-known entomology and taxidermy shop in Paris.

Reference. Selys Longchamps (1869b: 106).

miniata [species]

Hetaerina miniata Selys, 1879 [Orig. *Hetærina miniata*, De Selys]

Lat. *miniatus –a –um* = coloured red with cinnabar, painted vermillion {declinable past participle}

Referring to the red coloured markings on wings, typical in males of the genus *Hetaerina*: "Ailes hyalines à gouttelette apicale rouge, forte aux inférieures, un léger vestige aux supérieures, dont la tache basale rouge est arrondie en dehors, où elle dépasse notablement le quadrilatère,... et occupant la base de l'aile dans toute sa largeur. La tache des inférieures dépassant un peu le quadrilatère, mais prolongée jusqu'au nodus dans l'espace

costal et sous-costal. A ces dernières ailes la tache basale ne dépasse pas la nervure post-costale."

Reference. Selys Longchamps (1879b: 370).

misool<u>e</u>nsis [subspecies]

Neurobasis australis misoolensis Lieftinck, 1955 [Orig. *Neurobasis australis misoolensis*, subsp. n.]

Lat. *–ensis –is –e* = pertaining to …; Misool = an island west of New Guinea {declinable adjective}

A toponym named after the type locality of the subspecies, Misool Island, off the western part of New Guinea. M. A. Lieftinck himself had collected the type material (1 ♂, 2 ♀♀) in Fakal (in the western interior of the island) on 2 and 7 October 1948, while participating during four months in the Swedish - Dutch ornithological expedition to West New Guinea, headed by Sten Bergman (1895-1975).

Reference. Lieftinck (1955: 162).

mn<u>e</u>me [species]

Mnais mneme Ris, 1916 [Orig. *Mnais mneme* nov. spec.]

Gr. μνήμη [mnēmē] = remembrance, memory; personified: the Muse of memory (one of the original Boeothian muses) {noun in apposition}

According to the Greek geographer Pausanias (2nd century AD) before the nine 'Olympian' Muses, who embody branches of fine arts, there were three older 'Boethian' Muses, personifications of the preconditions of poetic art: Mneme [= memory], Melete [= attention; exercise] and Aoide [= voice; song]. Ris does not explain why he chose this female name from ancient mythology, but probably he sought alliteration with the genus name. The species was described from three ♀ specimens from "Atchong, Min-Fluss, Süd-China" (Fujian, China).

Reference. Ris (1916: 11).

mod<u>e</u>sta [species]

Echo modesta Laidlaw, 1902 [Orig. *Echo modesta*, sp. n.]

Lat. *modestus –a –um* = keeping due measure, moderate, modest, gentle {declinable adjective}

Laidlaw described this species on the female sex only. He had two specimens available, one collected by himself in the Malay Peninsula (see entry *lugens*) and the other from Penang (at collections of BMNH, London). The name probably alludes to the smaller size and lack of conspicuous colour features on the wings as compared with the females of its congeners *E. uniformis* (a species treated in discussion of differences) and *E. margarita* with apex of all wings black and decorated with conspicuous pterostigmata.

Reference. Laidlaw (1902: 84).

mont<u>a</u>na [synonym]

Vestalis gracilis montana Fraser, 1934 [Orig. *Vestalis gracilis montana*, nom. nov.; a re-

placement name for *Vestalis gracilis amæna* Fraser, 1929]

Present status. Synonym of *Vestalis* sub*montana* Fraser, 1934.

Lat. *montanus –a –um* = of mountains, belonging to mountains {declinable adjective}

Referring to the montane habitats of this South Indian taxon. Fraser wrote: "Distribution. – S. India: Coorg and the Nilgiri Wynaad, at about 3500 ft. altitude."

Reference. Fraser (1934: 128); cf. Fraser (1929: 583).

moribunda [species]

Hetaerina moribunda Hagen in Selys, 1853 [Orig. *Hetærina moribunda*, Hagen.]

Lat. *moribundus –a –um* = dying, at the point of death, moribund {declinable adjective}

This is one of the numerous other names in the 'bleeding to death' or 'beheading and blood' theme, which Hagen and Selys often applied for species of the genus *Hetaerina*, referring to the conspicuous red spots in male wings. In the 1854 description of *moribunda* male it reads: "♂ assez jeune … Tache basale rouge de sang… aux inférieures elle est un peu brune en haut" and "Le mâle plus adulte … La tache basale des ailes inférieures est rouge foncé." Selys' French name was 'Hétérine moribonde'.

Reference. Selys Longchamps (1853: 42); Selys Longchamps & Hagen (1854: 134).

mortua [species]

Hetaerina mortua Hagen in Selys, 1853 [Orig. *Hetærina mortua*, Hagen.]

Lat. *mortuus –a –um* = dead {declinable adjective}

Cf. the previous species. Selys' French name for this small species ["C'est l'espèce la plus petite de groupe, et presque du genre."] was 'Hétérine morte'.

Reference. Selys Longchamps (1853: 25); Selys Longchamps & Hagen (1854: 117).

myersi [species]

Iridictyon myersi Needham & Fisher, 1940 [Orig. *Iridictyon myersi*, new species]

An eponym named after John Golding Myers (1897-1942). {noun in the genitive case}

Myers collected the type specimens "from the upper Ireng River, Pakaraima Mountains, British Guinea" in 1932.

Reference. Needham & Fisher (1940: 1).

Notes on the eponymee. Dr John Golding Myers (1897-1942) was a British applied entomologist, specialising in biological control. He moved to New Zealand with his parents in 1911. He gained a BSc and a MSc degree (1924) from the Victoria University of Wellington. In 1919-1924 he was employed by the New Zealand Department of Agriculture and started publishing on insects, especially on Hemiptera. After that he had a diverse international career, including work on biological control of pests for various institutes. In 1928 he was awarded a PhD degree from Harvard University. He worked in the United States, France, England, the Caribbean Islands, Guyana, Venezuela, Brazil, Panama and Mexico. In 1937 he was appointed as Government botanist in Sudan to survey possibilities for future agricultural development. Myers' 155 publications also include taxonomic papers on Hemiptera and the book 'Insect Singers: A Natural History of the Cicadas' (1929). His detailed biography and complete list of publications is given by Cock & Bennett (2011).

nawai [synonym]

Mnais pruinosa nawai (Yamamoto, 1956) [Orig. *Mnais strigata nawai*, subsp. nov.]

Present status. Synonym of *Mnais costalis* Selys, 1869.

An eponym named after Yasushi Nawa (1857-1926). The material included specimens (paratypes) collected by Y. Nawa in 'Yōrō, Gifu-Ken' on 19 May 1892 and in 'Sigesato. Gifu-Ken' on 20 April 1895. These were the oldest specimens listed among the material. The author wrote (translated): "The subspecific name is dedicated to the pioneer entomologist in this region, Yasushi Nawa." Yamamoto participated in the entomological club meeting in the museum, and received guidance from Masao Nawa, son of Yasushi Nawa. {noun in the genitive case}

Reference. Yamamoto (1956: 19).

Notes on the eponymee. Yasushi Nawa (1857-1926) was a Japanese entomologist. He worked as a teacher at junior high and elementary schools in Gifu Prefecture. His early interest in insects culminated on 24 April 1883, when he discovered a new parnassiine species in Gero city. This 'Gifu butterfly' was later described as *Luehdorfia japonica* Leech, 1889. In 1896, Nawa founded the Nawa Insect Research Centre where he studied beneficial and harmful insects. In 1904 the centre moved to its present location in Gifu Park in Gifu City, and in 1919 the Nawa Insect Museum, the first of its kind in Japan, was opened there. Presently the museum includes over 300 000 specimens representing 18 000 insect species. Nawa authored many illustrated papers on Japanese insects, most of them published in the 'Konchu-Sekai' (Insect World) magazine.

nicaeensis [synonym]

Agrion nicaeensis Risso, 1826 [Orig. *Agrion nicæensis*, L.-R.]

Present status. Senior synonym of *Calopteryx virgo meridionalis* Selys, 1873.

Lat. *Nicaeensis –is –e* = pertaining to Nizza (Fr. Nice) [that town goes back to a foundation by Greeks from Asia Minor in the 4th century BC named Νίκαια [Nīkaia = belonging to Nike, the goddess of Victory, because they had conquered its place from the local Ligurians] {declinable adjective}

Antoine Risso named this species from male specimen(s) from 'Nice', southern France. The Latin description reads: "Thorace abdomineque purpureo-violaceis, viride azureoque commixtis pictis; alis brunneo viridescente nigris, basi hyalinis; pedipus nigris" [The thorax and abdomen purplish-violet, variegated with mixed green and azure blue, with dark greenish brown wings, hyaline at the base; black feet]. The added French text reads: "Corselet et ventre d'une couleur mélangée de teintes vertes, azur et pourpre violet; ailes d'un noir brun verdâtre, à base transparante; pieds noirs. Long. 0,060 Séj. Tous nos endroits humides. App. Mai, novembre." The given French name was 'Agrion de Nice.'

Capra (1945: 256) discussed the status of this long-neglected name (misspelled as *nicaensis*), stating that it might refer to *C. virgo meridiona*lis, but due to the lost type specimen and inadequate description, Capra did not want to replace Selys' established name. Later, Aguesse (1968: 70) listed *nicaensis* (sic) as synonym of *Calopteryx virgo* (Linnaeus, 1758), and Maibach (1987: 149) listed it (also misspelled) specifically as synonym of the nominate subspecies *C. virgo virgo*. However, as the type locality in the southern France, as well as the

statement of the wing base being hyaline, suggests, the name *nicaeensis* refers to *C. virgo meridionalis* Selys, 1873. Therefore, *nicaeensis* was actually the first available name for this subspecies, the second oldest available name being *occitanica* Walker, 1853 (see entries *meridionalis* and *occitanica*).

Reference. Risso (1826: 220).

nigra [nomen dubium]

Sapho (*Mnais*) *nigra* Selys in Selys & Hagen, 1854 [Orig. *Sapho* (*mnaïs*) *nigra*.]

Present status. Unverified, but probably either senior synonym of *Calopteryx japonica* Selys, 1869 or junior synonym of *Atrocalopteryx atrata* (Selys, 1853).

Lat. *niger –gra –grum* = black, sable, dark, dusky {declinable adjective}

Referring to blackish blue wings, see below. In connection of the account on *Mnais strigata*, Selys wrote on a '*Sapho*' specimen which he had seen in Museum Leiden: "J'ai vu dans le Musée de Leyde, une *Sapho* mâle, à ailes bleu noirâtre, à corps non pruineux, du Japon. Est-ce encore une troisième espèce du Japon? La circonstance que le corps n'est pas pruineux le ferait soupçonner; ou bien n'existetet-il qu'une seule espèce variant notablement selon l'âge ou d'autres circonstances? C'est ce qu'il serait impossible de décider avant d'avoir examiné de nouveau la riche collection de Leyde. On pourrait nommer l'espece noire *Sapho* (*mnaïs*) *nigra*." [The other described *Mnais* species was *M. pruinosa*.]

According to Lieftinck (1971: 103) the male specimen from "Japon", referred by Selys as *nigra*, is "destroyed (not in ML)." Lieftinck wrote: "An enigmatic specimen of unknown identity, figuring under the above names, though classified in a note sub *Mnais strigata* Hagen]. Also, Asahina (1975b: 404) considered the existence of the Japanese '*Mnais nigra*' as "unbelievable" and this taxon has not been subsequently discussed in any of the numerous publications on the genus *Mnais* by the Japanese authors. None of the numerous Japanese *Mnais* forms could be described as having "blackish blue wings and non-pruinosed body". Bridges (1994) confusingly listed *nigra* as synonym of *Mnais pruinosa* Selys, 1853, but this was a mere misinterpretation of Lieftinck's (1971) text.

The type material of both *M. pruinosa* and *M. strigata* was collected by Philipp Franz von Siebold (1796-1866) or by his assistants in Nagasaki (cf. Asahina 1975b: 405) in 1823-1829. If the provenance 'Japan' in the label of the specimen with 'blackish-blue wings' was correct, the specimen was probably among the material brought by von Siebold. If so, it could have been either a male of *Calopteryx japonica* Selys, 1869 or *Atrocalopteryx atrata* (Selys, 1853), both of which occur also in the Nagasaki area. According to Selys' diary notes (Caulier-Mathy & Haesenne-Peremans 2008: 385-387) Selys visited Leiden museum for five days in late April 1850. During two days (23 and 24 April) he had studied the dragonfly collection, which was stated to consist of 840 specimens representing 350 species; quite a lot of work for two days (6 and 5 working hours being specified, respectively), so an identification mistake or slip of the memory could have been possible. The genus combination '*Sapho* (*Mnais*)' is strange, since in Selys' (1853 and 1854) classification both *Sapho* and *Mnais* were placed as subgenera of the genus *Echo*. Since, Selys had received the single specimen of *Echo* for study during his visit to the British Museum in August 1851, it is obvious that earlier (before 1853) he had used the name *Sapho* for the full genus, and the citation '*Sapho*

(*Mnais*)' in 1854 was perhaps just a lapsus, instead of '*Echo* (*Mnais*)'.

Reference. Selys Longchamps & Hagen (1854: 65).

nigrescens [species]

Vestalis nigrescens Fraser, 1929 [Orig. *Vestalis nigrecens* sp. nov.]

Lat. *nigrescens* = becoming black, growing dark {present participle}

The name alludes to the darker colouring of this Sri Lankan endemic species as compared with its congeners: "The species is easily distinguished from others of the genus by its dark colouring which gives it a close superficial resemblance of *Echo margarita*, the dark metallic colouring being more similar to that species. The black labrum, antennae and legs and the non-metallic abdomen serve to distinguish it from [*Vestalis*] *apicalis*."

Reference. Fraser (1929: 584).

nigripectus [species]

Matrona nigripectus Selys, 1879 [Orig. *Matrona nigripectus*, De Selys; Selys' classification: Genre *Calopteryx*, Leach; sous-genre *Matrona*, De Selys.

(Fig. 21).

Lat. *niger –gra –grum* = black, sable, dark, dusky; *pectus* = breast, breastbone (in entomology: thorax) {noun in apposition}

The name refers to the black underside of the pterothorax in both sexes, one of the characters which distinguish *nigripectus* from *M. basilaris*: "La poitrine noire dans le deux sexes (fortement tachée de jaune livide chez la *basilaris*)."

Reference. Selys Longchamps (1879b: 355).

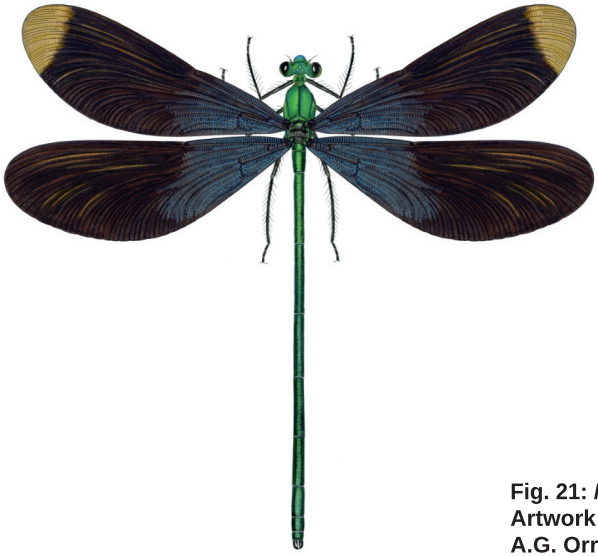

Fig. 21: *Matrona nigripectus* ♂. Artwork by A.G. Orr (2020). (© A.G. Orr).

nitens [species]

Caliphaea nitens Navás, 1934 [Orig. *Caliphaea nitens* sp. nov.)

Lat. *nitens* = shining, glittering, brilliant, bright {present participle}

Referring to the shining metallic colour of the body of both sexes: “Caput facie viridi nitente … vertice et occipite viridibus, obscurioribus, nitentibus … Thorax superne viridis, nitens … Abdomen viride, nitens” [The head with a shining green face … the vertex and the occiput green, somewhat dimmer, shining … The thorax dorsally green, shining … The abdomen green, shining].

Reference. Navás (1934: 2).

njuja [subspecies]

Calopteryx splendens njuja Kosterin & Sivtseva, 2009 [Orig. *Calopteryx splendens njuja* ssp. nov.] {noun in apposition}

The species epithet is a toponym, named after the type locality: “Etymology: – The name is toponymical, the Latin transliteration of the name of the river, Nyuya; a noun in apposition.”

