Annotated Catalogue with Illustrations of Ménétriés' Types of Ctenuchina and Euchromiina (Erebidae, Arctiinae, Arctiini) Deposited in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia

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ANNOTATED CATALOGUE WITH ILLUSTRATIONS OF MÉNÉTRIÉS' TYPES OF CTENUCHINA AND EUCHROMIINA (EREBIDAE, ARCTIINAE, ARCTIINI) DEPOSITED IN THE ZOOLOGICAL INSTITUTE OF THE RUSSIAN ACADEMY OF SCIENCES, ST. PETERSBURG, RUSSIA

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ABSTRACT. The types of Ctenuchina and Euchromiina that were described by E. Ménétriés, deposited at the Zoological Institute of the Russian Academy of Sciences of St. Petersburg, are catalogued. All but one of the types are of names described from Brazil and collected during the Langsdorff expedition; the only non-Brazilian type was collected in California, USA. **Lectotypes** are designated for the following names: *Laemocharis fasciatella*, *Charidea fastuosa*, *L. fulviventris*, *L. metallescens*, *L. ornata*, *Glaucopis rubroscapus, G. vidua vidua* and *G. vidua spiracula*. The following **new combinations** are proposed: *Poecilosoma fasciatella*, **stat. rev.,** *Aethria ornata*, and *Xanthyda metallescens*. Comments on each name are provided, as well as information on their current taxonomic status, illustrations of type specimens, and information about their conservation status.

Additional key words: Taxonomy, revalidated status, new combination, lectotype designation, Langsdorff expedition.

Édouard Ménétriés (1802–1861) was a French zoologist and linguist who was recommended by his professors Georges Cuvier and Pierre André Latreille (Komissarov 1994) to take part in the expedition to the interior of Brazil planned and commanded by Baron Georg Heinrich von Langsdorff (1774–1852), an amateur naturalist and Russian consul in Brazil (Komissarov 1994; Kryzhanovsky 2002).

The expedition was to the greatest extent financially supported by Tsar Alexander I, and was designed essentially for anthropological and scientific purposes, although political and commercial reasons also played an important role (Silva 1997). The expedition was divided in two parts, the first (1824–1825) included the exploration of the states of Rio de Janeiro and Minas Gerais, and the second (1826–1829) was done across the main rivers of the interior of the country, heading to Belém (Silva 1997). This is regarded as one of the most unsuccessful expeditions that took place in Brazil (Ihering 1902; Vanzolini 1996); some of the mishaps included the desertion of the illustrator Johann Moritz Rugendas, the suicide of the zoologist Christian Hasse, and the drowning of Aimé-Adrien Taunay (also an illustrator) in the Guaporé River (state of Mato Grosso). In addition to those misfortunes, Baron von Langsdorff acquired a serious mental illness that culminated in erasing all of his memories at the end of his life (Silva 1997).

Ménétriés participated only in the first part of the expedition, and apparently his contribution was not very satisfactory to Langsdorff (possibly because Ménétriés had other interests besides collecting zoological material, which, in the eyes of the Baron, was leading to suboptimal sampling) (Vanzolini 1996; Silva 1997), and his relationship with the Baron worsened (Komissarov 1994; Silva 1997). During the expedition, Ménétriés organized anthropological and zoological annotations in diaries that are currently unpublished and kept in Moscow and St. Petersburg, respectively (Komissarov 1994).

The Lepidoptera material collected during the Langsdorff expedition was incorporated into the collection of the Kunstkamera, the cabinet of curiosities of the Tsar, where Ménétriés was hired as the curator shortly after his return to Russia in 1825 (Vanzolini 1997; Kryzhanovsky 2002). For this reason, the zoological material received more attention than other materials collected during the expedition, which were forgotten for a century, along with Langsdorff's diaries and other documentation produced during the expedition (Komissarov 1994). The zoological collection formed after the expedition is now part of the collection of the Zoological Institute of the Russian Academy of Sciences (ZIN).

This paper is an illustrated catalogue of the types of Ctenuchina and Euchromiina described by Ménétriés, along with taxonomic remarks when appropriate. Even though Ménétriés provided illustrations of all his American arctiines, it is unlikely that any author who worked on the taxonomy of the group visited the ZIN collection to inspect the type material. The types of all but one species were collected during the Langsdorff

expedition, and all of them were described in the family Zygaenidae, where most authors placed the Ctenuchina and Euchromiina at the time (Pinheiro & Duarte 2013).

