Abstract. New World lampyrid taxonomy faces severe taxonomic impediments. Most species remain known from original taxonomic descriptions only, often insufficient for accurate identification. Therefore, the study of type specimens is critical to ensure proper identification. The Russian entomologist Viktor Ivanovich Motschulsky was one of the most important authors of firefly (Coleoptera: Lampyridae) taxonomy during the XIXth century, and his work is still relevant today. Part of his material, including the type specimens of several species, is deposited at the Zoological Institute of the Russian Academy of Sciences. Unlike their European, Asian, and Oceanian counterparts, the taxonomy of Neotropical fireflies is still in its infancy, partly due to largely outdated literature and difficulties in accessing type specimens. Here, we review the type specimens of 38 firefly species deposited at ZIN, 15 of which are holotypes and 7 are lectotypes. For each specimen, the name-bearing status, condition of preservation, as well as the associated label data are provided. Lectotypes are designated for the following species described by Motschulsky: Bicellonycha lividipennis, Ellychnia californica, Lychnuris klugii, Macrolampis longipennis, Pseudolychnuris suturalis, Telephoroides lineaticollis, Telephoroide occidentalis.

Keywords. Firefly, Lampyrinae, Amydetinae, Cladodinae, Photurinae.

Introduction

Investigation of type material is critically important for any taxonomic work. Unfortunately, information on centuries-old type specimens may be hard to obtain for several reasons. Type specimens may have been destroyed or are poorly labelled, or their depository institution has not been clearly given. All these problems are relevant for the type material of Viktor Ivanovich Motschulsky (1810–1871, also known as Motchoulsky, de Motschoulsky), Russian amateur entomologist, who described numerous insect taxa (nearly 5000 according to Motschulsky 1869), especially in the order Coleoptera, since the late 1830s. His last works were published after his death, until 1875. Despite Motschulsky’s remarkable entomological knowledge, he was sometimes not very thorough in his work. His descriptions were often very short, and type specimens were not always explicitly mentioned, sometimes not discussed at all, or even containing misleading information (e.g. attributing wrong type localities; see Bousquet 1997). Since he deposited types in multiple institutions, including his private collection, Motschulsky’s types are often difficult to find. Most of his type specimens are now in the Zoological Museum of Moscow State University (Moscow, Russia). However, many of his types are in the Zoological Institute of the Russian Academy of Sciences (St. Petersburg), among other places.

Motschulsky’s work is particularly relevant to Lampyridae taxonomy because he described several of the genus- and species-level names in this family (Motschulsky 1853). However, his original taxonomic descriptions lacked illustrations of diagnostic features and are often insufficient for the accurate identification of fireflies. Since then, such limitations have been largely overcome by past or ongoing taxonomic work in many parts of the world: North America (e.g., Fender 1970), Europe (e.g., Geisthardt 1982), Oceania and Eastern Asia (e.g., Ballantyne et al. 2019). However, with the notable exception of Zaragoza-Caballero’s team in Mexico (cf. Perez-Hernandez et al. 2022), little taxonomy on Neotropical lampyrids has occurred since their original descriptions. Yet, type specimens are still critical for the identification of Neotropical fireflies (e.g., Silveira & Mermudes 2014; Silveira et al. 2016; 2019). Documentation of the whereabouts and state of preservation of type specimens from the Neotropical region is crucial to the continued improvement of firefly taxonomy worldwide.

Most of Motschulsky’s descriptions of Lampyridae were published continuously from 1852 up to 1854 in his Études Entomologiques. During this time, Motschulsky was living in St. Petersburg, Russia, where he joined a group of amateur entomologists assembled around Édouard Ménétries (1802–1861). The latter was a curator of the entomological collection in the Zoological Museum of the Imperial Academy of Sciences (in St. Petersburg, Russia), which would become the Zoological Institute of the Russian Academy of Sciences (ZIN) in 1931. Members of this amateur group helped Ménétries prepare specimens, often taking some to their private collections. The subsequent curator of the ZIN collection, August Morawitz, discouraged this practice of taking specimens from the ZIN holdings (Krivokhatksky 2013).

Vasiliy Fomich Grey (ca 1815–1864, William Grey, Basile Grey), a gardener and member of the aforementioned entomological group (Reiman 1999), also had a private entomological collection. After Grey’s death, his collection – which included some Lampyridae types described by Motschulsky – was added to the ZIN holdings after a period of unknown whereabouts. It is thought that Grey’s collection was incorporated into ZIN via some other private collections (e.g., some specimens have also the label "ex. Tulinov coll."). Other parts of Motschulsky’s collection were directly deposited in ZIN or thought to have been incorporated after his death, transferred to St. Petersburg in two boxes including types (Krivokhatksky 2013). All these materials are kept in ZIN.

