Zootaxa 5701 (1): 065–078
https://www.mapress.com/zt/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

https://doi.org/10.11646/zootaxa.5701.1.3
http://zoobank.org/urn:lsid:zoobank.org:pub:B80CFE48-7F43-4896-B625-A269F67EAA8C

The Tenebrionidae of the Grand-Duchy of Luxembourg (Coleoptera)

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Abstract

The first checklist of the Darkling Beetles of the Grand-Duchy of Luxembourg is published based on the literature and the specimens preserved in the National Museum of Natural History of Luxembourg. Thirty-two species are recorder from this country. *Cteniopus sulphureus* (Linnaeus, 1758); *Omophlus lepturoides* (Linnaeus, 1758); *Isomira murina* (Linnaeus, 1758); *Nalassus laevioctostriatus* (Goeze, 1777); *Tribolium confusum* Jacquelin du Val, 1861; *Melanimon tibiale* (Fabricius, 1781); *Blaps mortisaga* (Linnaeus, 1758); *Blaps mucronata* Latreille, 1804; *Crypticus quisquilius* (Linnaeus, 1760); *Gnatocerus cornutus* (Fabricius, 1798) are reported for the first time.

Key words: Darkling Beetles, checklist, new records

Introduction

Although national checklists constitute a foundational tool in faunistic research, it has been acknowledged since Mousset (1977) that the faunal inventory of Luxembourg remains incomplete. Only in recent years, the optimized allocation of economic and human resources has facilitated the implementation of systematic and large-scale biodiversity assessments. Notable progress has been made in the compilation of faunistic data for several insect orders, while the Coleoptera fauna remains comparatively underexplored, with relatively few contributions over the past decades (Mousset 1969; Braunert 1996, 2009; Braunert & Gerend 1997; Gerend 2003, 2006; Vitali 2012, 2018, 2024; Fanti & Vitali 2021; Brisinger & Vitali 2023; Vitali & Fanti 2024).

Victor Ferrant (1856–1942), first director of the MNHNL, Alfred Mousset (1920–2005), and the well-known French specialist Fabien Soldati, who visited the MNHNL in 2000, identified some materials but they did not publish notes on the conserved material. Thus, while some Tenebrionidae have been recorded in Luxembourg since the late 19th and early 20th centuries (Olm 1892; Kraus 1893; Ferrant 1911), faunistic data remain limited to a few brief and scattered contributions (Lohst 1983; Libbrecht 1988; Gerend & Braunert 1997; Gerend *et al*. 2007; Schlechter 2008; Köhler 2009, 2011, 2012, 2013; Gerend 2023). Recently, Iwan *et al.* (2024) list several species from Luxembourg, without indication that some of them are new country records and without providing collecting data. Insect collecting in Luxembourg requires ministerial permits and all records must be entered in the national museum database. However, many of the listed species are not even present in the database. The origin of these data is therefore unclear: they may simply reflect speculative assumptions based on the occurrence of the species in neighboring areas, or confusion with the Belgian province of Luxembourg. Accordingly, these records were not taken into account.

Furthermore, the Grand Ducal Regulation concerning the integral and partial protection of certain animal species of wild fauna (RGD 2009) grants full protection to *Pseudocistela ceramboides* (Linnaeus, 1758), *Allecula morio* (Fabricius, 1787), and *Allecula rhenana* Bach, 1856. However, of these three species, only the first has been recorded in Luxembourg to date (Gerend *et al.* 2007). This discrepancy highlights the need for an updated faunistic assessment of the Tenebrionidae in the Grand Duchy of Luxembourg, which constitutes the primary aim of the present contribution. More broadly, this work seeks to promote collaborative research at both local and international levels.

Accepted by M. Lillig: 26 Aug. 2025; published: 1 Oct. 2025

Material and methods

The present checklist represents the first outcome of a systematic revision of the Palearctic Tenebrionidae dry collection housed at the National Museum of Natural History of Luxembourg (MNHNL), in conjunction with a comprehensive survey of the national literature concerning this family. In addition, several specimens sporadically collected by me (CFV) have been incorporated into the present contribution.