MATERIALS AND METHODS

All the specimens examined from the Neotropical region are kept in small cardboard or wooden drawers; in most cases, there is a need for curatorial attention in identification, gathering specimens from the same species in the same drawer, separation of different subtribes, etc. (Fig. 1). Among the specimens are Ménétriés' types, Herrich-Schäffer's types described from the Kaden collection, and some other non-type specimens from various localities. Some specimens are unlabeled and many have only their putative names on the labels, without locality data.

Most of Ménétriés' types are identified based on a round gold label, and a green label that shows the type locality (Figs. 2; 4–9). The only exceptions are three specimens of *Charidea fastuosa* Ménétriés, 1857, for which the type status here advocated is explained in the remarks on this name. In some instances the number of potential types was not defined, due to the unfortunate practice (widely used in the past) of labelling only one of the specimens from the same locality, and placing the other one(s) below or beside the labelled one. In such cases, as stressed in the text, we decided to consider the unlabelled specimens also part of the type series if they were placed in the same drawer and below or beside the labelled one. This arrangement of the specimens was considered evidence of the composition of the type series, as allowed under article 72.4.1.1 (ICZN, 1999). In all cases, the original description was compared to the specimens to aid in the verification of their type status.

Some ambiguous type localities for birds described by Ménétriés have been discussed (Vanzolini 1996; Vasconcelos & Pacheco 2012). However, in the case of most moths treated here there are no doubts concerning type localities, for all the species described from Brazil belong to localities where the author is known to have collected (e.g., names described from "Brazil," "interior of Brazil," or "Minas Gerais"). The only exception is the material described as *Glaucopis vidua* Ménétriés, 1857, and *G. vidua* var. *spiracula* Ménétriés, 1857, as explained below under these names.

The information from the original descriptions was compared with the respective label data. Additional information was added in square brackets when considered necessary. The names are given in alphabetical order by specific epithet. For each name, the original combination is given, as well as their current placement, taxonomic notes and conservation status of the type(s). The labels are transcribed with a "/" to separate lines on the same label, and ";" to separate labels.

Lectotype designations are made to ensure stability of the names. Following recommendation 73F of the International Code of Zoological Nomenclature (ICZN, 1999), in the absence of evidence of monotypy, all the types found were considered to be syntypes, even if only one known specimen exists.

The acronyms used are as follows: (BMNH) Natural History Museum, London, England; (ZIN) Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; (ZMHB) Zoologische Museum der Humboldt Universität, Berlin, Germany; (ZMUC) Zoologisk Museum of the University of Copenhagen, Denmark. Dates of older literature follow Heppner (1982).

CATALOGUE

All the illustrations provided by Ménétriés (1857) match closely with his species. In spite of this, some taxonomic issues persist, as discussed case by case below.

fasciatella Ménétriés, 1857
(Figs. 2, 10–13)