Kazantsev & Nikitsky (2008) recently catalogued the Lampyridae types described by Motschulsky deposited in the Zoological Museum of Moscow Lomonosov University (Moscow, Russia). However,
Motschulsky’s types in St. Petersburg, are still not catalogued, several of which are even not recognized. Here, we fill this gap by cataloguing the New World Lampyridae species described by Motschulsky. We provide detailed information about type specimens of 38 lampyrid species and their respective labels, in an important step to facilitate research on New World lampyrids.

Material and methods
For taxonomic hierarchy, we followed the classification system from Martin et al. (2019). We list each species under its original combination and indicate the current valid name. A list of synonyms for all 70 New World lampyrid species described by Motschulsky is provided in Table 1.

We provide, for each specimen, habitus pictures and report the name-bearing status, condition of preservation (e.g., complete or with any missing parts), and any label data. Label data is given as follows: double quotes (" ") for label data quoted verbatim, double forward slashes (//) to separate labels; double comma (,,) for line breaks, and square brackets [ ] for our comments or notes.

When the handwriting could be assigned to a writer, their name is listed. However, since Motschulsky’s types came to ZIN in different ways, they were labelled inconsistently. Only in some cases, there are original handwritten labels of Motschulsky. Most of the types have labels written by some technician, particularly in Ménétries or Morawitz’s time, and later pinned under the beetles. Some specimens bear handwritten labels by Ménétries and other handwritten labels of unknown origin, probably added to the specimens from Grey’s collection before they reached ZIN. Specimens with all 4 label types can be assigned with certainty to Motschulsky’s descriptions. If a type specimen is the only known specimen of that species to have been studied by Motschulsky, we considered it a holotype. For species whose lectotypes were designated by Kazantsev & Nikitsky (2008), we list paralectotypes.

Motschulsky often cited some species attributed to other authors, but never published by them. In these cases, Motschulsky is considered the author of these species. Consider for example Costalampys klugii (Motschulsky, 1854): Motschulsky attributes the authorship of the original combination Lychnuris klugii to Dejean, but Motschulsky should be regarded as the author since Dejean never described it. Likewise, specimens identified by Motschulsky are deemed type specimens of these species. Some of the types were recognized and separated earlier, probably by G.G. Jacobson, who was a curator of Coleoptera in ZIN from 1897 to 1926. These types were placed in a small box and lent to a French specialist, interpreted here to be E. Olivier, who added bluish and reddish labels with his opinions on the status of the specimens before returning them. These specimens remained in this small box, most likely since the 1910s.

Regarding the fact that Motschoulsky’s publications often have two different dates (one on first page, one on cover), we followed Griffin’s (1936) dates based on information retrieved from the Moscow’s Imperial Society of Naturalists.

Photos were taken with a Leica MZ 9.5 dissecting microscope coupled with a Leica DFC290 camera. The images were stacked using Helicon Focus software (Helicon Soft Ltd., Kharkiv, Ukraine). Images were edited in Adobe Lightroom® CC 2021 Software for light and contrast adjustment, and plates were assembled in Adobe Photoshop® CC 2021.

The following abbreviations are used for the collections mentioned in this paper: ZIN=Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia); ZMMU=Zoological Museum of Moscow State University (Moscow, Russia).
Table 1 (continued on next 2 pages). List of New World Lampyridae species described by Motschulsky. (V = Valid; S = Synonym; H = Homonym).

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<th>Subfamily</th>
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LIMA W. et al., New world lampryrid types at ZIN
Table 1 (continued). List of New World Lampyridae species described by Motschulsky. (V = Valid; S = Synonym; H = Homonym).

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<td>Photurinae</td>
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<td>Photuris vittipennis</td>
<td>V</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
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Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Suborder Polyphaga Emery, 1886
Superfamily Elateroidea Leach, 1815
Family Lampyridae Rafinesque, 1815
Genus Amydetes Illiger, 1807

*Amydetes fucata* Motschulsky, 1854b
Figs 1–4

*Amydetes fucata* Motschulsky, 1854b: 25.

Type material examined

Holotype
BRAZIL • ♂; “fucatus Motsch., Brisil [sic]”; ZIN.

Preservation status
One antenna missing, elytra damaged, abdomen missing, otherwise well-preserved.

Remarks
Motschulsky listed Deyrolle, a famous insect dealer of the 19th century (e.g., Deyrolle 1879), as the source of the specimen, from Santa Catarina, Brazil.

Current status
*Amydetes fucata* Motschulsky, 1854b.
**Bicellonycha lividipennis** Motschulsky, 1854b
Figs 5–7

*Bicellonycha lividipennis* Motschulsky, 1854b: 58.