Species newly recorded for Luxembourg are indicated with an asterisk. Bibliographic references concerning the local fauna are cited using the original nomenclature employed in the respective sources.

The distribution of the species has been compared with the fauna of the neighboring regions, using the following sources: Belgium (Everts 1903; 1922; Lhost 1983; Libbrecht 1987, 1988; Troukens 2005, 2009; Thomaes *et al*. 2025), Netherlands (Everts 1903; 1922; Thomaes *et al*. 2025), Rhineland (Glaser 1871, 1881; Everts 1903; Horion 1956; Köhler & Klausnitzer 1998; Schawaller 1972; Zebe 1972; Köhler 2011b; Köhler 2012; Thomaes *et al*. 2025), Saarland (Köhler & Klausnitzer 1998; Lillig 1999, 2000; Eisinger 2001; Köhler 2012; Eisinger *et al*. 2021); Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Soldati 2007). Alsace resulted having a fauna (Callot 2018) too different from that of Luxembourg and it was not treated here.

Photographs were taken with a CMOS Camera mounted on a Keyence VHX 6000 digital microscope equipped with a VHX-S660E free-angle observation system, a VH-ZST 20–2000x double zoom objective, 2D/3D image stitching system and stacking system taking 200 images at 2 million pixels of resolution. Images were performed using Photoimpact software to enhance depth of field and detail.

Results

TENEBRIONIDAE Latreille, 1802

Lagriinae Latreille, 1825

Lagria (s. str.) *hirta* (Linnaeus, 1758)

Gerend *et al*. 2007: 290; Köhler 2009: 109; 2011a: 130; 2012: 125; 2013: 101.

Material. 2♂♂, Luxembourg, 7.VIII.[1900], V. Ferrant lgt. (MNHNL138382–83); 1♂, Ludelange, 24.VI.1963, A. Mousset lgt. (MNHNL138384); 1♂, 2♀♀, Bockholz, 25.VII.1965, A. Mousset lgt. (MNHNL138385–87); 1♂, 1♀, Rumelange, 17.VII.1969, R. Thill lgt. (MNHNL138388–89); 1♀, ditto, 1.IX.1969, A. Mousset lgt. (MNHNL138390); 1♂, Bech, 26.VII.1970, A. Mousset lgt. (MNHNL138391); 1♀, Clemency 2.VIII.1970, A. Mousset lgt. (MNHNL138392) 1♂, 1♀, Bridel, 8.VII.1974, A. Mousset lgt. (MNHNL138393–94); 1♂, Bertrange, 9.VIII.1985, A. Mousset lgt. (MNHNL138395); 1♂, ditto, 8.VII.1994 (MNHNL138397); 1♂, ditto, 6.VII.1996 (MNHNL138398); 3♂♂, Oberdonven, VII.1992, A. Hary lgt. (MNHNL138396); 1♂, Berdorf, Schnellert RFI, Lehmring, 28.VIII–11.IX.1998 (MNHNL138399); 1♂, Stadtbredimus, Bous, at light, 21.VII.2001, A. Zahn lgt. (MNHNL138400); 1♂, ditto, 25.VII.2001 (MNHNL138401); 3♂♂, Alzingen, Malaise trap, 15–22.VII.2004 (MNHNL138402–04); 2♀♀, Hesperange, 4–11.VIII.2005 (MNHNL138405–06); 1♂, Niederanven, Ouerwenkel, yellow Moericke trap, 19.VIII–2.IX.2013, E. Carrières lgt. (MNHNL138407); 1♂, Feulen, Niederfeulen, 8.VI.2018, S. Christian lgt. (MNHNL138408); 1♂ Echternach, Rue de la Sure, 19.IX.2018, S. Christian lgt. (MNHNL138409); 4♂♂, 3♀♀, Stiewesdelt, 28.VI.2008, F. Vitali lgt. (CFV); 1♀, Mertert, Fausemühle, on *Carduus*, 12.VII.2011, F. Vitali lgt. (CFV); 1♂, Flaxweiler, Oberdonven, 260 m, Moericke yellow trap, 28.VI–13.VII.2010, E. Carrière lgt. (CFV); 1♂, ditto, 13–27.VII.2010 (CFV); 1♂, Differdange, Tellebierg, yellow Moericke trap, 24.V–27.VI.2011, E. Carrière lgt. (CFV.)