The holotype ♂ was collected in “Russia, Sakha Republik – Yakutia, Lena Ulus, the Nyuya river at the Chayandra river mouth” on 14 July 2006 by E.L. Kaimuk. A number of paratypes came from other locations of the same Lena Ulus of Republic of Sakha (Yakutia).

Reference. Kosterin & Sivtseva (2009: 127).

nobilitata [synonym]

Agrion nobilitata Fabricius, 1777 [Orig. *Agrion nobilitata*]

Present status. Synonym of *Neurobasis chinensis* (Linnaeus, 1758).

Lat. *nobilitatus –a –um* = ennobled, made renown {declinable past participle}

Fabricius’ description reads: “*nobilitata*. 3. AGRION alis erectis: posticis supra viridi-sericeis apice atris. Habitat in America meridionali Spengler. Statura & magnitudo *A. Virgo*. Corpus totum viride, nitidum. Alae anticae reticulatae, obscurae, posticae viridi sericeae, nitidae apice & subtus atrae [*nobilitata*. 3. AGRION with erect wings: the hindwings satiny green, at the apex black. It lives in southern America (Spengler). Stature and size: *A. Virgo*. The body completely green, shining. The forewings reticulated, shadowy, the hindwings satiny green, shining, at the apex and beneath luster-less black].

The species epithet obviously alludes to the conspicuous ‘satiny green’ hindwings of the single male specimen which Fabricius had available. This specimen (still preserved in the Zoological Museum of Copenhagen) obviously originates from India, and a probable explanation for the mistaken locality is that Fabricius had confused the data of *Agrion nobilitata* and *A. linearis* [= *Mecistogaster linearis*], the only other new odonate species (from India!) described in ‘Genera Insectorum’.

Reference. Fabricius (1777: 248)

oberthueri [species]

Atrocalopteryx oberthueri (McLachlan, 1894) [Orig. *Calopteryx Oberthüri*, sp. n.]

An eponym named after René Oberthür (1852-1944), who had supplied McLachlan with

the type series (7 ♂♂, 4 ♀♀) of this species from 'Ta-chien-lu' in Sichuan, China. In the introductory text of his paper McLachlan wrote: "For the materials from which this paper has been drawn up I am indebted to my good friend Mons. René Oberthür, of Rennes, who obtained them from his collectors in the above mentioned locality. Ta-chien-lu is situated, I believe at a considerable elevation." {noun in the genitive case}

Reference. McLachlan (1894: 433).

Notes on the eponymee. René Oberthür (1852-1944) was a wealthy French entomologist. He and his older brother Charles Oberthür (1845-1924) inherited a large printing company 'Imprimerie Oberthür' (founded by their father in 1852) in Rennes. Like their father, the brothers were keen amateur entomologists; Charles worked on Lepidoptera and René on Coleoptera. Both gathered extensive collections by purchase and by financing collectors worldwide. René Oberthür's Coleoptera collection ended up holding 5 million specimens (in 20 000 cases). It included old collections gathered by many eminent entomologists, such as Dejean, Bates and Wallace. The collection was sold to the Muséum national d'Histoire naturelle (Paris) in 1952. There it forms a special 'historic monument'. Oberthür himself published relatively little (also including descriptions of new species). However he wrote a series of papers (with Constant Houlbert) 'Faune analytique illustrée des Lucanides de Java' (1913-1914). For his biography, see Cambefort (2004).

occasi [synonym]

Calopteryx haemorrhoidalis occasi Capra, 1945 [Orig. *Calopteryx haemorrhoidalis* ssp. *occasi* n. n.]

Present status. Synonym of *Calopteryx haemorrhoidalis* (Vander Linden, 1825).

Lat. *occasus* = (among others:) sunset, west [or, elliptic expression: {sol} *occasus* = {the sun} that has set, in which *occasus* would be a past participle] {either way the name is to be seen as a noun in the genitive case}

The name chosen by Capra for his taxon from Liguria does not present any difficulties in understanding, as Liguria is the westernmost part of Italy bordering the Mediterranean, and Capra tells us that it pertains to a "razza della Francia meridionale, descritta ma non denominate dal Selys (1850 p. 142; 1854, p. 46)" [race of southern France, described but not named by Selys] in which in the males the distal quarter of the forewings is said to be clearer than the dark median section, almost hyaline, the tips not dark. So, from the Italian point of view, it has a western distribution. But for the interpretation there remain problems, either grammatically or semantically. For the Latin noun *occasus* pertains to the 5th declension, where the genitive singular ends in *–us* (with a long *–u–*), and not in *–i* as in the most common 2nd declension (the Latin word *occasus* is found in Italian as 'occaso' ending in –o like also all words in *–ūs* that have come from the 2nd declension, and as in Italian the genitive case is replaced by a prepositional phrase, Capra most probably was not aware of this grammatical difficulty); otherwise if one assumes that Capra might have chosen the exceptional exotic elliptic expression mentioned above, the meaning is not adequate, as that verbalisation can only refer to time, never to a geographic direction. The hypothesis in Fliedner (1997: 64) that the species name is an anagram of *occisa* is too far-fetched to be probable.

Reference. Capra (1945: 257).

occidentalis [synonym]

Phaon iridipennis occidentalis (Förster, 1906) [Orig. *Sapho* (*Phaon*) *iridipennis occidentalis* n. sbsp.]

Present status. Synonym of *Phaon iridipennis* (Burmeister, 1839).

Lat.*occidentalis –is –e* = western, westerly, west- {declinable adjective}

Förster described this taxon on specimens from Bipindi in Cameroon, collected in July-August 1900. The specimens were purchased from the Berlin natural history dealer Franz Hermann Rolle (1864-1929). The obvious collector was Georg August Zenker (1855-1922). The name obviously refers to the western location of the new subspecies as compared with the distribution of '*fuliginosa* De Selys', a taxon which Förster recognized as a subspecies of *Sapho* (*Phaon*) *iridipennis*, incorrectly thinking that *fuliginosa* is restricted to Madagascar ["Heimat: Nur Madagascar."]. Förster's generic combination (*Phaon* as subgenus of *Sapho*) did not follow Selys' classification, where *Phaon* was its own genus and *Sapho* was a subgenus of the genus *Echo*.

Reference. Förster (1906a: 330).

occisa [species]

Hetaerina occisa Hagen in Selys, 1853 [Orig. *Hetærina occisa*, Hagen.]

Lat. *occisus –a –um* = stricken down; murdered, slaughtered, slain {declinable past participle}

Rambur had named a calopterygan species *cruentata* (= the bloodstained; see entry *cruentata*) due to blood red spots at the wing bases. When Hagen and Selys established the genus *Hetaerina* (1853: 27, 30), into which they classified Rambur's taxon, they each chose some species names pertaining to that semantic field which one might call 'bloody' (cf. entry *capitalis*). One of these epithets was *occisa*. In the 1854 description of the ♂ of *occisa* it reads:"Tache basale des ailes rouge sanguin uniforme. Aux supérieures elle dépasse un peu le quadrilatère… Aux inférieures elle s'arrête précisément au bout du quadrilatère." Selys' French name was 'Hétérine occise'.

Reference. Selys Longchamps (1853: 44); Selys Longchamps & Hagen (1854: 143).

occitanica [synonym]

Calopteryx virgo occitanica Walker, 1853 [Orig. *Calopteryx virgo* Var. *occitanica*.]

Present status. Senior synonym of *Calopteryx virgo meridionalis* Selys, 1873.

Lat. *occitanicus –a –um* = pertaining to Occitania {declinable adjective}

Walker's (1853) catalogue was largely based on Selys' Synopsis des Caloptérygines (1853). In his treatment of *Calopteryx virgo*, Walker gave the formal scientific name *occitanica* for Selys' 'Race méridionale' and gave "South-west of Europe" as its range. Occitania has, since the Middle Ages, referred to a linguistic and cultural region encompassing roughly the southern third of modern France, but which never formed a political entity.

Later this name was forgotten, and the name *meridionalis* Selys, 1873 came into common use; for details see Hämäläinen (1997). However, an even older available name by Risso (1826) exists for this subspecies; see entry *nicaeensis*.

Reference. Walker (1853: 597).

oeneus (synonym)

Agrion oeneus Selys, 1831 [Orig. *Agrio œneus* (mihi), l'Ulrique (Geoff.).]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758).

Gr. Οἰνεύς [Oineus] (from mythology) = king of Pleuron and Calydon in Aetolia, father of Meleager {noun in apposition}

This name from Greek mythology was one of the four new names (*cyaneus*, *cellaris*, *oeneus* and *virescens*) which the 17-year-old Edmond de Selys Longchamps gave for the Belgian *Calopteryx* species, in this case for *C. virgo* female: "Ailes d'un jaune roussâtre; une petite tache blanche à chacune; corps d'un vert bronzé." Reference to Geoffrey's (1762) name l'Ulrique reveals that Selys was not aware of Fourcroy's (1785: 344) work where this name was listed to refer to *C. virgo*.

Reference. Selys Longchamps (1831: 58).

okinawana [synonym]

Calopteryx okinawana Matsumura, 1931 [Orig. *Calopteryx okinawana* Mats.]

Present status. Synonym of *Matrona japonica* Förster, 1897.

Lat. *Okinawanus –a –um* = of Okinawa, belonging to Okinawa {declinable adjective}

A toponym referring to the type locality of the species, which was described from specimens of both sexes. The author wrote (translated): "This is distributed in Okinawa, and not uncommon. Distribution: Okinawa. Remarks: in the past, this has been identified as *Calopteryx japonica*."

Reference. Matsumura (1931: 1454).

opaca [synonym]

Calopteryx opaca Say, 1840 [Orig. *Calepteryx opaca*]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

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

The name is due to the dark wings of the male specimen from Massachusetts: "wings subopaque, blackish-blue, with a tinge of brown, destitute of any costal spot."

Reference. Say (1840: 32).

oreades [species]

Matrona oreades Hämäläinen, Yu & Zhang, 2011 [Orig. *Matrona oreades* Hämäläinen, Yu & Zhang, spec. nov.]

The published etymology of this Chinese species reads: "The specific epithet, *oreades*, is the Latinised form of ορειαδεζ, the mountain nymphs of ancient Greek mythology. A noun in apposition." This name is grammatically incorrect, as it is based on the Greek Ὀρειάδες [Oreiades], which as a nominative plural would not be suitable for a species name. One would have preferred the Latinised singular form *oreas*, or in plural the genitive case *oreadum* (= of the mountain nymphs). The reason why the name was chosen is to be seen from p. 24: "*M. oreades* has been found in mountain streams at an altitude of ca 700–1400 m."

Reference. Hämäläinen & al. (2011: 21).

orichalcea [species]

Sapho orichalcea McLachlan, 1869 [Orig. *Sapho orichalcea*, n. sp.]

(Fig. 22).

Lat. *orichalcum* = brass, golden metal, yellow copper ore, mountain copper [loanword from Gr.]; *–eus –a –um* = made of …, ... coloured {declinable adjective}

The name points to the brass glossy wings in the males: “Alae ... in ♂ adulto nigrae, opacae, orichalceo-micantes … in ♂ immaturo fuliginoso-sub-hyalinae, orichalceo-micantes” [The wings ... in the adult ♂ black, opaque, glittering like brass … in the immature ♂ sooty sub-hyaline, glittering like brass].

Reference. McLachlan (1869: 27).

Fig. 22: *Sapho orichalcea* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

orientalis [subspecies]

Calopteryx splendens orientalis Selys, 1887 [Orig. *Calopteryx splendens* Harris, Race? *orientalis* Selys]

Lat. *orientalis –is –e* = of or belonging to the East, Eastern, Oriental {declinable adjective}

Selys described the taxon as ‘race ?’ of *Calopteryx splendens*. The range of this species was outlined (p. 38) as follows: “La patrie de cette espèce est fort étendue : si l’on doit considérer comme de simples races les différentes formes que j’y rapporte, elle habiterait à la fois toute l’Europe, l’Afrique méditerranéenne, le nord, le centre et l’ouest de l’Asie.” That means the localities at the eastern coast of the Caspian Sea “Krasznowodsk sur la côte orientale de la mer Caspienne, – Astrabad”, where his *orientalis* specimens had been collected, were certainly situated far to the east.

Reference. Selys Longchamps (1887: 40).

orohainani [subspecies]

Atrocalopteryx melli orohainani Guan, Han & Dumont, 2012 [Orig. *Atrocalopteryx melli orohainani* ssp. nov.]

Gr. ὄρος [oros] = mountain, hill; Hainan = island and province in southern China {noun in the genitive case}

A toponym referring to the type locality Diaoluoshan Mountain in Hainan Island (China), where the type material was collected on 6 August 2011. The given etymology reads: "The name is a composition of the Greek noun "oros" (= "mountain"), combined with the name of the island, in order to bring out the fact that the animal is restricted to the mountain zone of Hainan."

Reference. Guan & al. (2012: 40).

padana [synonym]

Calopteryx virgo padana Conci in Conci & Nielsen, 1956 [Orig. *Calopteryx virgo padana* Conci, n. subsp.]

Present status. Synonym of *Calopteryx* v. *virgo* (Linnaeus, 1758).

Lat. *Padanus –a –um* = of or on the Po {declinable adjective}

A toponym. The type locality: "Italia, Trentino, Loppio, Rio Cameras" is located in the Po Valley (Padan Plain). "Geonemia. – Italia settentrionale, versante padano, abbastanza comune" [Geonemics. - Northern Italy, Po Valley side, fairly common].

Reference. Conci & Niesen (1956: 56).

papavarina [synonym]

Hetaerina papavarina Fraser, 1946 [Orig. *Hetaerina papavarina* sp. n.]

Present status. Synonym of *Hetaerina laesa* Hagen in Selys, 1853.

Lat. *papaver* = poppy; *–inus –a –um* = pertaining to (also with regard to colour) {declinable adjective}

The name points to the poppy-coloured wing markings in male: "Wings hyaline, apex of hind-wing only with a strongly marked triangular poppy-coloured apical spot: fore-wing with a similarly coloured basal marking … Hind-wing with … the space between these two brown stripes poppy red to as far as level of arculus."

Reference. Fraser (1946: 33).

papilionacea [synonym]

Calopteryx papilionacea Rambur, 1842 [Orig. *Calopteryx papilionacea*, mihi]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

Lat. *papilionaceus –a –um* = butterfly like {declinable adjective}

The butterfly-like appearance of this colourful winged species must have evoked this name. Rambur compares this North American species with *C. virgo*: "Ayant la plus grande ressemblance avec la *Virgo*." However, in his account of '*Calopteryx maculata*, Beauvois' Rambur (1842: 222) correctly concluded that *maculata* appears to be very close to *papilionacea* and that the irregular arrangement of white spots in Beauvois' figure of *maculata* may be accidental.

Reference. Rambur (1842: 222).

papyreti [synonym]

Calopteryx papyreti Selys in Selys & Hagen, 1854 [Orig. *Calopteryx papyreti*, Zeller MS]

Present status. Synonym of *Calopteryx haemorrhoidalis* (Vander Linden, 1825).

Lat. *papyretum* = papyrus thicket {noun in the genitive case}

In the 'Patrie' part of the account of *Calopteryx haemorrhoidalis*, Selys wrote: "M. Zeller a donné le nom de C. *papyreti* aux petits exemplaires de Sicile signalés plus haut, et qu'il a pris vers la fin d'avril sur les bords du fleuve Cyane, la seule localité òu croisse en Europe le Papyrus."

Obviously, the single descriptive expression 'small' referring to size, added with the other text content for 'Race de Syracuse et d' Algérie', is enough to make the name *papyreti* available, but with Selys as the author. The name proposed by Philipp Christoph Zeller (1808-1883) refers to the type locality Cyane River, which was the only place in Europe with papyrus (*Cyperus papyrus*) populations.

*Reference.*Selys Longchamps & Hagen (1854: 46).

paradiseearum [synonym]

Neurobasis australis paradisearum Förster, 1898 [Orig. *Neurobasis australis* De Sélys, Subrasse *paradisearum* n. str.]