**Type material examined**

- **Lectotype** (designated here)
  BRAZIL • ♂; “Bicellonych [probably cut through without the “a” at the end of the genus name], livida,, Motsch., Brasil” // “Serra da Strella” // “” [red label left in blank]; ZIN.

**Preservation status**
Complete, well-preserved.

**Remarks**
One of the labels says “livida Motsch. Brasil”, as seen in another syntype of *Bicellonycha lividipennis* Motschulsky, 1854b (Kazantsev & Nikitsky 2008). Moreover, this specimen bears a red label, and fits the description given for *Bicellonycha lividipennis* Motschulsky, 1854b. Together, we interpret this as evidence that this specimen is a male syntype of *Bicellonycha lividipennis* Motschulsky, 1854b, which we hereby designate as lectotype. “Serra da Strella” probably refers to the Serra da Estrela Mountain, part of the Serra do Mar Mountain range, Southeastern Brazil. Several European naturalists set foot at the Serra da Estrela, where the diplomat and “academic extraordinary” baron Georg Heinrich von Langsdorff had a property, named “Fazenda da Mandioca” (Portuguese for “Cassava farm”) (Papavero 1971). Langsdorff in fact shipped many specimens to ZIN (Papavero 1971). Therefore, it is reasonable to attribute “Serra da Strella” to the piedmont of the Brazilian Serra da Estrela, in today’s Magé Municipality, Rio de Janeiro State, Brazil.

**Current status**

*Bicellonycha lividipennis* Motschulsky, 1854b: 58.

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**Dilychnia basalis** Motschulsky, 1853
Figs 8–10

*Dilychnia basalis* Motschulsky, 1853: 30.

**Type material examined**

- **Syntype**

**Preservation status**
Damaged, missing one antenna, terminalia, genitalia.

**Remarks**
Kazantsev & Nikitsky (2008) designated a syntype from ZMMU. Here we designate a second syntype. Motschulsky (1853: 30) described Dilychnia and only listed *Dilychnia basalis* in the publication, without providing a separate description for the species. A description for *Dilychnia basalis* was given by Motschulsky in a later publication (1854a: 7). Rendering *D. basalis* invalid would threaten the stability of this genus, since no other species were listed by the author. However, the article
12.2.6 of the International Code for Zoological Nomenclature (ICZN 1999) ensures combined descriptions for monotypic genera and their respective species described before 1961. Therefore, by the provisions of article 12.2.6, the publication date of *Dilychnia basalis* is 1853, and not 1854 as given in Vaz et al. (2020).

**Current status**
Synonym of *Dilychnia guttula* (Fabricius, 1801).

*Ellychnia albilatera* Motschulsky, 1854a
Figs 11–13

*Ellychnia albilatera* Motschulsky, 1854a: 3.

**Type material examined**

**Holotype**

**Preservation status**
Complete, well-preserved.

**Current status**
*Photinus albilaterus* (Motschulsky, 1854a).

*Ellychnia californica* Motschulsky, 1854a
Figs 14–16

*Ellychnia californica* Motschulsky, 1854a: 3.

**Type material examined**

**Lectotype** (designated here)

**Preservation status**
Complete, well-preserved.

**Remarks**
Kazantsev & Nikitsky (2008) found a male syntype from ZMMU, which was missing its head, as well as its pro and mesothorax. Here, we designate a female lectotype from ZIN, which renders the ZMMU specimen a paralectotype. “Nov. Helv.” (New Switzerland) probably refers to present-day Sacramento, California.

**Current status**
*Photinus californicus* (Motschulsky, 1854a).

Ellychnia latipennis Motschulsky, 1854a
Figs 17–19

Ellychnia latipennis Motschulsky, 1854a: 3.

Type material examined
   Holotype
USA • ♀; “Typ” // “latipennis,, Motsch”// “Amer. bor.” // “Ellychnia,, corrusca,, L” [E. Olivier handwriting]; ZIN.

Preservation status
Complete, well-preserved.

Remarks
Motschulsky listed Harris as the provider of this specimen. “Amer. bor.” should refer to North America.

Current status
Synonym of Photinus corrusca (Linnaeus, 1767) (junior synonym: Photinus latipennis (Motschulsky, 1854a)).

Ellychnia mexicana Motschulsky, 1854a
Figs 20–22

Ellychnia mexicana Motschulsky, 1854a: 3.

Type material examined
   Holotype

Preservation status
Complete, well-preserved.

Remarks
Motschulsky listed Harris as the provider of this specimen. “Amer. bor.” should refer to North America.

Current status
Photinus mexicanus (Motschulsky, 1854a).