Note. The species is common and widespread in the whole country, as well in the neighboring regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903, 1922; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025).

Lagria (s. str.) *atripes* Mulsant & Guillebeau, 1855

Schlechter 2008: 99; Köhler 2011a: 130; 2012: 125.

Material. 1♀, Kayl, 17.VI.2000, A. Mousset lgt. (MNHNL138379); 1♀, Hoscheid, 6.VIII.2000, A. Mousset lgt. (MNHNL138380); 1♀, Junglinster, Godbrange, 11.VI.2016, F. Vitali & S. Christian lgt. (MNHNL138381); 2♀♀, Mamer, 12.VI.2009, F. Vitali lgt. (CFV); 1♀, Luxembourg City, Bambësch, 19.VI.2008, F. Vitali lgt. (CFV); 1♀, ditto, 29.VI.2016 (CFV); 1♀, ditto, 22.V.2018 (CFV); 1♀, ditto, 9.VII.2021 (CFV).

Note. Although widespread throughout the country and in the neighboring regions (Géhin 1846; Fournel & Géhin 1847; Godron, 1863; Everts 1903, 1922; Köhler & Klausnitzer 1998; Thomaes *et al.* 2025), this species is much less common and abundant than the previous one. The same occurs is Lorraine (Godron 1863; Soldati 2007), Saarland (Lillig 2000) and the Netherlands (Everts 1903), while it is common in Belgium (Troukens 2005).

Alleculinae Seidlitz, 1836

**Cteniopus* (s. str.) *sulphureus* (Linnaeus, 1758)

Fig. 1.

Material. 2♀♀, Mamer, 9.VII.1961, A. Mousset lgt. (MNHNL138410–11); 1♀, Hobscheid, 27.VII.1975, A. Mousset lgt. (MNHNL138412); 1♀, Luxembourg Bonnevoie, 21.VII.1983, A. Mousset lgt. (MNHNL138413); 1♂, Luxembourg Rham [Plateau], 19.VI.1997, L. Reichling lgt. (MNHNL138414); 2♀♀, Luxembourg City, Ground, 6.VII.2010, F. Vitali lgt. (CFV).

Note. This species seems few common and widespread only in the Guttland. It is widespread in the neighboring regions, except—seemingly—for Saarland (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903, 1922; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025).

**Omophlus* (s. str.) *lepturoides* (Linnaeus, 1758)

Fig. 2.

Material. 2♀♀, Ettelbrück, VII.[1900], V. Ferrant lgt. (MNHNL138415–16); 1♀, Goebelsmühle VII.[1900], V. Ferrant lgt. (MNHNL138417).

Note. Ferrant collected the only known specimens before World War I at two xerothermic sites of the Éislek and erroneously identified them as "*Omophlus tibialis*", a junior synonym of *O. picipes* (Fabricius, 1792). This thermophilic species, still present in Rhineland (Köhler & Klausnitzer 1998), disappeared from Belgium before 2000s (Thomaes *et al*. 2025). Only old data are available from Lorraine (Godron 1863) and none from the Netherlands and Saarland (Everts 1903, 1922; Lillig 2000). It has to be considered as extinct in Luxembourg.

Gonodera luperus luperus (Herbst, 1783)

Gerend *et al*. 2007: 290; Köhler 2009: 109.