Present status. Synonym of *Neurobasis australis* Selys, 1897.

late Lat. *paradisea* = bird of paradise (*–arum* gen. plur.) {noun in the genitive case}

The colourful hind wings of this New Guinean damselfly must have evoked Förster to use this name referring to birds-of-paradise, the colourful inhabitants of New Guinea and adjacent islands with spectacular variety of plumage in male birds. Förster's description includes: "Das Hauptmerkmal dieser Subrasse besteht in den deutlich kürzern und breitern Flügeln, sowie in der Färbung der Hinterflügel, welche veilchenblau sind, wie etwa bei der *N. Kaupi*, doch mit merklich grünen Glanze, besonders am Hinterrande."

Reference. Förster (1898: 296).

parthenias [synonym]

Calopteryx parthenias Burmeister, 1839 [Orig. *Calopteryx parthenias* Charp.]

Present status. Synonym of *Calopteryx s. splendens* (Harris, 1780).

Lat. *Parthenias* = nickname of the Latin poet Virgil (see below) {noun in apposition}

Burmeister (1839) copied the species name *parthenias* from Charpentier's manuscript, to which he had access. However, since Charpentier's (1840) publication, including the description of *Agrion parthenias*, was published later, Burmeister became the correct author of this species name, similarly as in case of many other odonate names from Charpentier's manuscript.

Schmidt (2006: 426) pointed out some differences in Burmeister's and Charpentier's descriptions of *parthenias* and wrote (freely translated): "Burmeister (1839) had (unlike Charpentier 1840) included only characters of *splendens splendens*, not those of *splendens ancilla*; therefore [the name] *parthenias* Charpentier, 1840 as junior homonym of *parthenias* Burmeister, 1839, is not available to be used as a subspecies name. Therefore, *splendens parthe-*

nias Charpentier, 1840 cannot replace the younger synonym *ancilla* Selys (sic), 1853." However, Schmidt clearly misinterpreted the concept of homonymy. Charpentier's '*parthenias*' can not be [a secondary] homonym of Burmeister's '*parthenias*', since both names were established for the same nominal taxon, not for a different nominal taxon (see the Code: Articles 57.2 and 57.3.1.). This is evident from two facts: (1) each author referred to the other's work; Burmeister credits Charpentier as the author of the name *parthenias*, and Charpentier refers to Burmeister's publication; (2) both authors refer to the same illustrations by Rösel (1749: Aquat. Tab. 9) as an example of the taxon *parthenias*.

Schmidt correctly points out that Charpentier's description of both sexes and the coloured illustration of male (pl. 33) fit well to the later described subspecies *ancilla* Hagen, 1853. Charpentier obviously based his description on specimens from Silesia, although he did not specify the type locality, but wrote: "Habitat in Europa ad fluvios rivulosve" [It lives in Europe at rivers and small brooks]. On the other hand, unlike Schmidt claims, Burmeister's very brief description does not allow for a definite conclusion that it fits only to *splendens splendens*; the male wing was characterized merely as follows: "alis fascia media fusco-coerulea" [the wings with dark blue median band]. The provenance of Burmeister's *parthenias* reads (translated): "In most areas of Germany." However, these considerations, based on the subsequent better knowledge of the geographical variation of *C. splendens*, are irrelevant in judging the possibly homonymy.

For the interpretation of the name we are lucky, that Charpentier, who introduced all his species names in upper case letters, when mentioning the publication by Burmeister used lower case letters except for the initial one (whereas Burmeister had not capitalised the name), intending it to be a proper name. So we do not need to speculate why he called this taxon with the Greek term for a son of an unmarried female who could not easily claim the full citizenship. Also the river Παρθενίας [Partheni̱as], a tributary of the river Alpheios near Olympia in Greece, is not likely to have been chosen for labelling the taxon because it is not widely known. Therefore, this is the most probable explanation of the name: the Roman poet Virgil (70-19 BC) in his youth after having failed as an orator at Rome joined the circle around the epicurean philosopher Siron at Naples to study, where a relaxed tone prevailed. And there he was given the nickname Parthenias, which cannot have been intended in the disparaging sense that the Greek term actually had; for Vergil was a Roman citizen. The grammarian Servius (5th century AD) explained the nickname by the fact that Virgil was extremely shy (the name intended to be an allusion to Greek parthenos = maiden, virgin); rather, in this circle it might have been an interpretation of the gentile name Vergilius, which they thought to be associated with *virgo* (= maiden, virgin) translated into Greek. Be that as it may: Certainly Charpentier, who was well acquainted with ancient literary history, had intended the name as one connected to *virgo*, the oldest zygopteran taxon established by Linnaeus.

Reference. Burmeister (1839: 828); Charpentier (1840: 137).

pa̱vo [synonym]

Neurobasis kaupi pavo Lieftinck, 1955 [Orig. *Neurobasis kaupi pavo* subsp. n.]

Present status. Synonym of *Neurobasis kaupi* Brauer, 1867.

Lat. *pavo* = peacock {noun in apposition}

The name undoubtedly refers to the colourful appearance of this damselfly (from south and central part of Sulawesi), the male of which has broad and paddle-like hind wings with brilliant metallic-blue coloring covering about two thirds of the wing surface.

Reference. Lieftinck (1955: 158).

perornata [species]

Echo perornata Yu & Hämäläinen, 2012 [Orig. *Echo perornata* Yu & Hämäläinen, spec. nov.] (Fig. 23).

Lat. *perornatus –a –um* = highly ornate {declinable adjective}

The name points to the wing colour pattern of this species. The given etymology reads: "The Latin adjective *perornata* means 'very ornate' and refers to the coloured wing pattern, which is the finest in the genus."

Besides the umber-coloured wing tips, both sexes of this species (from the subtropical, south-eastern corner of Tibet) have also a narrow, umber band on each wing just distal to nodus.

Reference. Yu & Hämäläinen (2012: 40).

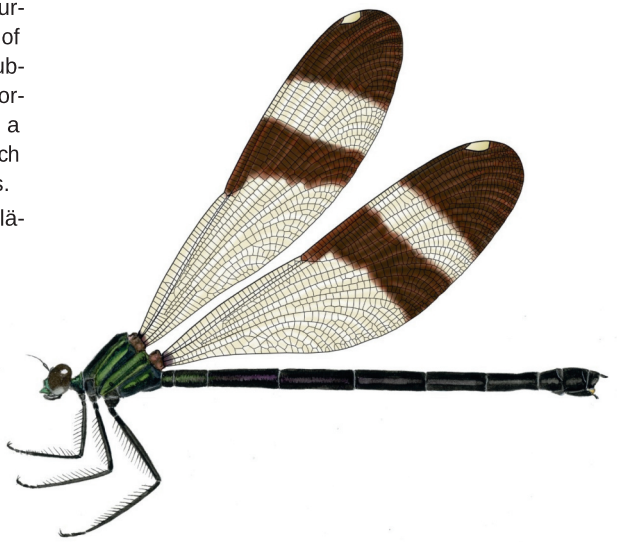

Fig. 23: *Echo perornata* ♀. Artwork by A.G. Orr (2020). (© A.G. Orr).

perplex [synonym]

Hetaerina perplex Selys, 1869 [Orig. *Hetaerina perplex*, De Selys]

Present status. Synonym of *Hetaerina simplex* Selys, 1853.

Lat. *perplexus –a –um* = interwoven, entangled, involved, intricate (referring to *H. simplex* Selys, 1853) {adjective}

The name, which certainly is shortened without regard to linguistic correctness to match *simplex*, alludes to Selys' uncertainty of the taxonomic status of this damselfly. He doubted that it is probably a mere 'race' of *H. simplex*: "C'est probablement une race de la *simplex*, dont elle ne diffère que par la tache basale rouge des ailes plus étendues, et non échancrée aux inférieures."

Reference. Selys Longchamps (1869a: 655).

persica [synonym]

Calopteryx intermedia persica Bartenev, 1912 [Orig. *Calopteryx intermedia persica* subsp. n.]

Present status. Synonym of *Calopteryx splendens intermedia* Selys, 1887.

Lat. *Persicus –a –um* = Persian {declinable adjective}

A toponym referring to the type locality (translated from Russian) “Syrch, the mountain at Khabis near Kirman, Persia.” The type series (1 ♂, 1 ♀) was collected by Alexander von Keyserling and Theophil Bienert in April 1858.

Reference. Bartenev (1912a: 440).

pfeifferi [synonym]

Agrion splendens pfeifferi Götz, 1923 [Orig. *Agrion splendens pfeifferi* nov. ssp.]

Present status. Synonym of *Calopteryx splendens xanthostoma* (Charpentier, 1825).

The author did not provide any etymology or explanation for this eponym, but the name was obviously dedicated to Ernst Pfeiffer (1893-1955), who like the author Dr Wilhelm H. J. Götz, was a naturalist residing in Munich. The single male specimen was collected by M. Gorb in Faro, Portugal in 1884. {noun in the genitive case}

Reference. Götz (1923: 37).

Notes on the eponymee. Ernst Pfeiffer (1893-1955), a German publisher and bookseller from Munich, was a keen lepidopterist. From 1920-1939 and 1951-1953 he collected butterflies during numerous trips to Austria, Hungary, the Balkan Peninsula, Turkey and Persia. His huge Lepidoptera collection, including material from numerous other collectors, eventually grew to fill 30 cabinets with 1000 drawers. It was deposited at the Zoologische Staatssammlung in Munich. Pfeiffer published several papers on Palaearctic butterflies. These include the description of the lycaenid *Neolysandra ellisoni* (Pfeiffer, 1931) and a number of butterfly subspecies. For his obituary, see Daniel & Forster (1955).

phryne [subspecies]

Mnesarete pudica phryne Costa 1986 [Orig. *Mnesarete pudica phryne* subsp. n.]

Gr. Φρύνη [Phrynē] = famous Greek courtesan (4th cent. BC); former name *Mnesarete* {noun in apposition}

A name from the ancient Greece. The author wrote: “de Phryne, es (fem.) cortezã grega, do seculo IV a.C., de grande beleza” [after Phryne, –es (female) Greek courtesan, 4th century BC, of great beauty]. The Phryne to which the author refers, was born at Thespiae named Mnesarete (gr. ≈ remembering virtue, see entry *Mnesarete*); later she moved to Athens where she became a courtesan famous for her prettiness. There is a tradition that Praxiteles used her as model for the famous ‘Aphrodite of Knidos’. Phryne (= toad) was said to have been named due to her yellowish complexion. By her profession she became rich. An anecdote says that she offered the Thebans to finance the rebuilding of the city walls previously destroyed by Alexander the Great if a plaque was erected showing her generous donation, but this offer was refused. There was a capital charge against her (which one is not known with certainty) from which she was defended by the orator Hypereides. There are several traditions as to what happened. One is that Hypereides, when she was in danger of being convicted, un-

covered her breasts, whereupon the jury decided such a divinely beautiful woman could not be an evildoer. Both the genus and subspecies name refer to the same courtesan.

Reference. Costa (1986: 11).

pieli [synonym]

Mnais pieli Navás, 1936 [Orig. *Mnais Pieli* sp. nov.]

Present status. Synonym of *Mnais tenuis* Oguma, 1913.

An eponym named after Octave Piel (1876-1945), who collected the type specimen (♂) in 'Kuling' (Jiangxi, China) on 6 July 1935. Navás wrote: "En son hommage je l'appelle *Pieli*." {noun in the genitive case}

Reference. Navás (1936: 42).

Notes on the eponymee. Alexandre Octave Piel Melcion d'Arc (1876-1945), better known as Father Octave Piel, was a French Jesuit priest resident in Shanghai, China. He was a keen insect collector, especially interested in Hymenoptera. While visiting the United States in 1929, he helped to identify Chinese bees and *Polistes* wasps in the collection of the US National Museum. From 1935 to his death, he was director of the 'Musée Heude', a natural history museum (that time part of the Aurora University) in Shanghai, which was established by the French Jesuit priest Pierre Marie Heude (1836-1902) in 1872. During Piel's directorship the museum's insect collection expanded greatly.

pilula [species]

Hetaerina pilula Calvert, 1901 [Orig. *Hetærina pilula*, sp. n.]

Lat. *pilula* = a little ball, globule {noun in apposition}

Calvert wrote: "The specific name proposed has reference to the shape of the enlarged tip of the inferior appendages." The description of male includes: "Inferior appendages half as long as the superiors, reaching to a level between the two teeth thereof; each tapers in the basal two-thirds, but is distinctly enlarged and thickened in the *apica*l third, whether viewed from above or in profile."

Reference. Calvert (1901: 33).

proxima [species]

Hetaerina proxima Selys, 1853 [Orig. *Hetærina proxima*, De Selys,]

Lat. *proximus –a –um* = the nearest, next {declinable adjective}

The species name is due to the resemblance of *H. proxima* with *H. carnifex*, a species which was described in the previous pages. This is revealed in Selys' (1854) description of mature male of *proxima*: "Ressemble à s'y méprendre aux petits exemplaires de la *carnifex*, tant sous le rapport des dimensions que de la coloration, avec les ailes un peu étroites comme chez la race *fulgens*, quoique le corps et les pieds soient un peu plus longs." Selys' French name was 'Hétérine voisine'.

Reference. Selys Longchamps (1853: 38); Selys Longchamps & Hagen (1854: 125).

pruinosa [species]

Mnais pruinosa Selys, 1853 [Orig. *Mnais pruinosa*, De Selys; Selys' classification: Genre

Echo, De Selys; sous-genre *Mnais*, De Selys]

Lat. *pruinosus –a –um* = full of hoar-frost, frosty, rimy {declinable adjective}

The species name alludes to the whitish-blue pruinosity on the mesepisterna of synthorax and on dorsal side of abdomen of mature male: “Thorax robuste, d’un vert bronzé, cuivré sur les còtés. Le devant, les attaches des ailes et une partie du dessous blanchâtre pulvérulent … Abdomen un peu épais, vert bronzé cuivreux, presque complètement saupoudré de blanchâtre en dessus, avec les articulations plus foncées; le dessous noirâtre.” Selys’ French name was ’Mnaïs pruineuse’.

Reference. Selys Longchamps (1853: 20); Selys Longchamps & Hagen (1854: 65).

pruinosa [species]

Mnesarete pruinosa (Hagen in Selys, 1853) [Orig. *Laïs pruinosa*, Hagen.]

Lat. *pruinosus –a –um* = full of hoar-frost, frosty, rimy {declinable adjective}

The name refers to distinct pruinosity in some body parts of mature male. Garrison (2006: 38) characterizes this species as “a dark blue gray species.” However, Hagen’s (1853) brief, original description includes only one detail referring to pruinosity: “♂ … intérieurs des fémurs brun ou pruineux.” The more detailed description (1854) of male includes a few other details: “Tète … chez les plus adultes la moitié antérieure du front est couverte de poussière bleuâtre) … Thorax … Espace interalaire et calles axilaires pruineux chez les adultes … Pieds … le dessous des fémurs pruineux chez les adultes, brun chez les jeunes.” Selys French name was ‘Laïs pruineuse’.

Reference. Selys Longchamps (1853: 28); Selys Longchamps & Hagen (1854: 93).

pseudamericana [synonym]

Hetaerina pseudamericana Walsh, 1864 [Orig. *Hetærina pseudamericana* n. sp.]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798).

Gr. ψευδ(ο)– [pseud(o)–] = false, pretended, sham + Lat. *americanus –a –um* = American {declinable adjective}

This is one of the five new *Hetaerina* taxa, which Walsh named from the United States; three of them are presently ranked as synonyms of *H. americana* and two of *H. titia*. *H. pseudamericana* was described in great detail from 3 ♂♂ and 3 ♀♀ female specimens, most of them being collected by the author at Rock River (near Rock Island) in Illinois. As usual in nomenclature, the element pseud– is chosen to show, that a taxon might easily be mistaken for another one. Several differentiating characters, mainly in minor details in colour pattern, were presented to distinguish the species from *H. americana*, which was stated also to occur in the same area.

Reference. Walsh (1864: 223).

pseudosyriaca [synonym; unavailable name]

Calopteryx splendens pseudosyriaca Buchholtz, 1955 [Orig. *Calopteryx splendens pseudosyriaca*]

Present status. Synonym of *Calopteryx splendens intermedia* Selys, 1887.