Ellipolampis elongata Motschulsky, 1854a
Figs 23–25

Ellipolampis elongata Motschulsky, 1854a: 35.

Type material examined
   Paralectotype (designated here)
CARIBBEAN, COUNTRY UNKNOWN • ♂; “Lampyris,, elongata,, mihi,, n. sp.” // “Typ” // “Etiquette,, faussa!” [E. Olivier handwriting]; ZIN.

Preservation status
Fairly well-preserved, antennae and metatarsi lacking.

Remarks
Motschulsky listed Mannerheim as the provider of specimens for this species. Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Here, we designate a paralectotype from ZIN. A note added to the specimen suggests that the identification label is false (“Etiquette faussa!”). While we can’t tell if the label is false or not, the specimen matches the original description, particularly for its unique pubescence covering its pronotum and elytra.

Current status
*Photinus elongatus* (Motschulsky, 1854a).

*Ellipolampis lateralis* Motschulsky, 1854a
Figs 26–28

*Ellipolampis lateralis* Motschulsky, 1854a: 35.

Type material examined

Holotype
BRAZIL • ♂; “Ellipolampis,, lateralis Grey,, Bras” // “Ellipolampis,, lateralis Grey,, Bras.” // “” [red label, left in blank]; ZIN.

Preservation status
Fairly well-preserved, lacking tarsi of pro, meso and metalegs.

Remarks
Motschulsky listed Grey as the provider of this specimen.

Current status
Synonym of *Photinus luctuosus* Laporte, 1840 (junior synonym: *Photinus lateralis* (Motschulsky, 1854a)).

*Ellipolampis limbella* Motschulsky, 1854a
Figs 29–31

*Ellipolampis limbella* Motschulsky, 1854a: 36.

Type material examined

Paralectotype (designated here)

Preservation status
Complete, well-preserved.
Remarks
Motschulsky listed Mannerheim as the provider of specimens for this species. Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Thus, the ZIN specimen is a paralectotype.

Current status
Photinus limbellus (Motschulsky, 1854a).

Ellipolampis suturella Motschulsky, 1854a
Figs 32–34

Ellipolampis suturella Motschulsky, 1854a: 36.

Type material examined
Paralectotype (designated here)
FRENCH GUYANA • ♂; “Photinus,, suturellus,, Motsch” [E. Olivier handwriting] // “suturellus Motsch” // “Guyana”; ZIN.

Preservation status
Complete, well-preserved.

Remarks
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU, therefore the ZIN specimen is a paralectotype.

Current status
Photinus suturellus (Motschulsky, 1854a).

Lychnacris triguttula Motschulsky, 1854a
Figs 35–37

Lychnacris triguttula Motschulsky, 1854a: 11 (as “Lychnaeris”, a lapsus calami).

Type material examined

Holotype
BRAZIL • ♀; “Hyas ,, triguttula,, Motsch.” [E. Olivier handwriting]// “typ”// “triguttula,, M. P.” // “Brasil sept.”; ZIN.

Preservation status
Complete, well-preserved.

Current status
Lychnacris triguttula Motschulsky, 1854a.

Lychnogaster cinctus Motschulsky, 1854a
Figs 38–40

Lychnogaster cinctus Motschulsky, 1854a: 8.

Type material examined

Paralectotype (designated here)
BRAZIL • sex undetermined; “Lychnogaster,, cinctus M.” [E. Olivier handwriting]// “typ”// “cinctus,, Motsch” // “Brasil mer.”; ZIN.

Preservation status
Significantly damaged: broken elytra, lacking antennae, one mesoleg, two metalegs, and the abdomen.

Remarks
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Thus, the ZIN specimen is a paralectotype. The original description lists “Brazil” as the type locality of Lychnogaster cinctus, whereas the ZIN paralectotype examined here has a label saying “Brasil. Mer.”, interpreted here as Southern Brazil.

Current status
Lucidota cincta (Motschulsky, 1854a).

Lychnuris klugii Motschulsky, 1854a
Figs 41–43

Lychnuris klugii Motschulsky, 1854a: 4.
Type material examined

Lectotype (designated here)

Preservation status
Complete, well-preserved.

Remarks
As pointed out by Silveira et al. (2021), Motschulsky misattributed the authorship of Lychnuris klugii to Dejean. Since Motschulsky, the rightful author, didn’t determine the depository of his type specimens, the ZIN specimen is considered a syntype, and we designate it here as a lectotype of Lychnuris klugii.

Current status
Costalampys klugii (Motschulsky, 1854a).

Macrolampis cincta Motschulsky, 1854a
Figs 44–46

Macrolampis cincta Motschulsky, 1854a: 37.

Type material examined

Paralectotype (designated here)

Preservation status
Lacking antennae, otherwise well-preserved.

