The scientific names of the Odonata in Burmeister's 'Handbuch der Entomologie'

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Abstract
This paper gives some information on the odonatological activities of **Hermann Burmeister** (1807-1897) and his sources and explains the meaning of the actual scientific names of the dragonflies, which are described in his 'Handbuch der Entomologie, Vol. II'.

Summarium
Hoc scripto studia describuntur, quae **Hermann Burmeister** (1807-1897) in odonata impenderit quibusque e fontibus hauserit. Maxime autem interpretatio nominum scientificorum praebetur eorum odonatorum, quas descripserat in libro suo, cui est titulus 'Handbuch der Entomologie, Vol. II'. Neque vero nomina obsoleta proferuntur, sed ea, quae nostris temporibus a viris doctis adhibentur.

Introduction
Since Linnaeus' system of nomenclature was established, all kinds of living organisms, plants as well as animals, are to be described by a unique combination of an individual species name and a genus name which is shared by others closely related. If scientific names are considered just to be labels in the drawers of taxonomists, it does not matter whether they make any sense except to identify their organisms unmistakably. Therefore some authors only see to it that their names are unique and euphonic as prescribed by the Code of International Zoological Nomenclature. Others however try to give their names an additional meaning by supplying information as to special features which might help to recognise the organism in question when being confronted with. Evidently it is no use to spend time on etymology of the first type of names, whereas one should consider the others thoroughly to benefit from them. But these names are not understandable to many people as they mainly are in Latin or in latinised Greek. This article therefore endeavours to explain some names of Odonata that might be of interest.
It would not be possible to discuss here all odonate species and genera, which would fairly exceed 6,000. A selection of names therefore had to be made which might attract attention of odonatologists all around the world. I therefore decided to deal with the species presented by BURMEISTER (1839: 805-862), for his was the first attempt to sum up the Odonata already known on a world-wide scale. Names that are no longer valid have been replaced by the actual ones as shown in BRIDGES (1994).

Abbreviations and linguistic remarks
Abbreviations: gr. = (ancient) Greek; l. = Latin; e. = English; fr. = French
In the transscriptions *ē* represents the Greek letter η (*ēta;* originally pronounced like -ea- in 'bear', later, as in modern Greek, like -ee- in 'bee');
ō represents ω (*ōmega,* pronounced similar to -aw- as in 'law').
When Greek words are transferred to Latin, K is replaced by C, AI by AE, OI by OE, EI often becomes I.
Underlining of a vowel means, that its syllable is accented. Note: the accent follows different rules in Greek and Latin.
An asterisk behind a word means, that not its nominative (= the form of nouns and adjectives indicated in dictionaries) is quoted, but its stem, which may be much different, e.g. gr. *rhi̲s*

(nose) has the stem *rhin**, which is used in many compounds.
A hyphen at the beginning or at the end of a word shows, that it is used as one element in a compound word. That can make a difference in sense e.g. the Greek word *pseudos* means 'lie, fallacy, falsehood'; *pseudo-* in compounds can easier be translated with 'false'.

Burmeister and his sources

Hermann C. Burmeister (*1807 at Stralsund, † 1892 at Buenos Aires) was a great zoologist and explorer (cf. ANONYMUS 1892; RATZEL 1903; MEER UND MUSEUM 9, 1993). In 1829 he qualified as a medical doctor at Greifswald as well as a philosophical one at Halle. After some time as a teacher in Berlin and his 'habilitation' (i.e. a major thesis typical of the universitary system in Germany) he was appointed to a professorship of zoology at Halle in 1837.
Alexander von Humboldt made it possible that **Burmeister** undertook two efficient expeditions to South America (1850-1852, 1854-1856). In 1861 he emigrated to Argentina where he involved himself in the exploration of the country, its fauna and flora, building up the National Museum of Natural History and the scientific section of the newly founded university of Cordoba. His publications cover a wide range of zoological, palaeontological and geological studies. One of them is his 'Handbuch der Entomologie (i.e. manual of entomology), vols 1-5, 1832-1855', that remained unfinished.
For this task he was well prepared, because already as a student he had focused his interests on taxonomy and entomology as can be seen by the subject of his doctor thesis at Halle: 'De insectorum systemate naturali (i.e. on the natural system of insects)'. Probably due to these special skills in 1830-1831 he was engaged by the banker and important trader in insects **Michael Christian Sommer** (1775-1868), who lived at Altona (now a part of Hamburg, but then a rival town belonging to the kingdom of Denmark), to revise his big entomological collection. This collection included insects from around the world, which **Sommer** had received as a 'Kommissionär', a kind of agent, who raised money to enable someone to start an overseas expedition or to emigrate. This credit had to be paid off by 'products of nature' i.e. botanical or zoological specimens – often insects – given to the investors or sold to collectors (WEIDNER 1967: 134-138).
The second volume of the 'Handbuch', in which which the Odonata are treated, was published in 1839.
At that time detailed keys of dragonflies did not exist and of most exotic (i.e. non-European) species sufficient descriptions had not yet been published. Therefore anybody who was to cope with the demands of such a task could not do without access to major collections of insects. In its odonatological parts BURMEISTER (1839) is based mainly on the collections of **Sommer**, to whom he also was related since he had married his daughter **Elisa Marie** in 1836, and of **Wilhelm von Winthem** (1799-1847), a Hamburg merchant, who like **Sommer** was engaged in the trade with insects by commission (WEIDNER 1967: 101-107; 1993: 91-105). That collection, which was even larger than **Sommer**'s, **Burmeister** had probably got to know when revising that of his future father-in-law. Another collection referred to is that of **Ernst Friedrich Germar** (1786-1853), a colleague of **Burmeister** at Halle, who was a professor of mineralogy, but at the same time a keen entomologist, who among other publications on insects edited entomological magazines 1814-1819 and 1839-1844, which however did not contribute to odonatology (WEIDNER 1983: 280-282). Moreover **Burmeister** mentions the collection of the University of Halle, which he was developing then. Contributions to this collection are reported to have come from a Mr. **King** at Madras, partly via a missionary named **Schmidt**, of whom I do not know any particulars, others from **J.C. Graf Hoffmann von Hoffmannsegg** (1766-1850) from Dresden, who was a botanist and entomologist and had visited Portugal for effective collecting trips (GÖLLNER-SCHEIDING

1969); but he also seems to have had special connections to Java, for which he is frequently quoted in the 'Handbuch'. The entomological collection of the 'Zoologisches Museum Berlin', which is quoted as M.B. (= Museum Berolinense, cf. CALVERT 1898: 51), plays a minor role in the chapter on Odonata than in the earlier parts of the 'Handbuch', and except for once, when it is referred to, Graf **Hoffmannsegg** is mentioned. That is quite natural, as the foundation of that museum to a great extent was due to his influence, and its collections were largely based on his donations (LANDSBERG 1993: 43; SCHULZE 1993: 65).

Other references are made to the curator of the Leiden Museum, **W. de Haan** (1801-1855) (cf. FLIEDNER 1998a), to the Swiss entomologist **J.J. Hagenbach** (1801? -1825), who since 1823 had been conservator at the same Museum, furthermore to **Sommer**'s collecting agents **K.C.A. Zimmermann** (1800-1867) from South Carolina (WEIDNER 1967: 137) and **C.F. Drège**, who collected in the South East of Africa ca 1826-1840 (WEIDNER 1993: 103), moreover to **G. Thorey** (1790 -1884), an insect trader at Hamburg similar to **Sommer** and **von Winthem** (WEIDNER 1993: 74-79).

Very important for **Burmeister**'s presentation of Odonata in the 'Handbuch' was **Toussaint de Charpentier** (1779-1847), who was then 'Berghauptmann' at Brieg/Silesia, i.e. the supreme mining officer in Silesia (WEIDNER 1960). He was a keen hobby entomologist and had specialised in Orthoptera and Odonata. In 1825 he had published a volume comprising 40 European odonate species and had continued his studies preparing an illustrated monograph of 61 species thoroughly described and depicted, which was to be published in 1840. **Charpentier** had placed a draft of his treatise at **Burmeister**'s disposal, which led to the effect, that some genus names that **Charpentier** was going to introduce have **Burmeister** as author (v.infra). Except for *Calepteryx,* which he emended into *Calopteryx,* **Burmeister** did not adopt the genus names proposed by LEACH (1815), because he did not estimate them to be well founded. This might be due to the fact, that he did not understand **Leach**'s descriptions very well, as he did not see that **Charpentier**'s genus *Diastatomma* is a synonym of **Leach**'s *Gomphus*, which he supposed to be a libellulid genus.
Burmeister was aware that his treatise did not describe all extant odonate species for he reported that 137 species of Anisoptera had been at the Leiden Museum in 1828, whereas his 'Handbuch' only comprises 119. Similarly he wrote that new species (e.g. coenagrionids) were going to be described by **Charpentier** in his forthcoming monograph. To some species he added notes like "related species are to be found in Dongola and North America" (BURMEISTER 1839: 836) or "moreover I saw several similar species in the collections of von Winthem and Sommer" (l.c.: 860).
Also the earlier publications of Odonata he used eclectically. In his 'Handbuch' we do not find two of **Linnaeus**' 19 odonate species, of **Fabricius**' newly described 46 species 15 are missing; of **Drury**'s 20 only 18 are quoted, of **Palisot de Beauvois**' 12 there are six, of the 40 species summed up by CHARPENTIER (1825) seven are omitted, as are eight of the 37 in VANDER LINDEN (1825). That means: **Burmeister** introduced only those taxa to his 'Handbuch' which he was convinced were correct. Whereas a complete catalogue of known odonate species was not achieved that way, an important contribution to their knowledge was made, and this treatise – in spite of not beeing free from errors (cf. HAGEN 1849: 141sqq.) – presented itself as a solid foundation for further studies.

Limits of interpretation

Due to several reasons not all scientific names of Odonata may be interpreted successfully with the tools of classical philology.
For, as discussed above, not every author gives any additional meaning to the proper names he chooses. Even arbitrary combinations of letters are permitted as names as long as they are euphonic. Looking for a hidden message in such denominations would be useless.