Gr. ψευδο– [pseudo–] = false, pretended, sham + Συριακός [Syriakos] = Syrian, of/con-

nected with Syria, found in Syria {declinable adjective}

The taxon *pseudosyriaca* was confusingly introduced in a paper, where Christiane Buchholtz presented results of her ethological observations on some members of the *Calopteryx splendens*-group, which she had made during her expedition to Turkey, Syria and Lebanon from 3 June to 12 August 1953. Based on information given in Schmidt (1954a: 67), she was accompanied by Erich Schmidt, at least during part of her stay (Buchholtz herself does not mention Schmidt's participation in the field work). In her paper, the concepts 'subspecies' (Unterart) and 'form' (Form) are used in turn. In the introductory text (p. 364) '*C. spl. pseudosyriaca* E. Schmidt' was presented as one of the six subspecies recorded in her study area. In the table 1 and in the legend of Fig. 2, *pseudosyriaca* and the other five taxa were characterised and illustrated as 'forms' of *C. splendens*. Then, in the conclusions (p. 383), the author wrote that *pseudosyriaca* cannot be ranked as a subspecies, but it is the same as *C. splendens cartvelica* Bartenev, 1930. The English summary (p. 386) reads: "The form *pseudosyriaca* must be abolished." Schneider (1985: 34-36), who strongly criticized Buchholtz' publication, presented *pseudosyriaca* as a hybrid between *C. hyalina* and *C. intermedia*. Schneider supposed that *pseudosyriaca* may have been a mere 'working name', used by Erich Schmidt, which was inadvertently published by Buchholtz, who lacked proper knowledge of taxonomic and nomenclatorial practices. Schmidt (1954a: 84-85), who also had seen individuals of this form during his joint stay with Buchholtz, wrote (without using the name *pseudosyriaca*): "Noch komplizierter sind die Populationen von Antakya und besonders von Dschisr ech Schughr am Orontes zusammengesetzt, wo sogar die meisten ♂♂ einen sehr unscharf begrenzten dunklen Flügelspitzenfleck haben im Umfang ähnlich dem der *C. spl. syriaca*. Ein solches ♂ wurde auch am Nachr Hussän erbeutet. Die zuletzt genannte Form des ♂ wurde von uns bisher nirgends allein angetroffen, sondern immer zusammen mit dem, was wir jetzt *C. splendens cartvelica* nennen; sie dürfte auch Beziehungen zu *C. spl. hyalina* (Martin) haben." Therefore, the name *pseudosyriaca* must allude to the resemblance of wing characters with those of *syriaca*.

The name *pseudosyriaca* must be ranked as an unavailable name, since it was presented as a synonym. According to Article 11.5. of the Code, the name must be used as valid when proposed.

Reference. Buchholtz (1955: 366).

pudica [species]

Mnesarete pudica (Hagen in Selys, 1853) [Orig. *Laïs pudica*, Hagen.]

Lat. *pudicus –a –um* = bashful, coy, modest, chaste, pure; virtuous {declinable adjective}

The reddish colour of the male wings – "Ailes élargies (à peu près dans la forme de celles de la *C. virgo*), d'un rouge sanguin" – has evoked this name, which refers to a blushing, bashful maiden. Selys French name was 'Laïs pudique'.

Reference. Selys Longchamps (1853: 29); Selys Longchamps & Hagen (1854: 95).

puella [species]

Sapho puella (Sjöstedt, 1917) [Orig. *Umma puella* n. sp.]

Lat. *puella* = a female child, girl, maiden, lass {noun in apposition}

The name obviously follows Linnaeus' (Sjöstedt's fellow country man) practice to give

feminine species names for damselflies (*virgo* and *puella*).

Reference. Sjöstedt (1917: 7).

purpurea [synonym]

Hetaerina purpurea Selys in Selys & Hagen, 1854 [Orig. *Hetærina purpurea*]

Present status. Synonym of *Hetaerina auripennis* (Burmeister, 1839).

Lat. *purpureus –a –um* = purple-coloured, purple, dark-red {declinable adjective}

In the species account of *Hetaerina auripennis*, Selys introduced a provisional name *purpurea*, should some larger specimens (3 ♂♂, 1 ♀) from Brazil, which he had studied, prove to represent a different race (or species). The name *purpurea* refers to the red colour at wing bases of the male. Selys wrote: "J'hésite à rapporter ici, comme race encore plus grande, trois mâles de la collection Latreille (Brésil) et une femelle de Bahia; les uns et les autres sans abdomen. Chez les mâles … La couleur rouge des ailes est peut-être altérée: aux inférieures elle dépasse à peine la postcostale, ce qui laisse au bord postérieur un espace hyalin plus grand que de coutume … Si c'était une espèce, ou pourrait la nommer *Hetærina purpurea*."

Reference. Selys Longchamps & Hagen (1854: 112).

purpurea [species]

Umma purpurea Pinhey, 1961 [*Umma purpurea* n. sp.]

Lat. *purpureus –a –um* = purple-coloured, purple, dark-red {declinable adjective}

The name refers to the purple colour in many parts of the male body of this very rare, "distinctive and beautiful" species from Cameroon. The brief description includes: "Face and head above deep purple … Prothorax metallic emerald, with purple lines edging the lobes and tumours. Synthorax purple on mesepisternum … pterostigma purplish black … Abdomen purple above, green laterally."

Reference. Pinhey (1961: 264).

rasoherinae [species]

Phaon rasoherinae Fraser, 1949 [Orig. *Phaon Rasoherinae* sp. nov.]

The species was described from 4 ♂♂ and 1 ♀ specimens from Madagascar: "Forêt de l'Ankarafantsika, 4. VIII. [19]47." The species name is an eponym dedicated to Queen Rasoherina (1814-1868), who was the ruler of Madagascar from 1863-1868, succeeding her husband King Radama II (1861-1863), who had lost power in a coup. In the same paper Fraser also named another new species (*Zygonyx ranavalonae*) after Queen Ranavalona I, mother of Radama, who ruled Madagascar from 1828-1861. No explanation was given for these dedications, which had been bestowed because of the cultural associations of the royal personages to the terra typica. {noun in the genitive case}

Reference. Fraser (1949: 32).

regina [species]

Ormenophlebia regina (Ris, 1918) [Orig. *Lais regina* n. sp.]

Lat. *regina* = queen {noun in apposition}

No explanation was given for the name of this large sized species described from 2 ♂♂ and 1 ♀ specimens from Bolivia (Coroico and Rio Songo), collected in 1913. However, the name was surely meant as a 'companion' for *Lais imperatrix* McLachlan, 1878 (= the empress), a large species, which was described from female specimens from Ecuador. Ris contrasted *imperatrix* with *regina* in the key to the females (p. 41) and discussed it also in the description.

Reference. Ris (1918a: 46).

rhopalon [species]

Mnesarete rhopalon Garrison, 2006 [Orig. *Mnesarete rhopalon* new species]

Gr. ῥόπαλον [rhopalon] = club, cudgel {noun in apposition}

The etymology reads: "*rhopalon* – Greek for club, in reference to the clublike paraproct."

The description of the inferior appendage of male includes: "Paraproct … distal process about 0.38 length of cercus, roundly curved mediodorsally ending in a well-developed club armed with small foliate plates and blunt spines."

Reference. Garrison (2006: 40).

risi [synonym]

Calopteryx orientalis risi Schmidt, 1954 [Orig. *Calopteryx orientalis Risi* n. subsp.]

Present status. Synonym of *Calopteryx splendens orientalis* Selys, 1887.

An eponym named after Friedrich Ris (1867-1931). {noun in the genitive case}

Schmidt did not give any direct explanation for his dedication, but in addition to his respect for this great odonatologist (whom Schmidt had already earlier honoured with two odonate names) this dedication had also another basis. Schmidt refers to Ris' (1918b: 268) publication, where Ris discussed the variability of various *Calopteryx* taxa and pointed out that *orientalis* specimens from 'Elbrus-Gebirge' have less extensive apical darkening than those from Astrabad. Schmidt's subspecies *risi* is similar to Ris' specimens from 'Elbrus-Gebirge'.

Reference. Schmidt (1954b: 242).

Notes on the eponymee. Dr Friedrich Ris (1867-1931) was a Swiss physician and entomologist specialising in Odonata. In 1890, he gained Dr. med. degree at the University of Zürich with a thesis on neurosurgery. From 1898 to his death, he was the Director of the Psychiatric Sanatorium in Rheinau (Canton of Zürich), the largest mental hospital in Switzerland. Ris spent all his free time on entomological studies. Most of his 126 publications were on Odonata. He was the last taxonomist who had mastered the odonate fauna of all continents. His major publication was the monograph of the libellulid dragonflies of the world: 'Libellulinen', which appeared in 9 fascicles (1909-1919) in the series 'Collections Zoologiques du Baron Edm. de Selys Longchamps Catalogue systématique et descriptif'. His other major papers include a treatment of the Odonata fauna of the American Cordillera (1918) and a monograph 'The Odonata or dragonflies of South Africa' (1921). His large Odonata collection (over 40,000 specimens) was deposited at Senckenberg Museum in Frankfurt am Main. Ris described nearly 300 new odonate species and named 28 new genera. His several obituaries include Uehlinger (1931; including bibliography), Calvert (1931) and Schneider-Orelli (1931). For detailed information on Ris and his odonatological legacy, see Fliedner (2021a).

rollinati [species]

Ormenophlebia rollinati (Martin, 1897) [Orig. *Lais Rollinati* nov. sp.]

An eponym dedicated to author's friend Raymond Rollinat (1859-1931): "Dédiée à mon ami Raymond Rollinat." Both Martin and Rollinat lived in Indre department, only 40 km apart. {noun in the genitive case}

Reference. Martin (1897: 592).

Notes on the eponymee. Pierre André Marie Raymond Rollinat (1859-1931) was a self-taught French vertebrate zoologist and herpetologist. Excluding his period of military service, he spent his whole life in Argenton-sur-Creuse, a commune in Indre department, central France. Rollinat concentrated mainly on studies of reptiles, amphibians and mammals of Central France, on which he wrote over 80 publications (beginning 1889), including the books 'Vertebrates sauvages du departement de l'Indre' (1894, with René Martin) and the posthumously published 'La vie des reptiles de la France centrale' (1934). Rollinat was a well-liked, very sociable citizen in his home town. He wrote detailed daily notes and took over 8000 photos documenting the community life and events around him. His house is now the town hall of Argenton-sur-Creuse. A special issue of the Bulletin de la Societe Herpetologique de France (Nr. 6; 1978) includes his biography (Rangde 1978), complete bibliography and other documents. For other information on him, see Anatole (1985).

rosea [species]

Hetaerina rosea Selys, 1853 [Orig. *Hetærina rosea*, De Selys]

Lat. *roseus –a –um* = rose-colored, rosy, ruddy {declinable adjective}

The species name points to the colour of the basal forewing spot in male: "Ailes hyalines, non salies comme chez la *caja*, mais les taches basales encore moins étendues; celle des supérieures est rose carmin." Selys' French name was 'Hétérine rose'.

Reference. Selys Longchamps (1853: 31); Selys Longchamps & Hagen (1854: 102).

rudis [species]

Hetaerina rudis Calvert, 1901 [*Hetaerina rudis*, sp. n.]

Lat. *rudis –is –e* = unwrought, unformed, rough, raw {declinable adjective}

Calvert wrote: "The specific name has reference to the superior appendages of the male." Obviously, Calvert was referring to the 'unformed' shape of the cercus (superior appendage), which lacks any specialized lobes. In *rudis*, the cercus is evenly curved, its outer and inner margins more or less parallel (which is unique for members of this genus). The medial margin of the cercus lacks any kind of medial projections or lobes (common to almost all others in this genus).

Reference. Calvert (1901: 40).

rupamnensis [synonym]

Hetaerina rupamnensis Walsh, 1864 [Orig. *Hetærina rupamnensis* n. sp.]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

Lat. *rupes* = rock, cliff + *amnis* = any broad and deep-flowing, rapid water; stream, torrent, river + *–ensis –is –e* = pertaining to {declinable adjective}

The name is a toponym, referring to the Rock River in Illinois. Walsh wrote: “Occurred on Rock River, Ill., whence the trivial name, from the middle of August to the middle of September.” In the introduction (p. 167) Walsh wrote: “The new species now described by me, were all found within four miles of Rock Island, Illinois, with the exception of *Hetaerina texana* received from Texas through Mr. Uhler.”

Reference. Walsh (1864: 230).

rupinsulensis [synonym]

Hetaerina rupinsulensis Walsh, 1862 [Orig. *Hetærina rupinsulensis*, n. sp.]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

Lat. *rupes* = rock, cliff + *insula* = island + *–ensis –is –e* = pertaining to {declinable adjective}

A toponym, referring to the Rock Island in Illinois, where the specimens were collected by the author. In connection with the description of *H. rupamnensis* (see above), Walsh (1864: 232) wrote: “*Rupinsulensis* Walsh, occurred on a small rivulet emptying into the Mississippi River three miles from the nearest point on Rock River.”

Reference. Walsh (1862: 383).

saltuum [species]

Ormenophlebia saltuum (Ris, 1918) [Orig. *Lais saltuum* n. sp.]

Lat. gen. pl. of *saltus* = forest, woodland, untilled mountain land, forest-pasture, woodland-pasture, thicket, jungle {noun in the genitive case}

The name alludes to the ‘forested area’, the expected habitat of this damselfly. The species was described on basis of 2 ♂♂ and 1 ♀ specimen from Pozuzo, Peru. Ris had purchased these specimens from the insect dealer Hermann Rolle (see entry *occidentalis*) in 1911. His introduction (p. 4) reads: “In mehreren Sendungen, 1910, 1911 und 1914 erhielt ich durch die Firma ‘Kosmos’ von Hermann Rolle in Berlin schöne Libellen mit der Bezeichnung Pozuzo, Süd-Peru. Der Ort ist nicht näher charakterisiert und der Sammler mir unbekannt. Es is zweifellos ein Waldgebiet [It is no doubt a forested area…] wie am Rio Negro der kolumbischen Ost-Kordillere und am Rio Songo in Bolivia, die Libellenfauna von durchaus entsprechenden Charakter.” Pozuzo is a village in Oxapampa Province on the eastern slopes of the Andes at an altitude of ca 740 m. Austrian and German immigrants established the village in 1859. It was among the few German colonies in the Amazon basis of Peru which survived and prospered.

Reference. Ris (1918a: 44).

samarcandica [species]

Calopteryx samarcandica Bartenev, 1912 [Orig. *Calopteryx samarcandica* sp. n.]

Lat. *samarcandicus –a –um* = pertaining to Samarkand (cf. *maracandica*) {declinable adjective}

The name is a toponym referring to the type locality of the species. The type material was presented as follows (translated from Russian, except the last 4 words written in English): “1 ♂ without head, Tokhta-Karachar, to the south of Samarkand, 3-7.vii.[18]96, Verigin [leg.] (Turkestan, southerly from Samarkand).” See also entry *maracandica*.

Reference. Bartenev (1912a: 439).

sanguinea [species]

Hetaerina sanguinea Selys, 1853 [Orig. *Hetærina sanguinea*, De Selys.]

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

This is one of the numerous *Hetaerina* species with names alluding to the blood-red spots at wing basis of male: “Ailes hyalines … le bout des supérieures sans taches, celui des inférieures avec une tache sanguine … Tache basale carmin des supérieures mal arrêtée.” Selys’ French name was ‘Hétérine sanguine’.

Reference. Selys Longchamps (1853: 31); Selys Longchamps & Hagen (1854: 100).

sanguinolenta [synonym]

Hetaerina sanguinolenta Hagen in Selys, 1853 [Orig. *Hetærina sanguinolenta*, Hagen.]

Present status. Synonym of *Hetaerina hebe* Selys, 1853.

Lat. *sanguinolentus –a –um* = full of blood, bloody / blood-red {declinable adjective}

Referring to the basal blood-red spots in male wings: “Tache basale sanguine des quatre ailes dépassant de quatre cellules au moins les quadrilatères (occupant les deux tiers environ avant le nodus) … Réseau rouge dans les taches ...” Selys’ French name was ‘Hétérine sanguinelente’.

Reference. Selys Longchamps (1853: 35); Selys Longchamps & Hagen (1854: 115).

saphirina [species]

Umma saphirina Förster, 1916 [Orig. *Umma saphirina* n. sp.]

Lat. *sapphirinus –a –um* = of sapphire, sapphirine (borrowed from Greek) {declinable adjective}

The bluish iridescence on wings, as well as the shining metallic blue or green body, must have evoked the name of this species from Uganda and Kenya: “Flügel hyalin, blau irisierend mit schwarzem Geäder … Körper glänzend metallblau und metallgrün wie bei *longistigma*. Während aber die Thoraxvorderseite bei *longistigma* nur längs dem Mittelkiel dunkler blau ist, dehnt sich bei unserer Art diese Färbung auf die ganze Vorderseite und auf das ganze Gesicht aus. Thoraxseiten heller, mehr grün. Unterseite im Alter weiss bereift. Abdomen wieder dunkler blau.”

