

Some taxonomical notes on Lampyridae (Coleoptera)

Fabrizio FANTI

Independent researcher. Tuscany, Italy
e-mail: fantifab@alice.it; ORCID: <https://orcid.org/0000-0003-2002-108X>

Taxonomy, nomenclature, new acts, Insecta, Coleoptera, Elateroidea, Lampyridae, World

Abstract. In the present paper some taxonomical acts are proposed: *Lycoides* Montrouzier, 1855 valid genus (*bonum genus*) and belonging to the family Lycidae (new placement); *Lycoides chrysomelas* Montrouzier, 1855 comb. rest.; *Diaphanes vitrifer* (Walker, 1859) comb. nov. (not formally combined before), decl. nov.; *Aquilonia incerta* (Boisduval, 1835) comb. nov. = *Aquilonia bremeri* (Le Guillou, 1844) comb. nov., syn. nov. = *Aquilonia dejeani* (Gemminger, 1870) comb. nov., syn. nov. [= *Aquilonia apicalis* (Boisduval, 1835) comb. nov.] = *Aquilonia costata* (Lea, 1921) syn. nov. Furthermore, to avoid the perpetuation of errors and confusion, it is reiterated that the author of the Tribe Pristolycini is J. R. Winkler, 1953 (nec Pristolycini Kazantsev, 2010 homonym). Also, *Lampyris lacordairei* Lacordaire, 1830 a totally forgotten species cited only as a nomen nudum exclusively by Sherborn (1922-32) and attributed by him to Dejean, is in reality validly described (by Lacordaire), and nevertheless turned out to be a nomen dubium and incertae sedis. *Nyctocharis* Dejean, 1833 considered here as a nomen dubium, unlike what was believed in the world literature, has a species originally included: *Lampyris lacordairei* Lacordaire, 1830 that, therefore, is the type species by monotypy. Furthermore, some considerations on *Lampyris macrophthalma* [Drapiez, 1820] and *Lampyris tenebrosa* [Drapiez, 1820], are reported of which the original descriptions are unknown (nomina nuda); the discovery of the exact location of the type locality of *Luciola exigua* (Gyllenhal, 1817); clarification on the type locality of *Lampyris marginipennis* Boisduval, 1835, and a curiosity about the type species of the genus *Luciola* made by Drapiez (1839). In recent literature *Lampyris serraticornis* Boisduval, 1835 and *Lampyris haemorrhoidalis* Boisduval, 1835 are considered *incertae sedis* in the family Lampyridae, however they are well-known species and their position has been known since the late 1800s and therefore they should not be considered Lampyridae. Lastly, updates and information on Italian fireflies are provided, mainly: the invalidation of the neotype of *Luciola pedemontana* ([Curtis], 1843) proposed by Nunes et al. (2026); *Lamprohiza splendidula* (Linnaeus, 1767) = *Lamprohiza foliacea* Baudi, 1872 syn. nov.; highlighting the substantial differences and inconsistencies in DNA barcoding results; biogeography of *Luciola* and the Po River barrier; and *Lampyris fuscata* Geisthardt, 1987 new for Emilia-Romagna. Finally, it should be noted that *Lampyris noctiluca* (Linnaeus, 1758) is very common and has a very vast distribution range and does not fall into any category of threat. Considering it as “Near Threatened”, as the IUCN does (Macadam et al. 2024), distorts the reality and undermines conservation projects at a global level and for truly endangered species.

INTRODUCTION

The Lampyridae are a family of beetles well known for the ability of its members to emit light, called bioluminescence (Lloyd 1971, 1983, Gardiner 2011, Martin et al. 2016, Faust 2017, Fanti 2022). In this paper, I focused on some species *incertae sedis* present in the various world catalogs and on some papers on the subfamily Luciolinae Lacordaire, 1857 (Olivier 1907, 1910, McDermott 1966, Ballantyne & Jusoh 2016a, Ballantyne et al. 2019, Keller 2024). I searched for all the types of the taxa discussed here, which unfortunately now seem irretrievably lost. Therefore, the aim of this document is to provide all available information, and discuss the availability and synonymies of the taxa under consideration, to

contribute to the resolution of taxonomy, a crucial aspect in zoological and biological studies. Updates on Italian fireflies are also provided.

MATERIALS AND METHODS

The taxa covered in this document include: 1) genera and species with author, publication date, original page number(s) including those of any reprints, and type locality with any notes; 2) synonyms (with the same data) listed according to the date of description; 3) all citations with author(s), date(s), and page(s), except for *Luciola exigua* and *Lampyrus marginipennis*; 4) notes on the proposed taxonomical acts. This paper strictly follows the rules of the International Code of Zoological Nomenclature (ICZN 1999), and all the bibliographic references on the topics covered have been reviewed.

RESULTS

Aquilonia incerta (Boisduval, 1835) **comb. nov.**

Lampyrus incerta Boisduval, 1835: 124, 702 (reprint: 124, 691). *Loc. typ.*: “Nouvelle-Hollande” [= historical name of Australia, especially in 1800-1850 it indicated the Northern and Western part of Australia].

Colophotia Incerta Dejean, 1833: 104. *Loc. typ.*: “Oceania” [n. n.].

Colophotia Incerta Dejean, 1836: 116. *Loc. typ.*: “Oceania” [n. n.].

[*Luciola incerta* Gemminger & Harold 1869: 1651. *Luciola incerta* J. E. Olivier 1902: 80 (reprint: 12). *Luciola incerta* J. E. Olivier 1907: 52, 67. *Luciola incerta* J. E. Olivier 1910: 43, 61. *Colophotia incerta* Sherborn 1922-32: 3156. *Lampyrus incerta* Sherborn 1922-32: 3156. *Luciola incerta* McDermott 1966: 106, 136. *Lampyrus incerta* Calder 1998: 173, 179 (*incertae sedis*). *Luciola (Luciola) incerta* Ballantyne & Lambkin 2000: 33, 73 (*Species Incertae*). *Luciola incerta* Ballantyne et al. 2013: 2 (Table 1). *Luciola incerta* Ballantyne et al. 2015: 83 (Appendix 3: *Species Incertae*). *Luciola incerta* Ballantyne & Jusoh 2015: 9 (*Species Incertae*). *Luciola incerta* Ballantyne & Jusoh 2016a: 26-27 (*Species Incertae*). *Luciola incerta* Ballantyne & Jusoh 2016b: 17 (*Species Incertae*). *Luciola incerta* Ballantyne et al. 2016: 245 (Table 7). *Luciola incerta* Ballantyne et al. 2019: 6, 151 (Table 28), 156 (*species incertae sedis*). [*Lampyrus*] *incerta*: Keller 2024].

= *Aquilonia bremeri* (Le Guillou, 1844) **comb. nov., syn. nov.**

Lampyrus Bremeri Le Guillou, 1844: 223. *Loc. typ.*: “Australie sept.”.

[*Lampyrus Bremeri* Erichson 1845: 92. *Lampyrus Bremeri* Lacordaire 1857: 332 (an *huj. gener?*). *Lampyrus Bremeri* J. E. Olivier 1907: 62 (*incertae sedis*; probably of the genus *Luciola*), 64. *Lampyrus Bremeri* J. E. Olivier 1910: 53 (*incertae sedis*), 58. *Lampyrus bremeri* Sherborn 1922-32: 871. *Lampyrus bremeri* McDermott 1966: 123 (*incertae sedis*; ? *Luciola*), 129. [*Lampyrus*] *bremeri* Keller 2024].

= *Aquilonia dejeani* (Gemminger, 1870) **comb. nov., syn. nov.**

Luciola Dejeani Gemminger, 1870: 120. *Loc. typ.*: “Nov. Holland”.

Luciola Dejeani (Gemminger.[er]) Gemminger & Harold, 1869: 1651 [n. n.]*.

= *Aquilonia apicalis* (Boisduval, 1835) **comb. nov.**

Lampyrus apicalis Boisduval, 1835: 127, 702 (reprint: 127, 691). *Loc. typ.*: “Nouvelle-Hollande”. Homonym *nec* Eschscholtz, 1822: 58. *Loc. typ.*: “Insel Luzon, bei Manilla”.

Lampyrus Apicalis Dejean, 1821: 36. *Loc. typ.*: “Nov.Holland” “Nouvelle Hollande” [n. n.].

Colophotia Apicalis Dejean, 1833: 104. *Loc. typ.*: “Nov. Holland” [n. n.].

Colophotia Apicalis Dejean, 1836: 116. *Loc. typ.*: “Nov. Holland” [n. n.].

[*Luciola apicalis* Gemminger & Harold 1869: 1651. *Luciola apicalis* J. E. Olivier 1902: 77 (reprint: 9). *Luciola apicalis* J. E. Olivier 1907: 51, 63. *Luciola apicalis* J. E. Olivier 1910: 42, 57. *Lampyrus apicalis* Sherborn 1922-32: 396 (Dejean, Eschscholtz and Boisduval). *Luciola apicalis* McDermott 1966: 103 (locality: “New Ireland”), 127. *Luciola apicalis* Ballantyne et al. 2013: 2 (Table 1). *Luciola apicalis* Ballantyne et al. 2019: 154. *Luciola apicalis*: Keller 2024. *Luciola dejeani/apicalis* Masters 1886: 289. *Luciola dejeani/apicalis* Olliff 1890: 652-653. *Luciola*

Dejeani J. E. Olivier 1902: 77 (reprint: 9). *Luciola Dejeani* J. E. Olivier 1907: 51, 65. *Luciola dejeani/apicalis* Lea 1909: 108. *Luciola Dejeani* J. E. Olivier 1910: 42, 59. *Luciola dejeani/apicalis* Lea 1921a: 197. *Luciola dejeani/apicalis* Lea 1921b: 66. *Luciola dejeani* McDermott 1966: 103, 131. *Luciola dejeani/apicalis* Calder 1998: 179. *Luciola dejeani* Ballantyne & Lambkin 2000: 33, 56, 57, 59 (also *apicalis*), 60, 61 (Fig. 19B), 64 (Fig. 21 L-N), 73, 75, 79 (Table 1), 81 (Fig. 29), 82 (Fig. 30), 83, 84 (Fig. 32), 85 (Fig. 33), 86 (Fig. 34), 87 (Fig. 35), 88. *Luciola dejeani* Ballantyne & Lambkin 2001: 364 (Table 1) 374 (Fig. 20), 375, 376 (Fig. 21). *Luciola dejeani* Ballantyne & Lambkin 2006: 22, 43. *Luciola dejeani* Ballantyne & Lambkin 2009: 9, 10, 12, 13 and 15 (Table 1), 22 (Fig. 2), 28, 30, 37 (Table 4). *Luciola dejeani* Ballantyne & Lambkin 2013: 12, 14, 16, 19, 21, 23 and 25 (Table 3), 36, 67. *Luciola dejeani* Ballantyne et al. 2013: 1, 2 (Table 1), 30, 32. *Luciola dejeani* Ballantyne & Jusoh 2015: 6. *Luciola dejeani* Ballantyne & Jusoh 2016a: 6, 27. *Luciola dejeani* Keller 2024. *Abscondita perplexa (dejeani)* Ballantyne et al. 2015: 69, 71, 73, 75, 77, 79, 81 (Appendix 2). *Abscondita perplexa = dejeani* Ballantyne & Jusoh 2016b: 5. *Abscondita perplexa/Luciola dejeani* Ballantyne et al. 2019: 26 (Table 1), 41, 154, 156].
= *Aquilonia costata* (Lea, 1921): 66. *Loc. typ.*: “Northern Territory : Flora River” **syn. nov.**

Lampyris bremeri

Note. The species probably belonged to the genus *Luciola* for two authors (Olivier 1907, McDermott 1966), while previously, Lacordaire (1857) did not know in which genus to place it. The type of *L. bremeri* has been lost, since no Le Guillou’s collection is present in Paris (A. Mantilleri pers. comm.), however the original description matches perfectly with the species now called *Aquilonia costata* (Lea, 1921), which is in fact quite common in the Northern Territory, Australia (Ballantyne & Lambkin 2000, 2009, Ballantyne et al. 2019), the type locality of *L. bremeri*. In fact, *Aquilonia costata* is the only species in all of Australia with a black head, brown (yellow-tawny) elytra with blackish tips and lighter central parts, and a blackish base of the abdomen (Ballantyne & Lambkin 2000, 2009, Ballantyne et al. 2019). Based on the original description *L. bremeri* would only have the dimensions (6 mm) a little smaller than *A. costata* (7.7-9.7 mm), however the ancient measurements were rather staggered and in this case evidently taken on a dry specimen, in fact the yellow colour of the luminous organs of the last two ventrites is clear proof of this, which is a typical colour of old specimens with luminous parts subject to oxidation (Fanti 2020). However, I only tentatively exclude that it could be a Lycidae due to its small size and in particular due to the colour of the ventral part which in Lycidae tends to be completely black.

