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Remarks on the type material and nomenclature of *Oxytrypia orbiculosa* (Esper, 1799 [1800]) (Lepidoptera: Noctuidae)

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Abstract. New data obtained during preparatory studies for a science-history monograph of *Oxytrypia orbiculosa* (Esper, 1799 [1800]) are presented, with emphasis on the type material and nomenclature of the species. Circumstantial data suggest that the holotype of *Phalaena orbiculosa* Esper, 1799 [1800], originated from the Szeged region of Hungary and deposited in the collection of Tóbiás Koy, may have been collected either by Johannes Centurius Hofmannsegg (1766–1849) or Pál Kitaibel (1857–1817) in the early 1790s. It was thought that the holotype was subsequently incorporated into the Imre Frivaldszky collection and later transferred to the Hungarian National Museum in 1864. However, it was deposited in the Koy collection arranged by a curiosity manner in a carved cabinet, arrived to the museum in 1909, where it was destroyed during the museum fire of 1956. The nomenclatural history of binomens and higher categories connected to the species is reviewed. The genus-group name *Oxytrypia* has been introduced by Staudinger in 1871 without description, but it is available under the Article 12.2.5 of the International Code of Zoological Nomenclature (ICZN) because it is accompanied by an indication. The subsequent author's correction of the name as *Oxytrypia* is justified under the ICZN Article 32.5. Consequently, the family-group names Oxytrypiini and Oxytrypiina are all subsequent misspellings of Oxytrypiinae Gozmány, 1970, in accordance with ICZN Article 35.4.1.

Key words: *Oxytrypia orbiculosa*, authorship, historical collections, holotype, Oxytrypiina, spelling.

Замечания о типовом материале и номенклатуре *Oxytrypia orbiculosa* (Esper, 1799 [1800]) (Lepidoptera: Noctuidae)

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Резюме. Представлены новые данные, полученные в ходе подготовительных исследований для научно-исторической монографии об *Oxytrypia orbiculosa* (Esper, 1799 [1800]), с акцентом на типовой материал и номенклатуру вида. Косвенные данные позволяют предположить, что голотип *Phalaena orbiculosa* Esper, 1799 [1800], происходящий из венгерского региона Сегед и хранившийся в коллекции Тобиаша Коя, мог быть собран либо Йоханнесом Центуриусом Хофмансеггом (1766–1849), либо Палом Китаибелем (1857–1817) в начале 1790-х годов. Считалось, что голотип впоследствии был включен в коллекцию Имре Фривальдского, а затем передан в Венгерский национальный музей в 1864 году. Однако он был помещен в коллекцию Коя, оформленную в виде диковинки в резном шкафу, попал в музей в 1909 году, где был уничтожен во время пожара в 1956 году. Рассматривается номенклатурная история связанных с этим видом биоменов и таксонов более высокого ранга. Родовое название *Oxytrypia* было введено Штаудингером в 1871 году без описания, но оно пригодно в соответствии со статьей 12.2.5 Международного кодекса зоологической номенклатуры (МКЗН), поскольку сопровождается указанием. Последующая коррекция названия как *Oxytrypia* автором оправдана в соответствии со статьей 32.5 МКЗН. Следовательно, названия Oxytrypiini и Oxytrypiina являются последующими ошибочными написаниями Oxytrypiinae Gozmány, 1970 в соответствии со статьей 35.4.1 МКЗН.

Ключевые слова: *Oxytrypia orbiculosa*, авторство, исторические коллекции, голотип, Oxytrypiina, написание.

Introduction

During the work on the monograph of *Oxytrypia orbiculosa* (Esper, 1799 [1800]), a characteristic noctuid species of sandy districts in Pannonia [Kovács, 1955], we are focusing to Hungarian science-history. However, some interesting information regarding the holotype of *Phalaena orbiculosa* Esper, 1799 [1800], as well as the question of the authorship and the spelling of the genus, arose. We believe that these go beyond the primarily Hungarian circumstances of the planned work on the enigmatic moth, and it is worth sharing our results with a wider readership. Thus, in the following, first we introduce some new information regarding the first (holotype) specimen of *O. orbiculosa*, revealing the

likelihood of who may have collected it and in which collections the specimen was later deposited. We then list under “nomenclatural history”, in chronological order of publication date, the various binominal combinations of the species' name, as well as the genus- and family-group names strictly associated with the species. As sources we use works that are monographic in nature or catalogues; and we do not cover smaller publications dealing faunistics or bionomics. What is followed by a clarification on the authorship and spelling of the genus itself, and the family-group name based on the genus in the sense of the International Code of Zoological Nomenclature [ICZN, 1999]. Finally, we briefly conclude our results. All figures are based on documents originating from the libraries of the Hungarian Natural History Museum.

