



This work is licensed under a Creative Commons Attribution License (CC BY 4.0).

## Research article

urn:lsid:zoobank.org:pub:F7629A7B-ABD8-4FC7-AE62-56E99DBD70CD

# West Palaearctic taxa formerly connected to the ‘old’ genus *Atritomus* Reitter, 1877 (Coleoptera, Mycetophagidae): taxonomy, distribution, and description of a new genus

Alessandro B. BISCACCIANTI<sup>1,\*</sup>, Jens ESSER<sup>2</sup>, Silvio CUOCO<sup>3</sup>,  
Enrica GIULIANO GRIMALDI<sup>4</sup> & Paolo A. AUDISIO<sup>5</sup>

<sup>1</sup>Laboratorio di Entomologia ed Ecologia Applicata (LEEA), Department PAU, Mediterranea  
University of Reggio Calabria, Salita Melissari, Reggio Calabria, I-89124, Italy.

<sup>2</sup>Fagottstraße 6, Berlin, D-13127, Germany.

<sup>3</sup>Gruppo Entomologico Toscano, c/o Natural History Museum, La Specola University of Florence, Via  
Romana 17, Florence, I-50125, Italy.

<sup>4</sup>Via Lido Sacramento 39/3, Siracusa, I-96100, Italy.

<sup>5</sup>Department of Biology and Biotechnology “C. Darwin”, Sapienza University of Rome, Viale  
dell’Università 32, Rome, I-00185, Italy.

\*Corresponding author: [alessandro.biscaccianti@unirc.it](mailto:alessandro.biscaccianti@unirc.it)

<sup>2</sup>Email: [jens\\_esser@yahoo.de](mailto:jens_esser@yahoo.de)

<sup>3</sup>Email: [scuoc@libero.it](mailto:scuoc@libero.it)

<sup>4</sup>Email: [enricagiulianogrimaldi@gmail.com](mailto:enricagiulianogrimaldi@gmail.com)

<sup>5</sup>Email: [paolo.audisio@uniroma1.it](mailto:paolo.audisio@uniroma1.it)

<sup>1</sup>urn:lsid:zoobank.org:author:5D808F20-12B6-43C6-9540-85140C6B2079

<sup>2</sup>urn:lsid:zoobank.org:author:3D44B8E0-B6D7-408A-BB44-AAE4DA70746D

<sup>3</sup>urn:lsid:zoobank.org:author:B6887B6B-D63E-4BF2-906F-31FBCD798319

<sup>4</sup>urn:lsid:zoobank.org:author:0A68423B-7BB2-4BAF-9E60-6DB302409FAA

<sup>5</sup>urn:lsid:zoobank.org:author:C8B583BF-AA8D-4875-B694-71F74D517848

**Abstract.** The present study aims to resolve the taxonomic confusion involving several taxa within Mycetophagidae Leach, 1815, originating from the introduction of the genus *Atritomus* Reitter, 1877, and then by its subsequent controversial interpretation. A detailed overview of the taxonomic and nomenclatural history of the taxa previously linked to *Atritomus* is provided. The authors propose the introduction of *Stereophilus* Biscaccianti, Audisio & Esser gen. nov. for *Atritomus filicornis* Reitter, 1887, and the restoration of *Entoxylon* Ancy, 1869 at the genus rank, together with some rectifications regarding the authorship and the date of publication of both *Entoxylon* and its type species, *E. abeillei* Ancy, 1869. Moreover, the Ethiopian species *Atritomus vicinus* Grouvelle, 1908 is herein transferred to the genus *Typhaeola* Ganglbauer, 1899 based on the examination of the holotype. The following new combinations are proposed: *Entoxylon baudii* (Seidlitz, 1889) comb. nov. (from *Esarcus* Reiche, 1864), *Entoxylon besucheti* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*), *Entoxylon franzi* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*), *Entoxylon inexpectatus* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*), *Entoxylon martini* (Reitter, 1887) comb. nov. (from

*Esarcus*), *Stereophilus flicornis* (Reitter, 1887) gen. et comb. nov. (from *Atritomus*), *Typhaeola vicina* (Grouvelle, 1908) comb. nov. (from *Atritomus*).

**Keywords.** Mycetophagidae, saproxylic beetles, taxonomy, new genus, new combinations.

Biscaccianti A.B., Esser J., Cuoco S., Giuliano Grimaldi E. & Audisio P.A. 2022. West Palaearctic taxa formerly connected to the ‘old’ genus *Atritomus* Reitter, 1877 (Coleoptera, Mycetophagidae): taxonomy, distribution, and description of a new genus. *European Journal of Taxonomy* 828: 61–74. <https://doi.org/10.5852/ejt.2022.828.1853>

## Introduction

The genus *Atritomus* Reitter, 1877 was first introduced for the Sardinian species *cribratus* Reitter, 1877 (type species by monotypy). The latter was formally described by Reitter (1877) in the same work, but he referred to it as *Triphyllus cribratus*, and erroneously attributed the authorship to Baudi, who never published its formal description (see Seidlitz 1889). Two years later, the same author (Reitter 1879) transferred to *Atritomus* the Caucasian species *univestris* Reitter, 1878, originally described under *Tritoma* Geoffroy, 1762 [suppressed name (ICZN 1994), not *Tritoma* Fabricius, 1775].

Some years later, Reitter (1887a, 1887b) realized the synonymy of *Atritomus cribratus* (sub “*Triphyllus cribratus* Baudi”) with *Esarcus abeillei* (Ancy, 1869). Nevertheless, Reitter himself (1887a, 1887b) did not find it necessary to establish a new genus for *univestris* or the then newly described North Algerian species *A. filicornis* Reitter, 1887, thus maintaining *Atritomus* as valid (see also Reitter 1889, 1901). It was Ganglbauer (1899) who introduced the new genus *Parabaptistes* Ganglbauer, 1899, implicitly for *univestris* by indication of Reitter’s (1887a) work (hence in accordance with ICZN 1999: art. 12.2). Ganglbauer’s action was correct. Indeed, as Reitter (1887a, 1887b) introduced the synonymy of the type species of *Atritomus* (*Triphyllus cribratus*) with *Esarcus abeillei*, type species of *Entoxylon* Ancy, 1869, the genus *Atritomus* automatically became a junior synonym of the latter, irrespective of the fact that Reitter himself (1879) moved *univestris*, not originally included, to *Atritomus*. It should be noted that the genus *Entoxylon* was later synonymized with *Esarcus* Reiche, 1864 by Reitter (1882), then rehabilitated at subgenus rank by Ganglbauer (1899). Furthermore, according to Seidlitz (1889), *Atritomus cribratus* and *Entoxylon abeillei* would not be conspecific, the former belonging to *Esarcus* and the latter of uncertain placement.