Lampyris incerta/apicalis

Note. The types of these two species have been lost, were not already found in Paris by Ballantyne in November 1993 (Calder 1998, Ballantyne & Lambkin 2000, Ballantyne et al. 2016, 2019), and are not present in the Royal Belgian Institute of Natural Sciences, Brussels, Belgium, where part of the Boisduval’s collection is preserved (Damoiseau 1967). However, these taxa are tendentially considered *incertae sedis*, as for *Lampyris bremeri*, based on the original descriptions are unequivocally similar to *Aquilonia costata* (Calder 1998, Ballantyne & Lambkin 2000, Ballantyne & Jusoh 2016a, Ballantyne et al. 2019), a well-known species from Australia.

Luciola dejeani

Note. This species was redescribed by Ballantyne & Lambkin (2000) on the basis of two old specimens still preserved, however neither is clearly the type. *Luciola dejeani* is in fact a replacement name and according to the code (ICZN 1999), the two names (*dejeani* and *apicalis*) are objective synonyms, both the nominal taxa they denote have the same name-bearing type despite any simultaneous restriction or application of the new replacement name to particular specimens or any contrary designation of type, or any different taxonomic usage of the new replacement name (ICZN 1999: Art. 72.7.). Therefore, since the specimens on which the redescription made by Ballantyne & Lambkin (2000) was based are of uncertain provenance (Ballantyne & Lambkin 2000), are mislabelled as Australia (Ballantyne & Lambkin 2000, Ballantyne et al. 2013, 2019) and above all none can be considered the type, *Luciola dejeani* Gemminger, 1870 cannot even be synonymised with *Abscondita perplexa* (Walker, 1858) from India and other Nations, as erroneously done by Ballantyne et al. (2013) and already hypothesized by Ballantyne & Lambkin (2000: probable synonym of *Luciola dubia*). Also Parvez et al. (2026) recently follow this incorrect taxonomy of Ballantyne & Lambkin (2000). According to the rules of the Code, therefore, any synonymy had to be made by looking at the type of *Lampyrus apicalis* Boisduval, 1835 or on the basis of the original description (Boisduval 1835). The type of *Lampyrus apicalis* Boisduval, 1835 has unfortunately been lost, and had not been found in Paris by Ballantyne in November 1993 (Calder 1998, Ballantyne & Lambkin 2000, Ballantyne et al. 2013, 2019), but the description, as we have seen above, matches perfectly with that of *Aquilonia costata*.

Note*. *Luciola dejeani* Gemminger, 1870 *nomen novum* for *Luciola apicalis* (Boisduval, 1835) primary homonym of *Lampyrus apicalis* Eschscholtz, 1822 (Olivier 1902, 1907, Lea 1909, 1921a, 1921b, McDermott 1966, Calder 1998, Ballantyne & Lambkin 2000, Keller 2024). The previous name *Luciola dejeani* Gemminger & Harold, 1869 is not a replacement name, unlike what is indicated in Calder (1998), since for the code it must be “expressly” indicated (ICZN 1999: Art. 16.1., Recommendation 16A., Art. 67.8., Art. 72.7., Glossary), while the work of Gemminger & Harold (1869) is a catalogue, a list of taxa with synonyms, and the replacement name is not expressly indicated, although it is easily intuitable that it is a *nomen novum*.

Despite the lack of types, it is possible to make all the proposed synonymies based on the unequivocal descriptions. This serves to perpetuate a concept dear to the Code (ICZN 1999), namely the priority of a name, and also to streamline the taxonomy. This has often been done in the literature, and recently, for example, for *Malthodes* and *Malthinus*, representatives of the family Cantharidae (Kazantsev 2021). All the taxa considered here: *incerta*, *apicalis*, *dejeani*, *bremeri*, *costata* originate from North Australia and exhibit identical morphology and even the same coloration, a characteristic present in only one Australian species. The first taxon to be described, and therefore having priority, was found to be *Aquilonia incerta* (Boisduval, 1835).

Lycoides Montrouzier, 1855 bonum genus

Lycoides Montrouzier, 1855: 78 (1856: cxii (by “editor” of *Annales*); reprint of 1857: 78, 3 of “Table méthodique et générale de l’essai sur la faune de l’île de Voodlark”).

[*Lycoides* Lacordaire 1857: 341. *Lycoides* Gemminger & Harold 1869: 1655. *Lycoides* J. E. Olivier 1907: 68. *Lycoides* J. E. Olivier 1910: 55. *Lycoides* Neave ed. 1939: 1015. *Lycoides* McDermott 1966: 74 [not totally formal synonym of *Pristolycus*], 125].

Type species: *Lycoides chrysomelas* Montrouzier, 1855 by monotypy.

Lycoides chrysomelas Montrouzier, 1855 comb. rest.

Lycoides Chrysomelas Montrouzier, 1855: 78 (1856: cxii (by “editor” of *Annales*); reprint of 1857: 78, 3 of “Table méthodique et générale de l’essai sur la faune de l’île de Voodlark”). *Loc. typ.*: “Woodlark” [= also called: Muyua (Papua New Guinea)].

[*Lycoides chrysomelas* Lacordaire 1857: 341. *Lycoides chrysomelas* Gemminger & Harold 1869: 1655. *Lycoides chrysomelas* J. E. Olivier 1907: 62 (*incertae sedis*), 64. *Lycoides chrysomelas* J. E. Olivier 1910: 53 (*incertae sedis*). *Pristolycus chrysomelas* McDermott 1964: 16 (comb. nov. for *Lycoides chrysomelas*). *Pristolycus chrysomelas* McDermott 1966: 74, 130. *Pristolycus chrysomelas* Kazantsev 1995: 61-62. *Pristolycus chrysomelas* Jeng et al. 2002: 87, 88, 104. *Pristolycus chrysomelas* Keller 2024].

Note. The genus is considered synonymous with *Pristolycus* Gorham, 1883 (McDermott 1966), over which it would have precedence (Kazantsev 1995). The synonymy was not entirely formalized in McDermott (1964, 1966), and already considered very doubtful, due to the differences in the length of antennomeres II-IV (Kazantsev 1995; Jeng et al. 2002). Therefore, I consider *Lycoides* Montrouzier, 1855 **bonum genus** for some important and substantial peculiarities compared to *Pristolycus*. Some, such as the antennal differences, were already identified by Kazantsev (1995).

Morphological differences: The genus *Pristolycus* has the third antennal joint flattened, much longer than second and similar in appearance to the fourth (Kazantsev 1995, Jeng et al. 2002), while *Lycoides* has the third antennal joint similar in length and appearance to the second, and very much shorter than the following ones (Montrouzier 1855, Kazantsev 1995, Jeng et al. 2002).

Coloration differences: The genus *Pristolycus* has a black head, pronotum dark brown-black or pinkish red in the lateral sides, and the elytra red or red with some parts black: sutures, lateral margins and/or costal intervals (Pic 1928, Kazantsev 1995, Jeng et al. 2002), while *Lycoides* has a black head, antennae longer than the head and pronotum, elytra golden yellow with black apices, and the pronotum almost globose and golden yellow (Montrouzier 1855).

Biogeographical differences: The genus *Pristolycus* inhabits the Kuril Islands (Russia), Japan, China, Taiwan, Myanmar, Vietnam and Laos (Jeng et al. 2002; Kazantsev 2010), while *Lycoides* inhabits only Woodlark (Papua New Guinea), an island east of Papua New Guinea.

On morphological-biogeographical grounds, there are strong doubts that *Lycoides* belongs to Lampyridae. Montrouzier (1855: 78) in the original description says that *Lycoides* has the general characters of the “Lampyrides”, but this is a heterogeneous group where, if we check the text (Montrouzier 1855: 16) and the index (Montrouzier 1857: 3 of the Table méthodique

et générale de l'essai sur la faune de l'île de Voodlark), the author included species of the family Lampyridae and species belonging to the family Lycidae. We also note that in the original description, Montrouzier (1855: 78) says that *Lycoides* has a general appearance similar to *Lycus* (Coleoptera, Lycidae). Subsequently, Lacordaire also has no idea whether *Lycoides* belongs to the “Malacodermes” (essentially meaning the Lampyridae) or whether it could be a Lycidae (Lacordaire 1857: 340, 341). All the other subsequent authors, having seen “Lampyrides” in Montrouzier’s description, may simply have been misled and inserted it into the family Lampyridae, without Montrouzier having formally done so. Therefore, given that Montrouzier “inserted it into the Lycidae,” given that subsequently no one studied the type (including most probably also McDermott: see Kazantsev 1995), and that the morphology is well compatible, the genus *Lycoides* is here tentatively considered to belong to the family Lycidae (**new placement**).

Only the study of the type could definitively resolve this problem, however the holotype seems irretrievably lost. Unfortunately, most of the Montrouzier’s collection was lost upon his death, but some specimens may survive in the Pic or Perroud collections, now in the Paris Museum: MNHN (Jolivet et al. 2007), where the type is not present (Antoine Mantilleri pers. comm.), while there are no specimens in the Perroud collection in Lyon: the Linnean Society collections (Harold Labrique & Cédric Audibert pers. comm.).

Tribe *Pristolycini* J. R. Winkler, 1953

Tribe *Pristolycini* J. R. Winkler, 1953: 404, 405, 409 (Coleoptera, Lycidae).

= Tribe *Pristolycini* Kazantsev, 2010: 187-188 (188 also in the key), 205, 208 (Coleoptera, Lampyridae) [**homonym**].

Note. The genus *Pristolycus* Gorham, 1883 was included in the family Lycidae Laporte, 1836 for a long time, and then Winkler (1953) established the Tribe *Pristolycini* J. R. Winkler, 1953. In recent decades, however, the genus *Pristolycus* has been considered to be in the family Lampyridae Rafinesque, 1815, and Kazantsev established, again based on this genus *Pristolycus*, the new Tribe *Pristolycini* Kazantsev, 2010. Kazantsev evidently did not know that the tribe had already been established by Winkler in the Lycidae (Bouchard et al. 2011). In the latest world classifications, this precedence of Winkler was not noted and therefore the tribe is erroneously attributed to “Kazantsev, 2010” (e.g., Martin et al. 2019, Keller 2024). However, as mentioned above and as Bouchard et al. (2024) have already correctly noted, the real author of the Tribe *Pristolycini* is Winkler. It is also noteworthy that Kazantsev, only a year after establishing the Tribe *Pristolycini*, considered the author of this tribe to be Winkler and not himself (Kazantsev 2011: 392).