Furthermore scientific names may be derived from any language; so, if it is not Greek or Latin, knowledge of that language, on which the name is based, would be essential for an interpretation.
But even if a name is based on Greek or Latin, it may not easily be understood, if its elements are not analysed correctly. E.g. *Sympetrum* often has been explained as gr. *sym-* (together with) and *petros* (stone); but that is not its correct meaning, for NEWMAN (1833) clearly states that it should be understood as gr. ***sympiezein*** [press together] and ***ētron*** [abdomen]. Similarly the genus name *Idiataphe* seems to be derived from gr. *idios* [one's own] and *taphē* [burial]; that sounds enigmatic and it is wrong indeed. Actually the name is an anagram (i.e. a different combination of the letters of a word) to replace *Ephidatia* Kirby, that being a homonym was not valid (COWLEY 1934a: 243); and that word refers to gr. *ephydatios* [in/of the water], which originally being an epithet used for Nymphs seems to be a name suitable enough for an odonate genus. If not revealed by the author who might have surmised the correct etymology? But there are many others who do not explain what they had in mind when creating their scientific names, e.g. **Fabricius**, **Burmeister**, **Say**, **Hagen**. In such cases any interpretation may prove to be mere guesswork if it is not self-evident what a name means.

Notes on some elements of genus names
It is well known that since the eighteen forties more and more dragonflies were described due to the progress of worldwide exploration (cf. FLIEDNER 1997: 21sq.). Therefore old genera were split into new ones, which often kept the previous names as a constituent of a compound name, combined with an allusion to a species, that seemed to be characteristic for the new genus: e.g. *Ophio-gomphus* consists of *Gomphus* Leach and gr. *ophis* - serpent, derived from *Gomphus serpentinus* (Charpentier) [currently *O. cecilia* (Fourcroy)]. Alternatively other features were introduced into such combinations like provenience, e.g. *Austro-gomphus* - *Gomphus* from the south meaning Australia [l. *austro**- south wind/ south]. Later on only one element of a compound genus name was recycled, e.g. *Chloro-cypha* consists of gr. *chlōros* - green and the second part of *Rhino-cypha* [gr. *rhin** - nose and *kyphos* - hunchbacked, curved], with which genus it shares the prominent clypeus. Evidently the derived compound does not make sense by itself because not the zygoptere as such is hunchbacked but its 'nose'; the reference to the older genus must be kept in mind.

In this place three elements of compound names are explained, that are no (or no longer) valid genus names (for other frequent elements of names cf. FLIEDNER 1997: 9-14).

Agrion was a name by **Fabricius** to comprise all Zygoptera. It is derived from gr. *agrios* [living on the fields, wild] and it might have been chosen, because zygopterans unlike e.g. flies do not live in the domestic area. This genus was split into numerous others many of which got names ending in *-agrion*. But later on controversies arose whether calopterygids or the other damselflies were the true agrionids. So to end all misunderstandings KIRBY (1890: 148) proposed the genus name ***Coen-agrion*** [gr. *koinos* - common] for all genera that were no calopterygids. But the name *Calopteryx* was well established since BURMEISTER (1839): so the elder name *Agrion* eventually was repressed (cf. FLIEDNER 1997: 41 sq.).

Diplax was created by **Charpentier**, but published by BURMEISTER (1839) for that genus, the earlier description of which by NEWMAN (1833) under the name of *Sympetrum* had remained unknown to most odonatologists. *Diplax* [gr. twofold] was to reflect the bilobal upper side of the Prothorax that resembles the majuscule letter B. It had to be abandoned because of the priority of **Newman**'s description but there are many names constituted with it [e.g. *Pachy-diplax* = stout *D.*; *Diplac-odes* = like a *D.*].

The third element discussed here has never been a genus name of its own, but more than 50 names are combinations with it. HAGEN (1861) created eight names ending in ***-themis*** [gr. *themis* - law as established by custom / the goddess of order]. Most probably **Hagen** chose this denomination starting from other names of divine beings established in Odonata, e.g. *Echo* or *Nehalennia*. Being the goddess of order Themis is a suitable patroness of taxonomists. HAGEN (1888) only explains grammatically why he chose this special word: When he was seeking genus names for libellulids three names NEWMAN (1833) had proposed together with *Sympetrum,* i.e. *Orth-etrum* [gr. *orthos* - straight; *ētron* - abdomen], *Lept-etrum* [gr. *leptos* - thin, lean] and *Plat-etrum* [gr. *platys* - flat, depressed], came to his mind which he thought to be available as no one had ever used them after their publication. But he did not want to employ them directly, for the adaption of names from the genus *Libellula* to **Newman**'s genera which differred in gender would have made changes inevitable. So he took an element, which shared gender with the previous genus, forming names like *Or*[*th*]*-themis, Lep*[*t*]*-themis* and *Pla*[*t*]*-themis* thus creating an equivalent to 'libellulid' in compound names.

The scientific names and their interpretation

In the following part of this article the scientific names are explained in accordance with the arrangement of families in BRIDGES (1994). Within the families the genera and within the genera the species will be found in alphabetical order.

Calopterygidae

Calopteryx [gr. *kalos* - beautiful; *pteryx* - wing] refers to the metallic sheen of the wings of the males in the species known to **Leach**.

- ***dimidiata*** [l. divided into two equal parts] might be alluding to the fact that in the females – **Burmeister** did not know the males – the wings seem to be divided as their exterior parts are black whereas the interior parts are only shadowed. SILSBY (2001: 77) reports the species to be the smallest of the family; but as others in BURMEISTER (1839) are of similar size, I do not think, that this might be the reason for the name.

- ***maculata*** (Palisot de Beauvois) [l. spotted] has some white spots in the discoidal parts of the wings.

- ***splendens*** (Harris) [l. shining] is deduced from the metallic sheen this species shares with most calopterygids.

- ***virgo*** (Linnaeus) [l. virgin, maiden] is one of the species names in odonata referring to beautiful womanliness as do popular names in many languages (e.g. Dutch: waterjuffer, French: demoiselle, cf. NITSCH 1965).

The genus name ***Neurobasis*** [gr. *neuron* - sinew, tendon, nerve/ in botany: string/ in entomology: vein in a wing; *basis* - base, pediment] is due to a special feature of the wing venation: there are crossveins in the basal space, whereas in the genera *Calopteryx* and *Vestalis* there are none.

- ***chinensis*** (Linnaeus) [l. from China] the species is named after the typical locality. The range of the species however is wider.

Phaon [gr. the shining one] according to an ancient legend was a ferryman on the isle of Lesbos. For having carried over Aphrodite, the goddess of love, to his island he received from her as a reward an ointment which made him the most beautiful of men. The famous poetess **Sappho** was said to have fallen in love with him. That was not returned. Therefore allegedly she met her end by throwing herself into the sea from the Leucadian rock. This name was created by SELYS (1853: 19) when building up a new classification for the calopterygids, the popular name of which was 'demoiselles'. According to that he chose many genus names evoking charm and beauty, not only ***Sapho*** (sic) after the poetess, who thus made a real counterpart to *Phaon*, but also such as *Cleis*. *Lais* and ***Mnais***, typical Greek names for courtesans, that respectively allude to gr. *kleos* - fame, gr. *laos* - folk, and gr. *mnaomai* - to woo as well as to *mna* - sum of 100 drachmai (a drachme being more than the wages of a labourer for one day). The genus names *Cleis* and *Lais* had to be replaced later on because of homonymy.

The species ***Phaon iridipennis*** [gr. *irid**- rainbow, l. *penna* - feather/ wing] got this name because its forewings glimmer in several colours like a rainbow, especially when flying.

Vestalis [l. *Vestalis* - virgin priestess of Vesta, the Roman goddess of hearth fire, who had to live her life chastely] is another genus name referring to charming womanliness chosen by SELYS (1853).

In the species **- *luctuosa*** [l. - feeling sorrow, sad] the brownish black colour of the males wings might have reminded **de Haan**, to whom **Burmeister** owed the name, of the costume of mourning.

The genus name ***Hetaerina*** is a compound of the gr. suffix *-inos* [like a .../ convenient to a …] and gr. *hetaira* [courtesan]. This name was put forward in the same publication, in which **Selys** established the Greek courtesans names as genus names, by his co-author **Hagen** sticking to the same semantic field.

The denomination **- *americana*** [l. American; the continent is known to be named after the Italian explorer **Amerigo Vespucci** (1451-1512)] describes the provenance of the species very roughly for it is shared by all species of this genus. But that **Fabricius** could not foresee; for he knew less than 100 odonate species, very few of which were from America.

- *auripennis* [l. *aurum* - gold, *penna* - feather/ wing] evokes the goldish ochre colour of the wings.

- *brightwelli* (Kirby, 1823) refers to **Thomas Brightwell** (1787-1868), an entomologically skilled attorney, later also mayor at Norwich, who „made a fine Collection of Insects especially Coleoptera, which he gave to the Norwich museum about 1844" (BOASE 1892). He most probably was the author of two entomological papers in the Zoological Journals 1825 and 1834, for whom HORN & SCHENKLING (1928) have F. as the abbreviation of the Christian name; but they have their information from HAGEN (1862) where the author is quoted "Brightwell, (F.)". I think that **Hagen** erroneously put an F for a T, if that was not an error of the typesetter, which was not noted. KIRBY (1823) described the species from a specimen in **Brightwell**'s collection.

- *caja* is a name by **Dru Drury** (1725-1803), a wealthy London goldsmith with keen entomological interests. He created ca 20 species names for odonata, most of which are

female names from classical antiquity. The name *Caia* is special, for it is a Latin female first name, 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 b.C. 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)", or a freedman [l. *libertus*] of a woman was named '*Gaiae libertus*' in his official name, independent of which lady had released him. In those times freeborn women used to be named in public only with family names like ***Titia***, which meant, that she belonged to the *Titii*, a clan which claimed descent from an ancestor named *Titus*. What lady **Drury** had in mind, when he gave this name to that species (*Hetaerina titia*) I do not know; at that time there was a great enthusiasm for classical antiquity, and operas, plays and novels, now only known to specialists, were full of such names.

The genus name ***Heliocypha*** consists of gr. *hēlios* [sun, sunshine] and *kyphos* [hunchbacked]. As recorded above (p. #4), *-cypha* refers to the related genus *Rhinocypha*, with which it shares the hooked 'nose'. FRASER (1949: 11sq.), who establishing and naming this new taxon followed a suggestion of **F.F. Laidlaw**, does not say what the name means. The sun might be quoted because the species of this taxon, which normally perch in shade as do that of *Rhinocypha*, are an extraordinary sight when flying in sunshine (**A. Günther**: pers.comm.). But alternatively the rose pink almost equilateral mesothoracic triangle respectively the elongated yellow triangular spot on each side of the thorax might be thought to evoke the idea of sunbeams.