Remarks
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU, therefore the ZIN specimen is a paralectotype.

Current status
Synonym of Macrolampis circumcincta (Gemminger, 1870) (senior homonym) (junior homonym: Photinus cinctus (Motschulsky, 1854a)).

Macrolampis longipennis Motschulsky, 1854a
Figs 47–49

Macrolampis longipennis Motschulsky, 1854a: 37.

Type material examined

Lectotype (designated here)


Preservation status
Fairly well-preserved, lacking antennae, one mesoleg and one metaleg.

Remarks
Kazantsev & Nikitsky (2008) found a male syntype at ZMMU, which was “badly damaged”, missing its head, as well as its pro and mesothorax. Here, we designate a male lectotype from ZIN, which renders the ZMMU specimen a paralectotype.

Current status
*Photinus longipennis* (Motschulsky, 1854a).

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*Macrolampis longula* Motschulsky, 1854a
Figs 50–52

*Macrolampis longula* Motschulsky, 1854a: 38.

Type material examined

Holotype
BRAZIL • ♂; “typ”// “longulus,, Motsch”; ZIN.

Preservation status
Well-preserved, but lacking a mesoleg and one of the metatarsi.

Remarks
Motschulsky listed Mannerheim as the provider of this specimen.

Current status
*Photinus longula* (Motschulsky, 1854a).

---

*Nyctocrepis demoulini* Motschulsky, 1853
Figs 53–55

*Nyctocrepis demoulini* Motschulsky, 1853: 33.

Type material examined

Holotype
BRAZIL • ♂; “Demoulinii [sic] Motsch,, Brésil”; ZIN.

Preservation status
Complete, well-preserved.

Remarks
Motschulsky listed Deyrolle as the source of the type material from Brazil. This species is known from Southern Brazil, including Santa Catarina (Bocakova et al. 2022). Since Deyrolle provided other lampyrid specimens to Motschulsky from this region, the holotype is possibly from Southern Brazil. Motschulsky (1853: 33) described *Nyctocrepis* and only listed *Nyctocrepis demoulini* in the publication, without providing a separate description for the species. A description for *Nyctocrepis demoulini* was
given by Motschulsky in a later publication (1854a: 10). Rendering *Nyctocrepis demoulini* invalid would threaten the stability of this genus, since no other species were listed by the author. However, the article 12.2.6 of the International Code for Zoological Nomenclature (ICZN 1999) ensures combined descriptions for monotypic genera and their respective species described before 1961. Therefore, by the provisions of article 12.2.6, the publication date of *Nyctocrepis demoulini* is 1853, and not 1854 as given in Bocakova et al. (2022).

**Current status**

*Nyctocrepis demoulini* Motschulsky, 1853.

*Nyctocrepis flabellicornis* Motschulsky, 1854a

*Figs 56–58*

*Nyctocrepis flabellicornis* Motschulsky, 1854a: 10.

**Type material examined**

*Holotype*


**Preservation status**

Well-preserved.

**Current status**

*Cladodes flabellicornis* (Motschulsky, 1854a).

*Nyctocrepis lamellicornis* Motschulsky, 1854a

*Figs 59–61*

*Nyctocrepis lamellicornis* Motschulsky, 1854a: 10.

**Type material examined**

*Paralectotype* (designated here)

BRAZIL • ♂; “lamellicornis Motsch,, Lacordairei O[?] Brésil”; ZIN.

**Preservation status**

Complete, well-preserved.

**Remarks**

Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Therefore, the ZIN specimen is a paralectotype.

**Current status**

Junior synonym of *Brasilocladodes illigeri* (Kirby 1832) (senior homonym).
**Nyctophanes bisignata** Motschulsky, 1854a
Figs 62–64

*Nyctophanes bisignata* Motschulsky, 1854a: 12.

**Type material examined**

**Holotype**

**Preservation status**
Well-preserved, missing one antenna.

**Remarks**
Motschulsky listed Mannerheim as the provider of the type specimen for this species.

**Current status**
*Aspisoma bisignatum* (Motschulsky, 1854a).

---

**Nyctophanes bremei** Motschulsky, 1854a
Figs 65–67

*Nyctophanes bremei* Motschulsky, 1854a: 13.

**Type material examined**

**Syntype**

**Preservation status**
Fairly well-preserved, missing one elytron.

**Remarks**
Motschulsky (1854) listed Deyrolle as the source of the specimen from Santa Catarina, Brazil. The type specimen analysed here has a label saying “Brazil Bremei Deyrolle”. However, it has another label saying “Cayenn.”. Because of the confusion with the labels, we decided to interpret this specimen as a syntype. We also note that McDermott (1966) misspelled the species name as *Aspisoma bremeri*, which should be considered a lapsus calami and not an available name.