Page 40	Page 41
<i>Crenata</i>	<i>Morio</i>
<i>Cuculla</i>	<i>Mundana</i>
<i>Curtula</i>	<i>Neufria</i>
<i>Deplana</i>	<i>Nivofa</i>
<i>Detrita</i>	<i>Nubeculosa</i>
<i>Dictaea</i>	<i>Obliterata</i>
<i>Dictaeoides</i>	<i>Oleagina</i>
<i>Dispar</i>	<i>Orbiculosa Esp.</i>
<i>Dodonea</i>	<i>Palpina</i>
<i>Dominula</i>	<i>Paralita</i>
<i>Dromedarius</i>	<i>Pavonia major</i>
<i>Dumeti</i>	-- -- media
<i>Eborina</i>	-- -- minor
<i>Erminea</i>	<i>Pini</i>
<i>Everia</i>	<i>Plantaginis</i>
<i>Fagi</i>	<i>Plumigera</i>
<i>Falcula</i>	<i>Populi</i>
<i>Falcelina</i>	<i>Populifolia</i>
<i>Flina</i>	<i>Potatoria</i>
<i>Franconica</i>	<i>Procelsienea</i>
<i>Fuliginola</i>	<i>Pruni</i>
<i>Furcula</i>	<i>Pudibunda</i>
<i>Gonostigma</i>	<i>Pudica</i>
<i>Grammica</i>	<i>Pulchra</i>
<i>Hamula</i>	<i>Pulla</i>
<i>Harpagula</i>	<i>Purpurea</i>
<i>Hebe</i>	<i>Quadra</i>
<i>Hepialica</i>	<i>Quercifolia</i>
<i>Hera</i>	<i>Quercus</i>
<i>Hospita</i>	<i>Querna</i>
<i>Humuli</i>	<i>Reclusa</i>
<i>Jacobaeae</i>	<i>Rosea</i>
<i>Illeifolia</i>	<i>Rubi</i>
<i>Irrorea</i>	<i>Rubicunda</i>
<i>Lucertula</i>	<i>Rubricollis</i>
<i>Lancefris</i>	<i>Russula</i>
<i>Leporina</i>	<i>Salicis</i>
<i>Libatrix</i>	<i>Selenitica</i>
<i>Lobulina</i>	<i>Sicula</i>
<i>Lubricipeda</i>	<i>Spinula</i>
<i>Luctifera</i>	<i>Striata</i>
<i>Lunigera</i>	<i>Taraxaci</i>
<i>Lupulina</i>	<i>Tau</i>
<i>Maculosa</i>	<i>Terrifica</i>
<i>Marginea</i>	<i>Tesudo</i>
<i>Matronula</i>	<i>Tremula</i>
<i>Mendica</i>	<i>Trepida</i>
<i>Menthastri</i>	<i>Trifolii</i>
<i>Monacha</i>	<i>Ulmi</i>
<i>Mori</i>	<i>Unita</i>

Fig. 1. Extract of the catalogue of Tobias Koy's insect collection [Koy, 1800], page 41 listing (Bombyx) "*Orbiculosa Esp.*" (in frame). Koy indicated species did not occur in Ofen (= Buda) region with cursive type face.

Рис. 1. Выдержка из каталога коллекции насекомых Тобиаса Коя [Кой, 1800], страница 41 с указанием (Bombyx) «*Orbiculosa Esp.*» (в рамке). Кой отметил, что виды, выделенные курсивом, не встречаются в районе Офен (= Буда).

Remarks on the holotype of *Phalaena orbiculosa*

Schmidt [1912: 620; 1913: 42] correctly noted that the capture of the very first specimen deposited in the insect collection of Tobias (Tóbiás) Koy (1757–1829) [Koy, 1800] (Fig. 1), may have taken place in 1797–1798, or earlier. According to the first paragraph of Esper's original description [Esper, 1799], the holotype was collected around the city of Szeged by a nature-loving person, remained unnamed. Although it cannot be proven with concrete data, we have good reason to assume that it is Baron Johannes Centurius Hofmannsegg (1766–1849), who visited Hungary in 1793–1794 [Hofmannsegg, 1800]:

1) According to his account, he spent the second half of May 1794 in the Szeged area. At that time, while digging up Iris rhizomes, he could easily find *O. orbiculosa* in the form of a caterpillar or pupa.