In **-** ***fenestrata*** [l. equipped with windows] the dark brown colour, which marks the wings from the middle on, is interrupted by transparent spots on the hindwings so that windowlike figures are effected there.

Libellago is not an ancient word but it seems to be formed of Latin elements, *libell-* derived from *libell(ul)a*, combined with *-ago*, which we find e.g. in *virago* [l. heroine], which means "with the characteristis of a man [l. *vir*]".

- ***lineata*** [l. marked with a threadlike stroke] refers to a yellow median and two humeral lines on the anterior part of the thorax.

Synlestidae

In 1868 **Selys** received a new species from Australia, for which he created the genus ***Synlestes*** [gr. *syn* - together with; *lēstēs* - robber], which was to say that the differences to other lestoid genera were so important that the new genus should be equal in taxonomical rank to *Lestes* (v. infr.). In 1917 **Tillyard**, a specialist in Australian Odonata, made this taxon type genus of a family group, into which also the following genus was included.

Chlorolestes [gr. *chlōros* - green/ pale; *lēstēs* v.infr.] is one of the genera which were separated from the taxon *Lestes* by SELYS (1862: 31). A metallic green is the colour of several species of this South African genus which may – like European *Lestes* species – turn bronze with age.

- ***fasciatus*** [l. banded] got this name because mature males bear a dark band on the middle of each wing. The two males, from which **Burmeister** made his description (females he did not

know), probably were only at the threshold of maturity as he does not mention the spectacular bluish white bands adjacent to the black ones proximally which adorn males that are fully mature.

- ***longicaudus*** [l. *longus* - long; *cauda* - tail, in insects mostly: abdomen] that species is called because of the very slim abdomen of the males, which makes them look longer than the species of this genus discussed above and below, whereas they do not differ in length substantially.

- ***tesselatus*** [l. checkered, tesselated] is similar to *C. fasciatus*, but the dark patches (and also the white ones that **Burmeister** does not mention like in the former species) in the wings of the males are tesselated, i.e. look like a mosaic of transparent and dark spots. **Burmeister** did not know females of this species too.

Lestidae

The name ***Austrolestes*** [l. *austr** - southwind / south; *lēstēs* - robber] means that the range of this taxon lies in a southern, i.e. the Australian, region.

- ***cingulatus*** [l.- girdled, belted] **Burmeister** named the species in reference to the reddish yellow bases of the abdominal segments that looked to him like girdles.

As already quoted ***Lestes*** [Latin pronunciation] is a Greek word for 'robber'. Why LEACH (1815) chose this name he did not say. It does not give any diagnostic clue either because all Odonata are predators.

- ***barbarus*** was the first species of this genus to be described. The name does not say that these Zygoptera are barbarians of special brutality, but that the specimina, on which **Fabricius** founded his description, were from north western Africa which region was then known as 'Barbary', derived from the Berbers living there. And the origin of their denomination is in late Roman antiquity, when the people who refused to accept Latin as their language were called *barbari* [aliens, barbarians].

- ***plagiatus*** does not mean 'the kidnapped robber' as any Latin dictionary would suggest; the word is to be derived from gr. *plagios* [placed sideways, athwart, oblique] and the Latin suffix *-atus* [marked with ..., equipped with ...], which is to say 'marked with something oblique'. This oblique mark is a spectacular white band on each side of the thorax from the basis of the hindwings to the middle legs.

- ***sponsa*** (Hansemann) [l. betrothed, bride] is another name that signifies a young female being.

- ***virgatus*** [l.- made of twigs/ striped] alludes to the four green bronze stripes on the mesonotum.

The genus ***Sympecma*** got its name by accident: Originally **Charpentier** had invented the name *Sympycna* [gr. *sympyknos* - pressed together, compressed, tight], because in rest this genus keeps its wings tightly to the abdomen, while *Lestes* species hold them ajar, so that they make a figure like an inverted V. But **Burmeister** did not decipher the name correctly in the papers that **Charpentier** had put at his disposition and published it in the nonsense form now in use. Because his 'Handbuch' was published prior to **Charpentier**'s treatise, the originally

intended name had to be abandoned.

- ***fusca*** (Vander Linden) [l.- blackish brown] evokes the dark brown dorsal coloration of the species. Increasingly with age the lighter parts are also more and more obfuscated.

Coenagrionidae

Aeolagrion [gr. *aiolos* - (inter alia:) glittering / changeful of hue, sheeny] probably got its name, because in the two species, on which WILLIAMSON (1917) originally intended to base this genus, the thorax above shows a metallic green. Alternatively it might refer to the "above very variable" thorax (l.c.: 245) of the species *A. demararum* [named after the river Demerara, which flows into the Atlantic near Georgetown, Guyana, the type locality].

- ***dorsale*** [l. of the back, on the back] probably refers to a large black or green metallic dorsal band on the thorax and the black dorsal coloration of the males first seven abdominal segments (cf. SELYS 1876: 272; WILLIAMSON 1917: 248).

The genus ***Amphiagrion*** Selys was named after the species **-** ***amphion*** put forward in the same publication in 1876. In Greek myth the hero **Amphion** was said to be a son of **Zeus**, the supreme god, and **Antiope**, a daughter of a river god. **A**. must have been something of a musical genius for he was said to have – when building the walls of Thebes with his twinbrother **Zethos** – charmed stones into a wall by the force of his music. As **Selys** did not designate a type species for the genus himself (he might have thougt that to be clear already by its name), KIRBY (1890) chose a different species in his revision for that.

- ***saucium*** [l. wounded, hurt] owes its name to a special feature of the males coloration: on the upper side of abdominal segments 7-9, which otherwise is black, in the middle there is a bloodred line which makes them look wounded. A female together with one of a different species BURMEISTER (1839: 856), who took them for conspecific varieties, described as *Agrion discolor* [l. differently coloured]. And that very synonym KIRBY (1890: 143) made type species of the genus (CALVERT 1898: 38).

The genus ***Argia*** was established by RAMBUR (1842: 254) for some North American Coenagrionids. It might reflect a figure from Greek mythology: according to that she was the wife of **Polyneikes**, a son of **Oedipus**, who associated with six other heroes and their men tried to regain rule over Thebes from where he had been expelled by his brother and rival **Eteokles**. But I do not think that this interpretation is correct, for **Rambur**'s genus names mostly point out to diagnostic features of the taxa in question. My conjecture is that he looked for a name as similar to *Agrion* as possible without causing confusion (RAMBUR 1842: 255 emphasises features of wing venation being very close in the two genera).

- ***fumipennis*** [l. *fumus* - smoke; *penna* - feather, wing] has its name from the shadowed wings of the species, which feature is not however true for all subspecies.

SELYS (1876) separated several genera from the genus *Agrion*, among these *Ceriagrion*, *Leptagrion* and *Pseudagrion*. ***Ceriagrion*** probably was named after the species ***Agrion cerinorubellum*** Brauer, which had its name from species names that were younger synonyms, i.e. *A. cerinum* Rambur [l. waxen](= ***C. coromandelianum*** (Fabricius) [l. from Coromandel]) and *Agrion rubellum* (Vander Linden) [l.- reddish] (= ***C. tenellum*** (de Villers) [l. very tender]).

- ***glabrum*** [l. without hair, smooth] is very, very smooth, says BURMEISTER (1839: 821) in his first description.

Coenagrion [gr. *koinos* - common] was to replace the name *Agrion* Fabricius because of a heavy dissension which Zygoptera had a right to claim that name (cf. p. #4#).

The species name - ***puella*** (Linnaeus) [l. maiden, girl] was one of the two first in modern nomenclature of Odonata to reflect tender femininity.

The denomination - ***pulchellum*** (Vander Linden) [l. beautiful little ...] shows that Odonata are able to enchant even dry taxonomists.

CHARPENTIER (1840: 21) originally had planned a genus ***Enallagma*** [gr. change] to comprise all European coenagrionids in which the coloration of the males abdomen is blue with black markings, i.e. besides the actual genus *E.* also *Coenagrion* and *Erythromma lindenii* as well. He wanted the name to be understood as 'possibility of confusion' because of the similarity of the species comprised. But his proposal had no effect until the valid description of the genus by **Selys** in 1876 (COWLEY 1934a: 241).

- ***glaucum*** [gr. *glaukos* - bluish green, grey] reflects the prevailing colour of the males abdomen in **Burmeister**'s specimina.

Erythromma [gr. *erythros* - red; *omma* - eye] reflects a conspicuous feature of the males in this genus.

- ***najas*** (Hansemann) [gr. *naias* - water nymph] suits very well a creature being nice and bound to water.

Ischnura [gr. *ischnos* - thin, lean; *ura* - tail, in insects: abdomen] is a name only suitable, if this genus is compared with *Calopteryx*; for in comparison to other coenagrionid genera known to **Charpentier** the abdomen is not significantly leaner.

In - ***denticollis*** [l. *dent** - tooth; *collum* - neck] the rear margin of the females pronotum has a toothlike process in the middle and a triangular tubercle on each side (cf. SELYS 1876: 135).

- ***elegans*** (Vander Linden) [l. elegant] is another name to describe the charming effect of Odonata.

- ***heterosticta*** [gr. *hetero-* in compounds: different(ly); *stiktos* - tattoed, spotted] refers to the fact that the pterostigmata of the forewings are mainly black with a little white on the distal end, while those of the hindwings are totally white.

- ***pumilio*** [l. dwarf] was the smallest species **Charpentier** then knew.

Leptagrion is derived from gr. *leptos* [fine, delicate, slender]. **Burmeister** emphasises the tenderness of the abdomina of the following two species.

- ***croceum*** [l. saffroncoloured] has its name from its prevailing colour.

- ***macrurum*** [gr. *makros* - long/ tall; *ura* – tail ~ abdomen] is rather long; it is 1½ the length of the former species. This is essential, because the species breeds in the leaf axils of bromeliads.

Pseudagrion [gr. *pseudo-* - false] has its name, because it is not easily distinguished from *Coenagrion* (then *Agrion*, v.p.#4#) (SELYS 1876: 201).

- ***caffrum*** probably has its name from its bronze black colour which may have reminded **Burmeister** of the 'Caffers', dark coloured Bantu tribes of Southeast Africa named from Arabic *kafir* - infidel, the displeased denomination by muslim merchants of Arab provenance which was adopted by the European colonists. (I do not think, that in this species the name is a mere allusion to the provenience of one of **Burmeister**'s two specimina from Durban because the second one was from Anjouan, one of the Comores, which is inhabited by other people).