Material. 1 ex., Mamer 10.VII.[1890], V. Ferrant lgt. (MNHNL138419); 11ex., Goebelsmühle VII.[1900], V. Ferrant lgt. (MNHNL138418); ♂, 1♀, Bridel, 24.V.1954, A. Mousset lgt. (MNHNL138420–21); 4♂♂, Koerich, 1.V.1961, A. Mousset lgt. (MNHNL138422–25); 1♀, Mamer, 2.VII.1978, A. Mousset lgt. (MNHNL138426); 1♀, Eischen, 8.VI.1980, A. Mousset lgt. (MNHNL138427); 1♀, Berdorf, Schnellert RFI, Lehmring, 24.VIII.1997, C. Braunert lgt. (MNHNL138428); 1♂, Schifflange, 10.V.2001, M. Meyer lgt. (MNHNL138429); 2♂♂, 1♀, Luxembourg City, Bambësch, 13.V.2008, F. Vitali lgt. (CFV); 2♂♂, ditto, on *Fagus*, 19.V.2010 (CFV); 1♀, ditto, 5.V.2014 (CFV); 1♀, Luxembourg Ground, on a wall, 29.IV.2011, F. Vitali lgt. (CFV); 1♀, Mesch, Mierscherwald, 25.V.2011, F. Vitali lgt. (CFV).

Note. The species is common and widespread in the woodlands of the whole country, as well in the neighboring regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903, 1922; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025).

***Pseudocistela ceramboides* (Linnaeus, 1758)**

Gerend *et al*. 2007: 290.

Material. 1♀, Weiswampach, VII.[1900], V. Ferrant lgt. (MNHNL138430); 1♀, Goebelsmühle, VII.[1900], V. Ferrant lgt. (MNHNL138431); 1♀, Unterhausenbach, Steck, 28.VI.2008, F. Vitali lgt. (CFV).

Note. A saproxylic species, widespread but rare across all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903, 1922; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025). In Luxembourg, it appears to be widespread only in the eastern part of the Éislek. Considered strongly threatened in both Luxembourg and Saarland (Lillig 2000; RGD 2009).

***Prionychus ater* (Fabricius, 1775)**

Köhler 2011a: 92, fig. 9b, 93, 130.

Material. Luxembourg, VI.[1900], V. Ferrant lgt. (MNHNL138432).

Note. Although the MNHNL holds only an old specimen, the saproxylic species is still present—albeit rare—in Luxembourg (Köhler 2011a). Considered threatened in Saarland (Lillig 2000) and rare in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron, 1863), it is widespread across all adjacent regions (Everts 1903, 1922; Köhler & Klausnitzer 1998; Lillig 2000; Troukens 2005; Thomaes *et al*. 2025).

****Isomira* (s. str.) *murina murina* (Linnaeus, 1758)**
Fig. 3.

Material. 4 exx., Mamer, 18.VII.[1890], V. Ferrant lgt. (MNHNL138439–40); 2 exx., Clervaux, VII.[1900], V. Ferrant lgt. (MNHNL138433); 2 exx., Luxembourg, 13.VI.[1900], V. Ferrant lgt. (MNHNL138434); 2 exx., ditto, 3.VII.[1900] (MNHNL138435); 2 exx., ditto, 16.VII.[1900] (MNHNL138436); 4 exx., ditto, 4.VIII.[1900] (MNHNL138437–38); 1 ex., Luxembourg Birelergrund, 10.VI.[1900], V. Ferrant lgt. (MNHNL138441); 1♂, 1♀, Eischen, 8 VI.1975, A. Mousset lgt. (MNHNL138442–43); 4♀♀, Steinfort, 18.VI.1977, A. Mousset lgt. (MNHNL138444–47); 1♂, Lellingen, 3.VIII.2000, A. Mousset lgt. (MNHNL138448); 1♂, 2♀♀, Goebelsmühle, 20.VI.2000, A. Mousset lgt. (MNHNL138449–51); 1♂, Dudelange, Haardt, 2.VI.2001, C. Braunert lgt. (MNHNL138452); 1 ex, Dudelange, 3.VI.2001, T. Wagner lgt. (MNHNL138453); 1 ex, Luxembourg City, Bambësch, 21.VI.2008, F. Vitali lgt. (CFV); 1 ex., Bourscheid, Goebelsmühle, 25.V.2012, F. Vitali lgt. (CFV).