**Current status**
*Aspisoma bremei* (Motschulsky, 1854a).

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**Nyctophanes cassidea** Motschulsky, 1854a
Figs 68–70

*Nyctophanes cassidea* Motschulsky, 1854a: 14.
Type material examined

Holotype

Preservation status
Fairly well-preserved, abdomen missing.

Current status
Aspisoma cassideum (Motschulsky, 1854a).

Nyctophanes lineolata Motschulsky, 1854a
Figs 71–73

Nyctophanes lineolata Motschulsky, 1854a: 12.

Type material examined

Holotype

Preservation status
Complete, well-preserved.

Remarks
Motschulsky listed Mannerheim as the provider of this specimen. The original description lists Brazil as the type locality, but with a question mark. The provenance label on the holotype says that it came from Northern Brazil.

Current status
Aspisoma lineolatum (Motschulsky, 1854a).

Nyctophanes palliata Motschulsky, 1854a
Figs 74–76

Nyctophanes palliata Motschulsky, 1854a: 13.

Type material examined

Holotype

Preservation status
Complete, well-preserved.


Remarks
E. Olivier added a label written “false label” for unclear reasons, and identified this specimen as *Aspisoma pallidum* Olivier.

Current status
*Aspisoma palliatum* (Motschulsky, 1854a).

_Nyctophanes pellucida* Motschulsky, 1854a
Figs 77–79

*Nyctophanes pellucida* Motschulsky, 1854a: 12.

Type material examined
Holotype

Preservation status
Well-preserved, but with one broken antenna.

Remarks
E. Olivier added a label written “false label” for unclear reasons, and identified this specimen as *Aspisoma pallidum* Olivier.

Current status
*Aspisoma pellucidum* (Motschulsky, 1854a).

_Pseudolychnuris suturalis* Motschulsky, 1854a
Figs 80–82

_Pseudolychnuris suturalis* Motschulsky, 1854a: 9.

Type material examined
Lectotype (designated here)
COLOMBIA • ♂; “suturalis,, Motsch”// “Typ” // “Pseudolych,, sutural [abruptly abbreviated]” [E. Olivier handwriting] // “♀,, ved [?] antenom.,, filiform.”; ZIN.

Preservation status
Well-preserved, except for damaged antennae.

Remarks
Kazantsev & Nikitsky (2008) found a syntype at ZMMU. The label says “♀”, but it is clearly a male. We hereby designate the ZIN specimen as a lectotype, rendering the ZMMU specimen a paralectotype.

Current status
_Alychnus suturalis* Motschulsky, 1854a (reviewed in Ladino-Peña et al., 2022).

**Pseudolychnuris vittata** Motschulsky, 1853  
Figs 83–85


**Type material examined**

- **Paralectotype** (designated here)  
  COLOMBIA • ♂; “vittata,, Motsch” // “Typ” // “Columbia.” // “Pseudolychnuris,, vittata M.” [E. Olivier handwriting]; ZIN.

**Preservation status**

Antennae, metalegs, and abdomen lacking.

**Remarks**

Kazantsev & Nikitsky (2008) designated a lectotype at ZMMU. Therefore, the ZIN specimen is a paralectotype. Kazantsev & Nikitsky (2008) designated a lectotype at ZMMU. Therefore, the ZIN specimen is a paralectotype. Motschulsky (1853: 30) described *Pseudolychnuris* and only listed *Pseudolychnuris vittata* in the publication, without providing a separate description for the species. A description for *Pseudolychnuris vittata* was given by Motschulsky in a later publication (1854a: 9). Rendering *P. vittata* invalid would threaten the stability of this genus, since no other species were listed by the author. However, the article 12.2.6 of the International Code for Zoological Nomenclature (ICZN 1999) ensures combined descriptions for monotypic genera and their respective species described before 1961. Therefore, by the provisions of article 12.2.6, the publication date of *Pseudolychnuris vittata* is 1853, and not 1854 as given in Ladino-Peñuela *et al.* (2022).

**Current status**

*Pseudolychnuris vittata* Motschulsky, 1853 (reviewed in Ladino-Peñuela *et al.* 2022).

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**Pygolampis blanda** Motschulsky, 1854b  
Figs 86–88

*Pygolampis blanda* Motschulsky, 1854b: 25.

**Type material examined**

- **Syntype**  
  HISPANIOLA, probably Domenican Republic • ♂; “blandus,, Motsch” // “S. Domingo” // “Pygolampis,, blanda M” [E. Olivier handwriting]; ZIN.

**Preservation status**

Fairly well-preserved, terminalia missing.