The name - ***pruinosum*** [l. covered with hoar-frost] probably is derived from the fact that the black thorax of adult males looks as if covered with blue dust (SELYS 1876: 228), a feature shared by other species of this genus. **Burmeister** however, who owes this name to **de Haan**, does not give any hint to pruinosity in his description. So his specimen might have been teneral. CALVERT (1898: 42) states that the 2 males at Halle with a label by **Burmeister** do neither agree with **Selys**' description nor with each other. So there is reason for some doubts as to the real species.

By the name ***Pyrrhosoma*** [gr. *pyrrhos* - 'flamecoloured', i.e. red, orange; *sōma* - body] the European species of this genus are described well.

- ***nymphula*** (Sulzer) [l. *nymphula* - little nymph or bride] is another name evoking female charm in damselflies. Roman brides used to wear a special veil during the wedding ceremony called 'flammeum' [flamelike thing], which agrees well with the colour of the species.

Platycnemididae
Platycnemis [gr. *platys* - wide, broad / flat; *knēmis* - greave, legging] describes the widened tibiae of this genus shared by most species of this family.

- ***pennipes*** (Pallas) [l. *penna* -feather; *pes* - foot, leg] is another description of the widened tibiae, which with their bristles look somewhat like feathers.

Pseudostigmatidae
Mecistogaster [gr. *mēkistos* - the longest, biggest; *gastēr* - belly, i.e. abdomen] aptly describes these giants among the Zygoptera, which belong to the family ***Pseudostigmatidae***, many members of which do not have real pterostigmata, but pseudostigmata [gr. *pseudo-* - false].

- ***amalia*** is a female first name. There was a **St. Amalia** in the sixth century, whose name probably is related to the Austrogoths royal family, the *Amali*, to which the famous **Theoderic** belonged. **Burmeister** evidently wanted the name to be suitable to the related species - ***lucretia*** [l. female member of the *Lucretii*-clan], for which **Drury** had chosen a name from classical antiquity, as he liked to (v.p. #6#). In Rome's legendary history a **Lucretia** had played a great role. Having been raped by the son of king **Tarquinius Superbus** she urged her husband and **Brutus** to take vengeance for her, then killed herself. Thus the expulsion of the kings was initiated by which Rome became a republic.

Burmeister's intention to follow **Drury** can be deduced from the fact that next to *amalia* he described a female *M. lucretia*, which he did not recognise, as *Agrion tullia* [l. female member of the *Tullii*-clan] (for *Libellula tullia* Drury see p. #21#).

Petaluridae

Petalura [gr. *petalon* - leaf; *ura* - tail ~ abdomen] refers to the leaflike anal appendages of the males.

- ***gigantea*** Leach [gr. *giganteios* - gigantic] evokes the size exceptional in Odonata

Aeshnidae
The genus ***Aeshna*** was established by **Fabricius** to comprise the larger Anisoptera. It has been guessed that the name might be derived from gr. *aischynē* [shame], and therefore it has been emended into *Aeschna*. As this conjecture met approval for a long time, many compound names derived from it are spelt with *c*, but the Fabrician genus without. Whereas the meaning of the word cannot be explained, its history can: in the 17th century insects had many different names, not only vernacular ones. One name in use for ephemerids in England then was *Aeschna* (with *c*) (COWLEY 1934b: 249). As **Linnaeus** had not adopted that name in his system, as he had others (e.g. *Perla*, a word used for Odonata by the Italian scientist **Ulysse Aldrovandi** (1522-1605), the 'father of entomology'), it was available to **Fabricius** who in his studies had found out that there were thousands of insect taxa yet to be classified, described and named. So he adopted this name for one of his three odonate genera. As **Fabricius** had got to know the name in England, he probably thought it was to be spelt without *c*.

- ***grandis*** [l. large, great] was the largest odonate species **Linnaeus** knew.

The name **-** ***juncea*** (Linnaeus) [l. adjective to *iuncus* - rush] points to a plant common in the habitat of the species. But the specimina in Halle, which have their labels written by **Burmeister**, are *Aeshna cyanea* [gr. *kyaneos* - of the colour of lapis lazuli] (CALVERT 1898: 54), a misidentification shared by **Charpentier**.

- ***mixta*** [l. mixed, mingled, blended] **Latreille** named the species because of the pattern of the abdomen being mixed from several colours.

In **-** ***septentrionalis*** the species name is a compound of l. *septem* [seven], *triones* [oxen used for ploughing] and the suffix *-alis* [belonging to]. The '*septentriones*' were a constellation better known under the name 'The Greater Bear'. The adjective thus means 'belonging to the Greater Bear' = 'northern, arctic', which denomination is in accordance with the type locality Labrador.

The genus ***Remartinia*** is named in honour of the French odonatologist **René Martin** (1846-1925). **Navás** probably included the first syllable of the Christian name to avoid ambiguity, for there were other scientists named **Martin**.

- ***luteipennis*** [l. *luteus* - golden yellow; *penna* - feather, wing] describes the characteristic colour of the wings.

The name of the genus ***Anaciaeschna*** is formed from the names of two genera to which this one is close, i.e. *Anax* (v.infra) and *Aeshna* (v.supra).

- ***isoceles*** (Müller) [gr. *isoskelēs* - with equal legs ~ isosceles] most probably evokes the triangular figure on the second abdominal segment. The spelling *isoceles* in the first description seems to be a lapsus calami or a kind of simplified spelling, as in pronunciation the *s* is silent. As **Müller** did not explain the denomination an incorrect original spelling cannot be proved; the spelling of the original publication therefore has to be maintained.

In the females of - ***jaspidea*** [l. jasperlike] the thorax is olive-green with greenish yellow bands on the sides (cf. HAGEN 1867a: 32sq.), which must have reminded **Graf Hoffmannsegg**, to whom **Burmeister** owed his specimen as well as the name, of the precious stone.

Anax [gr. Lord of the House] the genus might be named from its dominant behaviour in its territory.

- ***amazili*** is a name from belles-lettres: In 1777 the French author **J.F. Marmontel** published a novel 'Les Incas, ou la destruction de l'Empire du Pérou', in which an Inca heroine named Amazili plays a role. A genus of hummingbirds, *Amazilia*, is also called after her (cf. JOBLING 1991: 9) [For this information I am indebted to **H. Pieper**].

- ***ephippiger*** [gr. *ephippion* - saddle; l. *-ger* - bearing] has a saddle-like blue mark on the second abdominal segment.

- ***imperator*** Leach [l. emperor] stresses the same fact as the genus name.

- ***junius*** means: member of the *Iunii*-clan. To that Roman family belonged **Marcus Iunius Brutus**, the famous founder of the Roman republic as well as two of the assassins of **Caesar**. But none of them is involved in the origin of this denomination. For **Drury**, following his manner of giving female names from antiquity to Odonata, described this species as *Libellula junia*. The name was adapted in gender, when the species was transferred to the present genus. Today that would not happen to a proper name.

- ***guttatus*** [l. *gutta* - drop; *-atus* - marked with] the species is called, because the abdominal segments bear a double dropshaped mark on both sides.

- ***papuensis*** [l. concerning the Papua, i.e. the indigenous people of New Guinea] points to the origin of **Burmeister**'s specimina.

In ***Brachytron*** [gr. ***brachynō*** - to shorten; ***ētron*** - abdomen] the abdomen is short and stout.

- ***pratense*** (Müller) [l. - found in meadows] gives a hint, where to find the species. But there are other localities, where you may look for it too.

Boyeria is a name in honour of the Provencal entomologist **E.L.J.H. Boyer de Fonscolombe** (1772-1853) who described the first species to be included in this genus. **Mc Lachlan** replaced the preoccupied denomination *Fonscolombia* with this name in 1896.

- ***vinosa*** [l. fond of wine, full of wine]. SAY (1839: 13) does not explain why he chose this enigmatic denomination. But it might be induced by the males' typical flight behaviour for which DUNKLE (1989: 38) quotes WILLIAMSON (1907: 144): „ ... its tendency to examine critically every object projecting above the water often makes its capture an embarrassing matter to the collector. More than once as I waited for an approaching male that insect suddenly left the line of flight I had mapped out for it, flew to within an inch of my legs, circled around one leg a time or two, then the other, then about both, and then quietly resumed its flight along the stream, oblivious of the net which had frantically fanned all around it". This behaviour may have reminded **Say** of the erratic movements caused by drunkenness.

Gynacantha [gr. *gynē* - woman; *akantha* - thorn, prickle] evokes the 2-4 spines on the ventral side of the 10th abdominal segment of the females in this genus.

- ***gracilis*** [l. thin, slender, slim, lean] describes the rather slender abdomen.

In ***Neuraeschna*** [gr. *neuron* – (in entomology:) vein in a wing] the median space of the wings has 4-7 transverse veins, whereas it is free in the genus *Aeshna*.

- ***costalis*** [l. *costa* - rib / coast / in insects: vein along the leading edge of the wings; *-alis* - belonging to ..., concerning ...] hints at the irregular dark marks in the costal space of the wings.

In ***Staurophlebia*** [gr. *stauros* - cross; *phleb** - blood vessel i.e. artery or vein] the subcosta crosses the nodulus.

- ***reticulata*** [l. *reticulatus* - netlike, reticulated] indicates that the black veins of the wings and the dark margins of their cells make them look netlike.

Gomphidae

Diastatomma [gr. *diastat** - placed or standing asunder; *omma* - eye] was a name suggested by **Charpentie**r to comprise all gomphids, which was taken over by **Burmeister**. Being a synonym of *Gomphus* Leach, it later was reduced to the actual genus *D*.

- ***tricolor*** (Palisot de Beauvois) [l. threecoloured] describes the coloration: generally blackish brown with lateral and dorsal green bands and a yellow 7th segment of the abdomen.

Gomphus [gr. *gomphos* - bolt for shipbuilding] evokes the shape of the males abdomen in most species.

- ***flavipes*** (Charpentier)[l. *flavus* - yellow; *pes* - foot, leg] refers to the mainly yellow legs of the species, which by some scientists is included into the taxon ***Stylurus*** [gr. *stylos* - pillar; *ura* - tail], named from the elongated 9th abdominal segment in the larvae.