Following Reitter’s position, Grouvelle (1908) described *Atritomus vicinus* Grouvelle, 1908 from a single specimen collected by Rothschild in Ethiopia (Rothschild 1922a, 1922b). This species was listed under *Atritomus* also by Hetschko (1930), together with the five Palaearctic species described in or transferred to that genus until then. To our knowledge, *A. vicinus* was treated only by Rothschild (1922a, 1922b) and Hetschko (1930), and was no longer mentioned in the literature thereafter. Moreover, Hetschko (1930) erroneously considered *Parabaptistes* and *Atritomus* as synonymous, so sharing Reitter’s point of view. Subsequently, both *Atritomus* and *Parabaptistes* were synonymized with *Eulagius* Motschulsky, 1845 by Iablokoff-Khnzorian (1976) and, finally, Nikitsky (2008) placed *Atritomus* in synonymy with *Esarcus* subg. *Entoxylon*. Therefore, *Atritomus vicinus*, clearly incompatible with *Entoxylon*, remained incertae sedis.

For the reasons above explained, the species described in, or transferred to, *Atritomus* were alternatively treated in their original combination or included in *Eulagius*, *Esarcus* or *Parabaptistes* according to the points of view of different authors, thus increasing confusion and uncertainty. In this paper, we discuss the systematic placement of the taxa involved and their distribution and describe a new genus, in view of a revision of the subfamily Esarcinae, currently in progress.

## Material and methods

The material examined consists of 370 specimens preserved in the institutional and private collections listed below. The acronyms of the repositories follow Evenhuis (2020) where possible. The new records here reported are listed from North to South.

The specimens were examined using a Leica Wild M8 stereo microscope. Photographs, except those of the holotype of *Atritomus vicinus* (provided by MNHN), were taken by one of us (SC) using a Canon EOS 700D camera with extension tubes and a microscope digital camera AM Scope MU 500 (aedeagus). Pictures were composed using the Combine ZM software and edited with Adobe Photoshop ver. CS4.

Terminology follows Lawrence *et al.* (2014). Botanical nomenclature follows the World Checklist of Vascular Plants (2021) and Species Fungorum (2021).

## Institutional abbreviations

- ABB = coll. A.B. Biscaccian, Rome, Italy  
CCUA = Centro de Colecciones de la Universidad de Almería, Almería, Spain  
CES = coll. J. Esser, Berlin, Germany  
CSC = coll. S. Cuoco, Livorno, Italy  
JCO = coll. J.C. Otero, Santiago de Compostela, Spain  
MCZR = Museo Civico di Zoologia, Rome, Italy  
MNHN = Muséum national d’histoire naturelle, Paris, France  
MZUF = Museo Zoologico “La Specola”, Florence, Italy

## Abbreviations

- LI = Livorno province  
RC = Reggio Calabria province

## Results

### *Taxonomy*

Class Insecta Linnaeus, 1758  
Order Coleoptera Linnaeus, 1758  
Suborder Polyphaga Emery, 1886  
Family Mycetophagidae Leach, 1815  
Subfamily Mycetophaginae Leach, 1815  
Tribe Mycetophagini Leach, 1815

*Eulagius* Motschulsky, 1845

*Eulagius* Motschulsky, 1845: 92. Type species: *Eulagius acernus* Motschulsky, 1845, by monotypy.  
*Parabaptistes* Ganglbauer, 1899: 838. Type species: *Tritoma univestris* Reitter, 1878, by monotypy.

### Remarks

*Eulagius* was introduced by Motschulsky (1845) for the Caucasian *E. acernus* Motschulsky, 1845. The genus seems characterized by an Asiatic chorotype (sensu Vigna Taglianti *et al.* 1999), extending westwards to the Caucasian region. Eight species are currently ascribed to *Eulagius*, five of them occurring in the eastern part of Palaearctic Asia, namely *E. lewisi* (Reitter, 1889), *E. reitteri* (Lewis, 1896), *E. dentatus* Nikitsky, 1988, *E. ussuriensis* Nikitsky, 1988, and *E. chinensis* Nikitsky, 1996, and the remaining three, namely *E. acernus* Motschulsky, 1845, *E. irregularis* (Reitter, 1888), and *E. hyrcanicus*

Esser, Varandi & Farashiani, 2018, occurring between the Caucasus and northern Iran (Esser *et al.* 2018; Nikitsky 2020). A ninth included species, “*Eulagius filicornis* (Reitter 1877)” (described in *Atritomus*; Reitter 1877b), is transferred to a separate, new genus described hereunder.

It should also be noted that *Eulagius reitteri* was described in 1896 and not in 1895 (see Lewis 1896; Esser *et al.* 2018).

### *Eulagius acernus* Motschulsky, 1845

*Eulagius acernus* Motschulsky, 1845: 92.

*Tritoma univestris* Reitter, 1878: 166.

*Atritomus univestis* (Reitter, 1878) – auctorum (incorrect subsequent spelling and then unavailable name).

### Remarks

Among the species formerly ascribed to *Atritomus* Reitter, 1877, ‘*univestris*’ has been spelled as ‘*univestis*’ by several authors (see Jakobson 1915; Hetschko 1930; Iablokoff-Khinzorian 1976). Although the original specific epithet ‘*univestris*’ is incorrect in the Latin language [the linguistically correct term ‘*univestis*’ means ‘uniformly dressed’], it must be preserved unaltered in accordance with Art. 32.3 of the ICZN (1999), as the provisions of Art. 32.5 are not met. Therefore, the name ‘*univestis*’ is to be considered an incorrect subsequent spelling (ICZN 1999: art. 33.3) and thus unavailable. *Tritoma univestris* is currently accepted as a synonym of *Eulagius acernus* (Iablokoff-Khinzorian 1976; Nikitsky 2008, 2020).

According to Nikitsky (2020), *Eulagius acernus* is distributed in Armenia, Azerbaijan, Georgia, and in the southern part of European Russia.