**Remarks**

*Pygolampis blanda* Motschulsky, 1854b (nec. *Photinus blandus* Jaquelin Du Val 1857) is currently listed as Lampyridae incertae sedis (McDermott 1966). This species was described from “St. Domingo”, currently Hispaniola. Motschulsky lists Dejean as the author of the species, but the former must be recognized as author, since Dejean’s name is in litteris. Lacordaire (1857) mentions *P. blanda* Dejean as from Brazil, which probably misled McDermott to list it from this country in his catalogue (McDermott 1966: 123). Based on its brief description and its type locality, *P. blanda* could be allied...
to *Robopus* Motschulsky, 1853, but if transferred, it would cause a homonymy with *Robopus blanda* (Jaquelin Du Val, 1857), currently a junior synonym of *Robopus nefarius* (E. Olivier, 1912; see Keller & Branham 2021). Since *Robopus* is yet to be reviewed, and it is beyond the scope of this work to resolve this matter, we refrain from pursuing nomenclatural acts.

**Current status**

*Pygolampis blanda* Motschulsky, 1854b (incertae sedis lampyrid species according to McDermott 1966).

*Pygolampis interrupta* Motschulsky, 1854b  
*Figs* 89–91

**Type material examined**

**Syntype**  
HAITI • ♀; “vittata,, Motsch” // “Typ” // “Columbia.” // “Pseudolychnuris,, vittata M.” [E. Olivier handwriting]; ZIN.

**Preservation status**  
Complete, well-preserved.

**Remarks**  
Motschulsky listed Mannerheim as the provider of specimens for this species.

**Current status**

*Pseudolychnuris vittata* Motschulsky, 1854b (reviewed in Ladino-Peñuela *et al.* 2022).

*Pygolampis quadrinotata* Motschulsky, 1854b  
*Figs* 92–94

**Type material examined**

**Paralectotype** (designated here)  
HAITI • ♂; “var., quadrinotatus,, Motsch” // “Typ” // “Pygolampis,, 4notatus M” [E. Olivier handwriting] // “Haiti”; ZIN.

**Preservation status**  
Complete, well-preserved.

**Remarks**  
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Therefore, the ZIN specimen is a paralectotype.

**Current status**

*Heterophotinus quadrinotatus* (Motschulsky, 1854b).
**Pyractomena vitticollis** Motschulsky, 1854a
Figs 95–97

*Pyractomena vitticollis* Motschulsky, 1854a: 38.

**Type material examined**

**Syntype**

**Preservation status**
Complete, well-preserved.

**Remarks**
Motschulsky listed Mannerheim as the provider of specimens for this species. The original description lists “Antilles” as the type locality. We note that Motschulsky used *Pyrectomena* (misspelling of *Pyractomena*) several times in his work.

**Current status**

*Pyractomena vitticollis* Motschulsky, 1854a.

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**Telephoroides fruticola** Motschulsky, 1854b
Figs 98–100

*Telephoroides fruticola* Motschulsky, 1854b: 60.

**Type material examined**

**Paralectotype** (designated here)

**Preservation status**
Head fallen from thorax, lacking one of the protarsus and one mesoleg.

**Remarks**
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. Therefore the ZIN specimen is a paralectotype. Motschulsky listed Eschscholtz as the provider of specimens for this species.

**Current status**

*Photuris fruticola* (Motschulsky, 1854b) is a junior synonym of *Photuris femoralis* Curtis, 1839 (senior synonym). Other junior synonyms of the latter are *Photuris fulvipes* (Blanchard, 1845), *Photuris occidentalis* (Motschulsky, 1854b), *Photuris pallida* (Motschulsky, 1854b), and *Photuris trivialis* Boheman, 1858.

Telephoroides lineatocollis Motschulsky, 1854b
Figs 101–103

Telephoroides lineatocollis Motschulsky, 1854b: 59.

Type material examined
   Lectotype (designated here)
   NORTH AMERICA, COUNTRY UNKNOWN • ♂; “var. lineatocollis, Motsch.” // “Photuris, pensylvanica [sic], var. lineatocollis, M.” [E. Olivier handwriting]/“Amer. bor.”; ZIN.

Preservation status
Head fallen from thorax, lacking one of the protarsus and one mesoleg.

Remarks
Motschulsky misattributed the authorship of Telephoroides lineaticollis to Dejean. However, Motschulsky (1854) is the rightful author. Kazantsev & Nikitsky (2008) found a female syntype at ZMMU. Here, we found another syntype, male, from ZIN, which we designate as a lectotype.

Current status
Photuris lineatocollis (Motschulsky, 1854b).

Telephoroides occidentalis Motschulsky, 1854b
Figs 104–106

Telephoroides occidentalis Motschulsky, 1854b: 60.