- ***vulgatissimus*** (Linnaeus) [l. most ordinary, most common] is a statement no longer valid. But the sagacious hypothesis of SCHMIDT (1989), that this species name originally had been given to *Sympetrum danae*, the damaged type specimen of Linnaeus however had erroneously been replaced by the species bearing the name now, is not necessary to explain the

denomination, because there is evidence that in earlier centuries the species was very common (BURMEISTER 1839: 854; FLIEDNER 1998b: 206).

Macrogomphus [gr. *makros* - long, tall] has its name because of the rather long abdomina of the species in question.

- ***parallelogramma*** [gr. consisting of parallel lines] has two yellow bands with almost parallel sides on the mesothoracic episternum, as SELYS (1857: 90) writes in a description of **Burmeister**'s type he owes to **Hagen**.

Onychogomphus [gr. *onych** = anything like a claw] has its name after the subspecies *O. forcipatus unguiculatus* (Vander Linden) [l. equipped with little claws; which is an allusion to the special form of the male's exterior appendices], for l. *unguis* is the equivalent of gr. *onyx*.

- ***forcipatus*** (Linnaeus) [l. *forceps* - pair of tongs, pincers; *-atus* equipped with] refers to the exterior appendices of the males.

Ophiogomphus [gr. *ophis* - serpent] has its name after *O. serpentinus* (Charpentier), a junior synonym of the following species which was in use when **Selys** established the genus.

- ***cecilia*** [l. female member of the *Caecilii*-clan (the most famous of whom being St. Cecily, the patroness of music)] was named in non-Linnean manner by **Geoffroy**, who used to give French girls names to all odonate species, whether they already had a name or not. This name later was validly published by **Fourcroy** in 1785.

Sinictinogomphus [l. *Sinae* - China; gr. *iktinos* - kite] represents *Ictinogomphus* in the Chinese region, which genus name replaced *Ictinus* Rambur because of homonymity.

- ***clavatus*** (Fabricius) [l. *clava* - club, cudgel; *-atus* - equipped with] points to the abdominal shape of the males common in gomphids.

Zonophora [gr. *zōnophoros* - wearing a belt] refers to a pale bandage on the 7th segment of the following species.

In **-** ***campanulata*** [l. *campanula* - little bell; *-atus* - equipped with] the shape of the males segments 8-10 made **Burmeister** think of a little bell.

Cordulegastridae

Cordulegaster [gr. *kordylē* - club, cudgel/ bump, swelling; *gastēr* - belly ~ abdomen] is named from the shape of these Anisoptera.

The name **-** ***boltonii*** (Donovan) is a homage to the English naturalist and painter **James Bolton** († 1799), who had collected the specimen in **Drury**'s collection, from which the species was described.

Corduliidae

Cordulia [adj. to gr. *kordylē* - club, cudgel] refers to the shape of the males abdomen.

- ***aenea*** (Linnaeus) [l. made from or, bronze] describes the metallic sheen of the species.

In ***Didymops*** [gr. *didymos* - double, twofold / twin; *ōps* - eye] the process at the rear of the eyes typical for corduliids is shaped grainlike and looks like an extra little eye, so that a pair of eyes seems to be present on each side of the head.

- ***transversa*** [l. turned across, going crosswise, athwart] either evokes the transverse white bands before and between the wings on the thorax (SAY 1836: 19) or the yellow band dividing the frons horizontally(BURMEISTER 1839: 845).

The genus ***Epitheca*** [gr. *epithēkē* - cover (referring to the spectacular vulvar plate in the females)] is mentioned by BURMEISTER (1839: 845) occasionally as going to be established by **Charpentier**. As he also reports it would be based on the species - *bimaculata* [l. - two-spotted (referring to dark basal spots in the hindwings)] unknown to him, he already had given a valid description of the new genus and thus is its author now.

Epophthalmia [gr. *ep(i)*- - on, upon; *ophthalmos* - eye] alludes to the process on the rear of the eyes; **Burmeister** wanted this genus to comprise all corduliids; but *Cordulia* Leach was prior to his name.

- ***vittata*** [l. banded or marked with one or more fillets] has six bands on the thorax.

Neurocordulia [gr. *neuron* – (in entomology:) vein in a wing] SELYS (1871: 44) probably named the genus, because in some of its species (e.g. the following one, which was the only one he knew then) the transverse veins between radius and subcosta are accented by brownish droplike marks. But perhaps he only wanted to point to the variability of wing venation of the two specimina he had at his disposal.

The denomination **-** ***obsoleta*** [l. impaired by age or use, worn out, rotten, soiled by neglect, dirty; (of colour) dirty looking, dingy] was chosen by SAY (1836: 28 f.) probably because: „The brown spots of the anal base and the submarginal spots of the wings, are sometimes obsolete, or altogether wanting“. Or one could guess that the coloration of the species as described by NEEDHAM ET AL. (2000: 527) „Ground colour olivaceous, heavily suffused with brown” might have looked to the author as if these anisopterans were soiled with brown.

Somatochlora [gr. *sōmat** - body, *chlōros* - green] evokes the characteristic colour of the species **Charpentier** knew when suggesting his genus *Chlorosoma*. As that name was preoccupied, it was changed into *S.* by SELYS (1871: 45).

- ***albicincta*** [l. *albus* - white; *cinctus* - girdled] has a white-ringed abdomen (NEEDHAM & AL. 2000: XXX).

- ***flavomaculata*** (Vander Linden) [l. *flavus* - yellow; *maculatus* - spotted] refers to triangular yellow spots on the sides of segments 4-8 of the abdomen, which however are obfuscated with age.

- ***metallica*** (Vander Linden) [l. metallic] describes the spectacular metallic sheen of this species.

For ***Syncordulia*** [gr. *syn* - together with; -*c*. v.supr.] SELYS (1882: clxviii) states "sa stature et sa coloration rappellent les Synthemis … (its figure and coloration recalls the species of Synthemis)". So apparently this name is supposed to say : corduliid resembling *Synthemis*.

- ***gracilis*** [l. thin, slender, slim, lean] points to the long, slim appendices in the males. (Females **Burmeister** did not know).

To the genus ***Synthemis*** [gr. *syn* - together with; -*th.* v.p. #5#] SELYS (1871: 120) annotates: "Séparées de toutes Cordulines par l'espace basilaire reticulée (= distinguished from all corduliines by the basal space with veins)". Apparently he wanted to put the genus beside the corduliine genera taxonomically.

- ***eustalacta*** [gr. *eu* - well; *stalaktos* - dropped] refers to two droplike brimstone-coloured marks on the abdominal segments.

In ***Tetragoneuria*** [gr. *tetragōnos* - with four angles, square; *neuron* – (in entomology:) vein in a wing] the proximal side of the triangle in the forewings forms one side of a quadrangular structure extending to the middle of the postdiscoidal field. *Tetragoneuria* is often considered as a junior synonym of *Epitheca* (NEEDHAM ET AL. 2000: 576).

- ***cynosura*** (Say) [gr. dog's tail] might have got that name, because its body is rather hairy [cf. SELYS 1871: 36]. Similarly a genus of graminea with shaggy ears is called *Cynosurus*. Certainly *T. cynosura* is less pilose than other species of this genus (NEEDHAM ET AL. 2000: 483); but it was the first one described.

- ***semiaquea*** [l. *semi-* - half; *aqueus* - watery, coloured like water] refers to the wings: one half of them, i.e. the forewings, are hyaline, whereas the hindwings are mainly dark brown.

Libellulidae

Brachythemis [gr. *brachys* - short; -*themis* v.p.#5#] points to the shortness of the abdomen in this genus.

- ***contaminata*** (Fabricius) [l. - stained with guilt, polluted, contaminated, impure] probably refers to the fact that the ochre coloration in the proximal part of the wings is darker near the middle of the costa.

- ***leucosticta*** [gr. *leukos* - white; *stiktos* - pricked, tattooed] describes the mainly white colour of the pterostigmata which are dark brown and white in the adults.

Celithemis [gr. *kēlis* - stain, spot, defilement; -*th.* v.p. #5#] refers to the coloured patches on the wings of the species, on which **Hagen** based this genus.

- ***amanda*** [l. she, who must be loved] is a name not only used by the Romans in female slaves but also found in several modern European languages. Why HAGEN chose this name he does not say.

- ***eponina*** is a female proper name derived from *Epona*, the Roman-Celtic goddess of equids. It might be related to the numerous popular names of Odonata connected with horses in many European languages, which also occur in Great Britain (NITSCH 1965: 27; 31-33).

Crocothemis [gr. *krokos* - saffron; *-th.* v.p.#5#] got its name because in all species comprised by the first description of the genus the wings are marked with saffron spots at the basis.

- ***sanguinolenta*** [l. full of blood, bloody, blood red] refers to the colour of mature males.

Dasythemis [gr. *dasys* - dense; *-th.* v.p. #5#] differs from other genera with quadrangular *cellula cardinalis (e.g.* ***Nannodiplax*** [gr. *na*(*n*)*nos* - dwarf; *d.* v. p. #4#]) by its very dense wing venation (KARSCH 1889: 249)

In - ***venosa*** [l. full of veins, veiny] the dense wing venation is very conspicuous, because all the veins are infuscated.

Diastatops [gr. *diastat** - placed or standing apart; *ops* - eye] is a libellulid genus, in which the eyes – like in gomphids – are not contiguous.

- ***dimidiata*** [l. divided into two equal parts] **Linnaeus** called the species, because the proximal half of each wing is black. Moreover the margin of the wings is dark brown. BURMEISTER (1839: 854) also mentions a white band in their middle.

- ***obscura*** (Fabricius) [l. dark] has unicoloured dark wings.

- ***pullata*** [l. *pullus* - darkcoloured, blackish grey, dusty; *-atus* - made ...] is also a name pointing to the dark colour of the wings.

The genus ***Diplacodes*** [*D.* v.p. #4#;gr. *-ōdēs* - like ...] is composed from species formerly classified in the genera *Diplax* and *Diplacina* [l. *-inus* - (*inter alia*:) suiting to …] (KIRBY 1889: 308). So the similarity to *Sympetrum* stated by the denomination is quite natural.

- ***haematodes*** [gr. *haimat** - blood; *-ōdēs* - like ...] is described from a single male of dark blood red colour in **Germar**'s collection. During life adult males are much brighter (cf. SILSBY 2001: 170)

The name ***Dythemis*** [gr. *dyo* - two; *-th.* v. p.#5#] might refer to the bituberculated 9th abdominal segment in the females (HAGEN 1861: 162).