Reference. Förster (1916: 23).

sceleraata [synonym]

Hetaerina scelerata Walsh, 1864 [Orig. *Hetærina scelerata* n. sp.]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798).

Lat. *sceleratus –a –um* = accused / criminal, wicked / lying under a ban / sinful, atrocious, heinous {declinable adjective}

Description of this species was published in the appendix of Walsh’s paper. While the manuscript was already with the printer, Walsh had received specimens of *Hetaerina americana* for comparison, and he concluded that the single ♂ specimen from Rock River (Illinois), which he had presented as ‘*H. americana* ? Fab.’ (p. 210) was not *americana*, but represented a new species, which he named *scelerata*. We believe that the species name, referring to a sinful behaviour or person, was a new version of the ‘bloody-theme’, like

in *carnifex*, pointing to the perpetrator of a crime that had caused blood to flow, like a murderer or a robber, who hurt his victims so that blood is spilled. It should be noted that Walsh was a recognized scholar of classical languages and literature, and author of some books on Aristophanes' comedies.

Reference. Walsh (1864: 267).

scintilla [synonym]

Mnesarete scintilla Rácenis, 1968 [Orig. *Mnesarete scintilla* sp. n.]

Present status. Synonym of *Mnesarete cupraea* (Selys, 1853).

Lat. *scintilla* = a spark {noun in apposition}

The author's explanation for the species name reads: "El nombre específico proviene del latin '*scintilla*', que significa chispa o centella" [The specific name comes from the Latin "*scintilla*", which means spark or sparkle]. This points to the sparkling metallic glitter or sheen on the body of the male of this species (the female was unknown). The description includes characterisations, such as: "con brillo metálico morado" [with purple metallic lustre] and "con un fuerte brillo metálico morado" [with strong purple metallic lustre].

Reference. Rácenis (1968: 167).

semiopaca [synonym]

Mnais semiopaca May, 1935 [Orig. *Mnais semiopaca* n. sp.]

Present status. Synonym of *Mnais gregoryi* Fraser, 1924.

Lat. *semi–* = half–; *opacus –a –um* = in the shade, shaded, shady {declinable adjective}

May compared the colour of wings in males of *Mnais semiopaca* and *M. gregoryi*. The characterisation of *semiopaca* wings include: "Aus gelblicher Flügelbasis breitet sich eine rötlich-graugelbe aber völlig hyaline Färbung aus, die 4-5 mm distal vom Nodus ziemlich scharf abschliesst. Von dieser Gränze an bis zum Apex eine weissliche, wachs-opake Trübung mit schwach rötlich-gelber Tönung. Keine Querbinde, wodurch die Teilung des Flügels in eine opake und eine hyaline Hälfte sofort in die Augen springt." In typical *gregoryi* the base of wings is hyaline followed by a distinct opaque (dark brown) band, the apex being similarly opaque white as in *semiopaca*. Instead of *gregoryi*'s conspicuous opaque band, in *semiopaca* the middle part of wing has only a peculiar nuance of somewhat pink-tinted greyish yellow ["eine eigentümliche Nuance von etwas rosa getönten Graugelb übergehend"] – the basis for the name *semiopaca*. Similarly as in all *Mnais* species, *M. gregoryi* has two wing colour forms in the male sex. Both the 'typical' *gregoryi* and *semiopaca* represent the male form with (rather variably) coloured wings, whereas *maclachlani* (see entry *maclachlani*) represents the hyaline winged male form of *M. gregoryi*.

Reference. May (1935a: 103).

sempronia [species]

Hetaerina sempronia Hagen in Selys, 1853 [Orig. *Hetærina sempronia*, Hagen]

(Fig. 24 on p. 135).

Lat. *Sempronia* = female from the 'gens Sempronia', an influential plebeian family in ancient Rome. {noun in apposition}

Fig. 24: *Hetaerina sempronia* ♂. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

As usual Hagen did not give any explanation, whom he had in mind when naming this species. Probably he was inspired by one of the female names from Roman antiquity which Drury had chosen for most of his odonate species, e.g. *Hetaerina titia* (see entry *titia*). There were several remarkable females named Sempronia in antiquity, but to someone not specifically trained in ancient history (like Hagen) the most probable candidate is the Sempronia who according to the Roman historian Sallustius was involved in the Catilinarian conspiracy. According to him she was "fortunate by her family and her looks, in addition by her husband and children; she was literate in Greek and Latin, she could dance and sing more elegantly than necessary for a decent woman", which qualities would also fit to a courtesan to which the genus name refers (see entry *Hetaerina*). Unfortunately, we do not know for certain to which Sempronia the brilliant description of Sallustius is dedicated. As he associates her with a Iunius Brutus she probably was the mother (or stepmother) of D. Iunius Brutus, who was among the assassins of Julius Caesar. Selys' French name was 'Hétérine Sempronie'.

Reference. Selys Longchamps (1853: 45); Selys Longchamps & Hagen (1854: 147).

septentrionalis [synonym]

Hetaerina septentrionalis Selys, 1853 [Orig. *Hetærina septentrionalis*, De Selys.]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

Lat. *septenrionalis –is –e* = northern {declinable adjective}

Selys described this species from a single male specimen from Georgia (United States): "Patrie. Un mâle, de la Géorgie, fait partie des collections du Músee britannique." The name refers to its provenance in North America. Selys wrote: "Je regrette que la diagnose que j'ai prise soit si courte; je ne doute pas, cependant, qu'elle ne forme une espèce distincte. Ce serait la seule espèce sans ptérostigma, que l'on trouverait aux États-Unis, et la seule à tache apicale rouge de l'Amérique septentrionale." Selys' French name was 'Hétérine septentrionale'.

Reference. Selys Longchamps (1853: 36); Selys Longchamps & Hagen (1854: 119).

shachrudica [synonym]

Calopteryx splendens shachrudica Bartenev, 1916 [Orig. *Calopteryx splendens* biot. *shachrudicus*, biot. nov.]

Present status. Synonym of *Calopteryx splendens orientalis* Selys, 1887.

Lat. *shachrudicus –a –um* = from the city of Shahrood in Semnan Province in Iran {declinable adjective}

A toponym named after the type locality. The taxon was described from a long series of specimens of both sexes collected in Shakhrud (= Shahrood) during May 1914 by Alexey Nikolaevich Kirichenko (1884-1971).

Reference. Bartenev (1916: 43).

simplex [species]

Hetaerina simplex Selys, 1853 [Orig. *Hetærina simplex*, De Selys.]

Lat. *simplex* = simple, single, plain, uncompounded, unmixed {adjective}

The name alludes to some 'simpler' characters of male *simplex*, as compared with its congeners (known at that time), such as the lack of pterostigmata and lack of apical wing spots: "Le mâle diffère de toutes les autres espèces sans ptérostigma par l'absence de tache apicale aux ailes. II est aussi remarquable par la tache basale peu étendue, par les lignes jaunes du thorax étroites et par la forme des appendices anals supérieurs." Selys' French name was 'Hétérine simple'.

Reference. Selys Longchamps (1853: 30); Selys Longchamps & Hagen (1854: 98).

smaragdalis [? synonym]

Hetaerina smaragdalis De Marmels, 1985 [Orig. *Hetaerina smaragdalis* sp. n.]

Present status. Possible synonym of *Hetaerina capitalis* Selys, 1873; see Garrison (1990: 202-205).

Lat. *smaragdus* = emerald [borrowed from Greek] + *–alis –is –e* = pertaining to {declinable adjective}

The name alludes to the emerald green or metallic green colour of some body parts of male and female. The description includes characterizations such as: (♂) "top of head … vivid metallic green … In all Mexican specimens the black thoracic markings, including those on mesepisterna, show exclusive green reflections … Clypeus bright metallic blue, green or violet … all males with bright green reflections on the top of the front"; (♀) "Prothorax dorsally black with green reflections … Pterothorax pale reddish brown to beige; dark parts of mesepisternum flashing emerald green, as well as the three lateral dark bands … All [paratype female] specimens have bright emerald green thoracic stripes, green reflections on the top of the front."

Reference. De Marmels (1985: 184).

smaragdina [synonym]

Calopteryx smaragdina Selys, 1853 [Orig. *Calopteryx smaragdina*, De Selys.]

Present status. Synonym of *Atrocalopteryx atrata* (Selys, 1853).

Latinised from Gr. σμαράγδινος –η –ον [smaragdinos] = of emerald, smaragdine, smaragdus-green {declinable adjective}

Selys' both descriptions (1853, 1854) of this species are very brief. The only reference to the base of the name *smaragdina* is the characterisation: "Le corps vert métallique foncé." The description was based on a single male specimen from "Inde (?). (Musée britannique.)". Selys compared the species with *Calopteryx atrata* and *C. grandaeva* and considered it to be close to *atrata*. He presumed that the specimen originated either from India or China. The exceptionally meagre descriptions of *smaragdina*, and the fact that the measurements were given only as approximates, suggest that Selys had prepared the description in a hurry during his visit in the British Museum in August 1851. Kimmins (1969: 306) wrote: "I have designated this specimen as lectotype rather than accept it as holotype, since Selys' measurements suggest that he had seen more than one example." However, it is clearly a holotype (originating from China), for which Selys gave only approximate measurements: "Longeur totale ♂ 55 à 60^{mm} environ." If he had more specimens available, the measurements would have been given as "♂ 55-60^{mm}", similarly as in other species accounts. Selys's French name was 'Caloptéryx éméraudine'.

Reference. Selys Longchamps (1853: 16); Selys Longchamps & Hagen (1854: 51).

smaragdina [species]

Mnesarete smaragdina (Selys, 1869) [Orig. *Lais smaragdina*, De Selys.]

Latinised from Gr. σμαράγδινος –η –ον [smaragdinos] = of emerald, smaragdine, smaragdus-green {declinable adjective}

The name refers to the metallic green body of the male: "Corps vert métallique à reflets bleus." Selys noted: "N.B. Très-voisine de l'*ænea* par les formes. Elle s'en sépare par la coloration franchement verte du corps, comme chez la *Calopteryx virgo*. L' *ænea*, au contraire, est encore plus foncée que la *Cal. haemorrhoidalis*."

Reference. Selys Longchamps (1869a: 652).

smaragdina [species]

Vestalaria smaragdina (Selys, 1879) [Orig. *Vestalis smaragdina*, De Selys.]

(Fig. 25 on p. 138).

Latinised from Gr. σμαράγδινος –η –ον [smaragdinos] = of emerald, smaragdine, smaragdus-green {declinable adjective}

The name points to the metallic green parts of body in male and female: "Vert métallique brillant en dessus, y compris la lèvre supérieure et le rhinarium"; (♂) "Le vert bronzé de l'abdomen plus foncé et moins brillant au bout."; (♀) "Le dessus du 9^{e} segment vert brillant."

Reference. Selys Longchamps (1879b: 362).

splendens [species]

Calopteryx splendens (Harris, 1780) [Orig. *Libellula splendens*]

(Fig 4 and 5 on p. 7).

Lat. *splendens* = shining {present participle}

The name alludes to the metallic green body of this damselfly. The bilingual (English and

French) description begins with a characterization referring to both sexes: “The head, thorax, and abdomen are of a most beautiful green.” In the brief description and in a plate of coloured illustrations, Harris not only erroneously reverses the sexes of *splendens*, but also combines two species (male of *C. virgo*) as representing *splendens*, see Lucas (1900: 221-222) and Hämäläinen (2008).

Reference. Harris (1780: 99, pl. XXX).

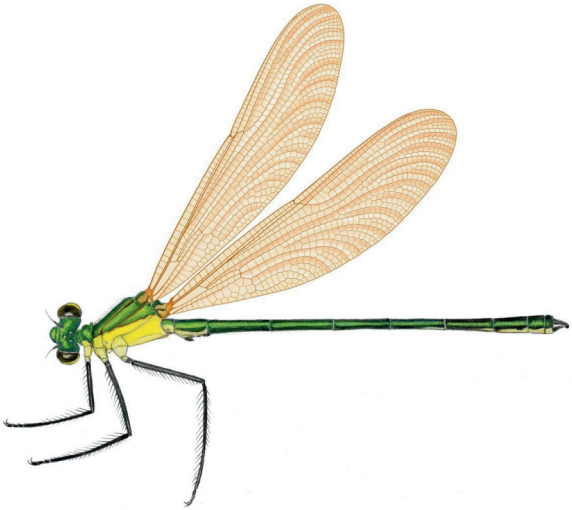

Fig. 25: *Vestalaria smaragdina* ♂. Artwork by A.G. Orr (2020). (© A.G. Orr).

splendeo [synonym]

Libellula splendeo Harris, 1780 [Orig. *Libellula splendeo*]

Present status. Synonym of *Calopteryx v. virgo* (Linnaeus, 1758).

Lat. *splendeo* = I shine, I am bright, gleam, glitter, glisten {to be treated as a noun in apposition}

As in the previous species, the name refers to the metallic green body: “The head, thorax, and abdomen are of a fine deep blue green.” Harris wrote: “These and the former [*splendens*], on account of their brilliancy and richness of colours, are vulgarly called King’s-fishers.” The common name surely refers to the resemblance of the striking blue colours of these damselflies and the Common kingfisher (*Alcedo atthis*), which share the same woodland stream habitats: “They frequent little rivulets, or ditches of running water, that are over-shaded with bushes by bank-sides.”

Reference. Harris (1780: 99, pl. XXX).

splendida [synonym]

Umma splendida Navás, 1922 [Orig. *Umma splendida* sp. nov.]

Present status. Synonym of *Umma mesostigma* (Selys, 1879).

Lat. *splendidus –a –um* = bright, shining, glittering, brilliant {declinable adjective}

Navás explained the species name as follows: “Tieno todo el aspecto exterior de *Agrion splendens* Harr, y por esto la he denominado *splendida*” [It has all the external appearance of *Agrion splendens* Harr, which is why I have named it *splendida*].

Reference. Navás (1922: 113).

strigata [synonym]

Mnais strigata Hagen in Selys, 1853 [Orig. *Mnais strigata*, Hagen; Selys’ classification: Genre *Echo*, De Selys; sous-genre *Mnais*, De Selys]

Present status. Synonym of *Mnais pruinosa* Selys, 1853.

Lat. *strigatus –a –um* = divided into stripes, striped {declinable adjective}

The name points to the two yellow stripes on the sides of pterothorax: “Thorax… vert bronzé; les sutures un peu noirâtres; les côtés avec deux raies jaune foncé terne; la 1re partant des seconds pieds, se prolongeant obliquement sur la 2e suture latérale, et finissant avant l’origine des ailes inférieures ; la 2e au bord postérieur latéral, épaisse, arquée en croissant, à pointes tournées en bas; une tache de même couleur à la base des trochanters, une transverse à la poitrine et quelques autres sur l'espace interalaire.” Selys’ French name was ‘Mnais striée’.

Reference. Selys Longchamps (1853: 20); Selys Longchamps & Hagen (1854: 64).

sublimbata [synonym]

Hetaerina occisa sublimbata Selys, 1873 [Orig. *Hetærina occisa*, variété *sublimbata*]

Present status. Synonym of *Hetaerina occisa* Hagen in Selys, 1853.

Lat. prefix *sub–* = somewhat …, less ... + *limbatus –a –um* = edged, bordered {declinable adjective}

This taxon was described on basis of two (possibly juvenile) male and one female specimens from Panama. The name refers to a wing character in male. The wing tips lack a round brownish spot: “Leur ptérostigma est long comme celui de la variété *macropus*, mais ils en diffèrent ainsi que des autres formes par la coloration du bout des ailes, qui ne portent pas de gouttelette brune arrondie, mais un léger limbe terminal brun rappelant, mais d’une manière moins marquée, ce qui se voit chez l’*Het. moribunda*.”

Reference. Selys Longchamps (1873b: 613).

submontana [species]

Vestalis submontana Fraser, 1934 [Orig. *Vestalis apicalis submontana*, nom. nov. (replacement name of *Vestalis apicalis amæna* Fraser, 1929].

Lat. *sub* = under, below, beneath, underneath + *montanus –a –um* = of mountains, belonging to mountains {declinable adjective}

The name alludes to the montane habitats of this South Indian species, which Fraser reported to occur in Nilgiris and Eastern Ghats. According to Kimmins (1966: 215), the holotype male was collected by F.C. Fraser in ‘Nilgiris, Gudalur’ on 20 September 1922. The altitude of the type locality is 3000 ft (ca 915 m).