Note. Sometimes identified as *Isomira semiflava* (Küster, 1852), the species is widespread in Luxembourg and neighboring regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025). In Saarland, it is not considered endangered (Lillig 2000). Ferrant identified one specimen as "*Hymenalia rufipes* F.", a species still not recorded from Luxembourg but present in the neighboring regions, except for Saarland (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025).

***Mycetochara* (*Ernocharis*) *maura* (Fabricius, 1792)**

Gerend *et al*. 2007: 290; Köhler 2009: 109; 2011a, 130; 2012: 125; 2013: 101 (all sub *Mycetochara linearis*).

Material. 1♂, 1♀, Mamer, VII.[1890], V. Ferrant lgt. (MNHNL138454–55); 2♀♀, Kayl, 27.VIII.[1900], V. Ferrant lgt. (MNHNL138456–57); 1♀, Weiswampach, VII.[1900], V. Ferrant lgt. (MNHNL138458); 3♀♀, Bertrange, 20.V.1971, A. Mousset lgt. (MNHNL138459–61); 1♂, Luxembourg Rham [Plateau], 20.VI.1980, A. Mousset lgt. (MNHNL138462).

Note. A saproxylic species, apparently in southward regression, whose exact distribution needs specialized research. The species, early identified as *Mycetochara linearis* (Illiger, 1794), is widespread across all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903; Köhler & Klausnitzer 1998; Lillig 2000; Thomaes *et al*. 2025). In Saarland, it is not considered endangered (Lillig 2000).

Tenebrioninae Latreille, 1802

***Nalassus* (s. str.) *laevioctostriatus* (Goeze, 1777)**
Fig. 4.

Material. 1♂, Hobscheid 6.III.1977, A. Mousset lgt. (MNHNL138463); 2♂♂, 2♀♀, ditto, 17.IV.1977 (MNHNL138464–67); 1♀, Berdorf, Siweschleff, 18.VI.2012, F. Vitali lgt. (CFV); 1 ex, Mersch, Helperknapp, 13.VI.2022, F. Vitali lgt. (CFV).

Note. This saproxylic species, living under bark in humid woods, had never been recorded before perhaps as it does not fall into pitfall traps. It is common and widespread across all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Troukens 2005; Soldati 2007; Thomaes *et al*. 2025). In Saarland, where it was firstly collected in the 1920s (Eisinger 2001), it is abundant and not considered endangered (Lillig 1999).

***Tenebrio* (s. str.) *molitor* Linnaeus, 1758**

Ferrant 1911: 200; Libbrecht 1988: 11; Gerend *et al*. 2007: 290; Köhler 2013: 102.

Material. 1♂, Mamer, 9.VI.[1890], V. Ferrant lgt. (MNHNL138468); 1♂, ditto, 11.VI.[1890] (MNHNL138469); 1♀, Bertrange, 10.VIII.1958, A. Mousset lgt. (MNHNL138470); 1♀, ditto 21.VI.1959, (MNHNL138471); 1♀, ditto, 4.VII.1960 (MNHNL138472); 1♂, ditto, 23.VII.1971 (MNHNL138473); 1♀, ditto, 2.VIII.1975 (MNHNL138474); 1♂, ditto, 25.X.1978 (MNHNL138475); 1♂, Remich, 26.VII.2000, M. Meyer lgt. (MNHNL138476); 1♂, Alzingen, G. Ewen lgt. (MNHNL138477); 1♀, Betzdorf, Roodt-sur-Sûre, VIII.2013, Buckland lgt. (MNHNL138478); 1♀, Luxembourg Ground, 25.VII.2019, F. Vitali lgt. (MNHNL138479); 1♂, Luxembourg City, Bambësch, at light, 21.VII.2013, F. Vitali lgt. (CFV); 1♀, ditto, VII.2021 (CFV).

