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A journal of world insect systematics

INSECTA MUNDI

0965

Taxonomic notes on the Luciolinae
(Coleoptera: Lampyridae)

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Date of issue: January 6, 2023

Center for Systematic Entomology, Inc., Gainesville, FL

Keller O, Ballantyne L. 2023. Taxonomic notes on the Luciolinae (Coleoptera: Lampyridae). *Insecta Mundi* 0965: 1–6.

Published on January 6, 2023 by
Center for Systematic Entomology, Inc.
P.O. Box 141874
Gainesville, FL 32614-1874 USA
<http://centerforsystematicentomology.org/>

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Electronic copies (Online ISSN 1942-1354) in PDF format

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Taxonomic notes on the Luciolinae (Coleoptera: Lampyridae)

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Abstract. Several nomenclatural changes for taxa in the firefly subfamily Luciolinae (Coleoptera: Lampyridae) are proposed. Evidence is presented to correct the year of description for *Luciola dregei* Motschulsky 1853 to Motschulsky 1854 when the name was ratified. We correct the authorities and years of descriptions for type species designations for the genera *Delopleurus* Motschulsky, 1853, and *Delopyrus* Motschulsky, 1853 to Motschulsky 1854 for both. All remaining taxa described as variations in the subfamily Luciolinae by McDermott (1966), are evaluated to subspecies with their availability determined based on ICZN (1999) Article 45.6.

Key words. ICZN, nomenclature, dates of publication, taxonomy, authorship.

ZooBank registration. urn:lsid:zoobank.org:pub:618A5442-2644-4E9A-BE70-07C413810DB9

Introduction

During literature research for an ongoing project to update McDermott's (1966) World Lampyridae (Coleoptera) catalog a few taxonomic problems with species and genera in the subfamily Luciolinae were discovered. Keller and Branham (2018a, b, c) and Keller (2021) had corrected several problems in other subfamilies but not in the Luciolinae. We are correcting Luciolinae nomenclatural details not only for the updated catalog but also to address any mistakes present in online databases, regional checklists, and catalogs which mostly relied on McDermott (1966). We address three groups of issues: an incorrect publication date, which resulted in the species being a *nomen nudum*, two incorrect type designations, and 21 determinations of subspecific status within Luciolinae. For each of these, we explain the issues and propose corrections. Here we cover pages 99–118 of McDermott (1966) who addressed the Luciolinae as composed of the Tribes Luciolini and Curtosini.

Materials and Methods

We checked each species record on pages 99–118 of McDermott's (1966) catalog for authorship, spelling, and date of publication mistakes by comparing each to the original descriptions, and Blackwelder (1949) for the correct dates of the Motschulsky publications (Motschulsky 1853, 1854a, b, c, d). The validity of varieties listed throughout the McDermott catalog was checked using the International Code of Zoological Nomenclature (ICZN 1999) and Lingafelter and Nearn (2013).

Results and Discussion

Date of Publication of Species-Group Taxon Names

Luciola dregei (Motschulsky, 1854)

Delopyrus dregei Motschulsky, 1853 [sic]: 50, *nomen nudum*.

Delopyrus dregei Motschulsky, 1854c: 26 name made available; McDermott 1966: 103.

Note. *Delopyrus dregei* was first mentioned in Motschulsky (1853) as the type species of the genus *Delopyrus* Motschulsky, 1853, but without a description. In the same publication Motschulsky (1853, p. 27) states: “La description des espèces paraitra dans un N:o suivant des ‘Etudes Entomologiques’” which translates to: “The description of the species will appear in a N:o following ‘Entomological Studies’”. This statement by the author suggests that the species would be described in a subsequent work and that the generic descriptions were not considered to be combined new genus/new species descriptions. The footnote on page 27 can be interpreted as a disclaimer in the sense of Art 8.3 ICZN (1999) that the description should not count for the species, and that Art 12.2.6 cannot be applied here. Therefore *D. dregei* Motschulsky (1853) is a *nomen nudum*. The actual description of the species was in *Etudes Entomologiques* volume 3 (Motschulsky 1854c), making the name available. The volume containing the description was published in 1854 as explained in Blackwelder (1949). McDermott (1966: 99) synonymized *Delopyrus* Motschulsky with *Luciola* (*Luciola*) Laporte.