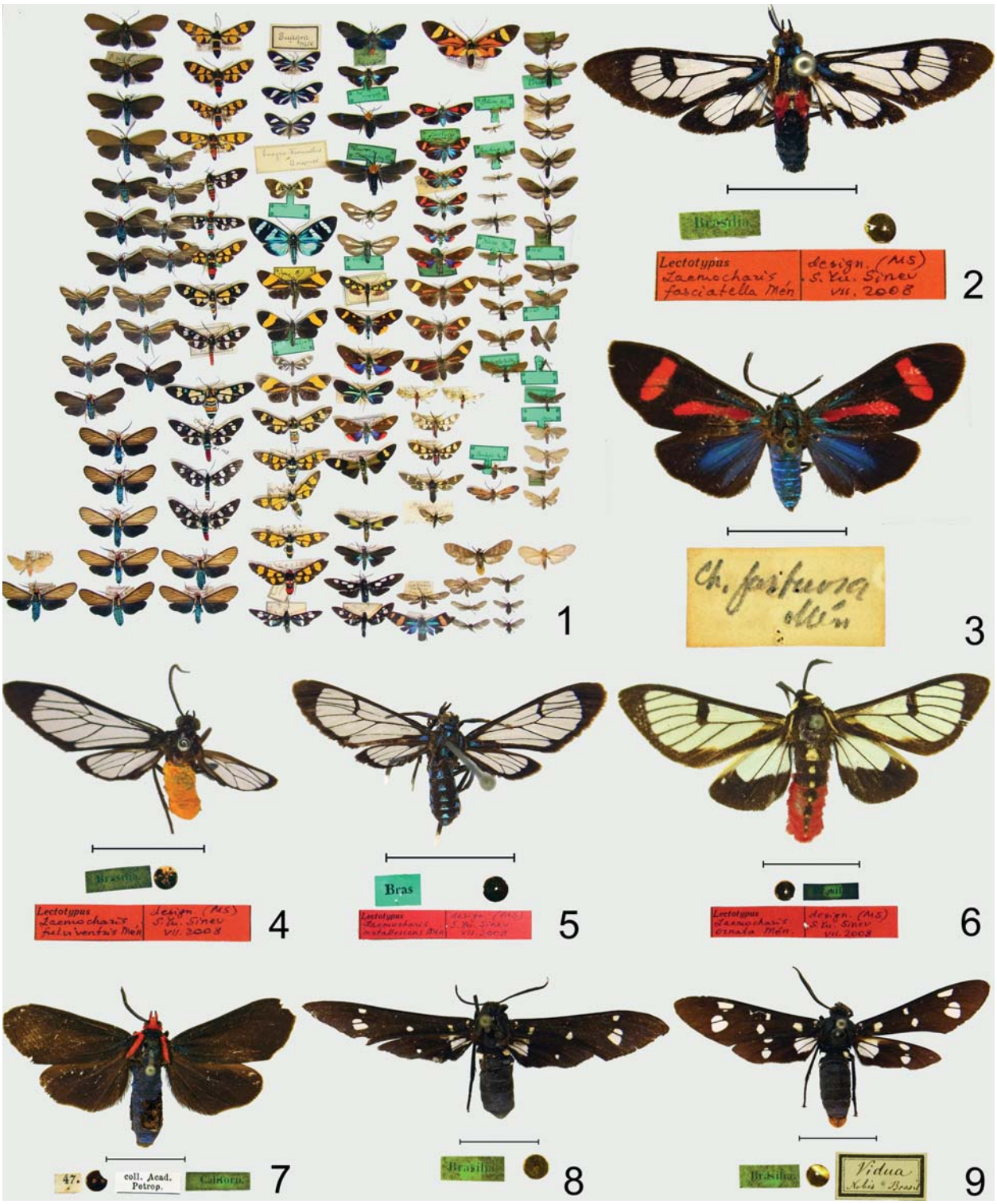
Laemocharis fasciatella Ménétriés, 1857: 140; pl. 14, fig. 4. **Lectotype hereby designated** male: BRAZIL [no further data]. With three labels: a round gold label; a green label with "Brasilia" printed; a red label "Lectotypus *Laemocharis fasciatella* Mén / design. (MS) S. Yu. Sinev vii.2008".

Current combination. *Poecilosoma fasciatella* (Ménétriés) **comb. nov., stat. rev.**