*Stereophilus* Biscaccianti, Audisio & Esser gen. nov.

urn:lsid:zoobank.org:act:030718A5-DF2E-4C19-8DBC-B46FB5B1B934

### Type species

*Atritomus filicornis* Reitter, 1887 (Reitter 1887b).

### Diagnosis

*Stereophilus* Biscaccianti, Audisio & Esser gen. nov. differs from all other known mycetophagid genera chiefly in having simple, filiform antennae. To the best of our knowledge, the threadlike antennal shape of this taxon likely represents an autapomorphic character state within the family. The new genus looks more similar to *Triphyllus* Dejean, 1821 and *Mycetophagus* Fabricius, 1792 rather than to *Eulagius*, in possessing a comparatively larger head, a wider and more strongly transverse pronotum with maximum width just ahead of base, anterolateral angles of pronotum rounded and blunt, not projected forward, and less convex body in lateral view. The strongly reduced laterobasal pronotal impressions, the chaetotaxy, and the body shape apparently place *Stereophilus* gen. nov. closer to *Triphyllus*, from which it differs in the lack of pore fields on the male abdomen (see Lawrence *et al.* 2014) and in the antennal features described below. The new genus differs from *Mycetophagus* chiefly in having laterobasal pronotal impressions almost indistinct, punctuation only vaguely arranged in striae at the elytral base, and filiform antennae. It also strongly differs from Typhaeini Thomson, 1863 (sensu Nikitsky 1993) and Berginiinae Leng, 1920 (sensu Lawrence *et al.* 2014) in having laterally open mesocoxal cavities. These features make *Stereophilus* gen. nov. impossible to confuse with *Atritomus* (currently a synonym of *Entoxylon*

sensu novum), in which the type species of the new genus was originally placed, and easy to separate from *Eulagius*.

### Etymology

The new genus is named after *Stereum* Hill ex Pers., the genus name of one of the fungi known as larval host of the included species, with addition of the Latin suffix '-philus' meaning 'lover'. The gender is masculine.

### Description

A medium-sized mycetophagid, elongate, subparallel, slightly convex in lateral view, with shiny integument. Head moderately wide, about 1.3–1.5 × as wide as long (measured from anterior edge of clypeus to neck), and about 0.58–0.61 × as wide as maximum pronotal width, deeply and coarsely punctured; frontoclypeal suture straight or barely concave, slightly impressed, finely but distinctly carinate, with carina continuing on sides of the frons up to upper edge of eyes, delimiting the frons on three sides so that it appears clearly trapezoidal in shape; clypeus transverse, about twice as wide as long, lateral margins slightly converging forwards, anterior margin straight, distal two fifths of clypeus membranous; antennal insertions clearly visible from above, not concealed by the aforementioned frontal carina; compound eyes slightly vertically elongate-oval, not globose, not emarginate anteriorly, weakly protruding laterally, anterior margin of eye not forming an evident angle with gena, finely faceted with interfacetal setae longer than diameter of one eye facet. Antennae 11-segmented, long, slender, surpassing pronotal base with the last three antennomeres if stretched backward through subantennal groove, without a distinct club, not or indistinctly widened towards apex, all antennomeres distinctly longer than wide. Pronotum finely margined on all sides, transverse, as wide as or barely wider than elytral base across humeri, constricted anteriorly, with maximum width just ahead of base, sides arcuate in dorsal view, lateral margin simple or indistinctly crenate (barely visible at high magnification), anterior edge straight, anterolateral angles rounded and blunt, not projected forward, posterior edge weakly trisinate, posterolateral angles rounded, paired basal impressions barely pronounced. Prosternal pubescent fovea absent in both sexes; notosternal suture complete. Scutellar shield subrectangular, about twice as wide as long, densely punctate. Elytra slender, about 1.7 × as long as combined maximum width, parallel sided up to distal fourth, rounded together at apex, elytral punctures weakly impressed and vaguely seriate at elytral base, then progressively confused towards apex, setation sparse, long, and semierect, background pubescence absent; epipleuron incomplete, large at base, regularly narrowed up to distal third of elytron, then obliterated. Hind wing (Fig. 1D) fully developed, about 2.5 × as long as wide. Mesocoxal cavities laterally open. Paired pore fields on male abdomen absent. Legs slender, tarsal formula 3-4-4 in males, 4-4-4 in females.

### Included species

The new genus is erected for *Atritomus filicornis*, the only species included thus far.

*Stereophilus filicornis* (Reitter, 1887) gen. et comb. nov.

Fig. 1

*Atritomus filicornis* Reitter, 1887b: 288.

*Atritomus boissyi* Caillol, 1925: 101.

*Parabaptistes filicornis* – auctorum.

*Eulagius filicornis* – auctorum.

### New records

FRANCE • 1 ♂, 2 ♀♀; Haute-Garonne, Forêt de Rieumes; 3 Sep. 1993; J. Rogé leg.; MZUF • 6 ♂♂, 5 ♀♀; Pyrénées-Orientales, Forêt de Sorède; 13 Jun 2004; F. Wachtel leg.; CES.