Type material examined
   Lectotype (designated here)
   COUNTRY UNKNOWN (original description lists French Guyana and Brazil) • ♀; “occidenta-,, lis,, Oliv.” // “Photuris,, fulvipes,, Blanch.” [E. Olivier handwriting]/“typ”; ZIN.

Preservation status
Well-preserved, lacking one elytron.

Remarks
Motschulsky listed “Ol.” as the provider of specimens for this species, perhaps referring to the entomologist G. Olivier. Kazantsev & Nikitsky (2008) found a female syntype at ZMMU. Here, we found another female syntype from ZIN, which we designate as a lectotype. The ZIN syntype lacks a locality label, but the original description listed French Guiana and Brazil as type localities, which match the known distribution of the species (Souto et al. 2019).

Current status
Photuris occidentalis (Motschulsky, 1854b) is a junior synonym of Photuris femoralis Curtis, 1839 (senior synonym). Other junior synonyms of the latter are Photuris fulvipes (Blanchard, 1845), Photuris fruticola (Motschulsky, 1854b), Photuris pallida (Motschulsky, 1854b), and Photuris trivialis Boheman, 1858.

Telephoroides pallida  Motschulsky, 1854b
Figs 107–109

Telephoroides pallida  Motschulsky, 1854b: 61.

Type material examined
Paralectotype (designated here, but see below)
COUNTRY UNKNOWN • ♂; “pallida,, Motsch // typ” // “Brasil.” // “etiquette faussa,, Bicellonycha” [E. Olivier handwriting]; ZIN.

Preservation status
Well-preserved, one of the elytra damaged.

Remarks
Kazantsev & Nikitsky (2008) designated a lectotype from ZMMU. The specimen found at ZIN is therefore a paralectotype. While we cannot tell whether the label is false, the specimen matches the original description in all but the “projected posterior angles of the pronotum” (Motschulsky 1854), which is rather subtle in this putative paralectotype.

Current status
Photuris pallida  (Motschulsky, 1854b) is a junior synonym of Photuris femoralis Curtis, 1839 (senior synonym). Other junior synonyms of the latter are Photuris fulvipes  (Blanchard, 1845), Photuris fruticola  (Motschulsky, 1854b), Photuris occidentalis  (Motschulsky, 1854b), and Photuris trivialis  Boheman, 1858.

Trilychnia flavipes  Motschulsky, 1854a
Figs 110–112

Trilychnia flavipes  Motschulsky, 1854a: 6.

Type material examined
Holotype
FRENCH GUYANA • sex undetermined; “flavipes”// “Guyana.” // “Lucidota,, banoni,, Cast.” [E. Olivier handwriting]; ZIN.

Preservation status
Incomplete, missing antennae, metalegs, and abdomen; right elytron is damaged.

Current status
Lucidota flavipes  (Motschulsky, 1854a).

Trilychnia ruficollis  Motschulsky, 1854a
Figs 113–115

Trilychnia ruficollis  Motschulsky, 1854a: 6.
Type material examined

Syntype
FRENCH GUYANA • sex undetermined; “ruficollis, Dej. Bras.” // “typ”// “Guyana.” // “Lucidota, discoidalis, Cast.” [E. Olivier handwriting]; ZIN.

Preservation status
Poorly preserved, lacking one antenna, one mesoleg, one metaleg, the abdomen; one of the elytra is damaged.

Remarks
Kazantsev & Nikitsky (2008) found a female syntype at ZMMU. Motschulsky misattributed the authorship of Trilychnia ruficollis to Dejean. Since Motschulsky, the rightful author, didn’t determine the depository of his type specimens, the ZIN specimen is considered another syntype of Trilychnia ruficollis.

Current status
Lucidota ruficollis (Motschulsky, 1854a).

Discussion
The ZIN collection of Lampyridae includes important type material and therefore is critically relevant for the study of firefly taxonomy. We found a total of 38 type specimens of New World species described by Motschulsky at ZIN. Among them, 15 are holotypes and seven are lectotypes (see Table 1). Kazantsev & Nikitsky (2008) reviewed the Lampyridae material from the Motschulsky collection deposited at the Zoological Museum of Moscow University (ZMMU). Their work listed 62 species-group taxa in this collection, and designated 23 lectotypes, including 17 which belonged to New World taxa. Together, ZIN and ZMMU host the majority of Motschulsky’s lampyrid types. Therefore, compilation of type species from both ZMMU and ZIN institutions provides a relevant reference for taxonomic studies since there are few monographic studies on Lampyridae. We hope that the information on name-bearing specimens presented here will assist in future taxonomic studies on New World Lampyridae.

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