Lampyris lacordairei Lacordaire, 1830 nomen dubium, incertae sedis

Lampyris Lacordairei (Dejean) Lacordaire, 1830: 246. *Loc. typ.*: “Brésil”.

[*Lampyris lacordairei* Sherborn 1922-32: 3344 [n. n.].

Note. After the original description, this species has been entirely overlooked in all subsequent literature, including world catalogues (Olivier 1907, 1910, McDermott 1966, Keller 2024). It

is cited only by Sherborn (1922-1932), who regarded it as a *nomen nudum* and attributed it to Dejean. However, the work in which the species appears was in fact authored by Lacordaire, who explicitly cited numerous species named but never described by Dejean (see Dejean 1833, 1836). Lacordaire (1830: 217) clearly indicated new species (“*N. Sp., Nova Species*”) and specified that these taxa were absent from the Dejean collection and had not yet been described by any author. The species *Lampyris lacordairei*, however, is accompanied by a description and must therefore be considered validly described under the International Commission on Zoological Nomenclature (ICZN 1999: Art. 11., Art. 12.). In particular, while shared characters with related taxa are reported, the species is explicitly differentiated from all others by the presence of strongly pectinate antennae (“*antennes fortement pectinées*”), in contrast to the simple antennae (“*antennes simples*”) of the compared taxa (*Lampyris albomarginata*, *L. infusca*, *L. fuliginosa*, *L. pellucida*, *L. intermedia*, *L. sobrina*). These compared taxa were themselves not described at the time of Lacordaire’s work and fall into different categories: remaining as *nomen nudum* (*L. sobrina* Dejean = *Pygolampis sobrina* Dejean, 1833, 1836), whereas others were later formally described and can now be identified: e.g., *Lampyris pellucida* Dejean = *Aspisoma pellucidum* (Motschulsky, 1854), additional names can be tentatively associated with later taxa: e.g., *L. albomarginata* Dejean = *Cratomorphus albomarginatus* (Laporte, 1840) and *L. intermedia* Dejean = *Pyrogaster telephorinus* var. *intermedius* J. E. Olivier, 1911, while other taxa: *L. infusca* Dejean, *L. fuliginosa* Dejean, remain ambiguous and may correspond to more than one species (McDermott 1966, Lima et al. 2024). *Lampyris lacordairei* is therefore best regarded as a **nomen dubium** and **incertae sedis**, as the type material is lost and its precise taxonomic identity cannot be determined (ICZN 1999). It can, however, be confidently excluded from the genus *Lampyris* Geoffroy, 1762 which is a genus that does not occur in South America.

***Nyctocharis* Dejean, 1833**

Nyctocharis Dejean, 1833: 100.

[*Nyctocharis* Dejean 1836: 113. *Nyctocharis* Sherborn 1922-32: 4931. *Nyctocharis* Neave ed. 1940: 366 [n.n.]. *Nyctocharis* Bousquet & Bouchard 2013a: 26, 210].

Originally included available species. *Lampyris lacordairei* Lacordaire, 1830 (as “*Nyctocharis Lacordairei* Dejean”).

Type species. *Lampyris lacordairei* Lacordaire, 1830 by monotypy.

Current status. Nomen dubium. The type species is certainly not referable to *Lampyris* Geoffroy, 1762 therefore, *Nyctocharis* Dejean, 1833 must be regarded as a name of doubtful application (ICZN 1999: Glossary).

Note. *Lampyris lacordairei* Lacordaire, 1830 is treated here as a *nomen dubium* and species *incertae sedis*.

Because *Lampyris lacordairei* Lacordaire, 1830 has remained almost completely overlooked (see above), Neave (1940) and, in particular, Bousquet & Bouchard (2013a) considered that

the genus *Nyctocharis* originally included no available species. The other two nominal taxa: *Nyctocharis pennicornis* Dejean and *Nyctocharis phyllogaster* Lacordaire, are in fact *nomina nuda* (see Dejean 1833, 1836, Sherborn 1922-1932).

However, from the context of Dejean's catalogues (1833, 1836), the name *lacordairei* can be unambiguously associated with the nominal species (ICZN 1999: Art. 12.2.5), as it represents the only Lampyridae bearing this specific epithet. Furthermore, Lacordaire (1830) explicitly attributes the species to Dejean as its author. According to Bousquet & Bouchard (2013b: 223), this corresponds to the typical case in which a species originally included in Dejean's catalogues may be considered available. Finally, no other *Lampyris lacordairei* is listed in world catalogues (Olivier 1907, 1910, McDermott 1966, Keller 2024).

***Diaphanes vitrifer* (Walker, 1859) comb. nov., declinatio nov.**

Lampyris vitrifer Walker, 1859a: 259. *Loc. typ.*: "Ceylon" (from title).

Lampyris vitrifer Walker, 1859b: 277 (reprint of 1861: 450). *Loc. typ.*: "Ceylon" (from title) **nomen nudum**.

[*Lampyris vitrifer* Gemminger & Harold 1869: 1648. *Lampyris vitrifer* J. E. Olivier 1907: 62 (*incertae sedis*), 72. *Lampyris vitrifer* J. E. Olivier 1910: 54 (*incertae sedis*), 68. *Lampyris vitrifer* (? *Lychnuris*) McDermott 1966: 123 (*incertae sedis*), 148. *Diaphanes vitrifer/Lampyris vitrifer* Wijekoon et al. 2016: 70 (Table 1), 71, 74 (Appendix 1 and Appendix 2 as *Lampyris vitrifer*). *Diaphanes vitrifer* Wijekoon et al. 2021: 13 (Table- 02), 14 (Table- 03), 17, 20 (Appendix 01). *Diaphanes vitrifer/Lampyris vitrifer* De Silva et al. 2024: 36, 37 (is unclear who transferred this species to *Diaphanes*; it is probably not formally nomenclatural). [*Lampyris*] *vitrifer* Keller 2024. *Diaphanes vitrifer/Lampyris vitrifer* Wijekoon & Wegiriya 2024: 135 (taxonomic status is doubtful)].

Note. The types of the species described by Walker were dispersed in the collections of Templeton, Layard and other researchers and in the British Museum or in the Museum of the East India Company (Walker 1859b). The latter institution was dissolved and the collections were dispersed in 1879 among various museums, of which the zoological ones were transferred to the British Museum of Natural History (= Natural History Museum in London) and to the Manchester Museum. In this latter, MMUE, Entomology, Manchester Museum, The University of Manchester, is present only a specimen of *Diaphanes vitrifer* collected in Ceylon in 1936 (Diana Arzuza pers. comm.). However, the Natural History Museum of London holds 12 specimens (Figs. 1-2), one of which has the original label *Lampyris vitrifer* and the label "type", while the other eleven are attributed to *Diaphanes vitrifer*, and therefore very likely collected after the type. Wijekoon et al. (2016, 2021) recently found a single specimen of this species also in the collection (Sri Lankan firefly collection) of the Department of National Museums, Colombo, Sri Lanka, labeled as *Diaphanes vitrifer*. Therefore, Wijekoon & Wegiriya (2024) consider this taxon to be of doubtful taxonomic status and also for De Silva et al. (2024) the specimen is doubtful because the species is not correctly labeled *Lampyris vitrifer* as in Walker's original description, just as it is not clear who transferred it in the collection to the genus *Diaphanes* (De Silva et al. 2024). Furthermore, *Lampyris* / *Diaphanes vitrifer* is not mentioned in Haly (1890), a work focused on beetles preserved in the Colombo Museum, Ceylon. Walker (1858, 1859a) described the Lampyridae species of Ceylon as belonging to the genera *Harmatelia*, *Colopothia* and *Lampyris*. The latter genus, however, is not present on this island (McDermott 1966). However, based on



Fig. 1. *Lampyris vitrifera* Walker, 1859. Type.

Fig. 2. Box in the Natural History Museum, London, with specimens of *Diaphanes vitrifera* (Walker, 1859).

the size, color, and morphology cited in the original description and the type seen in London, the species *Lampyris vitrifera* is clearly to be attributed to the genus *Diaphanes* Motschulsky, 1853: *Diaphanes vitrifera* (Walker, 1859) **comb. nov.** (not formally made before). Since *Lampyris* and *vitrifera* are feminine, while *Diaphanes* is masculine, the **mandatory change** to *vitrifer* is necessary here. *Diaphanes lutescens* (Walker, 1858) from Sri Lanka (Keller 2024) is particularly similar to *Diaphanes vitrifera*, and only an in-depth study of the still little-known Sri Lankan fauna will be able to verify differences and affinities.

Lampyris macrophthalma [Drapiez, 1820]

[*Photinus Macrophthalmus* Laporte 1833: 152. *Lampyris macrophthalma* Motschulsky 1854: 41 (doubt it is a *Photinus*). *Lampyris macrophthalma* J. E. Olivier 1907: 62 (*incertae sedis*), 68. *Lampyris macrophthalma* J. E. Olivier 1910: 54 (*incertae sedis*), 63].

Note. None of the authors citing the species quote the original description work, and I personally have not found this species in P.A.J. Drapiez's works. Olivier (1907, 19010) then reports, again without mentioning the work, that the species is from 1820, while Laporte (1833) considered it to be a *Photinus*, so perhaps he must have read in Drapiez's paper (or in the label of a specimen?) that it came from the Americas. The eventual discovery of the description will be crucial; to date it appears to be a **nomen nudum**.

***Lampyris tenebrosa* [Drapiez, 1820]**

[*Photinus Tenebrosa* Laporte 1833: 153. *Lampyris tenebrosa* Motschulsky 1854: 42 (doubt it is a *Photinus*). *Lampyris tenebrosa* J. E. Olivier 1907: 62 (*incertae sedis*), 72. *Lampyris tenebrosa* J. E. Olivier 1910: 54 (*incertae sedis*), 67].

Note. None of the authors citing the species quote the original description work, and I personally have not found this species in P.A.J. Drapiez's works. Olivier (1907, 19010) then reports, again without mentioning the work, that the species is from 1820, while Laporte (1833) considered it to be a *Photinus*, so perhaps he must have read in Drapiez's paper (or in the label of a specimen?) that it came from the Americas. The eventual discovery of the description will be crucial; to date it appears to be a **nomen nudum**.

***Luciola exigua* (Gyllenhal, 1817)**

Lampyris exigua Gyllenhal, 1817: 22. *Loc. typ.*: "Insula Solo maris Pacifici". ["Dom. Osbeck. Mus. *Schönherr*"]. [*Lampyris exigua* Boisduval 1835: 130, 702 (reprint: 130, 691). *Loc. typ.*: "Île Solo, dans l'océan Pacifique" [redescription].

Note. The type locality has not been well defined and understood until now. McDermott (1966) hypothesized with doubt that it was Sula in the Moluccas (Ballantyne & Jusoh 2016a; Ballantyne et al. 2019). The type has not been found and the species is now considered *incertae sedis* (e.g., Ballantyne & Jusoh 2015, 2016a, 2016b, Ballantyne et al. 2019, Keller 2024), and based solely on coloration is similar to *Luciola ochracea* (Ballantyne & Jusoh 2016a, Ballantyne et al. 2019).

However, the type locality is certainly identifiable as the Sulu Archipelago in the Philippines (between Borneo and Mindanao), which in "1750-1850" was called Sooloo Archipelago (and the "sea" in front of it was called Sooloo Sea). The specimen most likely came from Jolo Island (or at least from one of the other two large islands of the archipelago: Basilan Island and Tawi-Tawi Island). With this my discovery, studying the fauna of the islands, *Luciola exigua* will therefore be easily classified taxonomically, recognizing the belonging to one of the various genera similar to *Luciola* present in the area.