2) Hofmannsegg knew Koy, they collected together in the Buda area, and he even entrusted Koy with the care of his collected materials left in Hungary [Hofmannsegg, 1800: 238; Koy's name is misprinted here as "Kay"].

Another candidate person is Pál Kitaibel (1757–1817), a leading naturalist of his time in Hungary [Bálint, 2017]:

1) Kitaibel may have visited the Szeged area in 1792 or 1795 during his travels in the Banat (Bácska) region,

although no diaries from these journeys have survived [Priszter, 2001].

2) Kitaibel was the discoverer of *Iris arenaria*, the host plant of *O. orbiculosa* larvae in sandy habitats; it is plausible that the caterpillar or pupa (resulting an imago) was found when he collected *Iris*.

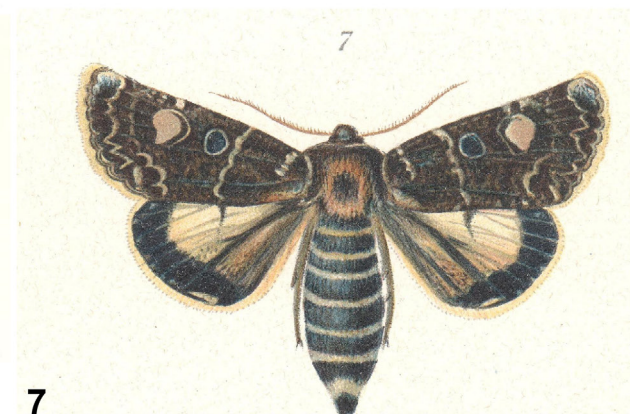
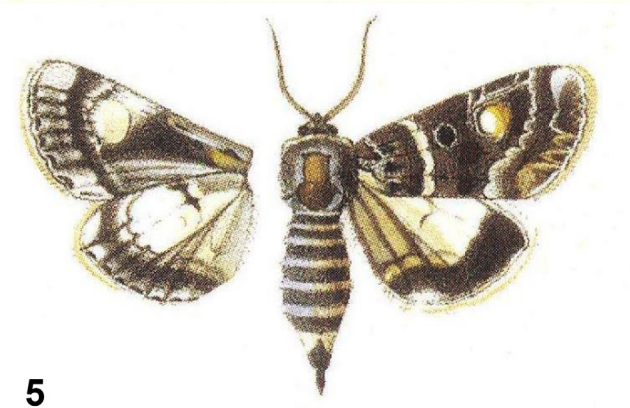
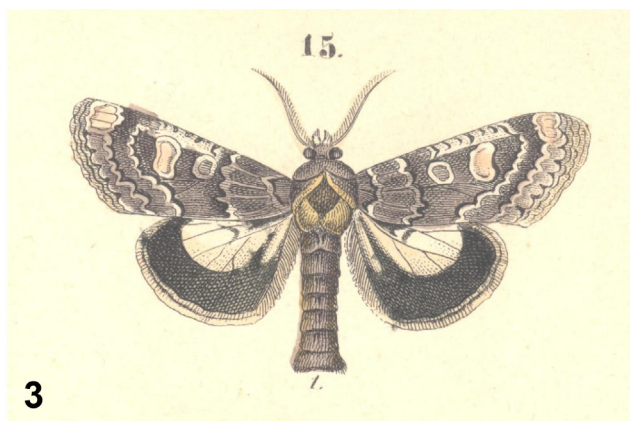
3) Kitaibel was a member of the Academy of Natural Sciences Leopoldina, whose Hungarian members were active in Buda; this circle included the entomologists Johannes Maurice (János Mór) Böhm (?–1809) and Tóbiás Koy, both elected members of the academy from 1798 [Abafi Aigner, 1898b: 48]. It is therefore also plausible that Kitaibel passed the remarkable specimen to his entomologist colleagues, and that it later became the holotype.