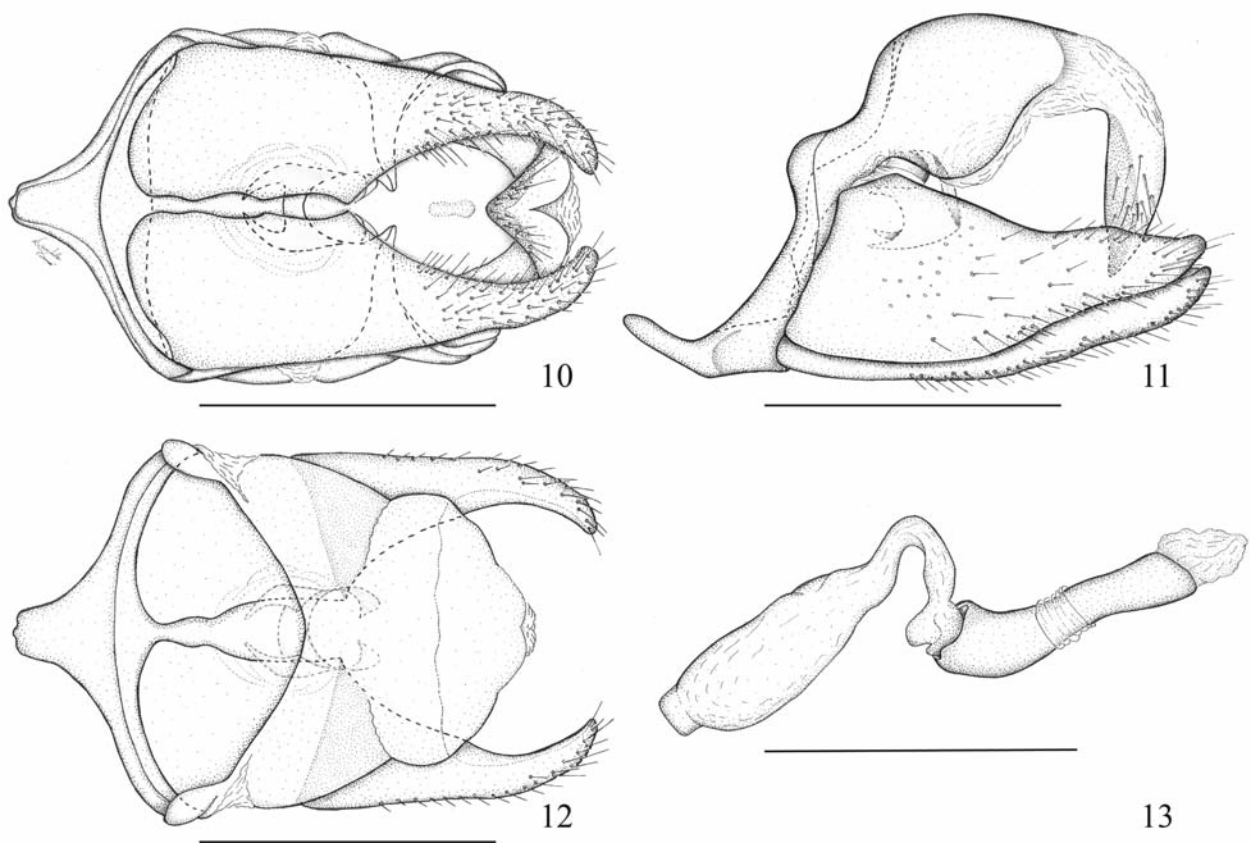
Condition of the lectotype. Both antennae broken, the left with the proximal portion still attached to the head. Right hindwing partly worn.

Remarks. This species was described from an unknown number of specimens, and only a single specimen was found. There is a label below the lectotype, on a different pin, with printed edges and "Fasciatella / Nobis Brasil" handwritten in ink, in what seems to be Ménétriés' handwriting (his handwriting is depicted in Horn & Kahle, 1935–1937, pl. 21, fig. 9). The lectotype corresponds reasonably well with the original illustration.

Ménétriés (1857) mentioned that this species resembles *Poecilosoma eone* (Hübner, 1831), the type species of *Agerocha* Hübner, 1831, which is a junior subjective synonym of *Poecilosoma* Hübner [1819]. In spite of this and with no evidence of having examined the type, Butler (1877: 34) synonymized *Laemocharis*



FIGS. 1–9. Arctiinae moths (Lepidoptera, Erebidae) deposited in the Zoological Institute of the Academy of Sciences of St. Petersburg. **1.** Example of drawer with unsorted material (mostly unidentified) from Afrotropical, Indo-Malayan, Nearctic, and Neotropical regions. **2-9.** Ménétriés' type collection. **2.** *Laemocharis fasciatella*; **3.** *Charidea fastuosa* (lectotype); **4.** *L. fulviventris*; **5.** *L. metallescens*; **6.** *L. ornata*; **7.** *Glaucopis rubroscapus*; **8.** *G. vidua*; **9.** *G. vidua spiracula*.