- ***rufinervis*** [l. *rufus* - red; *nervus* ~ gr. *neuron* v. p.##] aptly describes the colour of the longitudinal veins of the wings.

The name ***Erythemis*** [gr. *erythros* – red; *-th.* v.p.#5#]] is based on several red species included in this taxon.

- ***haematogaster*** [gr. *haimat** - blood; *gastēr* - belly ~ abdomen] points to the scarlet abdominal segments 4-10.

In - ***plebeja*** [l. belonging to the common people, pelebejan, common] the greyish brown colour combined with grey wings might have caused this name: **Burmeister** seems to have

seen a similarity to the lower classes, the clothes of which were dull coloured and many of whom had livid faces then. But perhaps he only wanted to state that the species was very common: RAMBUR (1842: 107) chose the name *plebeia* for a different species to evoke the similarity to *Sympetrum vulgatum*; both species names can be translated with 'common'.

In **-** ***vesiculosa*** (Fabricius) [l. full of bladders or blisters, vesiculous] the basis of the abdomen is vesicle-like, as the first three segments are short and a little bit inflated, the fourth is contracted.

Erythrodiplax [gr. *e.*: v.sup.; *d.*: v.p.#4#] means 'red *Diplax*'. That suits the type species *E. corallina* [l. coralline]; but there is a difficulty: that species was classified as *Erythemis c*. by BRAUER (1868: 722) himself on the very page on which he described the genus *Erythrodiplax*. For this, so far I can see, he only listed species, which are not red, but one: *Libellula plebeia* Rambur, the name of which was preoccupied by the species described by **Burmeister** mentioned above. Its valid name is *E. corallina* (Brauer), the very species KIRBY (1889: 278) made type species of the genus.

- ***berenice*** is another one of **Drury**'s names from classical antiquity: *Berenike* [gr. carrying off victory] was the name of several Ptolemaic princesses. One of them, queen of Cyrene, had dedicated a curl of her hair to the gods to secure a good return of her husband, **Ptolemy** III., from war. This curl was propagated to have been transferred to sky to form the constellation '*coma Berenices*' by the court's poet **Kallimachos**, whose poem later was translated into Latin by **Catullus** (cf. BARTELS 1996: 212).

- ***castanea*** [l. chestnut] has its name from its prevailing colour.

- ***connata*** [l. born at the same time, twin]. **Burmeister** does not explain, what twinlike similarity made him choose this name; but RAMBUR (1842: 93) emphasises the species to be very similar to *Sympetrum vulgatum*. So this might be the clue to that name.

- ***ochracea*** [l. ochre] refers to the colour of the species.

In **-** ***umbrata*** (Linnaeus) [l. shadowed] several features might have led to the name: the dull brown or black colour of the bodies, the dark band on all wings or the obfuscated tips of the wings; which one he had in mind **Linnaeus** does not explain.

- ***unimaculata*** (deGeer.) [l. *unus* - one; *maculatus* - spotted] is described by BURMEISTER (1839: 855): "*macula basali tota fusca castanea* [i.e. with a totally reddish brown basal spot]".

Leucorrhinia [gr. *leukos* - white; *rhin** - nose] refers to the white frons of its species.

- ***albifrons*** [l. *albus* - white; *frons* - forehead, front] points to the same feature as the genus name.

- ***pectoralis*** [l. concerning the breast] CHARPENTIER (1825: 46) chose as name because he was wrongly convinced that the thorax showed characteristic features, by which this species might be distinguished from other anisopteran species.

Libellula was the name by which **Linnaeus** summed up all Odonata. It is a diminutive of l. *libella* which among other things means: spirit level, an instrument of carpenters T-shaped in ancient and medieval times. This name the French naturalist **Guillaume Rondelet** (1505-1566) had chosen for the hammerheaded shark (*libella marina* - *libella* from the sea) because of similarity and later transferred to zygopterous larvae (*libella fluviatilis* - *libella* belonging to the rivers). From the 17th century onwards adult Odonata were also thus named by scientists.

For **-** ***auripennis*** [l. *aurum* - gold; *penna* - feather, wing] BURMEISTER (1839: 861) emphasises the golden yellow wings with their red venation.

- ***depressa*** (Linnaeus) [l. depressed, flat] refers to a feature of the broad abdomen.

- ***fulva*** (Müller) [l. ochre] describes the colour of the females and immature males.

- ***lateralis*** [l. concerning the sides, lateral] owes its name to the black markings on the sides of the thorax and the black coloration of the abdominal sides.

In **-** ***luctuosa*** [l. sorrowful, sad] the black colour of the males may have reminded **Burmeister** of the black colour of the vestments of mourning.

- ***lydia*** [l. woman or slave from Lydia] is another one of **Drury**'s names from classical antiquity.

- ***pulchella*** [l. beautiful little ...] is special in so far as it was named by **Drury** not with a female proper name from classical antiquity.

- ***quadrimaculata*** (Linnaeus) [l. four-spotted] refers to the black marks at the nodus of each wing which together with the pterostigmata make eight spots.

In **-** ***semifasciata*** [l. *semi-* - half; *fasciatus* - banded] the dark bands on the wings starting from the nodus end in the middle of the wings.

In ***Macrothemis*** [gr. *makros* - long, tall, large; *-themis* v. p.#5#] the body is thin, but not particularly long or large. The denomination points to the fact, that in the males the claws are bifid like in *Macromia* [gr. *ōmos* - shoulder] (HAGEN 1868: 283).

In **-** ***hemichlora*** [gr. *hemi-* - half; *chlōros* - (also:) yellow] the distal halves of the wings are light ochre. Alternatively the name might be derived from a special feature not mentioned in the original description: **A. Martens** informed me that, according to FÖRSTER (2001: 111), the thorax is "dark with distinct pale greenish yellow markings …".

- ***pleurosticta*** [gr. *pleuron* - rib, side of the body; *stiktos* - tattoed, spotted] refers to yellow droplike spots on the sides of the thorax.

In **-** ***tesselata*** [l. checkered, tesselated] the wings are dark at the tip, tesselated with white.

Neurothemis [gr. *neuron* – (in entomology:) vein in a wing; *-th.* v.p.#5#] is a name to replace the preoccupied *Polyneura* [gr. with many 'nervs'], whose name points to the numerous veins of the wings especially in males.

- ***feralis*** [l. belonging to the dead] might refer to the black body (also the names *luctuosa* or *pullata* are connected with the semantic field of funerals). The rarely employed adjective *fĕralis* [wild] does not fit an object from a collection already prepared.

- ***fluctuans*** (Fabricius) [l. fluctuating] according to its description by BURMEISTER (1839: 853) is "*corpore nunc ferrugineo, nunc testaceo* [i.e. having a now brownish rustcoloured, now brickcoloured body]".

- ***fulvia*** [l. female member of the *Fulvii*-clan] is again one of **Drury**'s names from classical antiquity like the following one. One **Fulvia** was the first wife of **Marc Antony**, from whom he divorced to marry **Octavia**, sister of the later emperor **Augustus**, as a sign of political alliance.

- ***tullia*** (Drury) [l. female member of the *Tullii*-clan] might refer to the daughter of **Cicero**, the most famous orator of Latin antiquity. She died at a young age causing her father to write five books of dialogues of consolation.

In the genus ***Orthemis*** [gr. *orthos* - straight; *-th.* v.p. #5#] the first sector of the triangle is straight.

- ***ferruginea*** (Fabricius) [l. of the colour of iron rust] the species is called from the coloration of the females and immature males.

Orthetrum [gr. *orthos* - straight; *ētron* v.p.##] got this name because the abdomen being straight. **Newman** did not know species of different shape.

- ***caffrum*** (v.p.#11#) points to the origin of **Burmeister**'s specimina from Durban, a region, where 'Caffers' live.

- ***cancellatum*** (Linnaeus) [l. latticed] is an allusion to the dark pattern on the back of females and immature males.

- ***chrysostigma*** [gr. *chrysos* - gold; *stigma* - tattoo mark] has its name from the 'golden' colour of the pterostigmata.

- ***coerulescens*** (Fabricius) [l. becoming blue] describes the changing of colour in the males due to pruinescence.

Mature males of - ***pruinosum*** [l. covered with hoarfrost, pruinous] show a bloom, which is not blue, as in the European libellulid species, but reddish violet.

- ***sabina*** [l. woman from the tribe of Sabins] is another one of **Drury**'s names from classical antiquity. The *Sabinae* played a great role in the foundation myth of Rome: The first population of Rome were young men accompanying **Romulus**. After some time to avert the extinction of their town by lack of offspring they kidnapped the daughters of their Sabine neighbours and made them their wives. By treating them most kindly and guaranteeing them more rights than Sabine women normally had they won them over, so that Rome could subsequently grow to be the capital of the ancient world.

- ***stemmale*** [gr.+ l. *stemma* - wreath, garland; l. *-alis* - belonging to, concerning] has a wreathlike marking, which CALVERT (1898: 84) describes thus: "the frons above the horizontal carina blackish …, and uniting with a narrow black stripe in front of the vertex and antennae, leaving a yellow spot on the superior surface of the frons surrounded by the black".

- ***testaceum*** [l. brick coloured] has a dark reddish ochre colour.

Pachydiplax [gr. *pachys* - thick, stout; *d*. v.p.#4#] has a short, stout abdomen.

- ***longipennis*** [l. *longus* - long; *penna* - feather, wing] refers to the rather long wings, more conspicuous by the short abdomen.

With ***Palpopleura*** the gr. word *pleura* [rib, side of the body] does not mean 'sides of the thorax' as sometimes in descriptions given by authors from the 19th century. It is employed as an equivalent for l. *costa* [rib], a word which entomologists use to name the vein in the anterior edge of the wings, which RAMBUR (1842: 129) describes as characteristic feature of the genus: „Bord costal des ailes antérieures sinué ou presque échancré [~ anterior edge of the forewings sinuous or almost zigzag]". The first part of the name is not Greek, which is common to **Rambur's** other genus names for dragonflies, but Latin. There is a verb '*palpare*' [stroke, touch], from which also the 'palpes' in entomological and 'palpitation' in medical terminology are derived. But I do not see what it is supposed to signify in this case.

- ***lucia*** is another female name from classical antiquity by **Drury**. There was a famous Lucia who ended her life as a martyr in times of the emperor **Diocletianus**. She is of importance in folklore, e.g. in Sweden.