Note. This synanthropic, cosmopolitan species, long known as a pest of grain and flour products, is widespread throughout all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Troukens 2005; Soldati 2007; Thomaes *et al.* 2025). Once very common everywhere, the species now appears to be in decline.

***Tribolium castaneum* (Herbst, 1797)**

Ferrant 1911: 200 (sub *Tribolium navale);* Köhler 2011a: 130 (sub *Tribolium castaneum*).

Material. 4 exx., Luxembourg, VII.[1900], V. Ferrant lgt. (MNHNL138480–81); 1♀, Bertrange, 31.VII.1975, A. Mousset lgt. (MNHNL138482); 4♀♀, Dalheim, 6.VII.1976, A. Mousset lgt. (MNHNL138483–86); 2♂♂, 2♀♀, Steinheim, 21.X.1983, A. Mousset lgt. (MNHNL138487–90); 5 exx., Redange, Ospern, M. Pletschet lgt. (MNHNL138491); 6 exx., Manternach, 31.X.2014, E. Buttini lgt. (MNHNL138492); 4 exx, ditto, 17.XI.2014 (MNHNL138493); 3 exx., Nospelt, Cité Belle Vue, 21.VII.2016, H. Kilb lgt. (MNHNL138494–95); 1 ex., Luxembourg Hollerich, 27.VI.2019, J. Wolak lgt. (MNHNL138496); 1 ex., Luxembourg City, Bambësch, 11.VII.2025, F. Vitali lgt. (CFV).

Note. This synanthropic species, of Oriental origin (Lillig 1999) and now cosmopolitan, has long been known as a pest of grain and flour products. It is widespread and common across all adjacent regions (Godron 1863; Everts 1903, 1922; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al*. 2025).

***Tribolium confusum* Jacquelin du Val, 1861**
Fig. 5.

Material. 3 exx., Bertrange, 25.IX.1961, A. Mousset lgt. (MNHNL138497); 9 exx., ditto, 7.XI.1962 (MNHNL138498–500).

Note. This cosmopolitan synanthropic species is widespread across all adjacent regions but much less common

and abundant than the previous one (Everts 1903, 1922; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al.* 2025). Not yet recorded from Lorraine (F. Soldati *in litt*.), where its presence is nonetheless expected.

Latheticus oryzae Waterhouse, 1880

Köhler 2009: 109.

Note. This adventive, minute species, of South Asian origin (Delobel & Tran 1993) and now cosmopolitan, is mainly found in storage areas containing American wheat and Indian rice. Seemingly—or once—absent from Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Soldati 2007), Saarland and Rhineland (Köhler & Klausnitzer 1998; Lillig 1999), it has been introduced into Belgium and the Netherlands (Everts 1903; Thomaes *et al.* 2025). However, Belgian data suggest that the species has been in decline since the 1950s (Libbrecht 1988) and is now most frequently encountered in the port of Antwerp (Troukens 2009).

Palorus depressus (Fabricius, 1790)

Köhler 2011a: 130; 2012: 125.

Material. 3 exx., Luxembourg, VII.[1900], V. Ferrant lgt. (MNHNL138501–03).

Note. A minute, saproxylic, thermophilic species, recorded from all adjacent regions (Lillig 1999; Thomaes *et al.* 2025). Very rare in the Netherlands (Everts 1903) and Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863) and recorded in Belgium only since the 1990s, it became extinct in northern Germany after the 1950s (Köhler & Klausnitzer 1998) and is considered endangered in Saarland (Lillig 1999). The species appears to be undergoing a southward range contraction, most likely driven exclusively by climatic factors.

**Melanimon tibialis* (Fabricius, 1781)

Fig. 6.