Reference. Fraser (1934: 130); cf. Fraser (1929: 584).

subpicta [species]

Neurobasis subpicta Hämäläinen, 1990 [Orig. *Neurobasis luzoniensis subpicta* ssp. nov.]

Lat. prefix *sub–* = somewhat …, less ... + *pictus –a –um* = painted, coloured, variegated {declinable adjective}

This taxon from Negros (the Philippines) was originally described as a subspecies of *N. luzoniensis*. The name *subpicta* was given to point out the less extensive coverage of the metallic colour in male hind wing as compared with *luzoniensis*: “Differs distinctly from the nominate subspecies by the smaller extent of metallic colouring in the hind wing. Wing base considerably less coloured.”

Reference. Hämäläinen (1990: 279).

superba [synonym]

Sapho superba Sjöstedt, 1917 [Orig. *Sapho superba* n. sp.]

Present status. Synonym of *Sapho bicolor* Selys, 1853.

Lat. *superbus –a –um* = (in good sense:) excellent, distinguished; splendid, magnificent {declinable adjective}

Undoubtedly, the impressive and handsome appearance of this damselfly with broad hindwings [“Flügel, besonders die hinteren, ungewöhnlich breit”] have evoked its name. In the discussion Sjöstedt wrote: “Diese stattliche Art [impressive species] steht *Sapho bicolor* Selys nahe und hat dasselbe allgemeine Aussehen wie diese mit breiten, hellen, an der Spitze braun-schwarzen Flügeln. Die Flügel sind aber bei *superba* bedeutend breiter.”

Reference. Sjöstedt (1917: 10).

syriaca [subspecies]

Calopteryx splendens syriaca Rambur, 1842 [Orig. *Calopteryx syriaca*, Géné]

Lat. *Syriacus –a –um* = Syrian, of Syria [borrowed from Greek] {declinable adjective}

A toponym. Rambur described the species on basis of a male specimen from Mount Lebanon [“mont Liban”], which he had received from Carlo Giuseppe Gené (1800-1847). The other male specimen, from unknown provenance, described in the same account has proven to be *Calopteryx dimidiata* Burmeister, 1839.

Reference. Rambur (1842: 223).

taoi [species]

Matrona taoi Phan & Hämäläinen, 2011 [Orig. *Matrona taoi* Phan & Hämäläinen, spec. nov.]

An eponym named after Nguyen Thien Tao (b. 1982). {noun in the genitive case}

The etymology of this Vietnamese species reads: “The species is named after Mr Nguyen Thien Tao (Biology Department, Vietnam National Museum of Nature) as a token of gratitude for his friendly support of the first author’s field work and research activity.”

Reference. Phan & Hämäläinen (2011: 63).

Notes on the eponymee. Tao Thien Nguyen (b. 1982) is a Vietnamese herpetologist. In 2014, he obtained his Ph.D. at the Kyoto University (Japan) with a focus on the molecular and morphological systematics and distribution pattern of various rhacophorid species. Presently,

he is curator of herpetology at the Institute of Genome Research of the Vietnam Academy of Science and Technology (Hanoi). Since November 2019, he has also been an Associate Professor at the Graduate University of Science and Technology (Hanoi). His research interests are in the taxonomy, evolutionary origin, and diversification of amphibians and reptiles, as well the practical elucidation of the phylogeny of various amphibian and reptile groups. Tao has authored or co-authored ca 120 papers on the taxonomy, phylogeny, ecology and conservation of amphibians, lizards and snakes of Vietnam and adjacent countries. These papers include descriptions of 60 new amphibian or reptile species.

taurica [subspecies]

Calopteryx splendens taurica Selys, 1853 [Orig. Race de Crimée (C. *taurica*, Selys); à *Calopteryx splendens*, Harris]

Lat. *Taurĭcus –a –um* = of or belonging to the Taurians, Taurian, Tauric (*Tauri* = a people on the Crimea) {declinable adjective}

A toponym. Selys described this 'Race de Crimée' from a male and a female specimen from the Crimean Peninsula. In the more detailed description in 1854, the taxon name *taurica* was not included.

Reference. Selys Longchamps (1853: 13); Selys Longchamps & Hagen (1854: 39).

tenuis [species]

Mnais tenuis Oguma, 1913 [Orig. *Mnais tenuis* Oguma, sp. nov.]

Lat. *tenuis –is –e* = delicate, slim, slender, thin, fine {declinable adjective}

The name points to the slender appearance of this damselfly. In the English version of the paper (1913b) it reads: "This splendid and delicate species of *Mnais* was collected in Formosa by Prof. Matsumura in four male and two female specimens." In the description the abdomen of male was characterised "slender".

Reference. Oguma (1913a: 315); Oguma (1913b: 156).

texana [synonym]

Hetaerina texana Walsh, 1864 [Orig. *Hetærina texana* n. sp.]

Present status. Synonym of *Hetaerina americana* (Fabricius, 1798).

Lat. *Texanus –a –um* = belonging to Texas {declinable adjective}

A toponym. Walsh based his description on a male specimen from Texas: "One ♂, the head and some legs lost, received from Mr. Uhler and labelled by him as '*H. basalis* Hagen, Pecos River, Texas'." Walsh described also a female specimen, but was hesitant of its taxonomic status and provenance.

Reference. Walsh (1864: 227).

thailandica [species]

Caliphaea thailandica Asahina, 1976 [Orig. *Caliphaea thailandica* sp. nov.]

Lat. *Thailandicus –a –um* = from Thailand {declinable adjective}

A toponym. This species was described from 3 male specimens, which Syoziro Asahina had collected at Doi Suthep, in Chiang Mai, northern Thailand on 18 June 1965.

Reference. Asahina (1976b: 387).

thorȧcicus [synonym]

Mnais earnshawi thoracicus May, 1935 [Orig. *Mnais earnshawi thoracicus* n. subsp.]

Present status. Synonym of *Mnais mneme* Ris, 1916.

Latinised from Gr. θωρακικός –ή –όν [thōrakikos] = pertaining to the chest {declinable adjective}

The subspecies was described on the basis of a series of specimens (6 ♂♂, 5 ♀♀) from 'Schui Yuan San' (in Fujian, China). The name refers to the distinct shape of thorax of the taxa *thoracicus* and *earnshawi*, the former being more cone-shaped: "Die Form des Thorax von *M. earnshawi thoracicus* is bedeutend konischer als die des Thorax von *M. earnshawi earnshawi*. Die übertrieben stark konische Form des Thorax von *M. earnshawi thoracicus*, die beim Vergleich mit *M. earnshawi earnshawi* sofort in die Augen springt..."

Presently, *earnshawi* and *thoracicus* are known to represent two distinct *Mnais* species: *andersoni* and *mneme*, respectively.

Reference. May (1935a: 102).

tįtia [species]

Hetaerina titia (Drury, 1773) [Orig. *Libellula Titia*]

(Fig. 26).

Lat. *Titia* = female from the gens Titia (a not too influential family in ancient Rome) {noun in apposition}

Unfortunately, there is no outstanding woman called Titia known from ancient history, so most probably Drury, who named almost all his dragonfly taxa with female names from antiquity, took that name from literature of his time as he did with *eponina* (see Fliedner & Endersby 2019: 141) or *sophronia* (see Fliedner 2021b: 28). Anyway, this name refers to charming femininity, like many names in the nomenclature of Odonata, especially in damselflies.

Reference. Drury (1773: 83; pl. XLV, fig. 5; species name given in Index]

Fig. 26: *Hetaerina titia* ♂, scanned from plate 45 in Drury (1773), where it is called *Libellula Titia*.

tolteca [synonym]

Hetaerina tolteca Calvert, 1901 [Orig. *Hetærina tolteca*, sp. n.]

Present status. Synonyn of *Hetaerina capitalis* Selys, 1873.

Modern Lat. *Toltecus –a –um* = pertaining to the Toltecs (see below) {declinable adjective}

An eponym named after a people group. The species was described from a male specimen collected in Jalapa (Xalapa) in Veracruz State in Mexico. This is one of the several odonate species which Calvert named after the indigenous American people from whose region his specimens originated. Tolteca means in the indigenous Mexican Nahuatl language 'inhabitants of Tollán (now Tula)', an archaeological site in central Mexico, which flourished from ca 800-1000 AD. Their culture was widespread and the Aztecs referred to them as their forerunners. The god Quetzalcoatl who was also adopted by other peoples played a major role in their religion. Since the first records of the Toltecs only date back to the 16th century, there is no consensus among scholars as to whether a larger empire of this people ever existed.

Reference. Calvert (1901: 40).

transcaspica [synonym]

Calopteryx transcaspica Bartenev, 1912 [Orig. *Calopteryx transcaspica* sp. n.]

Present status. Synonym of *Calopteryx splendens orientalis* Selys, 1887.

Lat. prefix *trans–* (in geographic context) = situated beyond + Gr. Κασπιακός (!) [Kaspiakos] = pertaining to the Caspian Sea, Caspian (Latin: *Caspius –a –um* (!)) {declinable adjective}

A toponym. This species was described on basis of specimens from 'Transcaspian region', collected by Constantin Ahnger in 1895, and from Geok-Tepe (Gök-Tepe) [station] of the Transcaspian Railroad, near Askhabad, collected on 8 July 1896. From both locations (in the present Turkmenistan), 1 ♂ and 1 ♀ specimen were available.

Reference. Bartenev (1912a: 440).

trebbaui [species]

Iridictyon trebbaui Rácenis, 1968 [Orig. *Iridictyon trebbaui* sp. n.]

An eponym after Pedro Trebbau (1929-2021). {noun in the genitive case}

He collected the holotype male of this species at 'Uruyen-Auyantepui, Bolivar, Venezuela' on 27 April 1956. Rácenis wrote: "Dedicamos esta especie a nuestro amigo y compañero de la expedición universitaria a la región del Auyantepui, Dr Pedro Trebbau M., quien además logró coleccionar el ejemplar holotipo esta especie" [We dedicate this species to our friend and colleague from the university expedition to the Auyantepui region, Dr Pedro Trebbau M., who also managed to collect the holotype specimen of this species].

Reference. Rácenis (1968: 171).

Notes on the eponymee. Karl Peter Trebbau Millowitsch (1929-2021), better known as Pedro Trebbau, was a German born Venezuelan veterinarian and zoologist, who by hosting popular TV programs became a well-known advocate of conservation of fauna and flora in Venezuela. Trebbau grew up and studied in Germany but immigrated to Venezuela

in 1953, becoming a Venezuelan citizen in 1957. He was director of El Pinar Zoo in 1958-1974 and Caricuo Zoo (1974-1979), both in Caracas. He continued to improve the management of zoos, both locally and internationally, also after his directorship. His major publication is the book 'The Turtles of Venezuela' (1984), which he co-authored with Peter C.H. Pritchard. For more details on Trebbau's life and achievements, see http://pedrotrebbaumillowitsch.com/

tr̲i̲color [synonym]

Calopteryx tricolor Burmeister, 1839 [Orig. *Calopteryx tricolor*]

Present status. Synonym of *Hetaerina titia* (Drury, 1773).

Lat. *tri-color* = three-coloured {adjective}

Burmeister's brief description reads: "*C. tricolor*: nigro-aenea, alis anticis in basi sanguineis, posticis in basi et apice summo fuscis. Long. 1" 5¾'". Aus Pennsylvanien" [dark bronze, the forewings bloodred at the base, the hind wings at the base and the wingtip dark brown. Length 1" 5 ¾'". From Pensylvania"]. The name refers to the colour pattern of male wings, consisting of reddish, hyaline and dark opaque sections.

Reference. Burmeister (1839: 827).

tripart̲i̲ta [synonym]

Echo margarita tripartita Selys, 1879 [Orig. *Echo margarita*, De Selys; Race? *tripartita*, De Selys]

Present status. Synonym of *Echo margarita* Selys, 1853.

Lat. *tri-partitus–a –um* = divided or divisible into three parts, threefold, tripartite {declinable adjective}

The name points to the wing colour pattern. In *tripartita* the apical opaque section occupies about one third of the wing length, whereas in *margarita* this section is clearly narrower. "Semblambe au type, mais la partie brun opaque des ailes plus étendue, commençant à mi-chemin du nodus au ptérostigma (aux deus tiers environ chez le type), de sorte qu'elle occupe presque le tiers terminal des ailes."

Reference. Selys Longchamps (1879b: 356).

tr̲i̲stis [synonym]

Vestalis tristis Navás, 1932 [Orig. *Vestalis tristis* sp. nov.]

Present status. Synonym of *Atrocalopteryx atrata* (Selys, 1853).

Lat. *tristis –is –e* = sad, mournful {declinable adjective}

The name alludes to the dark appearance of the species, especially to the throughout blackish wings of male: "Alae reticulatione densa, fusco-nigra, venulis fusco limbatis, limbis ipsis plerumque contiguis, totam alam fuscam reddentibus" [Wings with a dense, dark brown reticulation, small brown edged veins, the edges themselves generally contiguous, which make the whole wing dark brown]. Navás stated: "Similis *luctuosa*e. Major", comparing the species with *Vestalis luctuosa* (Burmeister, 1839).

Reference. Navás (1932: 8).

tschaldirica [subspecies]

Calopteryx splendens tschaldirica Bartenev, 1909 [Orig. *Calopteryx splendens* var. *tschaldirica* var. n.]

For Lat. *Tschaldiricus –a –um* see below {declinable adjective}

A toponym referring to Tschildir lake (Lake Çıldır, in Turkish: Çıldır Gölü), which is located in Turkey, near the Georgian border. The subspecies was described on the basis of a series of specimens, collected at the Kara-Su River, north from Lake Çıldır at m. Zurzune, on 24 June 1907 (15 ♂♂, 8 ♀♀), and at the Chaldyrka River near Grenaderskoe village, south from Lake Çıldır on 28 June 1907 (3 ♂♂).

Reference. Bartenev (1909: 70).

tuempeli [synonym]

Calopteryx splendens tuempeli Scholz, 1908 [Orig. *Calopteryx splendens* Harr. var. *Tümpeli* Scholz]

Present status. Synonym of *Calopteryx splendens ancilla* Hagen in Selys, 1853.

An eponym named after Rudolf Johannes Tümpel (1863-1938). {noun in the genitive case}

The new 'variety' was stated to be rare and found in Iseritz, Pronzendorf and Krehlau (in Silesia). In his introductory text Scholz refers in some detail on information on dragonfly larvae which Tümpel gave in the appendix of the 1907 edition of his book 'Die Geradflügler Mitteleuropas' (1901).

Reference. Scholz (1908: 461).

Notes on the eponymee. Dr Rudolf Johannes Tümpel (1863-1938) was a German teacher and entomologist, born in Ernstroda near Gotha. He studied mathematics and natural sciences for 8 semesters in Erlangen, Berlin, Leipzig and Strasbourg, qualifying as a teacher. In 1893 he received his doctorate at Universität Erlangen with the thesis 'Naturwissenschaftliche Hypothesen im Schulunterricht'. During his teaching career, he taught at various types of 'Gymnasium' (high schools preparing students for university) in several locations. He finally settled in Hagen (Westphalia) in 1905, where in 1908 he was awarded the title of Professor. He retired in 1928. Tümpel is best known as the author of the handbook 'Die Geradflügler Mitteleuropas' (1901, with new editions in 1907 and 1922). The book treats 'Orthoptera' in a very old broad sense, including dragonflies, mayflies, stoneflies, etc. Ten of the 20 colour plates (by Walter Müller) illustrate a total of 54 odonate species. Tümpel also authored four brief papers on dragonflies. For more information on him and his book, see Schmidt (1957).

unicolor [synonym]

Calopteryx unicolor Bartenev, 1912 [Orig. *Calopteryx unicolor* sp. n.]

Present status. Synonym of *Calopteryx samarcandica* Bartenev, 1911.

Lat. *uni-color* = of one color, uniform in color {adjective}

The name obviously refers to the wing colour, which is described in detail for different specimens of the type series (6 ♂♂ and 8 ♀♀) from 'Novyy Margelan' (in Uzbekistan), collected by K.F. Maurer on 28 March 1898.

Reference. Bartenev (1912b: 91; in reprint p. 27).

uniformis [species]

Echo uniformis Selys, 1879 [Orig. *Echo* ?*uniformis*, De Selys.]