For - ***sexmaculata*** (Fabricius) [l. *sex* - six; *maculata* - spotted] BURMEISTER (1939: 860) mentions, that the hyaline forewings each have three black spots.

Pantala [gr. *pant** - all-; *alē* - wandering or roaming without home or hope of rest] describes the cosmopolitan distribution and vagrant behaviour of the following species.

- ***flavescens*** (Fabricius) [l. becoming yellow, yellowish] evokes the coloration of females and immature males.

In ***Perithemis*** [gr. *peri-* around, round about; *-th.* v.p.#5#] the distinguishing feature is, that the abdomen is narrower at the base (~ around the body).

- ***domitia*** [l. female member of the *Domitii*-clan, to which also **Nero** belonged before he was adopted by the emperor **Claudius**] is again a name from classical antiquity by **Drury**.

Pseudothemis [gr. *pseudos* - lie, fallacy; *-themis* v. p.#5#] cannot mean 'false libellulid', for *Ps.* certainly is a libellulid genus. Before KIRBY (1889: 270) established this genus, its only species *P. zonata* was placed in the genus *Libellula*, but already BRAUER (1868: 731) had added "ob diese Gattung? (= really this genus?)". So I think the name might say: 'taxinomically elusive libellulid'. This is confirmed by the following observation: KIRBY, whose intention was "to arrange the genera themselves in something like a natural sequence" (1889: 257), in his 'Synonymic catalogue …' (1890) enumerates the first thirty libellulid genera in exactly the same order as in 1889 but for Nos. 9-11, which in 1889 are: *Rhyothemis*, *Pseudothemis*, *Neurothemis*, but in 1890 *Pseudothemis*, *Rhyothemis*, *Neurothemis*.

- ***zonata*** [gr. *zōnē* - belt, girdle; l. *-atus* - equipped with] points to the whitish yellow coloration of segments 3-4, which look like a broad girdle.

The name ***Rhyothemis*** [gr. *rhyēnai* - having flown; *-themis* v. p.#5#] sounds enigmatic. But I suppose **Hagen** when choosing this name was inspired by geology: Rhyolite, whose description was published in 1861 by **F. von Richthofen** (LÜSCHEN 1968: 303), is a magmatic stone interspersed with many other minerals, which thus shows many differently coloured irregular patterns. This is also true for the patterns the species of this genus show on their wings.

- ***phyllis*** (Sulzer) has its name from Greek myth: **Phyllis** was a Thracian princess, who married a son of the Athenian hero and king **Theseus**. When her husband did not return at the time he had promised, she hanged herself in despair. When her husband came back later, the tree, where she had hung, which had dried up since then, grew fresh leaves [gr. *phyllon* - leaf].

- ***variegata*** (Linnaeus) [l. made of various sorts or colours] clearly alludes to the conspicuously patterned wings.

Scapanea [gr. *skapanē* - spade] is named after its shape: „This West Indian genus consists of 2 species, 1 in our range, for which the readiest recognition character is the broadly flattened posterior end of the abdomen. In the male, segments 7-9 are twice as wide as the middle segments" (NEEDHAM ET AL. 2000: 792).

- ***frontalis*** [l. concerning the forehead] according to **Burmeister** has a white frons with a grey spot above.

Selysiothemis is named in honour of 'the father of odonatoloy', the Belgian baron **Edmund de Selys-Longchamps** (1813-1900).

- ***nigra*** [l. black] is said to be "totally black" in the first description; this is not true for females and immature males, which VANDER LINDEN (1825: 16) did not know. Also mature males are rather blackish, and regionally there are other variants of coloration (cf. SILSBY 2001: 182).

Sympetrum (v. p. #4#) points to a laterally compressed abdomen, which feature was not even true for all species known to **Newman** (cf. HAGEN 1888).

- ***flaveolum*** (Linnaeus) [l. little yellow one] refers to the yellow tinge of the wings bases, which may expand well over the nodus in females.

- ***pedemontanum*** (Müller) [l. from Piemont] denotes the region, where the species was discovered by **Müller** (**Allioni** who is often considered as the author only wrote the preface of the publication in which **Müller** described the species).

- ***vulgatum*** (Linnaeus) [l. general, ordinary, common] is true for Middle Europe, where it locally is the most common *Sympetrum* species.

Tholymis looks like a Greek word, but it is not. **Hagen** – as usual – does not explain what made him create this special denomination. The name might be something like a composition of parts of gr. ***thōrax***, ***lygaios*** (- shadowed, murky) and ***themis***, as HAGEN (1867: 219) states, that in the species *T. citrina* [gr. *kitrinos* - of a citron yellow] the thorax of adult males is dark coloured.

- ***tillarga*** (Fabricius) is a name I cannot explain yet. As it is spelt with capital T in the older publications, it is a proper name, but I could not find out of whom or what, or why it was chosen.

Tramea seems to be derived from l. *trameare* [to pass through], referring to the migratory behaviour of several species of the genus (cf. HAGEN 1867b: 224). But I have got the impression that HAGEN, who always formed his genus names from Greek elements, had created this name as a simplified version of the unwieldy denomination *Trapezostigma* (~ trapezoid pterostigma), which he had announced as going to be established in a future publication (1849: 174), and had taken the chance of adding some information using a pun with the Latin verb.

In - ***abdominalis*** (Rambur) [l. concerning the abdomen] the abdomen has black spots on segments 8-10 (like in some other species of the genus).

- ***basilaris*** (Palisot de Beauvois) [gr. *basis* - base, pediment; l. *-aris* - concerning ...] on each hindwing has an amber basal spot, in which there is a black mark.

T. basilaris burmeisteri is the only odonate taxon named in honour of the scientist. KIRBY (1889: 316) chose that name, because BURMEISTER (1839: 852) had described that taxon with the preoccupied name *Libellula chinensis*.

- ***carolina*** refers to the origin of **Linnaeus** specimina, the British colony Carolina established by the king **Charles I**.

In ***Trithemis*** [gr. *tri-* - three; *-th.* v. p.#5#] *tri-* refers to the trilobal rear margin of the Prothorax (cf. BRAUER 1868:735).

- ***arteriosa*** [l. full of arteries] got its name because the wing venation is conspicuous by its light red colour (in real blood vessels the blood in veins is much darker than in arteries).

In - ***aurora*** [l. goddess of morning] the reddish ochre coloration with the orange bases of the wings and the bloodred wing venation resemble the colours of sky at daybreak.

- ***selika*** Selys has got a Croatian female name. Why that the author does not say.

In - ***stictica*** [gr. *stiktos* - pricked, tattooed, marked, dappled; *-ikos* - belonging to ...] the name might point to the drop-like yellow spots on the sides of the thorax.

Uracis [gr. *ura* - tail ~ abdomen; *akis* - needle, splinter, dart] evokes the pointed ovipositor of the females, which sticks out over the end of the abdomen.

- ***fastigiata*** [l. *fastigiare* - to make sth. into a point or gable] probably refers to the same feature as the genus name.

- *imbuta* [l. dipped, tinged] got this name, because the wings with their dark coloured tips look as if they had been dipped into an ink pot.

The name ***Urothemis*** [gr. *ura* - tail; *-th.* v. p.#5#] probably refers to the elongated vulvar scale in the females, which extends the length of the 9th segment .

- *signata* [l. sealed, marked with ..., marked with a stamp] might refer to a red mark in each hindwing or to black dorsal spots at the rear margin of each abdominal segment (RAMBUR 1842: 117 does not explain, why he chose this denomination).

Zenithoptera [l.fr.eng. *zenith* (of arab. origin) ~ apex; l. *-pterus* - winged] might have got its name from the males habit "to perch with their wings folded over their backs, as butterflies do" (~ directed to the zenith) (MICHALSKI 1988: 109). This name SELYS (1877: 16) had received together with the specimina from the British explorer and scientist **H.W. Bates** (1825-1892), renowned for the detection of mimicry.

- *fasciata* [l. banded] has a white band on its violet pruinous wings. As **Linnaeus** described this species also as *Libellula americana*, that was the first synonym of a dragonfly in modern nomenclature.

Conclusion

BRIDGES (1994) sums up exactly 100 odonate species authored by **Burmeister**, including 21 synonyms and 6 homonyms. But **Burmeister** only claimed 84 species as his own because he had adopted unpublished names from other scientists: e.g. (*Pseudagrion*) *pruinosum* had been communicated to him by **de Haan**, or (*Heliocypha*) *fenestrata* had come from **C.R.W. Wiedemann** (1770-1840), an entomologically skilled professor of pharmacology at Kiel, via the collection of **von Winthem**.

It might be worthwhile to see what kind of names **Burmeister** preferred: more than $^1/_3$ refer to features of patterning, more than $^1/_5$ to coloration, and another $^1/_5$ to peculiarities of body parts; thus $^3/_4$ of his names mention diagnostic features, whereas of the names by others in his 'Handbuch' only 57% are from these categories. That means: **Burmeister** wanted his names to assist recognition of the Odonata in question more than other authors. Because at that time only very few students were not trained in the classical languages, scientific denominations then were a proper instrument in recognition. Scince it is no longer the case nowadays I would be glad if this article assists **Burmeister**'s original intention – recognition of the Odonata.

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References

ANONYMUS (1892): Hermann Burmeister. Entomologische Nachrichten 18: 220-222.