***Lampyris marginipennis* Boisduval, 1835**

Lampyris marginipennis (d'Urville) Boisduval, 1835: 126, 702 (reprint: 126, 691). *Loc. typ.*: "île Waigiou". *Lampyris marginipennis* Guérin-Méneville 1838: 74. *Loc. typ.*: "Offak, terre des Papous" [redescription].

Note. In the text of Guérin-Méneville (1838: 5, 53 *etc.*) it is clearly evident that the type locality of *Lampyris marginipennis* is Offak: havre Offak, baie d'Offack in the Waigeo Island (= Fofak Harbor, Fofak Bay, Waigeo, Southwest Papua Province, Indonesia), where Dumont d'Urville landed, and not Mt. Arfak, New Guinea or unclear locality as in recent literature (Ballantyne & Lambkin 2009, Ballantyne & Jusoh 2016a, Ballantyne et al. 2019). With this clarification, researchers who will study the fauna of the island and the Fofak Bay, will be able to find similar specimens to the description of *Lampyris marginipennis* and probably taxonomically classified it, verifying any synonymies *etc.*

Lampyris serraticornis Boisduval, 1835

Lampyris serraticornis Boisduval, 1835: 124, 702 (reprint: 124, 691). *Loc. typ.*: “Nouvelle-Hollande”. [*Lampyris serraticornis* Sherborn 1922-32: 5907. *Lampyris serraticornis* McDermott 1966: 123 (*incertae sedis*; ? *Vesta*; locality: “Pacific Islands”), 145. *Lampyris serraticornis* Calder 1998: 173, 179 (*incertae sedis*). *Lampyris serraticornis* Ballantyne & Lambkin 2000: 73 (*Species Incertae*). *Lampyris serraticornis* Ballantyne & Jusoh 2016b: 16 (*Species Incertae*). *Lampyris/Luciola serraticornis* Ballantyne et al. 2019: 151 (Table 28), 153 (*species incertae sedis*). [*Lampyris*] *serraticornis*: Keller 2024].

Note: The description corresponds perfectly to that of *Pyrochroa serraticornis* Fabricius, 1775 (Fabricius 1775: 203), an author cited by Boisduval himself. The synonymy with Fabricius’ species has therefore been well known since at least 1869 (Gemminger & Harold 1869: 1628). The species is therefore not a Lampyridae but a Lycidae: *Trichalus serraticornis* (Fabricius, 1775). The same applies to *Lampyris haemorrhoidalis* Boisduval, 1835 (Boisduval 1835: 125), which from the description cannot be considered a Lampyridae.

Type species of *Luciola*, curiosity

Note. Interesting and singular that for Drapiez (1839) the genus *Lampyris* has two type species, and he first cites *Lampyris noctiluca* Linnaeus and then *Lampyris italica* Linnaeus (= *Luciola italica*). Drapiez had probably realised that the two species were very different, but the genus *Luciola* Laporte, 1833 had just been described (Laporte 1833) and he probably did not yet know it, also considering that obviously the drafting of the substantial dictionary took place well before 1839, the year of publication (Drapiez 1839). The description of *Lampyris italica* provided by Drapiez (1839) speaks of a red pronotum and does not mention any black spot (typical of *Luciola italica*), however he might have ignored it and in any case in those periods it was thought that in Italy there was only one species of “*Luciola*,” given that *Luciola pedemontana* ([Curtis], 1843), a species without a black pronotal spot, had not yet been described. Therefore, in my opinion, that of Drapiez (1839) cannot be considered as a misidentification.

Drapiez (1839): 256-257. **Type species:** “LAMPYRE D’ITALIE. *Lampyris Italica*, Lin., Oliv., Col. II, 28, 12”.

This is therefore a particular, bizarre and unusual case. Even if officially *Luciola italica* (Linnaeus, 1758) was designated by Drapiez as the (second) type species for another genus (*Lampyris*) and therefore not be a valid fixation because for the Code (ICZN 1999) it must be expressly included in it, this denotes for the umpteenth time how this taxon has always been (from 1839 to 2024-2025, therefore for 185-186 years), and must be considered, the type species of the genus *Luciola*. As has already been demonstrated several times by Fanti (2022, 2024, 2025) and, erroneously, not accepted or hypothesized by Ballantyne et al. (2025) and Bouchard et al. (2024). Also, Nunes et al. (2026) continue to perpetuate the error of considering *L. lusitanica* (Charpentier, 1825) the type species of *Luciola*. This, besides being taxonomically and scientifically incorrect, also deceives editors and journals, as well as any non-specialist reviewers, who are not firefly scientists, since firefly specialists should at least be able to disallow the presence of these type of errors.

Updates and information on Italian fireflies

Note. As with the neotype of *Luciola lusitanica* (Charpentier, 1825), proposed by Ballantyne et al. (2025) which is inappropriate and invalid according to the Code (Fanti 2025), the neotype of *Luciola pedemontana* ([Curtis], 1843), proposed by Nunes et al. (2026) is also inappropriate and invalid because, as already indicated and warned by Fanti (2025), the specific conditions foreseen by ICZN (1999) do not apply. It should only be established in exceptional cases and in response to highly significant taxonomic problems (ICZN 1999: Art. 75., 75.2., 75.3., Yanega et al. 2018), while the species is well known and has an isolated and distinct biogeographic distribution. The lack of the holotype alone is not sufficient reason to establish a neotype (Yanega et al. 2018). Therefore, the neotype of *Luciola pedemontana* is invalid, and moreover it was not made following the recommendation of the Code (ICZN 1999: Recommendation 75B., Fanti 2025: page 9).

Note. Fanti (2022) was the first to propose the history of the name *Luciola pedemontana*, of the describer Curtis and of the total lack of the type (Fanti 2025). The specimens present at the National Museum of Ireland - Natural History (Ireland), although not belonging to *Luciola pedemontana*, unlike what is indicated in Nunes et al. (2026), are to all intents and purposes to be referred to the Curtis collection, given that the information comes from the collections manager (Fanti 2022).

Note. Unlike what was indicated in Lagrotteria et al. (2026), the taxonomy of Italian fireflies had already been extensively revised in detail, based on the knowledge available up to that point, by Fanti (2022) and in particular regarding *Lampyris plurihomonyma* Fabrizio Fanti, 2022 and *Lampyris somnambula* A. Costa, 1874 there is no nomenclatural confusion at all. Lagrotteria et al. (2026) use synonyms and therefore old specific names for these two species, only because they have not yet been integrated into the IUCN works, but then consider *Nyctophila* J. E. Olivier, 1884 a subgenus of *Lampyris* Geoffroy, 1762 as proposed by Fanti (2022). However, this taxonomic act is also not implemented by IUCN. This is therefore an incorrect use of the taxonomy, which is regulated by the provisions of the ICZN (1999) and certainly not by IUCN. Furthermore, the International Commission does not accept the taxonomic acts such as Lagrotteria et al. (2026) claim, but are eventually refuted by researchers on the rigorous basis of the Code rules (ICZN 1999). Furthermore, the other studies indicated by Lagrotteria et al. (2026) use the old specific names simply because they were published before the work of Fanti (2022).

Note. It is noteworthy and I find it particular, if not disconcerting, that when analyzing the DNA barcoding - COI (Cytochrome Oxidase I) of species of the genus *Luciola* Laporte, 1833 in Italy and Europe, the various working groups obtain very different results. Mori et al. (2025) found a genetic distance between *Luciola lusitanica* (Charpentier, 1825) and *Luciola italica* (Linnaeus, 1758) of 4.0%; between *Luciola pedemontana* ([Curtis], 1843) and *Luciola italica* of 3.7%, 3.9%, and 4.0%, respectively (depending on the three groups of *Luciola pedemontana* they identified), a genetic distance between *Luciola lusitanica* and the

Luciola pedemontana groups of 2.2%, 2.7%, and 3.1% (which in the same working group: Baratti et al. 2025, later becomes 2%) and in one group of *Luciola pedemontana* the genetic distance with *Luciola italica* and *Luciola lusitanica* is 3.9% and 3.1%, respectively, with a gap of only 0.8%.

According to De Angelis (2006), *Luciola italica* has an evolutionary and origin history that is very different and separate from that of the *Luciola lusitanica* species complex.

While, Nunes (2024) with the same type of DNA barcoding: COI has instead identified an extraordinary and surprising genetic diversity among the species of the *lusitanica* group, of a good 16.6% compared to the 2-3% found by Mori et al. (2025) and Baratti et al. (2025: “low intraspecific genetic variation”). The same notable genetic distance between the species, with studies on the COI, majority of luciferase gene and a vast distributional sample of specimens, had also been identified by Day et al. (2014).

Subsequently, in Nunes et al. (2026), examining specimens of a wider range than Mori et al. (2025), the distance between the four species: *Luciola italica* and the *Luciola lusitanica* complex, is from the previous 16.6% (Nunes 2024) to a range between 10.6% and 15% (11.6-17% in the supplemental material).

Baratti et al. (2025) in the abstract consider *Luciola pedemontana* a sister taxon of *L. italica*, while in the same work, but in the poster, they consider *Luciola italica*, *Luciola pedemontana*, and *Luciola lusitanica* to be the same species. Mori et al. (2025) also do not support a distinct identity of these three taxa on the basis of DNA barcoding.

It is now established beyond any doubt that *Luciola lusitanica*, *Luciola pedemontana*, and *Luciola mingrelia* are a group of species quite distinct morphologically, genetically, and biogeographically (e.g., De Angelis 2006: erroneously misinterpreted as *Luciola italica*, De Cock et al. 2010, Day et al. 2014, Novák & De Cock 2017, Fanti 2022, Nunes et al. 2022, Nunes 2024, Ballantyne et al. 2025, Nunes et al. 2026). It has been highlighted several times that even in some American genera genetic analyses have provided problematic data. Therefore, applied in this way, genetics has significant limitations in solving taxonomic problems, which are often already clear from “traditional” studies, and highlights the absolute need for morphological, biogeographical, and paleontological integration, as well as a specialization on Lampyridae. Even for other groups, such as fishes (e.g., Italian *Cobitis*) or reptiles (e.g., *Vipera walser*), genetic characters appear to be of little use for taxonomic purposes (Zerunian 2025), creating, as the well-known ichthyologist Zerunian (2025) rightly observes, “a small short circuit of methods, which first create and then call into question the discovery of a new species.”

Note. Regarding *Luciola italica* and *Luciola pedemontana*, the Po River (at least from Pavia Province to the mouth) is and has been a huge biogeographic barrier, an aspect first identified by Camerini (2022). The populations of *Luciola pedemontana* north of the Po: Bosco Fontana (Bonaduce & Sabelli 2004, 2006), Cologno al Serio (Duchen et al. 2020), Como e Monte Bisbino (Nunes et al. 2026) are considered here to be an accidental introduction (perhaps even ancient) due to earthworks, nursery gardening, or human activity rather than a natural expansion. From the Mantua area, it then expanded naturally into the neighboring areas of Veneto (Bertolini 1904, Porta 1929, Fanti 2021) and also in Trentino: Storo (Nunes et al. 2026) and other localities.

While, *Luciola italica* south of the Po River is found at the Campotto of Argenta (Fabbri et al. 2005) and in the Po Valley and Mesola, given the land bridges created by the mouth of the Po River, it could also have arrived naturally (e.g., fluvial sedimentation), but an accidental introduction is still very likely. The reports for Bologna-Paderno, Bologna Villa Ghigi, Eremo of Tizzano (Branchini et al. 2006, De Angelis 2006), in the vicinity of Porretta (Baudi 1873b), Bologna (Bugnion 1916, 1921, 1929), Modenese (Bargagli 1872: with doubts about the species), are to be considered erroneous and should be referred to *Luciola pedemontana*, as well as the reports for Forlì, Villanova, Bussecchio, Farazzano, Spinello and Passo della Calla (Zangheri 1969), since I was able to see the specimens thanks to the courtesy of the Museum of Natural History of Verona.