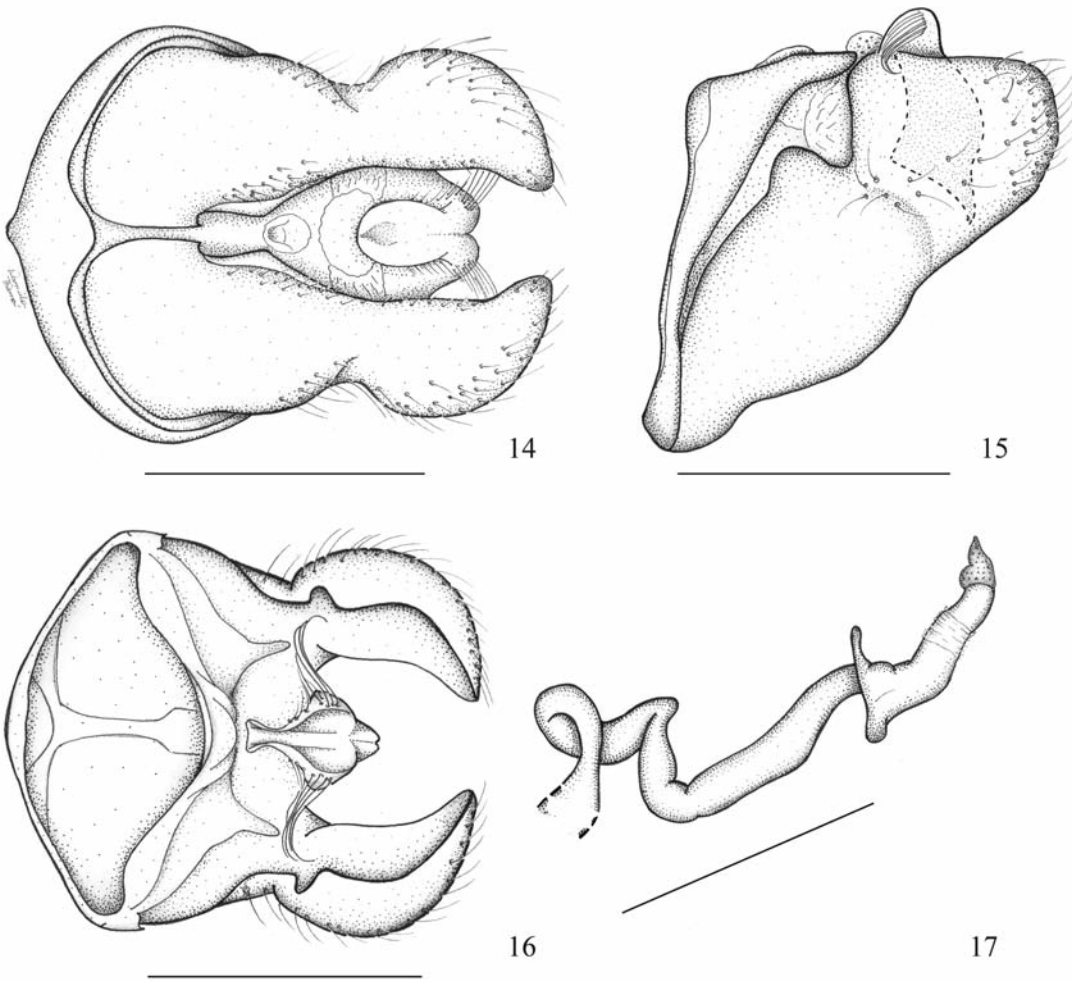


FIGS. 10–13. Male genitalia of *Poecilosoma fasciatella*. **10.** Ventral view; **11.** Lateral view; **12.** Dorsal view; **13.** Aedoeagus. Scale bar: 1mm.

fasciatella under *Eunomia colombina* (Fabricius 1793), a species from the West Indies. This synonymy was followed by all subsequent authors (Kirby 1892: 146; Hampson 1898: 201; Zerny 1912: 60; Draudt 1915: 59), none of whom are believed to have seen the type.

Examination of the lectotype of *L. fasciatella* and the only known syntype of *E. colombina*, held at ZMUC, made it clear that they are not synonyms (*E. colombina* is correctly illustrated in color in Draudt, 1915: plate 12, row d, as columbina). *Laemocharis fasciatella* is indeed remarkably similar to the established concept of *Poecilosoma eone* (illustrated by Cerda 2008, fig. 83), but they are distinct species. As noted by Ménétriés in the original description, his type differs from the established concept of *P. eone* (whose type is probably lost, as is most of Hübner's collection) in the absence of whitish spots on the abdomen. However, this is probably a result of discoloration, given that fresh specimens of *L. fasciatella* have these spots. The male genitalia of *P. eone* was illustrated by Cerda (2008, figs. 89a–e), and is remarkably similar to that of *P. fasciatella* (Figs. 10–13), differing by the shorter valvae, longer saccus and wider coecum.