BARTELS K. (1996): Wie Berenike auf die Vernissage kam. 77 Wortgeschichten. Wissenschaftliche Buchgesellschaft, Darmstadt.
BOASE, F. (1892-1921): Modern English biography: containing many thousand concise memoirs of persons who have died since the year 1850. With an index of the most interesting matter (6 vols). Truro, Netherton & Wor-th.
BRAUER, M. (1868): Verzeichnis der bis jetzt bekannten Neuropteren im Sinn Linné's. Zweiter Abschnitt. Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien 21: 711-742. Wien.
BRIDGES, C.A. (1994): Catalogue of the family-group, genus-group and species-group names of the Odonata of the world. Third edition. Bridges, Urbana/Illinois.
BURMEISTER, H. (1839): Handbuch der Entomologie. Zweiter Band. Besondere Entomologie. Enslin, Berlin.
CALVERT, P.P. (1898): Burmeister's types of Odonata. Transactions of the American Odonatological Society 25: 27-105. Philadelphia
CHARPENTIER, T. DE (1825): Horae entomologicae. Gosohorsky, Wratislaviae.
CHARPENTIER, T.DE (1840): Libellulinae Europaeae descriptae ac depictae. Voss, Leipzig.
COWLEY, J. (1934a): Notes on some generic names of the Odonata. The Entomologist's Monthly Magazine 70: 240-247. London.
COWLEY, J. (1934b): The types of some genera of Odonata. The Entomologist 67: 249-253. London.
DUNKLE, S.W. (1989): Dragonflies of the Florida Peninsula, Bermuda and the Bahamas. Scientific Publishers, Gainesville, FL. 1-155.
FLIEDNER, H. (1997): Die Bedeutung der wissenschaftlichen Namen europäischer Libellen. Libellula, Supplement 1: 1-111.
FLIEDNER, H. (1998a): Die Namengeber der europäischen Libellen. H. Fliedner, Bremen (ISBN 3-00-002432-8).
FLIEDNER, H. (1998b): Johann Franz Christian Heyer (1777-1864) und sein Beitrag zur Kenntnis der Libellen. Libellula 17: 71-90, 195-228.
FÖRSTER, S. (2001): The dragonflies of Central America exclusive Mexico and the West Indies. A guide to their identification. Second edition. Odonatological Monographs 2: vii+1-141.
FRASER, F.C. (1949): A revision fo the Chlorocyphidae with notes on the differentiation of the Selysian species *rubida, glauca, cyanifrons* and *curta*. Bulletin de l'Institut Royal des Sciences Naturelles de Belgique 25(6): 1-50. Bruxelles.
GLARE, P.G.W. (ed.) (1968-1976): Oxford Latin dictionary, fasc. 1-8. Clarendon Press, Oxford.
GÖLLNER-SCHEIDING, U. (1972): Hoffmannsegg (Hoffmann v. H.), Johann Centurius Graf v., Naturwissenschaftler. In: „Neue Deutsche Biographie, herausgegeben von der historischen Kommission bei der bayerischen Akademie der Wissenschaften. Neunter Band. Hess-Hüttig". Duncker & Humblot, Berlin, p. 440.
HAGEN, H.A. (1849): Übersicht der neueren Literatur, betreffend die Neuropteren Linn. Stettiner Entomologische Zeitung 10: 59-61, 66-74, 141-156, 167-177. Stettin.
HAGEN, H.A. (1861): Synopsis of the Neuroptera of North America, with a list of the South American species. Smithonian Miscellaneous Collections 4: 1-347. Philadelphia.
HAGEN, H.A. (1862): Bibliotheca entomologica. Die Litteratur über das ganze Gebiet der Entomologie bis zum Jahre 1862. Vol. I. A.-M. Engelmann, Leipzig.
HAGEN, H.A. (1867a): Notizen beim Studium von Brauer's Novara-Neuropteren. Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien 17: 31-62. Wien.
HAGEN, H.A. (1867b): Die Neuropteren der Insel Cuba. Stettiner Entomologische Zeitung 28: 215-232. Stettin.

HAGEN, H.A. (1868): Odonaten Cubas. Stettiner Entomologische Zeitung 29: 274-287. Stettin.

HAGEN, H.A. (1888): On the genus *Sympetrum*, Newman. Entomologica Americana 4: 31-34. New York.

HORN, W. & S. SCHENKLING (1928): Index litteraturae entomologicae. Serie 1: Die Welt-Literatur über die gesamte Entomologie bis inklusive 1863. I. Aalborg – Ferrière. W. Horn, Berlin.

JOBLING, J.J. (1991): A dictionary of scientific bird names. Oxford University Press, Oxford.

KARSCH, F. (1889): Beitrag zur Kenntnis der Libellulinen mit vierseitiger cellula cardinalis (*Nannophya* Rambur). Entomologische Nachrichten 15: 245-264. Berlin.

Kirby, W. (1823): A desription of some insects which appear to exemplify Mr. William S. MacLeay's doctrine of affinity and analogy. Transactions of the Linnean Society London 14: 93-110. London.

KIRBY, W.F. (1889): A revision of the subfamily Libellulinae, with descriptions of new genera and species. Transactions of the Zoological Society of London 12: 249-348, pls 51-57. London.

KIRBY, W.F. (1890): A synonymic catalogue of Neuroptera Odonata, or dragonflies. With an appendix of fossil species. Gumey & Jackson, London.

LANDSBERG, H. (1993): Hermann Burmeister und seine Beziehungen zum Zoologischen Museum Berlin. In: „Meer und Museum 9": 49-51. Stralsund.

LEACH, W.E. (1815): Entomology. In: D. Brewster, The Edinburgh Encyclopedia 9: 51-172 (Tribe I. Libellulides: 136 sq.)

LEWIS, C.T. & C. SHORT (1879): A Latin dictionary, founded on Andrews' edition of Freund's Latin dictionary, revised, enlarged, and in great part rewritten. Reprint 1980. Clarendon Press, Oxford.

LIDDEL, H.G. & R. SCOTT (1940): A Greek-English lexicon. 9th edition, revised and augmented by H.S.Jones & R.McKenzie.Reprint 1960. Clarendon Press, Oxford.

LÜSCHEN, H. (1968): Die Namen der Steine. Das Mineralreich im Spiegel der Sprache. Mit einem Wörterbuch, enthaltend über 1200 Namen von Mineralien, Gesteinen, Edelsteinen, Fabel- und Zaubersteinen. Ott, Thun & München.

MEER UND MUSEUM (1993): Band 9. Hermann Burmeister. Ein bedeutender Naturwissenschaftler des 19. Jahrhunderts. Schriftenreihe des Meeresmuseums Stralsund. Deutsches Museum für Meereskunde und Fischerei: 1-96. Stralsund.

MICHALSKI, J. (1998): A catalogue and guide to the dragonflies of Trinidad (Order Odonata). University of the West Indies Zoology Department. St. Augustine, Trinidad.

NEEDHAM, J.G.; WESTFALL, M-J.; MAY, M.L. (2000): Dragonflies of North America. Revised Edition. Scientific Publishers. Gainesville. Washingon, Hamburg. Lima. Taipei. Tokyo. I-XV, 940 pp.

NEWMAN, E. (1833): Entomological notes. Entomological Magazine 1: 506-516. London.

NITSCH, G. (1965): Die Namen der Libelle. In: Wissmann, W. „Wörterbuch der deutschen Tiernamen, Beiheft 3", Akademie-Verlag, Berlin.

RATZEL, F. (1903): Burmeister. In: „Allgemeine Deutsche Biographie. Siebenundvierzigster Band. Auf Veranlassung und mit Unterstützung seiner Majestät, des Königs von Bayern Maximilian II., herausgegeben durch die historische Commission bei der königlichen Akademie der Wissenschaften", Duncker & Humblot, Leipzig, pp. 394-396.

RAMBUR, J.P. (1842): Histoire naturelle des insectes. Névroptères. Rorêt, Paris.

SCHULZE, G. (1993): Hermann Burmeister und die Insektenkunde. In: „Meer und Museum 9": 65-69. Stralsund.

SELYS-LONGCHAMPS, E. DE, avec collaboration de **H.A. HAGEN** (1854): Monographie des Caloptérygines. Rorêt, Paris & Muquardt, Bruxelles + Leipzig (=Mémoires de la Société des Sciences de Liège 9: i-xi, 1-291).

SELYS-LONGCHAMPS, E. DE, avec collaboration de **H.A. HAGEN** (1857): Monographie des Gomphines. Rorêt, Paris & Muquardt, Bruxelles + Leipzig (= Mémoires de la Société des Sciences de Liège 11: 257-720, published in 1858).

SELYS-LONGCHAMPS, E. DE (1862): Synopsis des Agrionines. Troisième légion: *Podagrion*. Hayez, Bruxelles (=Bulletin de l'Académie Royale de Belgique (séries 2) 14: 5-44).

SELYS-LONGCHAMPS, E. DE (1870): Résumé d'une nouvelle classification des Cordulines. Compte rendu de la Société Entomologique de Belgique 14: iv-vii. Bruxelles.

SELYS-LONGCHAMPS, E. DE (1871): Synopsis des Cordulines. Hayez, Bruxelles (= Bulletin de l'Académie Royale de Belgique (séries 2) 31: 238-316).

SELYS-LONGCHAMPS, E. DE (1876): Synopsis des Agrionines. 5^{me} légion: Agrion (suite). Le genre *Agrion*. Hayez, Bruxelles (= Bulletin de l'Académie Royale de Belgique (séries 2) 41: 247-322, 496-539, 1233-1309).

SELYS-LONGCHAMPS, E. DE (1877): Odonates recueillis a Madagascar, aux îles Mascareignes et Comores, déterminés et décrites. In: „Recherches sur la faune de Madagascar et ses dépendances, d'après les découvertes de François P.Linnaeus Pollen et D.C. van Dam", J.K. Steenhoff, Leyde, Vol. 5: 15-20.

SELYS-LONGCHAMPS, E. DE (1882): Note sur le genre *Gomphomacromia* Brauer et le sous-genre *Syncordulia* . Compte rendu de la Société Entomologique de Belgique 26: clxvi-clxix. Bruxelles.

SILSBY, J. (2001): Dragonflies of the world. CSIRO Publishing, Collingwood.

VANDER LINDEN, P.L. (1825): Monographiae Libellulinarum Europaearum specimen. Frank, Bruxellis.

WEIDNER, H. (1960): Begegnungen mit Toussaint v. Charpentier. Entomologische Zeitschrift 70: 1-7, 27-30. Stuttgart.

WEIDNER, H. (1967): Geschichte der Entomologie in Hamburg. Abhandlungen und Verhandlungen des Naturwissenschaftlichen Vereins Hamburg (N.F.) Bd. IX 9, Supplement: 1-387. Hamburg.

WEIDNER, H. (1983): Schriften von Liebhaberentomologen im ausgehenden 18. und beginnenden 19. Jahrhundert. Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg 7: 279-342. Hamburg.

WEIDNER, H. (1993): Bilder aus der Geschichte des Zoologischen Museums der Universität Hamburg. Die Zoologischen Sammlungen im Naturhistorischen Museum zu Hamburg während seiner Kollegialverfassung 1843 bis 1882. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut.– Ergänzungsband zu Band 90: 1-380. Hamburg.

WILLIAMSON, E.B. (1907): A collecting trip north of Sault Ste. Marie, Ontario. Ohio Naturalist 7 (7): 129-148.

WILLIAMSON, E.B. (1917): Some species of *Leptagrion* with descriptions of a new genus and a new species (Odonata). Entomological News 28: 24-255.

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