Luciola pedemontana is therefore certainly introduced in the islands: Corsica and Sardinia (Fanti 2022) and I doubt that in these two islands the occurrence is the result of accidental introductions from localities of the Central Po River Valley: Castelletto di Branduzzo as reported by Lagrotteria et al. (2026) and Nunes et al. (2026), given that they are distant localities and belong to two different nations (France and Italy). If they really came from the same locality of the Po, one could only think of a voluntary introduction. It is also introduced in Sicily (Fanti 2022) as further demonstrated by the occasional findings in the Messina area and near Piana degli Albanesi (Lagrotteria et al. 2026), which are evidently not the result of a late Pleistocene colonization via land bridges as hypothesized by Lagrotteria et al. (2026). Furthermore, even in some islands: Ischia, Ponza, Ventotene, Zannone (Lagrotteria et al., 2026) these are accidental (more likely) or voluntary introductions.

About *Luciola mingrelica* (Ménétriés, 1832) in Italy (Mori et al., 2026: poster) and Friuli Venezia Giulia - San Giuseppe della Chiusa - ciclopedonale (= cycle/pedestrian path), 2 males, 6.vii.2020, C. M. Legittimo *leg.*, coll. Fanti (present work), it is most likely an accidental, if not even voluntary introduction, rather than an unlikely natural expansion from Croatia, considering that it has only gained notable prominence and notoriety among the citizens and the community of Trieste and its surroundings in the last few years (less than a decade).

Note. IUCN considered *L. noctiluca* (Linnaeus, 1758) as Near Threatened (Macadam et al. 2024), but the species is extremely common, ubiquitous in various environmental contexts, and has an extremely vast distributional range (Kazantsev 2010, Fanti 2022, Macadam et al. 2024), which is the largest among all *Lampyrus* Geoffroy, 1762 species, even if for African taxa we do not have well-known distribution data (Fanti & Parisi 2024). It is clear that like all insects, except for parasites and commensals of humans that exploit trade and human activities or constructions, it is in decline at least numerically. Therefore, *Lampyrus noctiluca* has lower numbers than decades ago and is undergoing contractions (Duchen et al. 2022, Macadam et al. 2024). However, it is a very resilient species, over the centuries it has already undergone contractions, in fact for Duchen et al. (2022) it had a population size of ca. 300,000 individuals around 3 mya, one million individuals around 560,000 years ago, 30,000 individuals at around 10,000 years ago with some signal of a population expansion starting 10,000 years ago until the present. While, for Catalán et al. (2025) the population sizes over the past 100,000 years, ranging from a high of 6,3 million individuals to a low of 7,000 individuals, most likely severely affected by the last ice age.

To date, the number is certainly several million individuals, also considering that in Italian agricultural areas, which are therefore transformed by man and not totally natural, dozens and dozens of specimens, if not more, thrive every 100 hectares (Fanti pers. obs.). Therefore, the species, unlike what is stated by IUCN (Macadam et al. 2024), does not currently have any level of threat at a global level. Therefore, the IUCN threat levels for this and other Italian species are much less realistic than the first red list of Italian Lampyridae present in Fanti (2022). Science is about transparency, and altering data or making it unrealistic undermines other, more important and necessary conservation projects and undermines the credibility of scientists.

Note. Mori et al. (2025: page 526) consider the presence in Italy of three species of *Luciola*: *Luciola pedemontana* ([Curtis], 1843), which for the authors was erroneously described by Motschulsky in 1853; *Luciola lusitanica* (Charpentier, 1825), and *Luciola italica* (Linnaeus, 1758) which for the authors was described in 1767. When in reality there are only two taxa (Fanti 2022), in fact after Fanti (2022) it is very clear that *Luciola pedemontana* is the name to be assigned to the Italian population previously known as *L. lusitanica*, which instead is a Portuguese endemic with few citations for Spain (Fanti 2022, Nunes et al. 2026).

Note. *Lampyris noctiluca* (Linnaeus, 1758) is well known to be absolutely identical morphologically throughout its vast range (Kazantsev 2010, Constantin 2014, Bezborodov & Koshkin 2018, Fanti 2022), and it is not, as Baratti et al. (2025) say, carrying out genetic analyses, a species-complex: with one taxon in Finland, one in Sweden, one with a wider range (Austria, Germany, Denmark, United Kingdom) and with a population, however genetically differentiated from the latter, present in Slovenia (for the latter it could also be a mistaken identification with *Lampyris zenkeri* Germar, 1817).

Note. Baratti et al. (2025) with genetic analyses consider that there are two species of *Phosphaenus hemipterus* (Goeze, 1777) in Europe: *Phosphaenus hemipterus* sp. 1 and *Phosphaenus hemipterus* sp. 2, one taxon of which is present in Germany and the other in Finland and Italy. This appears to be absolutely unsustainable from a biogeographical and morphological point of view. In fact, I have personally studied and extracted specimens of *Phosphaenus hemipterus* from Italy, Luxembourg and Germany and they are absolutely identical.

Note. *Lamprohiza foliacea* Baudi, 1872 is described on a male reported by Gené from Sardinia (Baudi 1872, 1873a, Fanti 2022). Subsequently, the species has not been found again (Fanti 2022, Lagrotteria et al. 2026). It should be noted that the genus *Lamprohiza* is also absent from nearby Corsica (Olivier 1884, Fanti 2022) and Sicily (Fanti 2022) and given the biology, biogeography and ecology of the genus, any future discovery on these islands, as with *Luciola*, should be considered an accidental or even deliberate introduction. Lagrotteria et al. (2026) consider the species probably extinct, but this is impossible since it is considered here to be an introduction or a labeling error and, in particular, other *Lamprohiza* species have not been significantly affected by climate change and human activity, and these

problems are not significantly encountered in Sardinia, particularly in its high-altitude areas, where some taxa of the genus *Lamprohiza* tend to occur. Giuseppe Gené visited Sardinia on four exploratory trips between 1833 and 1838 and was Professor of Zoology at the University of Turin and co-director of the Royal Museum of Natural History from 1831 (the type of *Lamprohiza foliacea* is now preserved in Turin Museum of Natural History). *Lamprohiza foliacea* was described twenty-five years after Gené's death, therefore a labeling error is extremely likely. The specific differences (Baudi 1872, 1873a, Porta 1929) in fact fall perfectly within the variability of *Lamprohiza splendidula*, of which *Lamprohiza foliacea* is here synonymized:

Lamprohiza splendidula (Linnaeus, 1767)

= *Lamprohiza foliacea* Baudi, 1872 **syn. nov.**

Note. *Lampyrus fuscata* Geisthardt, 1887. New data. Emilia Romagna: San Benedetto in Alpe, 1 male and 2 larvae, coll Fanti; San Benedetto in Alpe - Rio Canetole with a label reporting Tuscany, coll. Bergamo Museum (Fanti 2022). Distribution. Emilia Romagna: at least part of the province of Forlì-Cesena and probably present in other provinces near the Tuscan border (present work), Tuscany, Marche, Umbria, Lazio, Abruzzo, Molise and Apulia (Fanti 2022), Basilicata (Fanti 2024).

Note. It's difficult for me to trace the first “notti delle lucciole / lucciolate,” which were likely organized sporadically in the late 1980s and early 1990s by WWF Italy in various oases with dedicated evenings. The most reliable and consistent event so far, however, is the one begun in 1996 (with the environment already restored in the early 1990s) at Bosco della Bria (Binasco, MI), by the “Associazione Ambiente, Salute e Alimentazione, Binasco - Castello Visconteo” (D’Orsi 2019, Frost 2025, G. Camerini pers. comm.). Subsequently, from this and other initiatives, firefly nights followed one another and sprung up throughout the Italian peninsula.

While the first and most interesting national monitoring of Italian fireflies is, undoubtedly, the one proposed in May 2020 by Giuseppe Camerini on his website lampyridae.it, hoping that this beautiful initiative can receive funding and the right attention from the institutions.

DISCUSSION

An Australian species of firefly (family Lampyridae Rafinesque, 1815) currently known as *Aquilonia costata* (Lea, 1921) and characterised by brown elytra with blackish tips, had in fact already been described on the basis of specimens from various nineteenth-century scientific expeditions (Boisduval 1835, Guérin 1838, Le Guillou 1844). Boisduval (1835) described various species of Lampyridae from Oceania, on the basis of specimens present in the National Museum of Natural History (MNHN) of Paris, France, but also simply reporting the descriptions of previous authors. The lack of information on the types and old studies on these described species has led over the years to an inability to classify them taxonomically with precision. This paper resolves some of these cases and provides more detailed information for future new research, however there still remain some taxa to be

studied with new findings and with historical studies on the expeditions that collected these specimens. Furthermore, Boisdual (1835) “re-describes” in a less detailed way some of the species present in Guérin (1838), however his work, due to the various vicissitudes that were evidently the order of the day at that time, was published earlier. Finally, other taxonomical cases by Dejean, Montrouzier, Walker, Lacordaire, *etc.* and some updates on Italian fireflies have been resolved or given attention, in order to streamline and resolve the taxonomy, which had remained neglected for too long.

ACKNOWLEDGEMENTS. I am very grateful to Harold Labrique and Cédric Audibert for providing information on Perroud’s collection in Lyon (France), to Antoine Mantilleri for providing information on the specimens of the National Museum of Natural History, Paris (France), to Michael Geiser and Max Barclay (Natural History Museum of London) and Diana Arzuza Buelvas and Kayleigh Crawford (MMUE, Entomology, Manchester Museum, The University of Manchester) for information on Walker’s collection, and to Roberta Salmasso and the Museum of Natural History of Verona for information on Pietro Zangheri’s collection. I sincerely thank Carlo Maria Legittimo for providing *Luciola* specimens for my studies. I also thank Giuseppe Camerini enormously for his always valuable and comprehensive information, and because it is a real pleasure for me to discuss lampyridological issues with him.