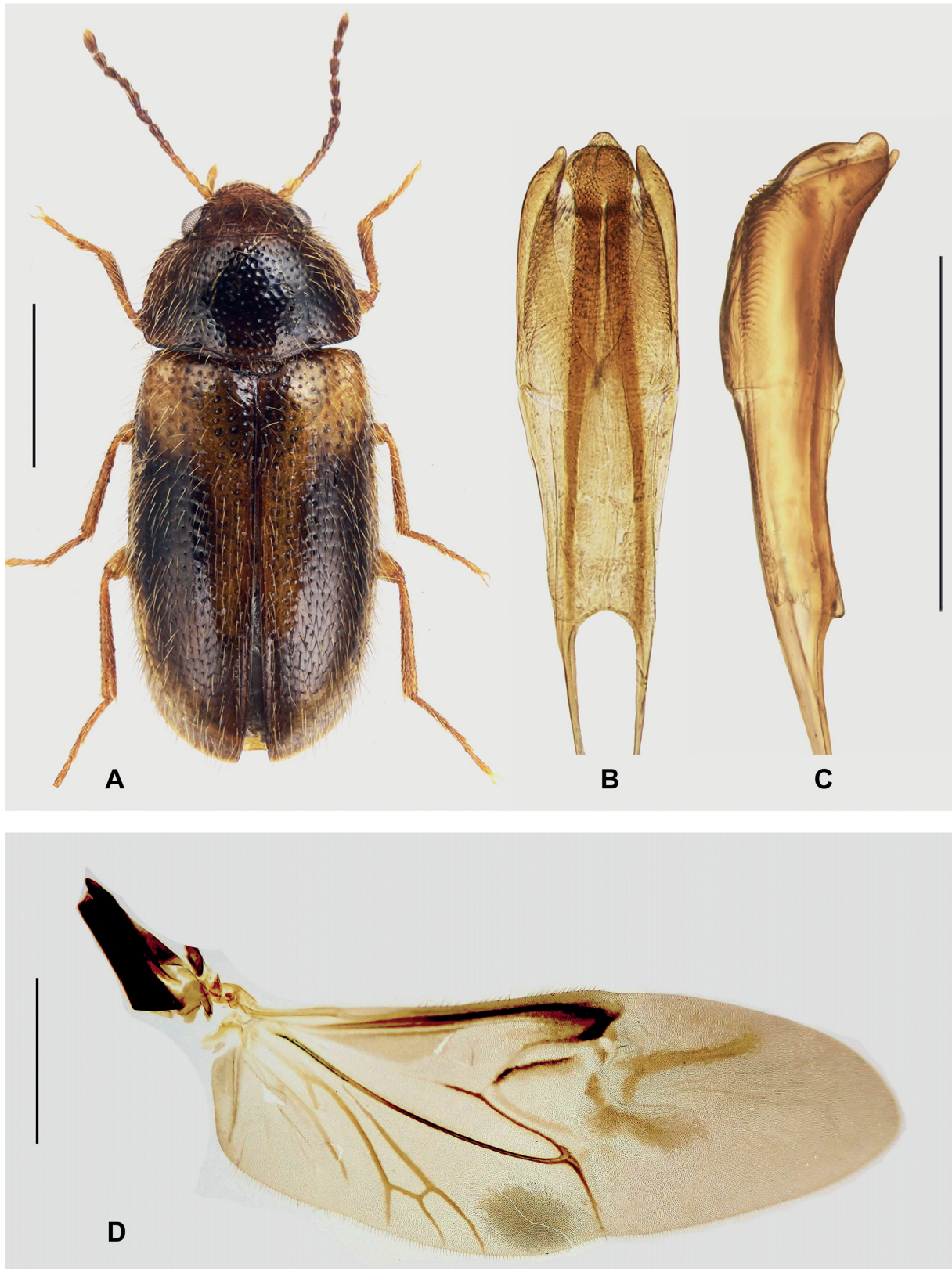
ITALY • 1 ♂; Tuscany, Collesalveti (LI), Nugola, Bosco Malenchini; 43°34'54" N, 10°27'30" E; alt. 45 m; 14 Jul. 2012; S. Cuoco leg.; on dry branches of *Quercus cerris* L.; ABB • 1 ♂; same collection data as for preceding; 13 Aug. 2012; S. Cuoco leg.; sifting litter in a Turkey oak wood; ABB • 2 ♂♂, 1 ♀; Tuscany, Collesalveti (LI), Nugola, Bosco Macchia Grossa; 43°35'27" N, 10°26'54" E; alt. 40 m; 8 May 2016; S. Cuoco leg.; sifting litter in a Turkey oak wood; CSC • 1 ♀; same collection data as preceding; ABB • 1 ♀; same collection data as for preceding; 18 Jun. 2016; S. Cuoco leg.; on *Fraxinus ornus* L.; CSC • 2 ♀♀; same collection data as for preceding; 1 Jul. 2016; S. Cuoco leg.; on *Fraxinus ornus* L.; CSC • 1 ♀; Tuscany, Livorno, Antignano, Mt Burrone; 43°29'16" N, 10°20'10" E; alt. 95 m; 12 May 2013; S. Cuoco leg.; on *Erica arborea* L.; ABB • 3 ♀♀; same collection data as for preceding; CSC • 1 ♀; Tuscany, Livorno, Bellosguardo, Via di Popogna (SP8) km 6.7; 43°30'41" N, 10°23'18" E; alt. 130 m; 21 May 2013; S. Cuoco leg.; on branches of *Quercus ilex* L.; CSC • 1 ♂; Calabria, Aspromonte, San Giorgio Morgeto (RC), Mt Campanaro; 38°21'58.1" N, 16°06'36.5" E; alt. 693 m; 28 May 2018; A.B. Biscaccianti, F. Manti and E. Castiglione leg.; inside a hollow on *Quercus suber* L.; ABB.

### Remarks

*Stereophilus filicornis* gen. et comb. nov. occurs in western and southern Europe and western North Africa. The species was described from specimens collected in Algeria, and was later also reported from Belgium, France, Germany, The Netherlands, Spain, and Tunisia (Recalde Irurzun & Pérez-Moreno 2007; Bonamie *et al.* 2010; Bouyon 2014; Gielen & Smets 2020; Nikitsky 2020; Bleich & Gürlich 2021; Háva 2021; Eisinger in press, all sub *Eulagius*). It has been imported to Great Britain, where it seems to be established (Harrison 1996; Foster 2001, 2013; Booth 2012; Denton & Dodd 2013; Nikitsky 2020, all sub *Eulagius*).

The biology and ecology of *Stereophilus filicornis* gen. et comb. nov. are poorly known: some authors report catches from under bark on dead trunks, on woody debris of old trees, and by beating dead branches of broadleaf trees such as *Castanea sativa* Mill., *Quercus canariensis* Willd. (= *mirbeckii* Durieu), *Q. robur* L., *Q. suber* L. (Caillol 1925, sub *Atriotomus*; Peyerimhoff 1926, sub *Parabaptistes*; Labatut *et al.* 2014, sub *Eulagius*); only Freeman (2003, sub *Parabaptistes*) reported a series of specimens reared from carpophores of *Stereum hirsutum* (Willd.) Pers. (Russulales, Stereaceae), sampled from *Fagus sylvatica* L. The single specimen here reported from southern Italy, Calabria (Aspromonte) was found by sifting wood mould, woody debris, and *Daedaleopsis nitida* (Durieu & Mont.) Zmitr. & Malysheva (Polyporales, Polyporaceae) carpophores, likely its local host fungus, collected from inside a large hollow on a *Quercus suber* trunk. The site is a mesophile cork oak mixed forest, referred to the Helleboro-Quercetum suberis association (Signorello 1984; Mercurio & Spampinato 2001). The habitat of *Stereophilus filicornis* gen. et comb. nov. in Tuscan sites is represented by fragments of hilly submesophile woodland dominated by *Castanea sativa* and *Quercus cerris* L. (Nugola municipality: Bosco Malenchini and Bosco Macchia Grossa) and mosaics of Mediterranean maquis, holm oak and Aleppo pine woods (Antignano and Bellosguardo municipalities) (V. Lazzeri, pers. comm.).