The transfer of *L. fasciatella* to *Poecilosoma* follows the current combination of *P. eone*. However, it is likely that neither of them belongs to this genus, given that characters of the male genitalia are quite different between *P. eone* and the type species of *Poecilosoma, P. chrysis* Hübner, 1823 (L. R. Pinheiro, personal observation). If this is indeed the case, *Agerocha* would need to be revalidated (as mentioned above, *P. eone* is the type species of *Agerocha*). According to a preliminary survey we made among various euchromiine genera, at least three other species seem very close to *P. eone* and *P. fasciatella*: *Saurita gracula* (Dognin 1911), and two others currently placed in *Chrostosoma* Hübner, [1819], *C. regia* (Schaus, 1894) and *C. bogotense* (Felder 1874). The last two appear in Draudt (1915) and Hampson (1898) as *Cosmosoma* Hübner, [1823], but because both authors placed the type species of *Chrostosoma—Sphinx evadnes* Cramer, 1781—in *Cosmosoma*, the former automatically became a senior subjective synonym of the latter (Julian Donahue, personal communication). This is why all the species that are treated here in *Chrostosoma* appear in previous catalogues as *Cosmosoma*.



FIGS. 14–17. Male genitalia of *Xanthyda metallescens*. **14.** Ventral view; **15.** Lateral view; **16.** Dorsal view; **17.** Aedoeagus. Scale bar: 1mm.

fastuosa Ménétriés, 1857
(Fig. 3)

Charidea fastuosa Ménétriés, 1857: 143, pl. 14, fig. 8. **Lectotype hereby designated** male: BRAZIL [no further data]. With one white label with the handwritten inscription "Ch. fastuosa Mén." in pencil on the upper side, and "scintillans Am. M." handwritten in ink on the underside. **Paralectotypes:** one male with a green "T" shaped label with "fastuosa Ménét." handwritten in ink and another green label with the handwritten inscription "Ipanema / Beske" also in ink; one female, unlabelled.

Current combination. Junior subjective synonym of *Euchromia jucunda* Walker, 1854 (synonymized by Hampson 1898), a species currently placed in *Cyanopepla* Clemens, 1861.

Condition of the types. Lectotype. Wings rubbed. Left hindleg missing and right antenna broken. **Male paralectotype.** Wings slightly rubbed, right forewing with minor damage on external margin. Female paralectotype. Left hindleg missing.

Remarks. *Charidea fastuosa* Ménétriés was described from an undetermined number of specimens. The three specimens here considered as part of the type series were arranged in a column in a drawer filled with specimens of many other species. The lectotype designated here was the second, with the other male above, and the female below, followed by a different species of *Cyanopepla*. Therefore we consider the other male and the female to be part of the type series. There was no round gold label with these specimens, but there is no question about their type status, given that the lectotype label data were clearly mentioned by the author in the original description. There was another box with specimens arranged under the name *Charidea scintillans* (no mention of the author's name). These are *C. jucunda*, and not *C. scintillans* (Butler 1872) (a photograph of the type held at the BMNH was

examined by the first author), and are not considered part of the type series due to their placement in a different box, arranged under a different name.

Ménétriés (1857) compared his *C. fastuosa* with *C. fulgens* Herrich-Schäffer, 1854 (...). A syntype of the latter, deposited at the ZMHB, was consulted by the first author and is indeed a similar species, though it does not seem to be particularly closer to it than many other species of *Cyanopepla*. Hampson's synonymization of *C. fastuosa* under *E. jucunda* was followed by all subsequent authors. The holotype of the latter, held at the BMNH, was also examined by the first author, and the synonymy seems to be correct.

The name scintillans on the label of the lectotype cannot be a reference to *C. scintillans* (Butler), given the fact that the latter name was described 25 years later, unless the label had been added posteriorly. It is unknown to what the former name could refer.