Lat. *uni-formis –is –e* = having only one shape, uniform {declinable adjective}

The name refers to the uniform hyaline wings in male of this Sumatran species: “Sa stature est celle de l’*E. margarita*, mais ses ailes sont uniformément hyalines un peu bleuâtres, irisées, ayant à peu près l’apparence de celles de la *Cleis cincta*.”

Reference. Selys Longchamps (1879b: 357).

velata [species]

Vestalaria velata (Ris, 1912) [Orig. *Vestalis smaragdina velata* nov. subsp.]

Lat. *velatus –a –um* = veiled, covered; enfolded {declinable adjective}

The name of this taxon, originally ranked as a subspecies of *smaragdina*, refers to the rather dark, golden smoky brown colour of wings in both sexes: ”die ganzen Flügel goldig rauchbraun, ziemlich dunkel, die Aderung teils gleichfarbig, teils etwas dunkler oder heller (je nach der Ausfärbung?), bei ♂ und ♀ ungefähr gleich.” This ‘veiled’ wing colour is in contrast to the largely hyaline wings of *smaragdina*.

Reference. Ris (1912: 56).

venusta [synonym]

Sapho venusta Karsch, 1889 [Orig. *Sapho venusta*, nov. spec.]

Present status. Synonym of *Sapho orichalcea* McLachlan, 1869.

Lat. *venustus –a –um* = charming, pleasing, winning, agreeable, beautiful (the word is derived from Venus, the Roman goddess of charm and love) {declinable adjective}

This species was described from a single female specimen, collected in an unknown location in Africa. The specimen was stated to be close to *S. orichalcea*. As in case of several other names given to calopterygids, such as *amabilis*, *amoena* and *vinnula*, the attractive appearance of this damselfly must have evoked its name *venusta*.

Reference. Karsch (1889: 233).

venusta [species]

Vestalaria venusta (Hämäläinen, 2004) [Orig. *Vestalis venusta* spec. nov.]

Lat. *venustus –a –um* = charming, pleasing, winning, agreeable, beautiful {declinable adjective}

The given etymology reads: “The feminine form of the Latin adjective *venustus*, which means “charming”, a proper expression to denote any *Vestalis* species; cf. the species names *amoena* and *amabilis* already used in this genus.”

Reference. Hämäläinen (2004: 383).

vesta [synonym]

Agrion vesta Charpentier, 1840 [Orig. *Agrion Vesta*]

Present status. Synonym of *Calopteryx* v. *virgo* (Linnaeus, 1758).

Lat. *Vesta* = Roman virgin goddess, guardian of the hearth, home and family {noun in apposition}

In ancient Rome the cult of Vesta was most important, as she was believed to protect not only the homes of the citizens, but also the whole state; her temple was in the midst of the town on the Forum Romanum; in its hearth a fire was constantly maintained, for it was considered a bad omen when it went out. Responsible for that were six virgin priestesses called Vestales (cf. entry *Vestalis*). It was thought that Rome and its empire would last as long as the cult of the goddess was carefully observed. Charpentier certainly wanted the name to be semantically close to *virgo*, as was his species name *parthenias* (see entry *parthenias*). *Agrion vesta* was stated to occur in Silesia and elsewhere in Europe. It was synonymised with *C. virgo* by Selys Longchamps & Hagen (1850: 135), as representing teneral individuals of *virgo*.

Reference. Charpentier (1840: 136).

vinnula [species]

Vestalaria vinnula Hämäläinen, 2006 [Orig. *Vestalaria vinnula* spec. nov.]

Lat. *vinnulus–a –um* (see below) {declinable adjective}

The given etymology of this species from southern Vietnam reads: "*Vinnula*, the feminine form of the Latin adjective 'vinnulus', which means 'delightful'; cf. *venusta* (= 'charming')." It should be noted, however, that the rare adjective *vinnulus* is used in Latin only in reference to a pleasant voice or speech, so it is not really suitable to characterise a dragonfly.

Reference. Hämäläinen (2006: 87).

virens [synonym]

Vestalis virens Needham, 1930 [*Vestalis virens* sp. n.]

Present status. Synonym of *Vestalaria velata* (Ris, 1912).

Lat. *virens* = being green, being verdant {present participle}

The name refers to the green body of the species: "This is a long, brown winged, green bodied species with black legs. The face and top of head including the basal joints of antennae shining metallic green with bluish reflections. Thorax is green above … Abdomen metallic green, paler on the under side … The female in all respects similar to the male, except that ..."

Reference. Needham (1930: 199).

virescens [synonym]

Agrion virescens Selys, 1831 [Orig. *Agrio virescens* (mihi)]

Present status. Synonym of *Calopteryx s. splendens* (Harris, 1870).

Lat. *virescens* = growing green, becoming verdant {present participle}

The name refers to the greenish wings and body of the species, which Edmond de Selys Longchamps (aged 17 years) described from specimen(s) collected by him in the Liège region in Belgium. The brief description reads: "*Agrio* [sic] *virescens* (mihi). Ailes transparentes, d'un vert tendre sans taches; corps d'un vert bronzé."

Reference. Selys Longchamps (1831: 58).

virginica [synonym]

Agrion virginica Westwood in Drury, 1837 [Orig. *Agrion virginica*]

Present status. Synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807).

Lat. *Virginicus –a –um* = from Virginia {declinable adjective}

A toponym. The species was described and illustrated from a female specimen from the interior parts of Virginia (United States). Westwood wrote: “Drury observes of this insect that ‘it is somewhat like one we have in England, but distinctly different, and soon to be discovered by comparing them together.’ He nevertheless applied to it the name of the English species [*Libellula virgo*], which I have been consequently obliged to reject.”

Reference. Drury (1837: 118, Pl. XLVIII, fig. 2).

virgo [species]

Calopteryx virgo (Linnaeus, 1758) [Orig. *Libellula virgo*]

(Figs 2, 3 on p. 7 and Fig. 27 below).

Lat. *virgo* = virgin, maid {noun in apposition}

In the 10th edition of 'Systema naturae' Linnaeus (1758) gave for the first time proper binomial names for odonate species, all placed in the genus *Libellula*. From the 18 species named and described, 16 were included in the species group ‘Alis patentibus acquiescentes’ [Resting with open wings] (which corresponds the present suborder Anisoptera), and only two species – *virgo* and *puella* – were among the second group ‘Oculi distantes remotique’ [Eyes standing apart and being remote], which corresponds the present suborder Zygoptera (damselflies). Both names refer to feminity, *virgo* to a young virgin maid and *puella* to a young girl.

In *Libellula virgo*, Linnaeus (1758: 545-546) recognized four different forms: α (alpha), β (beta), γ (gamma), δ (delta). Three of these refer to the real *Calopteryx virgo*: β being mature male, α teneral male and γ female. Form δ represents a male of *C. splendens*. Earlier, in ‘Fauna svecica’ (Linnaeus 1746) these four forms were presented as four distinct species (Nr. 756-759) in the genus *Libellula*. In the connection of species No. 757 ‘*Libellula corpore caeruleo nitido; alis viridi-caerulescentibus: apice fuscis: margine immaculatis*’ [A dragonfly with a blue shining body; with green-blue wings: dark at the apex: without a spot at the margin], Linnaeus gave it a common (vulgo) name ‘Lovisa’. For the species No. 758 (‘*Libellula corpore viridi-caeruleo; alis*

Fig. 27: *Calopteryx virgo* ♂, scanned from plate 31 in Charpentier (1840), where it is called *Agrion virgo*.

subfuscis: puncto marginali albo' [A dragonfly with a green-blue body; with slightly dark brown wings: with a white marginal spot], he gave the common name 'Ulrica'. These species (757 and 758) refer to mature male and female of *virgo*, respectively. The names were dedications to Luise Ulrike (Lovisa Ulrika), Princess of Prussia, who had arrived in Sweden in August 1744 to meet her groom Crown Prince Adolf Frederick. [Later Lovisa Ulrika (1720-1782) became Queen consort of Sweden]. These two names were the first dedications to an individual contemporary person, which Linnaeus used in the animal names. (For the purpose of the 'vulgo' names, see the entry for *ludovicea*). It is worth noting that in selecting this beautiful damselfly (rather than one of the numerous butterflies) for his dedication, Linnaeus chose what is surely one of the most gorgeously arrayed and charming insects to occur in northern Europe. This species perhaps best embodies those qualities he admired in the princess. Although Linnaeus did not use the princess' name(s) in his final binomial name *Libellula virgo* (1758), his early admiration for her may also have influenced him in the selection of the species epithet *virgo*, descriptive of her state when she arrived in Sweden (see Hämäläinen & Orr 2017: 61-62). In the 6th edition of 'Systema Naturae', soon after his dedications to the princess, Linnaeus (1748) introduced the Swedish vernacular name 'Jungfrur' (maids, maidens, virgins) for the '*Libellula*' species (Nr. 756-759 in 'Fauna suecica') which he later recognized as a single species *L. virgo*. In earlier versions of 'Systema naturae', either 'trollslända' or 'la Demoiselle' were given as the vernacular name for the genus *Libellula*. Anyway, whatever role Linnaeus' admiration for the princess might have played while choosing the name *virgo*, it undoubtedly alludes to the attractive appearance of this damselfly.

Later, Linnaeus' dedication to the princess in the common name 'Lovisa' was reborn, in a roundabout way, in the form of formal scientific names in the *Calopteryx* nomenclature; see entries *ludovicea* and *ludoviciana*.

It should be noted here that in the reference to Burmeister's publication, Charpentier (1840: 134) capitalised the name *virgo* [*Calopteryx Virgo*]. Perhaps, Charpentier thought that the name *virgo* alludes to the constellation Virgo, which embodies the virgin goddess of justice (Gr. Dike, Lat. Justitia).

Reference. Linnaeus (1758: 545).

vulnerata [species]

Hetaerina vulnerata Hagen in Selys, 1853 [Orig. *Hetærina vulnerata*, Hagen.]

Lat. *vulneratus –a –um* = wounded {declinable past participle}

The species name is obviously an allusion to blood spilling out from a wound, a common theme in many names given by Hagen and Selys to the *Hetaerina* species (cf. entries *carnifex* and *laesa*). referring to the variable sized reddish coloured spots at base and at tip of male wings. The description of *vulnerata* reads: "La tache basale sanguine des supérieures est plus obtuse inférieurement." Selys' French name was 'Hétérine blessée'.

Reference. Selys Longchamps (1853: 40); Selys Longchamps & Hagen (1854: 130).

waterstoni [subspecies]

Calopteryx splendens waterstoni Schneider, 1984 [Orig. *Calopteryx waterstoni* sp. n.]

An eponym named after Andrew Rodger Waterston (1912-1996). {noun in the genitive case}

The species was described from specimens (6 ♂♂, 7 ♀♀) collected in Trabzon (Turkey) by

K.M. Guichard on 23-25 August 1959 and 18 July 1960. The specimens were preserved at the Royal Scottish Museum. Schneider's derivatio nominis reads: "The species name is dedicated to Dr A.R. Waterston (Edinburgh, Scotland)." In the acknowledgements it reads "Special thanks are accorded to Dr A.R. Waterston (Edinburgh) who also realized that the specimens in question represented a new species, but left the description to me."

Reference. Schneider (1984: 282).

Notes on the eponymee. Andrew Rodger Waterston (1912-1996) was a Scottish entomologist and malacologist. For most of his career (since 1935) he was associated with the Royal Scottish Museum, becoming the Keeper of the Natural History (1958-1973), and after formal retirement he continued to work in the museum to the end of his life. In 1943-1952 he worked in the Middle East in the service of he Colonial Office, first as the Chief Locust Officer and (from 1947) as an Entomological Advisor. Based in Cairo and Beirut, he travelled widely in the Middle-East and northern Africa. After retirement Waterston's entomological interests focused to Odonata. His half a dozen papers on Odonata (1976-1991), include studies on the genus *Cordulegaster* and treatments of the odonate fauna of Saudi-Arabia, Yemen and Oman. Waterston described one new odonate genus (*Arabicnemis*) and four new odonate species and one new subspecies. For his obituary, see Shaw & Gibson (1997) and Shaw & Askew (1997).

westfalli [species]

Hetaerina westfalli Rácenis, 1968 [Orig. *Hetaerina westfalli* sp. n.]

An eponym named after Minter Jackson Westfall, Jr. (1916-2003). {noun in the genitive case}

Rácenis wrote: "Dedicamos esta especie al entomólogo norteamericano, Dr. Minter J. Westfall, Jr., en reconocimiento de sus valiosos trabajos sobre los odonatos del Nuevo Mundo" [We dedicate this species to the North American entomologist, Dr. Minter J. Westfall, Jr., in recognition of his valuable work on New World odonates]. The holotype ♂ from 'Puerto Ayacucho, Amazonas, Venezuela' was collected by Janis Rácenis on 21 February 1957.

Reference. Rácenis (1968: 164).

Notes on the eponymee. Dr Minter Westfall, Jr. (1916-2003) was an American odonatologist. He gained his BSc at Rollins College (Winter Park, Florida) in 1941 and a PhD from Cornell University (Ithaca, NY) in 1947. He returned to Florida in 1947, and worked at the University of Florida (Gainesville), first as Assistant Professor of Zoology, later becoming Professor of Zoology, retiring in 1985. Westfall had an important role in teaching and mentoring a new generation of North American odonatologists, and in the development and success of the Societas Internationalis Odonatologica. With the exception of a few early papers and his (unpublished) PhD thesis, all his research publications are on the Odonata of the New World. He co-authored with J.G. Needham 'A manual of the dragonflies of North America (Anisoptera)' (1955), and co-authored (with his student Michael L. May) 'Damselflies of North America' (2006), both major handbooks of North American Odonata with later editions. Westfall described 15 new species of New World Odonata and named two new genera. For his biography and obituary, see f.i. Tennessen (1986), Tennessen (2004) and Fliedner & Endersby (2019: 78-79).

williamsoni [species]

Mnesarete williamsoni Garrison, 2006 [Orig. *Mnesarete williamsoni* new species]

An eponym named after Edward Bruce Williamson (1877-1933). {noun in the genitive case}

The etymology reads: “Named for Edward Bruce Williamson (1877-1933), renowned collector of Neotropical Odonata, whose collections made some 80 years ago are still benefiting students of the order.” The holotype ♂ of this species was collected (in Belém, Pará State, Brazil; on 7 August 1922) by Jesse H. Williamson (E.B. W.’s cousin) and J.W. Strohm.

Reference. Garrison (2006: 41).

Notes on the eponymee. Edward Bruce Williamson (1877-1933) was an American odonatologist, a recognized authority of the New World odonate fauna and a keen collector. He gained a BSc degree from Ohio State University in 1898. Most of his career (since 1903) he worked in a bank (Wells County Bank, Bluffton, Indiana) owned by his father. He was President and Director of this bank from 1918 to 1928, when the bank failed at the start of the great depression. He used his free time for scientific research and fieldwork on dragonflies. He was appointed (in 1916) as the Honorary Curator of Odonata at Museum of Zoology of the University of Michigan in Ann Arbor, and later became (1929) a Research Associate of the museum, where he had a two room office to keep his large collection (ca 50 000 specimens) and library. He collected dragonflies in Indiana, elsewhere in the US, and in several Central and South American countries, where he made several expeditions in 1905- 1920. His over 100 papers and notes on Odonata include revisions of many American genera, a few papers on the Oriental fauna, and many engrossing travel reports with detailed information of local odonate fauna. He described 92 new species and named 14 new genera. He was widely known as a cultivator of irises, breeding many new varieties for sale in his ‘Longfield Iris Farm’ in Bluffton. For his obituaries and biography, see e.g. Davis (1933), Calvert (1935) and Fliedner & Endersby (2019: 80-81).

xanthostoma [subspecies]

Calopteryx splendens xanthostoma (Charpentier, 1825) [Orig. *Agrion Xanthostoma*] (Fig. 1 on p. 2).

Gr. ξανθός –ή –όν [xanthos] = yellow (of various shades) + στόμα [stoma] = mouth {noun in apposition}

The taxon was described from a female specimen from ‘Gallia meridionali’. The name refers to the striking yellow colour of the ‘mouth’ (labrum, base of mandibles and labium) of the female: “ore et pectoris parte inferiore, ad femorum bases, colore laete flavo pictis” [the ‘mouth’ and the lower part of the thorax at the bases of the femora painted with bright yellow colour]. Later, Charpentier (1840: 139) described the head in more detail: “Caput viride, nitens, labio et labro totis, antennarum scapo mandibularumque basibus flavis” [Head green, glossy, the labium and labrum totally, the shaft of the antennae and the bases of the mandibles yellow]. The taxonomic status of this taxon – a species or a subspecies – remains to be settled; see p. 3.