Our records are the first of this species for Italy. According to Tempère (1974, sub *Parabaptistes*), the species could also be present in Sicily. However, no source was provided and the occurrence of *Stereophilus filicornis* gen. et comb. nov. in Sicily remains unconfirmed.



**Fig. 1.** *Stereophilus filicornis* (Reitter, 1887) gen. et comb. nov., ♂ from Italy, Tuscany. **A.** Habitus. **B.** Aedeagus (dorsal view). **C.** Aedeagus (lateral view). **D.** Right hind wing of a male from France, Haute-Garonne. Scale bars: A, D = 1 mm; B–C = 0.5 mm.

Tribe Typhaeini Thomson, 1863 (sensu Nikitsky 1993)

*Typhaeola vicina* (Grouvelle, 1908) comb. nov.

*Atritomus vicinus* Grouvelle, 1908: 378–379.

#### Remarks

Grouvelle (1908) described *Atritomus vicinus* from a single male collected by Rothschild in Ethiopia (Rothschild 1922a, 1922b). This species, listed under *Atritomus* also by Hetschko (1930), was no longer mentioned by any of the subsequent authors. Although we have not yet been able to directly access the holotype of *A. vicinus* for dissection, because of restrictions due to the COVID-19 pandemic, the high-resolution images provided by our colleague Antoine Mantilleri (MNHN) (Fig. 2) allowed us to place this species in the genus *Typhaeola* Ganglbauer, 1899.

Subfamily Esarcinae Reitter, 1882

*Entoxylon* Ancey, 1869 stat. rev.

*Entoxylon* Ancey, 1869a: viii. Type species: *Entoxylon abeillei* Ancey, 1869a, by monotypy.

*Atritomus* Reitter, 1877: 384. Type species: *Atritomus cribratus* Reitter, 1877 (sub *Triphyllus cribratus* Baudi, nomen nudum), by monotypy.

*Entoxylon* – Ancey 1869b: 46 (primary homonym); 1870: 84 (primary homonym).

#### Remarks

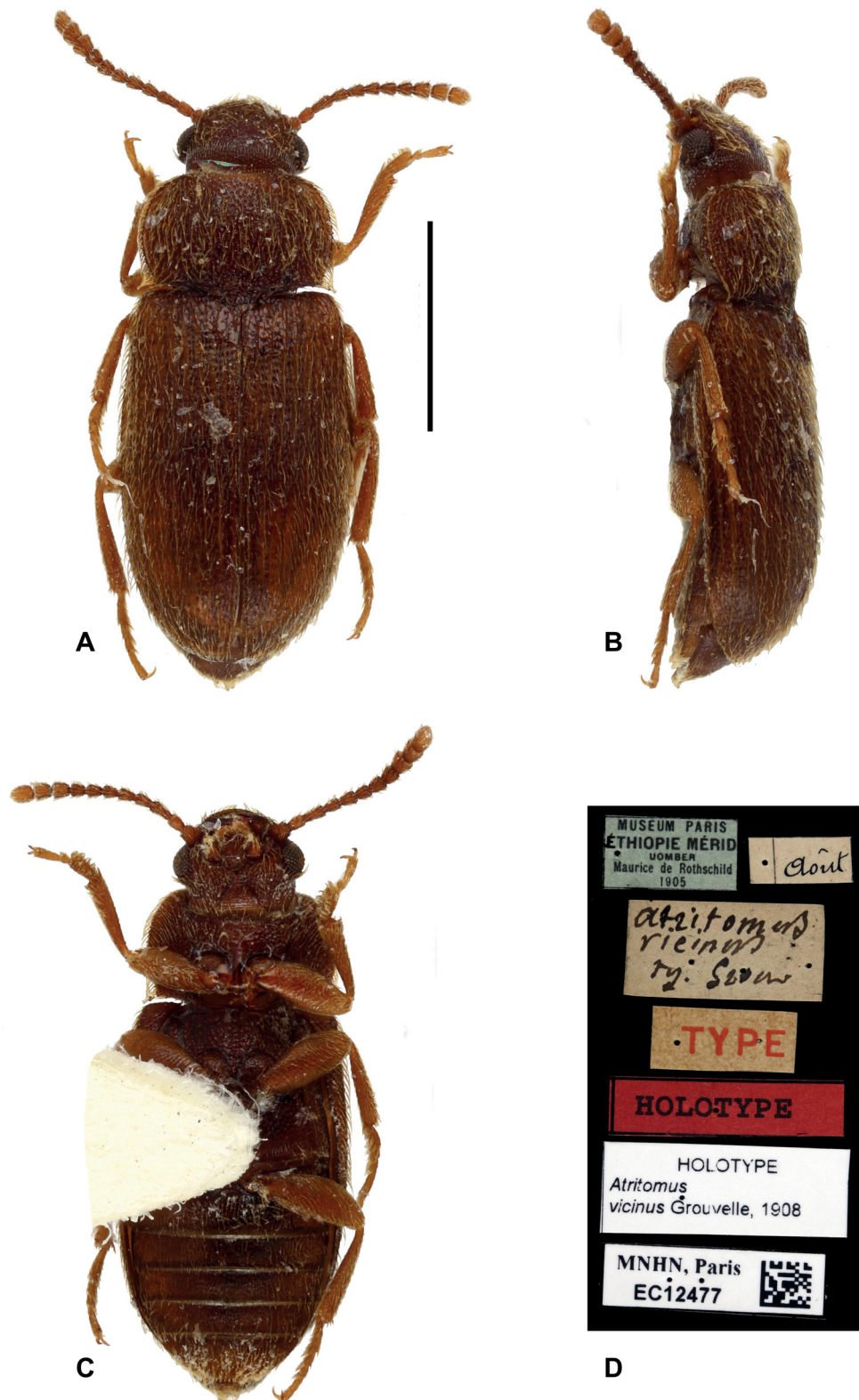
The names ‘*Entoxylon*’ and ‘*abeillei*’ were introduced three times in the literature. The first time in the second issue of *Nouvelles et Faits Divers* (Ancey 1869a: viii), a supplement of *L’Abeille*, where the new generic name ‘*Entoxylon*’ was erected (without a description) for the sole species therein shortly described, *E. abeillei* (type species by monotypy). Both ‘*Entoxylon*’ and ‘*abeillei*’ take the authorship and date from that publication, dated October 1869. Ancey shortly redescribed his taxa under the same names in a different journal, *Petite Nouvelles Entomologiques*, published 15 Dec. 1869 (Ancey 1869b), then provided a detailed description of both the genus and the species the following year (Ancey 1870). All subsequent authors overlooked the first valid introduction of the two names, incorrectly citing ‘*Entoxylon*’ as first published in *Petite Nouvelles Entomologiques* (Ancey 1869b), and ‘*abeillei*’ in *L’Abeille* (Ancey 1870). No change in nomenclature affecting the Principle of Priority derives from this rectification.