REFERENCES

- BALLANTYNE L. A., FU X.-H., LAMBKIN C. L., JENG M.-L., FAUST L. F., WIEKON W. M. C. D., LI D. & ZHU T. 2013: Studies on south-east Asian fireflies: *Abscondita*, a new genus with details of life history, flashing patterns and behaviour of *Abs. chinensis* (L.) and *Abs. terminalis* (Olivier) (Coleoptera: Lampyridae: Luciolinae). *Zootaxa* 3721(1): 1-48.
- BALLANTYNE L. A. & JUSOH W. F. A. 2015: *McDermott’s 1966 subgenus Luciola, an update* (Coleoptera: Lampyridae: Luciolinae). Electronic file, 19 + [1] pp.
- BALLANTYNE L. A. & JUSOH W. F. A. 2016a: *Species diagnoses for the subgenus Luciola as represented in the Indo-Pacific region* (Coleoptera: Lampyridae: Luciolinae). Electronic file, 50 pp.
- BALLANTYNE L. A. & JUSOH W. F. A. 2016b: *List of genera and species in the Luciolinae from India, Sri Lanka, China, Korea, Japan, Myanmar, Thailand, Malaysia, Laos, Cambodia, Vietnam, Indonesia, Philippines, the Republic of Palau, the Federated States of Micronesia, Papua New Guinea, Solomon Islands, New Caledonia, Vanuatu, Fiji and Australia*. Electronic file, 17 pp.
- BALLANTYNE L. A., JUSOH W. F. A., NOVÁK M., NUNES V. & LIMA DA SILVEIRA L. F. 2025: The type species of *Luciola* Laporte, 1833 (Coleoptera, Lampyridae, Luciolinae). *Zoosystema* 47(7): 105-123.
- BALLANTYNE L. A. & LAMBKIN C. L. 2000: Lampyridae of Australia (Coleoptera: Lampyridae: Luciolinae: Luciolini). *Memoirs of the Queensland Museum* 46(1): 15-93.
- BALLANTYNE L. A. & LAMBKIN C. L. 2001: A new firefly, *Luciola* (*Pygoluciola*) *kinabalua*, new species (Coleoptera: Lampyridae), from Malaysia, with observations on a possible copulation clamp. *The Raffles Bulletin of Zoology* 49(2): 363-377.
- BALLANTYNE L. A. & LAMBKIN C. L. 2006: A phylogenetic reassessment of the rare S. E. Asian firefly genus *Pygoluciola* Wittmer (Coleoptera: Lampyridae: Luciolinae). *The Raffles Bulletin of Zoology* 54(1): 21-48.
- BALLANTYNE L. A. & LAMBKIN C. L. 2009: Systematics of Indo-Pacific fireflies with a redefinition of Australasian *Atypheila* Olliff, Madagascan *Photroluciola* Pic, and description of seven new genera from the Luciolinae (Coleoptera: Lampyridae). *Zootaxa* 1997: 1-188.
- BALLANTYNE L. A. & LAMBKIN C. L. 2013: Systematics and Phylogenetics of Indo-Pacific Luciolinae Fireflies (Coleoptera: Lampyridae) and the Description of new Genera. *Zootaxa* 3653: 1-162.
- BALLANTYNE L. A. & LAMBKIN C. L., BOONTOP Y. & JUSOH W. F. A. 2015: Revisional studies on the Luciolinae fireflies of Asia (Coleoptera: Lampyridae): 1. The genus *Pyrophanes* Olivier with two new species. 2. Four new species of *Pteroptyx* Olivier and 3. A new genus *Inflata* Boontop, with redescription of *Luciola indica* (Motsch.) as *Inflata indica* comb. nov. *Zootaxa* 3959(1): 1-84.

- BALLANTYNE L. A., LAMBKIN C. L., HO J.-Z., JUSOH W. F. A., NADA B., NAK-EIAM S., THANCHAROEN A., WATTANACHAIYINGCHAROEN W. & YIU V. 2019: The Luciolinae of S. E. Asia and the Australopacific region: a revisionary checklist (Coleoptera: Lampyridae) including description of three new genera and 13 new species. *Zootaxa* 4687(1): 1-174.
- BALLANTYNE L. A., LAMBKIN C. L., LUAN X., BOONTOP Y., NAK-EIAM S., PIMPASALEE S., SILALOM S. & THANCHAROEN A. 2016: Further studies on south eastern Asian Luciolinae: 1. *Sclerotia* Ballantyne, a new genus of fireflies with back swimming larvae 2. *Triangulara* Pimpasalee, a new genus from Thailand (Coleoptera: Lampyridae). *Zootaxa* 4170(2): 201-249.
- BARATTI M., PICCHI M. S., LIMA DA SILVEIRA L. F., ANCILLOTTO L., VIVIANO A., LELLI N. & MORI E. 2025: Illuminating firefly diversity: molecular taxonomy and conservation of Italian Lampyridae. *Congress of the European Society for Evolutionary Biology (ESEB), Abstract Book*, Barcelona, 17-22 August 2025. [poster: August 19, 2025, 5:00 PM - 7:00 PM].
- BARGAGLI P. 1872: Alcune escursioni entomologiche fatte in Italia nel 1872. *Atti della Società Italiana di Scienze Naturali* 15: 484-503.
- BAUDI F. 1872: Europeae et circummediterraneae Faunae Dascillidum et Malacodermatum specierum, quae Comes Dejean in suo Catalogo ed. 3^a consignavit, ex ejusdem collectione in R. Taurinensi Musaeo asservata, cum auctorum hodiernae recepta denominatione, collatio. *Berliner Entomologische Zeitschrift* [1871] 15: 89-130.
- BAUDI F. 1873a: Rassegna entomologica. *Bollettino della Società Entomologica Italiana* 5(2): 98-123.
- BAUDI F. 1873b: Catalogo dei Dascillidi, Malacodermi e Terebridi della Fauna europea e circummediterranea appartenenti alle collezioni del Museo Civico di Genova. *Annali del Museo di Storia Naturale di Genova* 4: 226-268.
- BERTOLINI S. de 1904: Catalogo dei Coleotteri d'Italia. *Rivista Italiana di Scienze Naturali, Siena* (1899-1904), 144 pp.
- BEZBORODOV V. G. & KOSHKIN E. S. 2018: On distribution of *Lampyris noctiluca* (Linnaeus, 1767) (Coleoptera, Lampyridae) in the Amur region. *Ecologica Montenegrina* 16: 111-113.
- BOISDUVAL J. P. A. D. de 1835: *Voyage de découvertes de l'Astrolabe Exécuté par ordre du Roi, pendant les années 1826-1827-1828-1829, sous le commandement de M. J. Dumont d'Urville. Faune Entomologique de l'Océan Pacifique, avec l'illustration des insectes nouveaux recueillis pendant le voyage; par le Docteur Boisduval. Deuxième Partie. Coléoptères et autres ordres*. J. Tastu, Paris, vii + 716 pp. + plates [plates with vernacular names published in 1832 or later. Coléoptères plates 6-9] [reprinted in 1835: *Faune entomologique de l'Océanie comprenant Les Coléoptères, Les Hémiptères, les Néuroptères, les Hyménoptères Et Les Diptères*. Roret, Paris, vii + 705 pp.].
- BONADUCE A. & SABELLI B. 2004: 21. Coleoptera, Lampyridae (pp. 273-275). In: CERRETTI P., HANDERSEN S., MASON F., NARDI G., TISATO M. & ZAPPAROLI M. (eds.): *Invertebrati di una foresta della Pianura Padana Bosco della Fontana, Secondo contributo. Conservazione Habitat Invertebrati [Short notes]* 3: 257-303.
- BONADUCE A. & SABELLI B. 2006: The Lampyridae from the Nature Reserve Bosco della Fontana (Marmirolo, Mantua). *Bollettino del Museo Civico di Storia Naturale di Verona (Botanica Zoologia)* 30: 155-159.
- BOUCHARD P., BOUSQUET Y., DAVIES A. E., ALONSO-ZARAZAGA M. A., LAWRENCE J. F., LYAL C. H. C., NEWTON A. F., REID C. A. M., SCHMITT M., ŚLIPÍŃSKI S. A. & SMITH A. B. T. 2011: Family-group names in Coleoptera (Insecta). *ZooKeys* 88: 1-972.
- BOUCHARD P., BOUSQUET Y., DAVIES A. E. & CAI C. 2024: On the nomenclatural status of type genera in Coleoptera (Insecta). *ZooKeys* 1194: 1-981.
- BOUSQUET Y. 2016: Litteratura Coleopterologica (1758-1900): a guide to selected books related to the taxonomy of Coleoptera with publication dates and notes. *ZooKeys* 583: 1-776.
- BOUSQUET Y. & BOUCHARD P. 2013a: The genera in the second catalogue (1833-1836) of Dejean's Coleoptera collection. *ZooKeys* 282: 1-219.
- BOUSQUET Y. & BOUCHARD P. 2013b: The genera in the third catalogue (1836-1837) of Dejean's Coleoptera collection. *ZooKeys* 282: 221-239.
- BRANCHINI B. R., SOUTHWORTH T. L., DE ANGELIS J. P., RODA A. & MICHELINI E. 2006: Luciferase from the Italian firefly *Luciola italica*: Molecular cloning and expression. *Comparative Biochemistry and Physiology, Part B* 145: 159-167.
- BUGNION E. 1916: Les insectes phosphorescents. *Bulletin de la Société Murithienne* 39: 82-124 + tables I-IV.
- BUGNION E. 1921: La biologie de la Luciole (*Luciola lusitanica*). *Revue d'Histoire naturelle appliquée. Mammalogie - Aquiculture - Entomologie - Botanique - Colonisation - Aquariums et Terrariums*, Première partie, vol. 2: 12-18. [separatum: pp. 1-7].

- BUGNION E. 1929: Le ver-luisant provençal et la luciole niçoise. *Association des Naturalistes de Nice et des Alpes-Maritimes, Mémoire supplément au "Riviera Scientifique"* 1929, 131 pp.
- CALDER A. A. 1998: Coleoptera: Elateroidea. In: Wells A. (Ed.), *Zoological Catalogue of Australia* 29.6. CSIRO Publishing, Melbourne, 1-248.
- CAMERINI G. 2022: Habitat selection by *Luciola pedemontana* (Coleoptera Lampyridae) in a lowland landscape in Northern Italy: implications for conservation. *Biologia Ambientale* 36: 64-72.
- CATALÁN A., GYGAX D., CANDOLIN U., TUSSO S., DUCHEN P. & HÖHNA S. 2025: Sex-biased Migration and Demographic History of the Big European Firefly *Lampyrus noctiluca*. *Molecular Biology and Evolution* 42: 1-14.
- CONSTANTIN R. 2014: Contribution à l'étude des Lampyridae de France, actualisation de leur distribution et observations en France de *Lampyrus iberica* Geisthardt, Figueira, Day & De Cock, 2008 (Coleoptera, Elateroidea). *Le Coléoptériste* 17(1): 34-44.
- DAMOISEAU R. 1967: Liste du matériel typique conserve dans les collections entomologiques de l'Institut Royal des Sciences Naturelles de Belgique Coleoptera - 1 - Famille des Lampyridae. *Bulletin de l'Institut royal des Sciences naturelles de Belgique* 43(8): 1-24.
- DAY J. C., BONADUCE A. & SABELLI B. & DE COCK R. 2014: Phylogeography of European Fireflies: Five Species in One. *The International Firefly Symposium 2014*, August 11-15, 2014, Gainesville, Florida, USA [poster].
- DE ANGELIS J. P. 2006: *Cloning, Sequencing, and Characterization of Luciola italica Luciferase*. Honors Thesis, Connecticut College, 40 pp.
- DE COCK R., MOISEFF A., DAY J. & CASTLE S. 2010: Discovery of synchronous flashing in a population of *Luciola* sp. nov. from Europe, Paxos (Greece, Ionian islands). *2nd International Firefly Symposium 2010 (IFS 2010)*, 2-5 August 2010, Selangor, Malaysia [poster]. [poster abstract (2012): Discovery of synchronous flashing in a new species of *Luciola* from Europe (Paxos, Ionian Islands, Greece). *Lampyrid* 2: 1971-198].
- DEJEAN P. F. M. A. 1821: *Catalogue de la collection de Coléoptères de M. le Baron Dejean*. Crevot Libraire, Paris, [2] + viii + 136 pp.
- DEJEAN P. F. M. A. 1833: *Catalogue des Coléoptères de la collection de M. le Comte Dejean. [Livraisons 1-2]*. Méquignon-Marvis, Paris, 1-176.
- DEJEAN P. F. M. A. 1836: *Catalogue des coléoptères de la collection de M. le comte Dejean. Troisième édition, revue, corrigée et augmentée. [Livraisons 1-4]*. Méquignon-Marvis Père et Fils, Paris, 1-384.
- DE SILVA D. R., WIJEKOON W. M. C. D. MADUSHANKA T. I. & WEGIRIYA H. C. E. 2024: *Diaphanes olivieri* Gorham 1895 (Coleoptera: Lampyridae: Lampyrinae) in Sri Lanka: Rediscovery and First Record of Female. *Formosan Entomologist* 44: 36-47.
- D'ORSI A. 2019: E lucciola fu. *La Nuova Ecologia* 19: 74-76.
- DRAPIEZ P. A. J. 1839: *Dictionnaire classique des Sciences Naturelles, présentant la définition, l'analyse et l'histoire de tous les êtres qui composent les trois règnes, leur application générale aux arts, à l'agriculture, à la médecine, à l'économie domestique, etc.; résumant tous les faits présentés par les dictionnaires d'histoire naturelle; augmenté des nombreuses découvertes acquises depuis la publication de ces ouvrages. Tome Sixième*. Meline, Cans et Compagnie, Bruxelles, 567 pp. [Reprint: Drapiez A. 1853: *Les trois règnes de la nature. Dictionnaire classique des sciences naturelles, présentant la définition, l'analyse et l'histoire de tous les êtres qui composent les trois règnes. Leur application générale aux Arts, à l'Agriculture, à la Médecine, à l'Économie Domestique, etc.; résumant les travaux de Buffon, Daubenton, Lacépède, Cuvier, de Jussieu, etc., etc. augmenté des nombreuses découvertes acquises depuis la publication de ces ouvrages. Tome Sixième. I-L*. Meline, Cans et C^e, Bruxelles, 567 pp.].
- DUCHEN P., HÖHNA S. & CATALÁN A. 2020: Genomics of European fireflies: first results and next steps. *Bulletin de la Société Vaudoise des Sciences Naturelles* 99: 67-72 + Annexes pp. 1-2.
- DUCHEN P., HÖHNA S. & CATALÁN A. 2022: Population history and genomic diversity of *Lampyrus noctiluca* and *Luciola italica* in the canton Vaud. *Bulletin de la Société Vaudoise des Sciences Naturelles* 101: 31-38.
- ERICHSON W. F. 1845: Bericht über die wissenschaftlichen Leistungen in der Naturgeschichte der Insecten, Arachniden, Crustaceen und Entomostraceen während des Jahres 1844. *Archiv für Naturgeschichte* 11(2): 67-181.
- ESCHSCHOLTZ J. F. Von 1822: *Entomographien. Vol. I*. G. Reimer, Berlin, 128 + 3 pp., 2 plates.
- FABBRI R., SPETTOLI R. & CAPOVILLA R. 2005: [Lestes 2005]. Relazione finale dell'indagine sugli Insetti del Parco Regionale del Delta del Po - Stazione di Campotto di Argenta (Ferrara). *Lestes, Associazione di Ricerca e Studio nelle Scienze Naturali c/o Museo Civico di Storia Naturale di Ferrara*, 63 pp.