Reference. Charpentier (1825: 5).

yakima [synonym]

Calopteryx yakima Hagen, 1889 [Orig. *Calopteryx aequabilis*. Race Yakima. *Calopteryx yakima* Hag. n. sp.]

Present status. Synonym of *Calopteryx aequabilis* Say, 1840.

For *yakima* see below {noun in apposition}

A toponym named after the type locality Yakima River. Hagen wrote: “At a place called Lone Tree, near the Yakima River in Washington Territory, collected by my assistants and myself, 13 specimens, 5 of them males; June 30 to July 18, 1882; all more or less with unfinished colours except two males, which were among the first lot, collected in June.” In a footnote referring to the name it reads: “Yakima is a nomen proprium as matrona, margarita, sappho, etc.” Yakima River is a tributary of the Columbia River. It is named after the indigenous Yakama people. The taxonomic status of *yakima* was confusingly presented. The taxon was described as ‘Race Yakima’ within the species account of ‘*Calopteryx aequabilis* Say’. However, the taxon was presented with a binomial ‘*Calopteryx yakima* Hag. n. sp.’, suggesting it being a new species.

Reference. Hagen (1889: 248).

yoshikoae [species]

Noguchiphaea yoshikoae Asahina, 1976 [Orig. *Noguchiphaea yoshikoae* sp. nov.] (Fig. 28).

Both the genus and species names are eponyms dedicated to the memory of Yoshiko Noguchi (1926-1976). {noun in the genitive case}

This species was described on the basis of two male specimens collected at Doi Inthanon in Chiang Mai province in northern Thailand by Rokuro Kano and Hiromu Kurahashi on 17 September 1975. Asahina wrote: “The name of this beautiful insect was dedicated to the late Miss Yoshiko Noguchi who served as secretary for fifteen years in sustaining the Entomological Society of Japan, and for more than twenty years as an assistant researcher to the development of the Entomology Department, National Institute of Health, Tokyo.”

Reference. Asahina (1976b: 390).

Notes on the eponymee. Yoshiko Noguchi (1926-1976) was a Japanese medical entomologist. After graduating from the Tokyo Metropolitan University in 1954, she became an assistant researcher at the Department of Medical Entomology of the National Institute of Infectious Diseases (Tokyo), where she collaborated closely with Asahina. She authored or

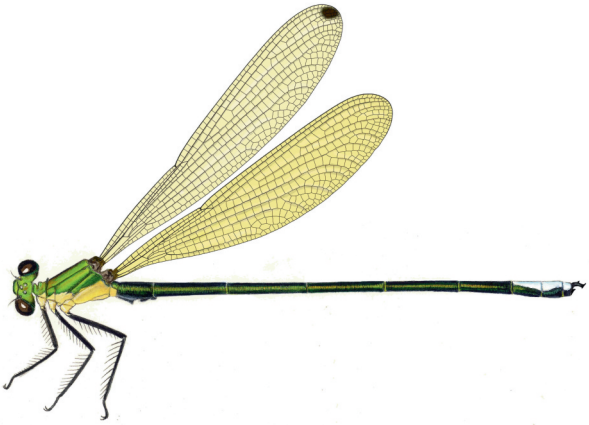

Fig. 28: *Noguchiphaea yoshikoae* ♂. Artwork by A.G. Orr (2014). (© A.G. Orr).

co-authored ca 20 papers and conference reports, mostly on the control of flies spreading polio and mosquitos spreading encephalitis. From 1961, she served as secretary of the Entomological Society of Japan. For her obituary, see Asahina (1976a).

yunosuke<u>i</u> [species]

Mnais yunosukei (Asahina, 1990) [Orig. *Vestalis yunosukei* sp. nov.]

An eponym named after Yunosuke Kimura (b. 1927). {noun in the genitive case}

He collected the type specimens (1 ♂, 1 ♀) at Doi Par Hom Pok mountain, Chiang Mai province, northern Thailand, on 9 February 1989. Asahina wrote: "The specific name is dedicated to the collector of this enigmatic damselfly, Mr. Yunosuke Kimura."

Reference. Asahina (1990: 12).

Notes on the eponymee. Yunosuke Kimura (b. 1927) is a Japanese amateur lepidopterist. He studied chemical engineering at Kyoto Imperial University, graduating in 1948. In the same year he joined the Mitsubishi Corporation in Osaka, and in 1970-1978 worked in Bangkok as the manager of the Machinery department and (from 1973) as the president of the Thai Trading International Corporation. In his spare time and holidays, Kimura collected butterflies in various locations in Thailand. After retiring from the company's service in 1984, he visited Thailand every year (until 2000) during the February-June season for collecting and studying butterflies. Eventually his Thai butterfly collection grew to include over 1100 species, on the basis of which he authored (together with four other Japanese lepidopterists) a 3-volume series 'The butterflies of Thailand: Based on Yunosuke Kimura collection' (2011, 2013, 2016).

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Appendix

Categorisation of roots of the names of genera and species

Here we attempt to group the calopterygid names (genus- and species-group names separately) into different categories according to their roots.

The names, especially compound names, may fit in several categories. The name '*Echo*', for instance, might be seen as a figure from ancient mythology, as not uncommon in the odonatological nomenclature; but in this case, the figurative meaning of the word is in the foreground (see p. 31). Another example is the name *rasoherinae*, which nominally refers to a Malagasy queen from the 19th century. However, it is evident that the name was chosen because of the cultural association of the royal personage to the type locality of the species: Madagascar. Thus, the name could also be ranked as sort of a 'pseudotoponym'.

An example of a compound name is *fuscibasis*: The first morpheme *fusc-* (= dark brown) undoubtedly belongs to the category 'coloration'; the second morpheme *-basis* actually refers to a part of the body, which could point to a character of morphology; but the combination of the two clearly refers to a pattern. In our list, therefore, the word component indicating the respective classification is set in italics under each heading.

But some names do not fall into a particular category because of their actual meaning, but only in the context of nomenclatural tradition. Therefore, they are listed where they belong due to their wording, but particularly in the category 'figurative'. For example, Rambur chose the name *cruentata* (= stained with blood) for a *Hetaerina* species in reference to the red basal spots on the wings of the males; Hagen and Selys then created the roughly synonymous names *sanguinea* and *sanguinolenta*, but since there were more *Hetaerina* species with this genus-typical feature, they chose names such as *laesa* (= the wounded one), *occisa* (= the slain one), *moribunda* (= dying), *mortua* (= dead) and finally *carnifex* (= henchman). It is clear that each time the same characteristic prompted the choice of name, but the latter words no longer have any relation to pattern or coloration, but these qualities have inspired figurative names. Such names are not italicised.

It should also be noted that the same scientific name does not always refer to the same feature. Although, the species name *apicalis -is -e* (= concerning the apex) refers to the darkened wing tips in all three names in Calopterygidae, in many of the over 20 *apicalis* names in Odonata it has a different meaning. In the case of *Argia apicalis* (Say, 1840), the name refers to the blue coloration of the last abdominal segments of the male, whereas in *Pseudagrion apicale* Schmidt, 1951 the name points to the structure of the tip of the male abdominal appendages. But even if the name refers to the wing tips, it does not describe the same fea-

ture in each case. In *Libellula apicalis* Guérin, 1832 (= *Neurothemis fulvia* (Drury, 1773) and in *Polyneura apicalis* Rambur, 1842 (= *Neurothemis terminata* Ris, 1911) it indicates a hyaline wing tip, in the other cases a dark or opaque one. In contrast to this, the species name of *Palaemnema apicalis* Navas, 1924 does not indicate the coloration of the wing tips, but their dense venation.

Thus, in order to fully grasp a species' etymology, it is necessary in each case to understand what a name really represents. This publication is intended to facilitate this.

In the following textboxes within each category relevant roots are in italics; words or parts of words which do not clearly show that they belong to the respective category are not italicised.

In the texboxes below:

- braces {} signify a name ranked as subgenus or subspecies
- square brackets [] signify a name ranked as synonym or homonym
- parentheses () signify that the name also is alternatively related to this category

People

from antiquity

[*Cleis*] [*Lais*] ***Mnais*** ***Mnesarete*** ***Phaon*** ([Pro*phaon*]) ***Sapho*** ([*Vestinus*])
amaryllis *caja* *cornelia* [*cecilia*] [*parthenias*] {*phryne*} *sempronia* *titia*

from mythology

(*Echo*) [*Sylphis*]
auco *aurora* *hebe* *mazu* *mneme* [*oeneus*] *oreades* [*vesta*]

collectors / entomologists / other scientists

***** the eponymee has collected the type material [or part of it].
***Noguchi*phaea**
*andersoni ** *anderssoni ** *borchgravii ** *brightwelli* *calverti* [*caprai*] *coomani ** *daviesi* *de-villei ** [*earnshawi*]* [*elwesi*]* [*fraseri*] *gallardi ** [*grahami*]* *gregoryi ** *hauxwelli ** [*hincksi*] [*johanseni*] *kaupi* *kimminsi* [*klugi*]* [*kricheldorffi*]* *kuroiwae ** *lencionii ** *loutoni ** *machadoi* [*maclachlani*] *mattii* *medinai* *melli ** *mesumbei ** *myersi ** [*nawai*]* *oberthueri* [*pfeifferi*] [*pieli*]* [*risi*] *rollinati* *taoi* *trebbaui ** [*tuempeli*] {*waterstoni*} *westfalli* *williamsoni* *yoshi-koae* *yunosukei **

royals

[*leopoldi*] [*ludovicea*] [*ludoviciana*] *rasoherinae*

family members

anumariae {*dorothea*} *dutati* *margarita* *mariana*

female names

anne *annina* *beryllae*

others

hermannkunzi *mendezi*

categories of people

Hetaer*ina** ***Matrona (*Matron*oides) ***Vestalis***
{*ancilla*} ([*carnifex*]) (*corephaea*) {*dominula*} [*donna*] *femina* {*femin*alis}? (*hetaer*inoides)
imperatrix *mandarinus* [*materna*] *regina* *virgo*

groups of people / ethnics

Umma
awamena *charca* *miao* [*tolteca*]

Appearance

coloration

***Atro*calopteryx** [*Leuco*pteryx]
aenea *amethystina* *astrape* *atrata* *atrocyana* *auri*pennis [*auri*pennis] (*aurora*) [basi*lactea*] (*beryllae*) *bicolor* *candens* (capitalis) core*phaea* (*cruentata*) *cupraea* *cyanei*pennis [*cyaneus*] *cyano*ptera [de*colorata*] (*erythro*kalamus) *flavi*pennis [*fulgens*] *fulgida* [*fuliginosus*] *fumosa* *fusci*-basis *fusco*guttata ([*fusco*marginalis]) *grisea* (*haemorrhoidalis*) [holo*sericea*] {*hyalina*} *hyalina* *ianthini*pennis *ictero*ptera *incarnata* *incolor* in*fumosa* [*iricolor*] *iridi*pennis (laesa) (luctuosa) ([lugens]) (lugens) *luteola* *melania* *metallica* *miniata* *modesta* (moribunda) (mortua) [*nigra*] *nigrescens* *nigri*pectus *nitens* (occisa) [*opaca*] *orichalcea* [*papavarina*] *pruinosa* *pruinosa* *pudica* [*purpurea*] *purpurea* *rosea* (*sanguinea*) ([*sanguinolenta*]) *saphirina* ([scelerata]) [*scintilla*] ([*semi*-*opaca*]) (*splendens*) ([*splendeo*]) ([*splendida*]) [*smaragdalis*] [*smaragdina*] *smaragdina* *smaragdina* [*tricolor*] ([tristis]) [*unicolor*] (*uniformis*) *velata* [*virens*] [*virescens*] {*xantho*stoma}

pattern

Psolo*desmus*
[*albistigma*] [apicalis] [apicalis] apicalis [basalis] [basalis] ([*basilactea*]) (*bi*color) [bipartita] (carnifex) *cincta* costalis (*cruentata*) *dimidiata* *fasciata* (fusco*guttata*) [fusco*marginalis*] *guttifera* (*haemorrhoidalis*) [in*ornata*] (laesa) [*limbata*] [*lineata*] *maculata* *marginata* (miniata) (moribunda) (mortua) (occisa) ([opaca]) ([purpurea]) (sanguinea) (sanguinolenta) (scelerata) [*semiopaca*] [strigata] [sub*limbata*] *subpicta* [*tri*partita] ([unicolor]) uniformis (vulnerata)

morphology

Bryoplathanon ({Divortia}) [Climaco*basis*] **Iri*dictyon*** ***Neurobasis*** **Ormeno*phlebia***
aequabilis albi*stigma* *anacolosa* *angustipennis* ([*apicalis*]) ([*apicalis*]) (*apicalis*) [*asticta*] *atropha* (auri*pennis*) ([auri*pennis*]) ([*basalis*]) ([*basalis*]) *basilaris* ([*basi*lactea]) [*cellaris*] *ciliata* (*costalis*) *curvicauda* (cyanei*pennis*) (cyano*ptera*) *declivium* *drepane* *duplex* *ephippium* (flavi*pennis*) (fusci-*basis*) *globifer* *gracilis* [*hetero*sticta] (ianthini*pennis*) (icterop*tera*) *infecta* (iridi*pennis*) [*longipennis*] *longipes* *longipes* *longistigma* [*macropus*] *mesostigma* (nigri*pectus*) *pilula* *rhopalon* *rudis* *tenuis* [*thoracicus*] ({xantho*stoma*})

size

majuscula [*maxima*] *maxima* (*modesta*)

similarity

[Anacia*grion*] (Cali*phaea*) **{Divortia}** **Matrono*ides*** (Noguchi*phaea*) **[*Noth*olestes]** (Sino*basis*)
***Vesta*laria** **[*Vesti*nus]**
[*cognata*] con*similis* [*disparilis*] [*distincta*] erythro*kalamus* hetaerino*ides* (*in*fumosa) {*intermedia*} [*papilionacea*] [*paradisearum*] [*pavo*] *proxima* [*pseud*americana] [*pseudo*syriaca] *simplex* [splendida]

beauty/wonder

***Cali*phaea** ***Calo*pteryx**
amabilis [*amaena*] [*amaena*] *amata* *amoena* [*divina*] *electa* [*elegans*] {*festiva*} *florida* [*formosa*] *gloriosa* [*nobilitata*] *perornata* *splendens* [*splendeo*] ([*splendida*]) [*superba*] [*venusta*] *venusta* *vinnula*

figurative

Echo
capitalis [*carnifex*] *cruentata* *haemorrhoidalis* *laesa* *luctuosa* [*lugens*] *lugens* moribunda *mortua* *occisa* *pudica* *sanguinea* [*sanguinolenta*] [*scelerata*] [*tristis*] *vulnerata*

Places

{*Sino*basis} (Umma)
[*almogravensis*] {*altaica*} {*amasina*} *amazonica* *americana* *angka* [*asturica*] (auco) (*awamena*) {*balcanica*} [*brasiliensis*] [*britannica*] [*californica*] [*californicum*] *camerunensis* [*cartvelica*] (*charca*) *chinensis* [*ciscaucasica*] [*colchicum*] [*colombiana*] [*coloradicum*] {*cretensis*} [*erevanense*] [*floridana*] [*hudsonica*] *japonica* *japonica* *laosica* *laotica* *luzoniensis* [*maracandica*] (*miao*) (mazu) {*mingrelica*} {*misoolensis*} [*nicaeensis*] {*njuja*} [*occitanica*] [*okinawana*] {oro*hainani*} [*padana*] [*persica*] (rasoherinae) [*rupamnensis*] [*rupinsulensis*] *samarcandica* [*shachrudica*] {*syriaca*} {*taurica*} [*texana*] *thailandica* [*transcaspica*] ([*tolteca*]) {*tshaldirica*} [*virginica*] [*yakima*]

north, south, east, west
australis {*meridionalis*} [*occasi*] [*occidentalis*] {*orientalis*} [*septentrionalis*]

Habitats
[*Agrion*]
amnicola [*montana*] (*oreades*) ({oro*hainani*}) [*papyreti*] *saltuum* *submontana*

Evolution
***Archi*neura** **[*Pro*phaon]**
[grand*aeva*]

Other meaning
exul *gumma* *indeprensa*

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