There is a valid species in *Cyanopepla* that is a senior homonym of *C. fastuosa* Ménétriés—*C. fastuosa* (Walker 1854). The former is also a junior synonym of *C. jucunda* (see above), and for this reason no replacement name is required according to article 60.2.1 (ICZN 1999).

fulviventris Ménétriés, 1857
(Fig. 4)

Laemocharis fulviventris Ménétriés, 1857: 141, pl. 14, fig. 5. **Lectotype hereby designated male**, BRAZIL [no further data]. With three labels: a round gold label; a green label with "Brasilia" printed; a red label "Lectotypus *Laemocharis fulviventris* Mén. / design. (MS) S. Yu. Sinev vii.2008".

Current combination. Junior subjective synonym of *Glaucopis* (*Ilipa*) *tengyra* Walker, 1854 (synonymized by Hampson 1898: 252), currently placed in *Chrostosoma* Hübner, [1819].

Condition of the lectotype. Right antenna and forewing missing, as well as some legs.

Remarks. *Laemocharis fulviventris* was described from an unspecified number of specimens, and only a single female was found. It was placed in *Ilipa* Walker, 1854 by Kirby (1892: 143). Hampson (1898: 252) considered *L. fulviventris* a junior subjective synonym of *Glaucopis* (*Ilipa*) *tengyra* Walker, 1854, a species that he placed in *Cosmosoma* Hübner, [1823]. This treatment was followed by Zerny (1912: 75) and Draudt (1915: 82, pl. 14, row f).

The holotype of *C. tengyra*, deposited at the BMNH, was examined by the first author. Even though its abdomen and antennae are missing, it seems reasonable to regard the synonymy as correct.

ignicolor Ménétriés, 1857

Laemocharis ignicolor Ménétriés, 1857: 139; pl. 14, fig. 3. Lectotype male, BRAZIL [no further data]. With three labels: a round gold label; a green label with "Brasilia." printed; a red label "Lectotypus Laemocharis ignicolor Mén. / design. (MS) S. Yu. Sinev vii.2008".

Current combination. This name is currently considered a junior subjective synonym of *Erruca erythrarchos* (Walker 1854) (synonymized by Becker & Pinheiro 2009: 684).

Remarks. There is a label below the specimen on a different pin, with printed edges and "Ignicolor / Nobis Brasil" handwritten in ink.

This name was based on a composite glued specimen, with the head and thorax of *Erruca erythrarchos* and an abdomen of *Aethria haemorrhoidalis* (Stoll 1790), and is currently considered a synonym of *Erruca erythrarchos* Walker, 1854. For more information and an illustration, see Becker & Pinheiro (2009).

metallescens Ménétriés, 1857
(Figs. 5 and 14–17)

Laemocharis metallescens Ménétriés, 1857: 138, pl. 14, fig. 1. **Lectotype hereby designated** female, BRAZIL [no further data]. With three labels: a round gold label; a green label with "Bras." printed; a red label "Lectotypus Laemocharis metallescens Mén. / design. (MS) S. Yu. Sinev vii.2008".

Current combination. *Xanthyda metallescens* (Ménétriés), **comb. nov.**

Condition of the lectotype. Both antennae missing.

Remarks. This species was believed to occur from Mexico to southeastern Brazil. However, Cerda (2008) determined that this distribution corresponds to the range of two distinct species, *X. metallescens*, whose type locality is in Atlantic Forest in eastern Brazil, and *X. chalcosticta* (Butler 1876), which occurs from Mexico and down at least to Pará, Brazil. This distinction is confirmed here, by the differences in the male genitalia (Figs. 14–17).

Xanthyda metallescens is known to occur in the Brazilian states of Santa Catarina, Paraná, São Paulo, Rio de Janeiro, and Minas Gerais, in the Atlantic Forest and Cerrado biomes, and it is very similar in habitus to *Chrostosoma elegans* Butler, 1876. A full account of the misidentifications of *X. metallescens* may be found in Cerda (2008). This species is here transferred to *Xanthyda* Hampson, 1920, which was revalidated by Cerda (2008), based on the overall similarity to its type species, plus the genital characters used by this author to

define the genus (mainly the outgrowths of the tegumen).

ornata Ménétriés, 1857
(Fig. 6)

Laemocharis ornata Ménétriés, 1857: 139, pl. 14, fig. 2. **Lectotype hereby designated** male [BRAZIL], Minas Gerais [no further data]. With three labels: a round gold label; a green label with "Bras." printed; a red label "Lectotypus / Laemocharis / ornata Mén. / design. (MS) /S. Yu. Sinev / VII.2008".