The first paragraph of Esper's *Phalaena (Bombyx) orbiculosa* description and the accompanying figure (Fig. 2) suggest that the specimen was made available to him. Esper must have returned the specimen to Koy, since the holotype is absent from the well-preserved Esper's collection [Hacker, 1989]. Indeed, later source explicitly state that it remained in Koy's possession [Treitschke, 1825]. This specimen was the model for the first lithographic figures of the species [Herrich-Schäffer, 1845; Berge, 1851; Hofmann, 1887] with a remarkably flat body suggesting that it was pressed (Fig. 3). Therefore it can be supposed that the original figure in Esper was stylized and fit to the reality

invented by the artist. After Koy's death, the holotype was acquired by Imre Frivaldszky through the purchase of the Koy collection [Abafi Aigner, 1898b: 60]. It was widely known that he possessed the only *Phalaena orbiculosa* specimen known to exist [Silberman, 1835].

Although Abafi-Aigner and Schmidt stated that the holotype entered the Hungarian National Museum with the Frivaldszky's collection in 1864 [Abafi Aigner, 1889a: 135; Abafi Aigner, 1898b: 88–89; Schmidt, 1912: 620, 1913: 42],

this interpretation is incorrect. The specimen arrived with the Frivaldszky's collection as "*Miselia orbiculosa*" and inventoried as such under the entry number 1269 cannot represent the holotype, as that very specimen belonged to the Koy's collection (see below). This pinned specimen almost certainly originated from the captures of Rudolf Anker (1824–1901) and his brother Lajos (1822–1887), who rediscovered the species in 1862 and collected several specimens in subsequent years [Frivaldszky, 1865: 93].



Figs 2–7. Colour lithographies of *Oxytrypia orbiculosa*.

2 – male, holotype [Esper, 1800]; 3 – male [Berge, 1851]; 4–5 – after Frivaldszky [1865]: 4 – male, 5 – female; 6 – male [Warren, 1911]; 7 – female [Schmidt, 1912].

Рис. 2–7. Цветные литографии *Oxytrypia orbiculosa*.

2 – самец, голотип [Esper, 1800]; 3 – самец [Berge, 1851]; 4–5 – по Фривальдскому [Frivaldszky, 1865]: 4 – самец, 5 – самка; 6 – самец [Warren, 1911]; 7 – самка [Schmidt, 1912].

Therefore it can be assumed that the specimens depicted on plate V of Frivaldszky's faunal work were based on the holotype kept in the Koy's collection (the male) (Fig. 4), and on the specimen collected by the Ankers (the female), kept in the Frivaldszky's collection (Fig. 5).

Koy's collection was arranged in a cabinet-of-curiosities manner, with specimens placed individually or in small groups in glass trays, similar to the Esper's and Gerning's collections, which are still in excellent condition today [Hacker, 1989]. After acquiring the Koy's collection, Frivaldszky maintained this arrangement and similarly housed specimens of the new or rare species he found in the material of the Balkan and Anatolian expeditions he financed, *Danaus chrysippus* (Linnaeus, 1758), *Kretania euryphilus* (Freyer, 1852), *Plebejides sephirus* (Frivaldszky, 1835) [Bálint, Frivaldszky, 2009; Bálint, Katona, 2022]. After Frivaldszky's death, the collection was donated to the zoological institute of the József Nádor University (Pest), and was transferred to the Hungarian National Museum only in 1909 [Csiki, 1910], where it was kept in a separate, original carved cabinet [Gaál, 1941]. No inventory of the collection has yet been located in the archives.

The Koy's collection suffered severe damage during the museum fire of 1956, when a large number of specimens were destroyed [Boros, 1957; Bálint, 2025]. Only seven Noctuidae specimens survived, indicating that the moth material was particularly affected. It is therefore presumed that the holotype of *Phalaena orbiculosa* was destroyed in that fire, as no relevant specimen is present in the surviving material.

Finally, we note that through the aforementioned Anker brothers, many specimens reached European collectors, so some specimens could be deposited in larger public collections. Thus, Hampson [1903] listed five male and three female specimens collected in Hungary, one of the males perhaps provided the basis for the detailed illustration of the species including wing venation, body and leg anatomy. Warren's [1911] colour illustration is completely consistent with this male specimen (Fig. 6). Since Schmidt [1912; 1913] illustrated the female in his monographs (Fig. 7), the species had been fully documented by modern lithographic technics, resulting perfect images.

Nomenclatural history

The species-group name *orbiculosa* and its combinations

Phalaena (Bombyx) Orbiculosa Esper, 1799 [1800]: 93, pl. 93, fig. 8.