Type Species Designations

Delopleurus Motschulsky, 1853: 50 (now a synonym of *Luciola* Laporte in McDermott 1966). Type species: *Delopleurus fuscus* Motschulsky, 1854d: 47 (subsequent monotypy)

Delopyrus Motschulsky, 1853: 50 (now a synonym of *Luciola* Laporte in McDermott 1966). Type species: *Delopyrus dregei* Motschulsky, 1854c: 26 (subsequent monotypy)

Note. As stated above, these type designations were invalid because the species designated were *nomina nuda* and therefore not available. Motschulsky (1853, p. 27) stated: “La description des espèces paraitra dans un N:o suivant des ‘Etudes Entomologiques’” which translates to: “The description of the species will appear in a N:o following ‘Entomological Studies’”. We interpret this statement by Motschulsky (1853) as a disclaimer in the sense of Art 8.3 ICZN (1999) that the descriptions should not count for the species and that the author planned to describe the species later. Article 67.2.1 of the ICZN (1999) states that type-species designations based on unavailable names are invalid. By applying ICZN (1999) Article 69.3 we conclude that the type designation was by subsequent monotypy for both genera which currently are synonyms of *Luciola*.

Determination of Subspecific or Infrasubspecific Rank

We evaluated all remaining taxa described as variations in the subfamily Luciolinae (McDermott 1966) and determined their availability based on Article 45.6 of the Code (ICZN 1999) using Lingafelter and Nearn (2013) for elucidation of this article. We disagree with the action by Geisthardt & Satô (2007) in validating *Lampyroidea quadrinotata binotata* Wittmer, 1935 in the genus *Lampyroidea* Costa, 1875 as a subspecies, because it was described as an aberration and is therefore automatically infrasubspecific and unavailable. In the table below we show the taxa have been elevated to subspecies level. The table is first organized alphabetically by McDermott’s (1966) catalog, then alphabetically by subfamily and species within each subfamily in the original combination column.