Current combination. *Aethria ornata* (Ménétriés) **comb. nov**.

Condition of lectotype. Right forewing worn and both hindwings and most legs missing. Specimen not very well mounted.

Remarks. The species was described from an undetermined number of specimens, and only one was found. Below the specimen, on a different pin, there is another label, white with printed black edges, with "ornata/Nobis Brasil" handwritten. The lectotype corresponds quite well to the original illustration.

The reason for treating this species in *Aethria* Hübner, 1819, and not in *Mesolasia* Hampson, 1898, is because Hampson, mistakenly believing that *Sphinx leucaspis* Cramer, 1775, was the type of *Aethria*, designated *Sphinx haemorrhoidalis* Stoll, 1790 as the type species of *Mesolasia*, not realizing that this is also the type species of *Aethria* (designated by Kirby 1892). *Aethria ornata* seems to be congeneric with *A. haemorrhoidalis* (Stoll 1790), the type species of *Aethria* Hübner, 1819, but is probably more closely related to *A. melanobasis* (Druce 1897).

rubroscapus Ménétriés, 1857
(Fig. 7)

Glaucopis rubroscapus Ménétriés, 1857: 142, pl. 14, fig. 7. **Lectotype hereby designated,** male: [USA], California (Wosnesensky). With four labels: "47."; a round gold label; a green label with "Californ." printed; and a printed label "coll. Acad. Petrop.".

Current combination. *Ctenucha rubroscapus* (Ménétriés).

Condition of the lectotype. Forelegs and right antenna missing. Abdomen partially eaten by museum pests, but genitalia seems to be intact.

Remarks. A single specimen was found, from a type series of unknown size. There is an additional white label with printed black edges on a different pin from the lectotype, below the specimen, with "rubroscapus/Nobis Californ." handwritten.

The validity of the synonymies of *C. rubroscapus* has not been evaluated.

vidua Ménétriés, 1857
(Fig. 8)

Glaucopis vidua Ménétriés, 1857: 141, pl. 14, fig. 6. **Lectotype hereby designated** female, BRAZIL [no further data]. With two labels: a round gold label, and a green label with "Brasilia" printed.

Current combination. This name is currently considered a junior subjective synonym of *Syntomeida syntomoides* (Boisduval 1836). Synonymized by Hampson (1898: 306).

Condition of type. Left antenna partly broken.

Remarks. Described from an unspecified number of specimens. With additional white label with printed black edges placed below the specimen, reading "vidua /Nobis Brasil" in handwriting. The specimen is likely mislabeled, as the species is not known to occur in Brazil, neither in any other country in South America (Hampson, 1898: 307).

Syntomeida syntomoides has many other synonyms, but their validity has not been evaluated here.

vidua var. *spiracula* Ménétriés, 1857
(Fig. 9)

Glaucopis vidua var. *spiracula* Ménétriés, 1857: 141. **Lectotype hereby designated** male, BRAZIL [no further data]. With two labels: a round gold label, and a green label with "Brasilia" printed.

Current combination. See above under *vidua*.

Condition of type. Right antenna missing.

Remarks. Described from an unspecified number of specimens. Ménétriés (1857) mentioned that the specimen(s) that received this name came from the collection of a Mr. Becker in Paris. Although no label indicating this information was found, the round gold label and the location of the lectotype hereby designated, immediately below the lectotype of *Glaucopis vidua*, followed by the label saying "vidua Nobis Brasil", are here considered evidence to support our hypothesis that the specimen here designated as a lectotype is in fact the same one received by Ménétriés from Mr. Becker.

According to article 45.6.4 of the ICZN (1999), this name is to be considered a subspecies, and the correct combination would be *Syntomeida syntomoides spiracula* (Ménétriés). The validity of this status remains to be evaluated, though it is likely that it is only an individual variation, as the wing pattern of this species shows some intraspecific differences in the size of the spots.

The discussion about the possible wrong type locality addressed in *Glaucopis vidua*, above, also applies here.

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