- FABRICIUS J. C. 1775: *Systema Entomologiae, sistens insectorvm classes, ordines, genera, species, adiectis synonymis, locis, descriptionibvs, observationibvs*. Kortii, Flensbvrge et Lipsiae, 832 pp.
- FANTI F. 2020: A new *Lamprohiza* (Coleoptera, Lampyridae) from Turkey. *Rivista del Museo Civico di Scienze Naturali "Enrico Caffi"*, Bergamo 33: 87-90.
- FANTI F. 2021: Insecta Coleoptera Lampyridae. In: BOLOGNA M. A., ZAPPAROLI M., OLIVERIO M., MINELLI A., BONATO L., CIANFERONI F., STOCH F. (eds.): *Checklist of the Italian Fauna. Version 1.0*. Last update: 2021-05-31. [<https://www.lifewatchitaly.eu/en/initiatives/checklist-fauna-italia-en/checklist/>].
- FANTI F. 2022: *Guida delle lucciole d'Italia. Lampyridae*. C&P Adver Effigi Edizioni, Arcidosso (GR), 478 pp.
- FANTI F. 2024: Lampyridae: History of the type species of the genus *Luciola*, updated checklist of North African fireflies, and other taxonomic and faunistic notes. *Baltic Journal of Coleopterology* 24(1): 43-64.
- FANTI F. 2025: *On the inopportune neotype designation of Luciola lusitanica (Charpentier, 1825), and on the incorrect type species designation of Luciola*. Self-Publishing, Cetona, Tuscany, Italy, 27.09.2025 - 14 PM (UTC +1), 15 pp. [ISBN: 979-890030063-4; Electronic copies: PDF/A format; public domain].
- FANTI F. & PARISI F. 2024: *An updated checklist of the Sub-Saharan fireflies (Coleoptera, Lampyridae) with taxonomic notes*. Self-Publishing, Cetona, Tuscany, Italy, 7.03.2024 - 12 AM (UTC +1), 61 pp. [ISBN: 979-8-89170-085-7; Electronic copies: PDF/A format; public domain].
- FAUST L. F. 2017: *Fireflies, Glow-worms, and Lightning Bugs. Identification and Natural History of the Fireflies of the Eastern and Central United States and Canada*. University of Georgia Press, Series: A Wormsloe Foundation nature book, Athens, Georgia, 356 pp.
- FROST N. 2025: [Photographs by DEL VECCHIO M. & VENDITTI S.]. Lights out: can we stop glow-worms and fireflies fading away?. *The Guardian (USA edition)*, 8 November 2025, pp. 52-53. [There are two photographs, one uncredited and one accredited to Peter Flude/The Guardian].
- GARDINER T. A. 2011: *Glowing, glowing, gone? The Plight of the Glow-worm in Essex*. British Naturalists' Association, Corby, Northants, viii + 80 pp.
- GEMMINGER M. 1870: Nachstehende Art- oder Gattungsnamen ändere ich, wie folgt. ab: 1. Artnamen. 2. Gattungen. *Coleopterologische Hefte* 6: 119-124.
- GEMMINGER M. & HAROLD E. F. von 1869: *Catalogus Coleopterorum hucusque descriptorum synonymicus et systematicus. Tom. VI. Rhipidoceridae, Dascillidae, Malacodermidae, Cleridae, Lymexylonidae, Cupesidae, Ptinidae, Bostrychidae, Cioidae*. Sumptu E. H. Gummi, Monachii, 1609-1800 + 5.
- GUÉRIN-MÉNEVILLE F. E. 1838: *Voyage autour du monde, Exécuté par Ordre du Roi, Sur la Corvette de Sa Majesté, La Coquille, pendant les années 1822, 1823, 1824 et 1825, sous le ministère et conformément aux instructions de S. E. M. Le Marquis de Clermont-Tonnerre, ministre de la marine; Et publié sous les auspices de son Excellence M^{gr} le C^{te} De Chabrol, ministre de la marine et des colonies, par M. L. I. Duperrey. Zoologie, par M. Lesson. Tome second. - 2^e Partie*. Arthus Bertrand, Paris, xii + 9-319 pp.
- GYLLENHAL L. 1817: Appendix ad C. J. Schönherr Synonymiam Insectorum Tom. I. Part 3. sistens Descriptiones Novarum Specierum. *Scaris in Officina Lewerentziana*, Stockholm, 1-266 + Tables 5-6.
- HALY A. 1890: *First Report on the Collection of Beetles in the Colombo Museum*. George J. A. Skeen, Government Printer, Colombo, 208 pp.
- ICZN (International Commission on Zoological Nomenclature) 1999: *International Code of Zoological Nomenclature, Fourth Edition. The International Trust for Zoological Nomenclature c/o The Natural History Museum*, London, 306 pp.
- JENG M.-L., YANG P.-S. & SATÔ M. 2002: Notes on the Morphology and Systematics of the Genus *Pristolytus* GORHAM (Coleoptera, Lampyridae). *The Japanese Journal of Systematic Entomology* 8(1): 87-108.
- JOLIVET P., VERMA K. K. & MILLE C. 2007: New genera and species of Eumolpinae from New Caledonia [Coleoptera, Chrysomelidae]. *Revue française d'Entomologie (N.S.)* 29(2-3): 77-92.
- KAZANTSEV S. V. 1995: A review of the genus *Pristolytus* Gorham with the description of a new species (Coleoptera Lampyridae). *Russian Entomological Journal* 4(1-4): 61-62.
- KAZANTSEV S. V. 2010: Fireflies of Russia and adjacent territories (Coleoptera: Lampyridae). *Russian Entomological Journal* 19(3): 187-208 [in Russian].
- KAZANTSEV S. V. 2011: An annotated checklist of Cantharoidea (Coleoptera) of Russia and adjacent territories. *Russian Entomological Journal* 20(4): 387-410.
- KAZANTSEV S. V. 2021: New species of *Malthodes* Kiesenwetter, 1852 from the Caucasus, with taxonomic notes on Malthininae (Coleoptera: Cantharidae) of Russia. *Caucasian Entomological Bulletin* 17(2): 285-291.
- KELLER O. 2024: *The Lampyridae of the World Database*. <https://lampyridae.world/#/>

- LACORDAIRE J. T. 1830: Mémoire sur les Habitudes des Insectes coléoptères de l'Amérique méridionale. *Annales des Sciences Naturelles* 20: 185-291.
- LACORDAIRE J. T. 1857: *Histoire naturelle des insectes. Genera des Coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes. Tome quatrième contenant les familles des buprestides, throschides, eucnémides, élatérides, cébrionides, cérophytides, rhépicerides, dascyllides, malacodermes, clérides, lyméxylones, cupésides, ptiniores, bostrichides et cissides*. Librairie encyclopédique de Roret, Paris, 579 pp.
- LAGROTTERIA A., ANCILLOTTO L., BARATTI M., PICCHI M. S., LIMA DA SILVEIRA L. F., FARAONE F. P., MARRONE F., VECCHIONI L., MILANA G., DI BARI P., FRAGALÀ D., LAZZERI L., FORBICIONI L., SCHIFANI E., CIOPPA D., GUADAGNINI A., PISU D., VIVIANO A., MAGGIONI M., SERAFINI E., CANESTRELLI D., GARDINI P., LELLI N., SPILINGA C., MENCHETTI M., POLIDORI C., SOMÀ F., SCARFÒ M., DE COCK R. & MORI E. 2026: Lights in the Mediterranean night: firefly distribution in Italian islands revealed through citizen-science and scientific field-work. *Biogeographia - The Journal of Integrative Biogeography* 41(1): a066 [19 pp. + Supplementary Material].
- LAPORTE F. L. N. DE CAUMONT 1833: Essai d'une révision du genre *Lampyre*. *Annales de la Société Entomologique de France* 2: 122-153.
- LEA A. M. 1909: Revision of the Australian and Tasmanian Malacodermidæ. *The Transactions of the Entomological Society of London* 1909: 45-251, plates II-VI.
- LEA A. M. 1921a: On Coleoptera, mostly from Queensland. *Memoirs of the Queensland Museum* 7: 182-240.
- LEA A. M. 1921b: On Australian Coleoptera of the Family Malacodermidæ. *Transactions and Proceedings of the Royal Society of South Australia* 45: 50-135.
- LE GUILLOU E. J. F. 1844: Description de vingt insectes Coléoptères recueillis pendant le voyage autour du monde de l'*Astrolabe* et la *Zélée*. *Revue Zoologique* 7: 220-225.
- LIMA W., MOSEYKO A. G. & LIMA DA SILVEIRA L. F. 2024: New world lampyrid types at the Zoological Institute of the Russian Academy of Sciences. *European Journal of Taxonomy* 943: 24-58.
- LLOYD J. E. 1971: Bioluminescent Communication in Insects. *Annual Review of Entomology* 16: 97-122.
- LLOYD J. E. 1983: Bioluminescence and Communication in Insects. *Annual Review of Entomology* 28: 131-160.
- MACADAM C., DE COCK R. & HENRIQUES S. 2024: *Lampyris noctiluca*. The IUCN Red List of Threatened Species 2024: e.T216125791A216918599. <https://dx.doi.org/10.2305/IUCN.UK.2024-1.RLTS.T216125791A216918599.en>.
- MARTIN G. J., BRANHAM M. A., WHITING M. F. & BYBEE S. M. 2016: Total evidence phylogeny and the evolution of adult bioluminescence in fireflies (Coleoptera: Lampyridae). *Molecular Phylogenetics and Evolution* 107[2017]: 564-575 + supplementary material.
- MARTIN G. J., STANGER-HALL K. F., BRANHAM M. A., LIMA DA SILVEIRA L. F., LOWER S. E., HALL D. W., LI X.-Y., LEMMON A. R., LEMMON E. M. & BYBEE S. M. 2019: Higher-level Phylogeny and Reclassification of Lampyridae (Coleoptera: Elateroidea). *Insect Systematics and Diversity* 3(6): 11: 1-15 + supplementary data.
- MASTERS G. 1886: Catalogue of the described Coleoptera of Australia. Part IV. *The Proceedings of the Linnean Society of New South Wales* (2)1: 259-380.
- MCDERMOTT F. A. 1964: The taxonomy of the Lampyridae (Coleoptera). *Transactions of the American Entomological Society* 90(1): 1-72.
- MCDERMOTT F. A. 1966: Lampyridae. In: STEEL W. O. (eds.): *Coleopterorum Catalogus. Supplementa. Pars 9 (Editio Secunda)*. Uitgeverij Dr. W. Junk, 's-Gravenhage, 149 pp.
- MONTROUZIER J. X. H. 1855: Supplément aux Coléoptères de Woodlark (p. 78). In: *Essai sur la faune de l'île de Woodlark ou Moïou. Annales des Sciences Physiques et Naturelles, d'Agriculture et d'Industrie, publiées par La Société impériale d'Agriculture, etc., de Lyon*, (Deuxième Série) 7(1): 1-114. ["Essai" continued in 1856: *Annales des Sciences Physiques et Naturelles, d'Agriculture et d'Industrie, publiées par La Société impériale d'Agriculture, etc., de Lyon*, (Deuxième Série), 8: 393-504 [+ xciii-cxxix (by editor of *Annales*)] / reprint of 1855 and 1856: Montrouzier J. X. H. 1857: Supplément aux Coléoptères de Woodlark (p. 78). In: *Essai sur la faune de l'île de Woodlark ou Moïou*. Imprimerie de F. Dumoulin, Libraire, Lyon, 226 + 7 pp.].
- MORI E., VIVIANO A., BARATTI M., SERAFINI E., GABBRIELLI B., PICCHI M. S., GIANNETTI D., MASCALCHI C. & ANCILLOTTO L. 2025: A light in the dark: DNA barcoding provides new data about the taxonomy of the Italian *Luciola* (Coleoptera, Lampyridae) fireflies. *Zootaxa* 5609(4): 525-536.
- MORI E., LAGROTTERIA A., BARATTI M., VIVIANO A., PICCHI M. S., LIMA DA SILVEIRA L. F., LELLI N. & ANCILLOTTO L. 2026: *L.U.C.E.: Lighting up the Understudied but Charismatic fireflies of Europe*. Tetris Final Event, 27-29 April 2026, Brussels, Belgium, poster.
- MOTSCHULSKY V. de 1854: Lampyrides. (Continuation.) *Etudes Entomologiques* 2[1853]: 33-43.