*Entoxylon* strongly differs from *Esarcus* mainly in having anterior edge of pronotum straight, with anterolateral angles blunt, never protruding forward, scutellar shield visible, not concealed under posterior margin of pronotum, elytral interstria, if present, flat (always present, convex, in *Esarcus*), pterothorax and abdomen lacking setose cavities, and other, less evident characters. In our opinion, these features fully justify the restoration of *Entoxylon* as a separate genus.

#### Included species

*Entoxylon abeillei* Ancey, 1869 comb. rev. [SE France, NW Italy, doubtful in Sardinia and Sicily]; *Entoxylon baudii* (Seidlitz, 1889) comb. nov. (from *Esarcus*) [SE France, NW Italy]; *Entoxylon besucheti* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*) [SW Spain]; *Entoxylon franzi* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*) [SW Spain]; *Entoxylon inexpectatus* (Dajoz, 1964) comb. nov. (from *Esarcus* subg. *Entoxylon*) [S Spain]; *Entoxylon martini* (Reitter, 1887) comb. nov. (from *Esarcus*) [N Algeria].





**Fig. 2.** *Atritomus vicinus* Grouvelle, 1908 (= *Typhaeola vicina* (Grouvelle, 1908) comb. nov.), holotype (EC12477). **A.** Habitus, dorsal view. **B.** Habitus, lateral view. **C.** Habitus, ventral view. **D.** Labels. Scale bar = 1 mm.

## Discussion

A first attempt of a global revision of mycetophagids was recently proposed by Lawrence *et al.* (2014), highlighting some unresolved taxonomic issues regarding subfamilial and tribal classification, as well as the need for a detailed revision of several genera, mainly the most speciose and widely distributed ones, such as *Mycetophagus* Fabricius, 1792 and *Litargus* Erichson, 1846.

Among the genera occurring in the Palaearctic Region, the Afrotropico-Mediterranean genus *Typhaeola* Ganglbauer, 1899 was recently revised by Esser (2016, 2018), whereas the West-Mediterranean genus *Esarcus* Reiche, 1864 was summarily revised by Dajoz (1964) following the subgeneric division proposed by Ganglbauer (1899), which remains unchanged until present. Dajoz (1964), however, underestimated the importance of pronotal features, usually strongly distinctive in mycetophagids, and overlooked the presence or absence of deep, setose cavities on the pterothorax and first abdominal ventrite. This last character is distinctive in *Esarcus sensu stricto*, and completely absent in the species here ascribed to *Extoxylon* Ancy, 1869 *sensu novum*. Species with pterothoracic and abdominal cavities share other relevant features: anterolateral angles of pronotum strongly projected forward, posterior pronotal edge deeply emarginate, scutellar shield concealed under posterior margin of pronotum, elytral punctures deeply impressed and aligned in regular striae, interstria convex. Conversely, species without pterothoracic and abdominal cavities have pronotum with anterior edge straight, anterolateral angles blunt, never projected forward, posterior edge at most weakly sinuate, scutellar shield visible, although rudimentary, elytral punctuation less impressed, aligned or not in more or less distinct striae, but interstria, if present, flat.

*Stereophilus filicornis* (Reitter, 1887) gen. et comb. nov. was originally described in the genus *Atritomus* Reitter, 1877, then moved to *Parabaptistes* Ganglbauer, 1899 (Jakobson 1915; Winkler 1926), and finally to *Eulagius* Motschulsky, 1845 after Iablokoff-Khnzorian (1976) proposed the synonymy of both *Atritomus* and *Parabaptistes* with *Eulagius*. The placement of *S. filicornis* alternatively in *Atritomus*, *Parabaptistes* or *Eulagius* apparently derives from the consequent synonymies of the genus-group names adopted by different authors in the past, and not from a morphological study of the species. The peculiarities of the head, antennae, and pronotum exclude this species from *Eulagius*, making it necessary to establish the new genus proposed above.

## Acknowledgements

The following colleagues and institutions are gratefully acknowledged for allowing us to study specimens under their care: Pablo Barranco and Miguel Angel Gómez de Dios (University of Almería, Spain), Luca Bartolozzi (Zoological Museum “La Specola”, Florence, Italy), Roberto Casalini (Museo Civico di Zoologia, Rome, Italy), Dietmar Eisinger (Saarbrücken, Germany), Antoine Mantilleri (Muséum National d’Histoire Naturelle, Paris, France), José Carlos Otero (University of Santiago de Compostela, Spain). We are also grateful to Valerio Lazzeri (Museo di Storia Naturale del Mediterraneo, Livorno, Italy) and Dario Lunghini (Sapienza University, Rome, Italy) for botanical information and the identification of plants and fungi, and to Francesco Manti, Elvira Castiglione, and Carmelo P. Bonsignore (Mediterranea University, Reggio Calabria, Italy) for their contribution to field work. The first author also acknowledges the Director and Managers of Aspromonte National Park (Gambarie di Santo Stefano in Aspromonte, Italy), in particular Antonino Siclari, for funding and supporting his research activities in the park in 2018, in the framework of the Operative Program “FESR Calabria 2014/2020, OT 6 Action 6.5.A1 – Monitoraggio SIC terrestri in aree protette”. Finally, we sincerely thank Daniel Whitmore (Staatliches Museum für Naturkunde, Stuttgart, Germany) for the linguistic revision of the manuscript.