Bombyx orbiculosa (Esper): Koy, 1800: 41 (new combination).

Miselia orbiculosa (Esper): Treitschke, 1825: 404–405 (new combination); Boisduval, 1840: 124; Berge, 1851: 105, pl. 15, fig. 1.

Valeria orbiculosa (Esper): Herrich-Schäffer, 1845: 294 (new combination), pl. 13, fig. 63; Heydenreich, 1851: 39; Lederer, 1857: 103; Herrich-Schäffer, 1861: 29; Staudinger, Wocke, 1861: 42; Frivaldszky, 1865: 92, 153, pl. 5, figs 8a, 8b; Emich, 1868: 195; Horváth, Pével, 1875: 52.

Oxytripia orbiculosa (Esper): Staudinger, Wocke, 1871: 98 (new combination); Cserey, 1901: 93; Hampson, 1903: 127; Poole, 1989: 750; Varga et al., 1989: 237, 239–240; Fibiger, Hacker, 1990: 49; Nowacki, Fibiger, 1996: 270; Rákossy, 1996: 116, pl. 11,

fig. 8; Beck, 1999: 535; Klyuchko et al., 2001: 359; Zilli et al., 2005: 27; Kljuchko, 2006: 102; Matov et al., 2008: 270; Matov et al., 2019: 339; Kádár et al., 2010: [29], pl. XII, fig. 116; Gyulai et al., 2010: 59; Ronkay et al., 2024: 71.

Oxytripia orbiculosa (Esper): Hofmann, 1887: 81, pl. 34, fig. 22; Abafi-Aigner et al., 1896: 33; Staudinger, Rebel, 1901: 168; Rothe, 1902: 19; Abafi-Aigner, 1907: 60, pl. 51, fig. 15; Spuler, 1908: 187; Warren, 1911: 252, pl. 50, fig. a; Schmidt, 1912: 617; Schmidt, 1913: 34; Popescu-Gorj, 1964: 194, pl. XVII, fig. 65; Gozmány, 1970: 105, fig. 75; König, 1975: 169, pl. X., fig. 1; Forster, Wohlfahrt, 1980: 231, pl. 25, fig. 19; Inoue et al., 1982a: 761; Inoue et al., 1982b: 369, pl. 187, fig. 14; Hacker, 1989: 323; Zolotarev, Dubatolov, 2000: 7; Varga et al., 2004: 80.

The genus-group name *Oxytripia*

Oxytripia Staudinger in Staudinger et Wocke, 1871: 98; Cserey, 1901: 93; Hampson, 1903: 127; Poole, 1989: 750; Varga et al., 1989: 237; Fibiger, Hacker, 1990: 49; Nowacki, Fibiger, 1996: 270; Rákossy, 1996: 116; Beck, 1999: 535; Zilli et al., 2005: 27; Matov et al., 2008: 270; Matov et al., 2019: 339; Gyulai et al., 2010: 59; Ronkay et al., 2024: 71.

Oxytripia Staudinger in Staudinger et Wocke, 1871: 423 (author's correction); Hofmann, 1887: 81; Abafi-Aigner et al., 1896: 33; Staudinger, Rebel, 1901: 168; Rothe, 1902: 19; Abafi-Aigner, 1907: 60; Spuler, 1908: 187; Warren, 1911: 252; Popescu-Gorj, 1964: 194; Gozmány, 1970: 105; König, 1975: 169; Forster, Wohlfahrt, 1980: 231; Inoue et al., 1982b: 369; Hacker, 1989: 323; Varga et al., 2004: 80.

The family-group name *Oxytrypiina*

Oxytrypiinae Gozmány, 1970: 103.

Oxytrypiinae Gozmány: Fibiger, Hacker, 1990: 49 (footnote).

Oxytrypiina Gozmány: Beck, 1999: 529, 535; Zilli et al., 2005: 26.

The binominal combinations of the species-group name testify the growth of our knowledge in the family Noctuidae. Noctuidae generic refinement first appeared by Treitschke [1825], which Herrich-Schäffer [1845] continued to evaluate. This latter author remarked that he was unable to place the species in any existing genus satisfactorily. Monographing all the European noctuids Lederer [1857] also points out in a footnote that the species should perhaps be placed in a separate genus. This has been done by Staudinger [Staudinger, Wocke, 1871].