- NEAVE S. A. ed. 1939: Nomenclator Zoologicus. A List of the Names of Genera and Subgenera in Zoology from the Tenth Edition of Linnaeus 1758 to the end of 1935. *The Zoological Society of London*, London, Vol. II. D-L, [1-2] + 1025 pp. [Book series, initial set of 4 volumes. Neave S. A. 1939-1996 (ed.): vol I. A-C, II. D-L, III. M-P, IV. Q-Z, V supplement (1945), vol. VI. (1955), vol. IX. (1996)].
- NEAVE S. A. ed. 1940: Nomenclator Zoologicus. A List of the Names of Genera and Subgenera in Zoology from the Tenth Edition of Linnaeus 1758 to the end of 1935. *The Zoological Society of London*, London, Vol. III. M-P, 1065 pp.
- NOVÁK M. & DE COCK R. 2017: Light in the darkness I: some insights in Lampyridae from the Balkans from the Croatian Natural History Museum: species of the genus *Luciola* Laporte, 1833. *International Firefly Symposium, 2017* (IFS 2017), 24-28 Aprile 2017, Taipei, Taiwan [poster; proceedings p. 50].
- NUNES V. C. S. 2024: *Shrouded in a flashing mystery: decoding the gene flow and species boundaries in the firefly Luciola lusitanica* (Lampyridae: Coleoptera). Tese de mestrado, Biologia do Organismo e Evolução, 2023, Universidade de Lisboa, Faculdade de Ciências. [unpublished: <https://repositorio.ulisboa.pt/handle/10451/64409>].
- NUNES V. C. S., DE COCK R., KOKEN M., SOUTO P. M., LIMA DA SILVEIRA L. F., PAULO O. S. & PACHECO Y. 2022: Shrouded in a flashing mystery: decoding the gene flow and species boundaries in the firefly *Luciola lusitanica* Charpentier, 1825. *International Firefly Symposium (IFS) Abstract Book*, 15-18 June 2022, Parque Biológico de Gaia, Portugal, p. 79.
- NUNES V. C. S., PAULO O. S., NOVÁK M., TAKIYA D. M., PACHECO Y., CADIGAN J., DE COCK R., SOUTO P. M., VIGNJEVIĆ G., CATALÁN A., KOKEN M., STANGER-HALL K., BALLANTYNE L. A. & LIMA DA SILVEIRA L. F. 2026: Systematics, phylogeography and integrative taxonomy of European *Luciola* fireflies (Lampyridae: Luciolinae). *Systematics and Biodiversity* 24(1): 2632789. [59 pp. + Supplemental material].
- OLIVIER J. E. 1884: Essai d'une révision des espèces européennes & circuméditerranéennes de la famille des lampyrides. *Abeille, Journal d'Entomologie* 22: 1-54 + [2] + 2 tables + Notes complémentaires a l'essai sur les lampyrides: pp. 1-4.
- OLIVIER J. E. 1902: Catalogue synonymique & systématique des espèces de «*Luciola*» et genres voisins décrits jusqu'à ce jour. *Revue Scientifique du Bourbonnais et du Centre de la France* 15: 69-88 [reprint extract from the *Revue Scientifique du Bourbonnais et du Centre de la France*. Imprimerie Etienne Auclair, Moulins, pp. 1-20].
- OLIVIER J. E. 1907: Coleoptera. Fam. Lampyridae (pp. 1-74). In: WYTSMAN P. (ed.): *Genera Insectorum*, 53.
- OLIVIER J. E. 1910: Lampyridae. In: SCHENKLING S. (eds.): *Coleopterorum Catalogus. Pars 9*. Berlin: W. Junk, 68 pp.
- OLLIFF A. S. 1890: New species of Lampyridae, including a notice of the Mt. Wilson Fire-fly. *The Proceedings of the Linnean Society of New South Wales* (2)4: 643-653, 1297-1298.
- PARVEZ, CHAKRAVARTHY A. K., KELLER O., GUPTA D. & DAS A. 2026: A checklist of fireflies (Coleoptera: Lampyridae) from India. *Zootaxa* 5768(2): 229-249.
- PIC M. 1928: Etude synoptique du genre *Pristolyceus* Gorh.(Col.). *Entomologische Nachrichtenblatt (Troppau)* 2(1): 3-4.
- PORTA A. 1929: *Fauna Coleopterorum Italica. Vol III: Diversicornia*. Piacenza: Stabilimento Tipografico Piacentino, 466 pp.
- SHERBORN C. D. 1922-32: *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. Sectio secunda. A Kalendis Ianuariis, MDCCCL usque ad finem Decembris, MDCCCL*. London: Longmans, Green & Co. & British Museum (Natural History), cxxxi + 7056 pp.
- WALKER F. 1858: Characters of some apparently undescribed Ceylon Insects. *The Annals and Magazine of Natural History* (3)2(10): 280-286.
- WALKER F. 1859a: Characters of some apparently undescribed Ceylon Insects. *The Annals and Magazine of Natural History* (3)3(16): 258-265. [DP: 1859 (title page), No. 16. April 1859]
- WALKER F. 1859b: List of Ceylon Insects (pp. 269-293). In: *Ceylon: an account of the island physical, historical, and topographical with notices of its natural history, antiquities and productions by Sir James Emerson Tennent, K.C.S., LL.D. &c. Illustrated by maps, plans, and drawings. Volume I*. Longman, Green, Longman, and Roberts, London. xxxv + [1] + 619 pp. [DP: 1859 (title page; introduction dated 13 July 1859), 15 October 1859 (Athenaeum); Lit Gaz; Publ Circ], 26 October 1859 (Bookseller), October 1859 (Edinb Rev)] [Bousquet, 2016: "The entire work was published in two volumes issued simultaneously. Five editions, variously revised, were published within eight months, 1859-1860. Walker's section was also published in 1861 on pages 442-463 of "Sketches of the Natural History of Ceylon with narratives and anecdotes Illustrative of the Habits and Instincts of the Mammalia, Birds, Reptiles, Fishes, Insects, &c. including a monograph of The Elephant

- and a description of the modes of capturing and training it with engravings from original drawings by Sir J. Emerson Tennent, K.C.S., LL.D. &c.”] [Reprint of 1999 “Ceylon: an account...” and “Sketches of the...” by Asian Educational Services, New Delhi, Madras, 1999. Reprint of “Ceylon: an account...” of 2011 by Asian Educational Services, New Delhi, Chennai, 2011].
- WIJEKON W. M. C. D., WEGIRIYA H. C. E. 2024: A new species of the genus *Diaphanes* (Coleoptera: Lampyridae: Lampyrinae), *D. uvaparanagama* Wijekoon, from Sri Lanka. *Asian Journal of Conservation Biology* 13(2): 135-142.
- WIJEKON W. M. C. D., WEGIRIYA H. C. E. & BOGAHAWATTA C. N. L. 2016: Systematic revision of the repository collection of Canthoroidea in the Department of National Museums, Colombo, Sri Lanka (Coleoptera: Cantharidae, Lampyridae, Lycidae, Rhagophthalmidae). *Ceylon Journal of Science* 45(1): 67-74.
- WIJEKON W. M. C. D., WEGIRIYA H. C. E. & BOGAHAWATTA C. N. L. 2021: Distribution, Diversity and Relative Abundance of Fireflies (Coleoptera; Lampyridae) in Three Habitat Types in Sri Lanka. *Rajarata University Journal* 6(1): 10-20.
- WINKLER J. R. 1953: Doplnkové poznámky ke R. Kleineovým „Bestimmungs-Tabellen“ s popisy nových druhů východoasijských lycidů. Supplementary remarks to R. Kleine’s „Bestimmungs-tabellen“ with the descriptions of new species of east Asiatic Lycidae. *Acta Entomologica Musei Nationalis Pragae* 28[1952]: 401-410.
- YANEGA D., PAPE T., WELTER-SCHULTES F., KOJIMA J., EVENHUIS N. L., KRELL F.-T., GRYGIER M. J., AHYONG S. T., BALLERIO A., BOUCHARD P., RHEIND F. E., DMITRIEV D. A., HARVEY M. S., LAMAS G., PYLE R. L., HALLIDAY B., ZHANG Z.-Q. 2018: *When zoological type specimens are lost: ICZN-compliant guidelines for when and when not to designate neotypes*. Version 12-ix-2018. <https://doi.org/10.13140/RG.2.2.17568.51201>
- ZERUNIAN S. 2025: *Cobitis feroniae*, una nuova specie endemica nei corsi d’acqua della Piana Pontina e della Piana di Fondi?. *Biologia Ambientale* 39: 1-4.

Received: 29.5.2026

Accepted: 10.6.2026

Printed: 5.10.2026