## References

- Ancey C.M.F. 1869a. [*Entoxylon abeillei*]. *Nouvelles et Faits Divers* 2: VIII.
- Ancey C.M.F. 1869b. [*Entoxylon abeillei*]. *Petite Nouvelles Entomologiques* 1 (12): 46.
- Ancey C.M.F. 1870. Coléoptères nouveaux. *L’Abeille (s. II) (1869–1870)* 7: 84–88.
- Bleich O. & Gürlich S. 2021. Online-Verzeichnis der Käfer Deutschlands. Available from <http://www.coleoweb.de> [accessed 30 Dec. 2021].
- Bonamie G., Smets K. & Crevecoeur L. 2010. *Eulagius filicornis* (REITTER 1887) nieuw voor België (Mycetophagidae). *Atalanta* 38: 10–14.
- Booth R.G. 2012. 72. Family Mycetophagidae Leach, 1815. In: Duff A.G. (ed.) *Checklist of Beetles of the British Isles. 2<sup>nd</sup> Edition*: 81–82. Pemberley Books, Iver.
- Bouyon H. 2014. Mycetophagidae Leach, 1815a. In: Tronquet M. (ed.) *Catalogue des Coléoptères de France. Revue de l’Association roussillonnaise d’Entomologie* 23 (suppl.): 517–519.
- Caillol H. 1925. Une espèce présumée nouvelle d’*Atritomus* Reitter (Col. Mycetophagidae). *Bulletin de la Société entomologique de France* 1925 (6): 101.
- Dajoz R. 1964. Contribution à l’étude des coléoptères Mycetophagidae. I. Revision du genre *Esarcus* et description de trois espèces nouvelles d’Espagne. *L’Entomologiste* 20 (1–2): 7–15.
- Denton J. & Dodd S. 2013. Further records of *Eulagius filicornis* (Reitter) (Mycetophagidae) including the first for Hampshire. *The Coleopterist* 22: 71.
- Eisinger D. In press. *Eulagius filicornis* (Reitter, 1887) – neu für Deutschland (Coleoptera: Mycetophagidae). *Mitteilungen der AG Rheinischer Koleopterologen*.
- Esser J. 2016. Revision der Gattung *Typhaeola* Ganglbauer, 1899 (Coleoptera: Mycetophagidae) – 1. Teil: Paläarktische Arten. *Entomologische Zeitschrift* 126 (3): 169–175.
- Esser J. 2018. Revision von *Typhaeola* Ganglbauer, 1899 – 2. Teil: Afrotropische Arten (Coleoptera: Mycetophagidae). *Entomologische Zeitschrift* 128 (1): 19–24.
- Esser J., Varandi H.B. & Farashiani M.E. 2018. A new species of *Eulagius* Motschulsky, 1845 (Coleoptera: Mycetophagidae) from Iran. *Linzer biologische Beiträge* 50 (1): 239–243.
- Evenhuis N.L. 2020. The insect and spider collections of the world website. Available from <http://hbs.bishopmuseum.org/codens/> [accessed 30 Nov. 2021].
- Foster A.P. 2001. *Eulagius filicornis* (Reitter) (Mycetophagidae) and other saproxylic beetles from the Maidenhead Thicket area, Berkshire. *The Coleopterist* 10: 46–47.
- Foster A.P. 2013. *Eulagius filicornis* (Reitter) (Mycetophagidae) in South Hampshire (VC11). *The Coleopterist* 22: 101.
- Freeman J.C. 2003. Note sur la biologie de *Parabaptistes filicornis* Reitter (Coleoptera, Mycetophagidae). *Bulletin de la Société Linnéenne de Bordeaux* 31 (1): 27–28.
- Ganglbauer L. 1899. *Die Käfer von Mitteleuropa. 3. Familienreihe Clavicornia*. Carl Gerold’s Sohn, Wien.
- Gielen K. & Smets K. 2020. *Mycetophagus ater* en *Eulagius filicornis*, twee nieuwe boomzwamkevers voor Nederland (Coleoptera: Mycetophagidae). *Entomologische Berichten* 80 (6): 213–219.
- Grouvelle M.A. 1908. Collections recueillies par M. Maurice de Rothschild dans l’Afrique orientale anglaise. Insectes Coléoptères: Clavicornes. Diagnoses des espèces nouvelles. *Bulletin du Muséum national d’histoire naturelle, Paris* 14 (7): 365–380.