In his monographs Schmidt [1912: 620; 1913: 42] noted that the genus-group name *Oxytripia* had been introduced by Staudinger in 1871 and that, although Hampson [1903] regarded it as a nomen nudum and provided a detailed description for the genus, authorship should be attributed to Hofmann, who published the first diagnosis in 1894 under the name *Oxytrypia*. In the light of the ICZN this interpretation needs remarks, as well as the family-group name Oxytrypiinae Gozmány, 1970.

1) While Schmidt's observation was correct that Staudinger did not provide any description, but because the propagation of the name was accompanied by an indication to a species which had to be placed in the genus, the name became available under the authorship of Staudinger, according to the ICZN Article 12.2.5.

2) Staudinger himself corrected the original spelling of *Oxytripia* to *Oxytrypia* in the same volume where the

170. *Oxytripia* n. gen.
 1375 *Orbiculosa* Esp. III, 93, 8; Tr. V, 1. 404; HS. 63. 64; Gn. II, 52. *Hung.*

98 | „ 170: lege „*Oxytripia*“ pro „*Oxytripia*.“

22. Gattung. *Oxytripia*, *Stgr.*

Fühler in beiden Geschlechtern gekämmt, beim ♂ länger als beim ♀. Palpen sehr kurz, kaum behaart (nur beschuppt). Thorax glatt beschuppt wie bei *Valeria*. Beine und Brust nur kurz behaart, nicht lang wie bei der vorigen Gattung. ♀ mit deutlichem, großem, hornigem Legestachel. Nur eine Art:

Orbiculosa, *Esp.* Taf. 34, Fig. 22. Fliegt im Spätherbst im Oktober in Ungarn, Dr. *Staudgr.* erhielt sie auch aus Zentralasien, aus dem Altai.

7. alcsalád: *Oxytrypiinae*

Fejük kicsi, szemük csupasz, ajaktapogatójuk apró, pikkelyek és sörték borítják. Mindkét ivar csápja kétoldalúan tollas, toruk és potrohuk vaskos, erőteljes, szőrözetük rendes. Elülső szárnyuk megnyúlt, az erezetben areola van, hátulsó szárnyuk kerek, az erezet tipikusan quadrifid; elülső lábszáruk nem, de a középső és a hátulsó tövises. A bagolylepke-rajzolat teljes, a mintázat díszes és bonyolult.

A hernyó föld alatti rhizomákban endofág életmódot folytat.

Az imágók nappal repülnek.

Az alcsaládba egyetlen nem és faj tartozik, amely a palearktikum középső részén él. Gazdaságilag közömbös.

Figs 8–10. Various documentations related to *Oxytripia orbiculosa*.

8 – details of Staudinger and Wocke [1871], with the new name proposed as *Oxytripia* on page 98 (a) and the author's correction to *Oxytrypia* on page 423 (b); 9 – the first diagnosis of *Oxytripia* formulated by Hofmann [1887: 81]; 10 – erection with description of subfamily *Oxytrypiinae* by Gozmány [1970: 103].

Рис. 8–10. Различные источники, упоминающие *Oxytripia orbiculosa*.

8 – подробности работы Штаудингера и Воке [Staudinger, Wocke, 1871]: a – новое название *Oxytripia* (страница 98), b – исправление автора к *Oxytrypia* (страница 423); 9 – первый диагноз *Oxytripia*, сформулированный Хофманом [Hofmann, 1887: 81]; 10 – описание подсемейства *Oxytrypiinae* [Gozmány, 1970: 103].

name was proposed as new (Fig. 8); consequently the incorrect original spelling must be corrected according to Staudinger's action based on the ICZN Article 32.5.1.1.

3) The spelling *Oxytripia* corrected by Staudinger was used in the first edition of Hofmann [1887] where the genus has the first full diagnosis (Fig. 9), accompanied by a

coloured illustration of the male indentiocl with the figure given by Berge (Fig. 3). In contrary to views of Hampson [1903] and Schmidt [1912, 1913] the Staudinger name is not a nomen nudum as has been demonstrated above, therefore Hofmann's account does not play any role in nomenclature.

4) The type genus of the family-group name Oxytrypiinae Gozmány, 1970 was used in its correct spelling (Fig. 10), but all subsequent usages we found were based on the incorrect spelling *Oxytripia*; consequently all these subsequent family-group names must be treated and must be corrected to Oxytrypiini or Oxytrypiina in accordance with the ICZN Article 35.4.1.

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