Original combination	Name used in McDermott (1966)	Current status, comments
<i>Lampyroidea quadrinotata</i> ab. <i>binotata</i> Wittmer, 1935: 248	<i>Lampyroidea quadrinotata</i> var. <i>binotata</i> Wittmer, 1935: 248 (McDermott 1966: 115)	Originally described as an aberration, therefore automatically infrasubspecific and unavailable
<i>Luciola aegrota</i> var. <i>scutellaris</i> Olivier, 1891: 603	<i>Luciola aegrota</i> var. <i>scutellaris</i> Olivier, 1891: 603 (McDermott 1966: 99)	<i>Abscondita aegrota scutellaris</i> Olivier, 1891 <i>Luciola aegrota</i> synonymized with <i>Luciola promelaena</i> Walker in Ballantyne et al. (2013: 32) and <i>Luciola promelaena</i> assigned to <i>Abscondita</i> Ballantyne
<i>Luciola bimaculicollis</i> v. nov. <i>flavocostata</i> Pic, 1928: 21	<i>Luciola bimaculicollis</i> var. <i>flavocostata</i> Pic, 1928: 21 (McDermott 1966: 100)	<i>Luciola bimaculicollis flavocostata</i> Pic, 1928 See under other nomenclatural issues below
<i>Luciola brahmia</i> var. nov. <i>vitalisi</i> Pic, 1923: 27	<i>Luciola brahmia</i> var. <i>vitalisi</i> Pic, 1923: 27 (McDermott 1966: 100)	<i>Sclerotia brahmia vitalisi</i> (Pic, 1923) <i>Luciola brahmia</i> Pic transferred to <i>Sclerotia</i> Ballantyne in Ballantyne et al. (2016: 224)
<i>Luciola collarti</i> var. <i>kivuensis</i> Pic, 1952: 270	<i>Luciola collarti</i> var. <i>kivuensis</i> Pic, 1952: 270 (McDermott 1966: 101)	<i>Luciola collarti kivuensis</i> Pic, 1952
<i>Luciola coxalis</i> var. <i>inlimbata</i> Pic, 1952: 270	<i>Luciola coxalis</i> var. <i>inlimbata</i> Pic, 1952: 270 (McDermott 1966: 102)	<i>Luciola coxalis inlimbata</i> Pic, 1952
<i>Luciola gaudens</i> v. nov. <i>latevittata</i> Pic, 1928: 21	<i>Luciola gaudens</i> var. <i>latevittata</i> Pic, 1928: 21 (McDermott 1966: 105)	<i>Luciola gaudens latevittata</i> Pic, 1928
<i>Luciola gemina</i> v. nov. <i>juncta</i> Pic, 1925: 6	<i>Luciola gemina</i> var. <i>juncta</i> Pic, 1925: 6 (McDermott 1966: 105)	<i>Luciola gemina juncta</i> Pic, 1925
<i>Luciola grandjeani</i> var. nov. <i>infrapallida</i> Pic, 1934: 46	<i>Luciola grandjeani</i> var. <i>infrapallida</i> Pic, 1934: 46 (McDermott 1966: 105)	<i>Luciola grandjeani infrapallida</i> Pic, 1934
<i>Luciola insignis</i> var. <i>lineatopennis</i> Olivier, 1914: 241	<i>Luciola insignis</i> var. <i>lineatopennis</i> Olivier, 1914: 241 (McDermott 1966: 106)	<i>Luciola insignis lineatopennis</i> Olivier, 1914
<i>Luciola lusitanica</i> var. <i>erythrocephala</i> Olivier, 1885: 362	<i>Luciola lusitanica</i> var. <i>erythrocephala</i> Olivier, 1885: 362 (McDermott 1966: 108)	<i>Luciola lusitanica erythrocephala</i> Olivier, 1885
<i>Luciola lusitanica</i> var. <i>minor</i> Baudi di Selve, 1873: 229	<i>Luciola lusitanica</i> var. <i>minor</i> Baudi di Selve, 1873: 229 (McDermott 1966: 108)	<i>Luciola lusitanica minor</i> Baudi di Selve, 1873
<i>Luciola mendax</i> var. <i>obliterata</i> Pic, 1952: 270	<i>Luciola mendax</i> var. <i>obliterata</i> Pic, 1952: 270 (McDermott 1966: 110)	<i>Luciola mendax obliterata</i> Pic, 1952