- Harrison T.D. 1996. *Eulagius filicornis* (Reitter) (Mycetophagidae) apparently established in Britain. *The Coleopterist* 4: 65–67.
- Háva J. 2021. Additions and corrections of the family Mycetophagidae (Insecta: Coleoptera) from the Catalogue of Palaearctic Coleoptera, Volume 5 – Tenebrionoidea, 2020. *Natura Somogyiensis* 36: 11–14.
- Hetschko A. 1930. Fam. Mycetophagidae. In: Junk W. & Schenkling S. (eds) *Coleopterorum Catalogus. Pars 108*: 1–26. W. Junk, Berlin.
- Iablokoff-Khnzorian S.M. 1976. *Eulagius acernus* Motschulsky – A misunderstood species (Coleoptera, Mycetophagidae). *Zoological Papers* 17: 173–174.
- ICZN (International Commission on Zoological Nomenclature). 1994. Opinion 1754. Histoire abrégée des insectes qui se trouvent aux environs de Paris (Geoffroy, 1762): some generic names conserved (Crustacea, Insecta). *Bulletin of Zoological Nomenclature* 51 (1): 58–70.
- ICZN (International Commission on Zoological Nomenclature). 1999. *International Code of Zoological Nomenclature. Fourth edition adopted by the International Union of Biological Sciences*. The International Trust for Zoological Nomenclature, London.
- Jakobson G.G. 1915. *Beetles of Russia and Western Europe*. Devriena, St Petersburg (1905–1915). [In Russian.]
- Labatut S. 2014. Liste provisoire des Mycetophagidae (Coleoptera Mycetophagidae) de Gironde. *Bulletin de la Société Linnéenne de Bordeaux* 42 (2): 163–168.
- Lawrence J.F., Escalona H.E., Leschen R.A.B. & Slipinski A. 2014. Review of the genera of Mycetophagidae (Coleoptera: Tenebrionoidea) with descriptions of new genera and a world generic key. *Zootaxa* 3826 (1): 195–229. <https://doi.org/10.11646/zootaxa.3826.1.6>
- Lewis G. 1896. On new species of Coleoptera from Japan, and notices of others. *Annals and Magazine of Natural History (s. VI)* 17 (101): 329–343.
- Mercurio R. & Spampinato G. 2001. Primo contributo alla definizione tipologica delle sugherete della Calabria. *III Congresso Nazionale SISEF, Abstract Book*: 483–490. Università degli Studi della Tuscia, Viterbo.
- Motschulsky V. 1845. Remarques sur la collection de Coléoptères russes de Victor de Motchoulsky. 1<sup>er</sup> Article. *Bulletin de la Société impériale des Naturalistes de Moscou* 18 (1): 3–127.
- Nikitsky N.B. 1993. *Mycetophagid beetles (Coleoptera, Mycetophagidae) of Russia and adjacent countries*. Izdatel'stvo Moskovskogo Universiteta, Moscow. [In Russian.]
- Nikitsky N.B. 2008. Family Mycetophagidae Leach, 1915. In: Löbl I. & Smetana A. (eds) *Catalogue of Palaearctic Coleoptera. 5. Tenebrionoidea*: 51–55. Apollo Book, Stenstrup.
- Nikitsky N.B. 2020. Family Mycetophagidae Leach, 1915. In: Iwan D. & Löbl I. (eds) *Catalogue of Palaearctic Coleoptera. 5. Tenebrionoidea. Revised and Updated Second Edition*: 27–33. Brill, Leiden / Boston.
- Peyerimhoff P. 1926. Notes sur la biologie de quelques Coléoptères phytophages du Nord Africain (quatrième série). *Annales de la Société entomologique de France* 95: 319–390.
- Recalde Irurzun J.I. & Pérez-Moreno I. 2007. Presencia de *Eulagius filicornis* (Reitter, 1887) y *Mycetophagus (Philomyctes) populi* Fabricius, 1798 en la Península Ibérica y otras aportaciones sobre Micetofágidos ibéricos (Coleoptera: Tenebrionoidea: Mycetophagidae). *Boletín de la Sociedad Entomológica Aragonesa* 40: 389–392.
- Reitter E. 1877. *Atritomus* nov. gen. Tritomidarum. *Deutsche Entomologische Zeitschrift* 21 (2): 384.

- Reitter E. 1879. Bestimmungs-Tabellen der europäischen Coleopteren. I. Enthaltend die Familien: Cucujidae, Telmatophilidae, Tritomidae, Mycetaeidae, Endomychidae, Lyctidae und Sphindidae. *Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien* 21: 71–100.
- Reitter E. 1882. Bestimmungs-Tabellen der europäischen Coleopteren. VI. Enthaltend die Familien: Colydiidae, Rhyssodidae, Trogositidae. *Verhandlungen des naturforschenden Vereines in Brünn* 20 (1881): 113–149.
- Reitter E. 1887a. Coleopterologische Notizien. XXI. *Wiener Entomologische Zeitung* 6 (2): 76–77.
- Reitter E. 1887b. Neue Coleopteren aus Europa, den angrenzenden Ländern und Sibirien, mit Bemerkungen über bekannte Arten. *Deutsche Entomologische Zeitschrift* 31: 241–288.
- Reitter E. 1889. Ueber den Gattungsnamen *Scydmaenus* und *Eumicrus*. *Deutsche Entomologische Zeitschrift* 1889 (2): 264–266.
- Reitter E. 1901. Coleopterologische Notizien. *Wiener Entomologische Zeitung* 20 (5): 98.
- Rothschild M. (ed.) 1922a. *Voyage de M. le Baron Maurice de Rothschild en Éthiopie et en Afrique orientale anglaise (1904–1905). Résultats scientifiques. Animaux articulés. Deuxième partie.* Imprimerie Nationale, Paris.
- Rothschild M. (ed.) 1922b. *Voyage de M. le Baron Maurice de Rothschild en Éthiopie et en Afrique orientale anglaise (1904–1905). Résultats scientifiques. Animaux articulés. Atlas.* Imprimerie Nationale, Paris.
- Seidlitz G. 1889. Ueber die Coleopteren-Gattung *Esarcus* Reiche. *Deutsche Entomologische Zeitschrift* 1889 (1): 147–149.
- Signorello P. 1984. Osservazioni fitosociologiche su alcuni aspetti boschivi dei *Quercetea ilicis* dell’Italia meridionale. *Notiziario della Società Italiana di Fitosociologia* 19 (1):177–182.
- Species Fungorum 2021. Species Fungorum. Available from <http://www.speciesfungorum.org/> [accessed 30 Nov. 2021].
- Tempère G. 1974. Les localités françaises de “*Parabaptistes flicornis*” (Reitter) (Col. Mycetophagides). *Bulletin de la Société Linnéenne de Bordeaux* 4 (10): 89–90.
- Vigna Taglianti A., Audisio P.A., Biondi M., Bologna M.A., Carpaneto G.M., De Biase A., Fattorini S., Piattella E., Sindaco R., Venchi A. & Zapparoli M. 1999. A proposal for a chorotype classification of the Near East fauna, in the framework of the Western Palearctic region. *Biogeographia (n.s.)* 20: 31–59.
- Winkler A. 1926. Mycetophagidae. In: Winkler A. (ed.) *Catalogus Coleopterorum Regionis Palaearcticae. Pars 6*: 743–746. Winkler, Vienna.
- World Checklist of Vascular Plants. 2021. World Checklist of Vascular Plants, version 2.0. Facilitated by the Royal Botanic Gardens, Kew. Available from <http://wcvp.science.kew.org/> [accessed 30 Nov. 2021].

*Manuscript received: 14 January 2022*

*Manuscript accepted: 27 May 2022*

*Published on: 8 July 2022*

*Topic editor: Tony Robillard*

*Section editor: Max Barclay*

*Desk editor: Eva-Maria Levermann*

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d'histoire naturelle, Paris, France; Meise Botanic Garden, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Real Jardín Botánico de Madrid CSIC, Spain; Zoological Research Museum Alexander Koenig, Bonn, Germany; National Museum, Prague, Czech Republic.