Original combination	Name used in McDermott (1966)	Current status, comments
<i>Atyphella obsoleta</i> var. <i>immaculata</i> Olivier, 1911: 174	<i>Luciola obsoleta</i> var. <i>immaculata</i> (Olivier, 1911: 174) (McDermott 1966:110)	<i>Pygatyphella obsoleta immaculata</i> (Olivier, 1911) <i>Atyphella obsoleta</i> Olivier transferred to <i>Pygatyphella</i> (Ballantyne) in Ballantyne & Lambkin (2009: 93)
<i>Luciola overlaeti</i> var. <i>lokandusa</i> Pic, 1952: 271	<i>Luciola overlaeti</i> var. <i>lokandusa</i> Pic, 1952: 271 (McDermott 1966: 111)	<i>Luciola overlaeti lokandusa</i> Pic, 1952
<i>Luciola sordida</i> v. nov. <i>pectoralis</i> Pic, 1930: 6	<i>Luciola sordida</i> var. <i>pectoralis</i> Pic, 1930: 6 (McDermott 1966: 113)	<i>Luciola sordida pectoralis</i> Pic, 1930
<i>Luciola spilodera</i> variété <i>cyathigera</i> Fairmaire, 1898: 405	<i>Luciola spilodera</i> var. <i>cyathigera</i> Fairmaire, 1898: 405 (McDermott 1966: 113)	<i>Luciola spilodera cyathigera</i> Fairmaire, 1898
<i>Luciola tetrasticta</i> var. nov. <i>brevemaculata</i> Pic, 1921: 342	<i>Luciola tetrasticta</i> var. <i>brevemaculata</i> Pic, 1921: 342 (McDermott 1966: 114)	<i>Luciola tetrasticta brevemaculata</i> Pic, 1921
<i>Luciola tetrasticta</i> v. nov. <i>pallidicollis</i> Pic, 1931: 40	<i>Luciola tetrasticta</i> var. <i>pallidicollis</i> Pic, 1931: 40 (McDermott 1966: 114)	<i>Luciola tetrasticta pallidicollis</i> Pic, 1931
<i>Luciola turneri</i> var. <i>hecqi</i> Pic, 1956: 194	<i>Luciola turneri</i> var. <i>hecqi</i> Pic, 1956: 194 (McDermott 1966: 114)	<i>Luciola turneri hecqi</i> Pic, 1956
<i>Pyrophanes quadrimaculata</i> var. <i>bimaculata</i> Olivier in Baer, 1886: 187	<i>Pyrophanes quadrimaculata</i> var. <i>bimaculata</i> Olivier in Baer, 1886: 187 (McDermott 1966: 116)	<i>Pyrophanes quadrimaculata bimaculata</i> Olivier in Baer, 1886 Ballantyne et al. (2015: 26) considered <i>Pyrophanes quadrimaculata</i> <i>bimaculata</i> , based on a single female, as species <i>incertae sedis</i> as there was no evidence of reliable association with males of this species

Other Nomenclatural Issues

Luciola bimaculicollis var. *flavonotata* [sic], a subsequent incorrect spelling of *Luciola bimaculicollis* var. *flavocostata* Pic, 1928

Note. The name *Luciola bimaculicollis* var. *flavonotata* [sic] Pic, 1938 as listed in McDermott (1966) was never described by Pic and therefore is interpreted here as a subsequent incorrect spelling for *Luciola bimaculicollis* var. *flavocostata* Pic, 1928, following ICZN Article 32.5.1.

Pyrophanes similis var. *crassicus*

Note. Ballantyne et al. (2015) indicated that Olivier (1902, 1907, 1910) had incorrectly recorded a variety *crassicus* as a variety of the species *Pyrophanes similis*, all attributed in each reference to Olivier (1885), however, Olivier (1885: 370) does not list that name. No variety or subspecies “*crassicus*” exists in Luciolinae.

Type species for *Luciola*

The type species of the genus *Luciola*, and the correct author for *Luciola pedemontana*, is addressed elsewhere (Ballantyne and Jusoh, in review).

Acknowledgments

We thank Davide Dal Pos (College of Sciences, University of Central Florida, Orlando, FL, USA) and Wan F. A. Jusoh (School of Science, Monash University Malaysia, Jalan Lagoon Selatan, Selangor, Malaysia) for very helpful pre-submission reviews of this manuscript. Additionally, we thank Douglas Yanega (University of California, Riverside, Riverside, CA, USA), Alberto Ballerio (Brescia, Italy) and Francisco Welter-Schultes (Gesellschaft für wissenschaftliche Datenverarbeitung mbh Göttingen, Germany) for very informative discussions about the International Code of Zoological Nomenclature. OK thanks Wesley and Wally Powell for their daily help and support. Lastly, we also would like to thank the Florida Department of Agriculture and Consumer Services, Division of Plant Industry for their support of this work.

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Received September 23, 2022; accepted December 1, 2022.

Review editor Kevin Hinson.