Material. 1 ex., Nospelt, 7.IX.1968, A. Mousset lgt. (MNHNL138504); 6 exx., Eischen, 2 V.1971, A. Mousset lgt. (MNHNL138505–10).

Note. A small, xerophilic species associated with sandy habitats, locally present throughout all adjacent regions (Everts 1903; Köhler & Klausnitzer 1998; Lillig, 1999; Thomaes *et al*. 2025). Once common in dune areas of the Netherlands (Everts 1903), the species has been in strong decline in Belgium since the 1950s (Libbrecht 1988) and it is very rare in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Soldati 2007) and in Saarland, where it is not considered endangered (Lillig 1999). In Luxembourg, it is likely also declining, probably due to climatic factors.

Eledona agricola (Herbst, 1783)

Köhler 2012: 125.

Material. 5 exx., Kehlen, VIII.[1900], V. Ferrant lgt. (MNHNL138511–15); Stiewesdelt, 28.VI.2008, R. Gerend lgt. (CFV).

Note. This minute, mycophagous species, associated with *Laetiporus sulphureus* (Bull.) Murrill, is widespread and abundant throughout all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Everts 1903, 1922; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al*. 2025). Its distribution in Luxembourg still requires targeted research. The host fungus has sometimes been identified under its synonym *Polyporus caudicinus* (Libbrecht 1988; Lillig 1999), and the specific epithet has frequently been misspelled as "*agaricola*" (Everts 1903, 1922; Troukens 2005).

***Bolitophagus reticulatus* (Linnaeus, 1767)**

Gerend *et al*. 2007: 273, 290; Köhler 2009: 109; 2011a: 130; 2012: 93, 125; 2013: 101.

Material. 1 ex., Abweiler. 3.VII.1990, A. Mousset lgt. (MNHNL138516); 1 ex., from Contern to Itzig, 9.IX.1990, G. Ewen lgt. (MNHNL138517); 2 exx., Berdorf, Schnellert RFI, 13.II.1997, C. Braunert lgt. (MNHNL138518–19); 1 ex., ditto, 21.III.1997, C. Braunert lgt. (MNHNL138520); 1 ex., Junglinster, 29.V.1999, A. Mousset lgt. (MNHNL138521); 1 ex., Weyer, 11.IV.2000, A. Mousset lgt. (MNHNL138522); 6 exx, Luxembourg City, Bambësch, on *Fomes*, 4–6.V.2008, F. Vitali lgt. (CFV); 2 exx, ditto, 22.III.2009; 1 ex, Schieren, Biirtrengerbësch, 17.VI.2011, F. Vitali lgt. (CFV); 1 ex, Mersch, Helperknapp, on *Fomes*, 13.VI.2022, F. Vitali lgt. (CFV).

Note. This mycophagous species, associated with *Fomes fomentarius* (L.) Fr., has been recorded from all adjacent regions (Godron 1863; Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al*. 2025). Although it was historically unknown in the Netherlands (Everts 1903, 1922) and once considered as very rare in Lorraine (Géhin 1846; Fournel & Géhin 1847), known from only a single site in Belgium until recently (Libbrecht 1988; Troukens 2009), and considered endangered in Saarland (Lillig 1999), the species appears to be increasing in the region. It is regularly found in humid woodlands in Luxembourg.

Blaptinae Leach, 1815

***Blaps* (s. str.) *mortisaga* (Linnaeus, 1758)**
Fig. 7.

Material. 1♂, 1♀, Mamer, 10 VIII.[1890], V. Ferrant lgt. (MNHNL138523–24).

Note. A synanthropic species of South European (Everts 1922) or, more likely, Anatolian origin (F. Soldati, *in litt*.). It was temporarily introduced into Luxembourg and adjacent regions (Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al*. 2025), where it remained rare and eventually became locally extinct. The species was reported from Lorraine in the first half of the 19th century (Géhin 1846; Fournel & Géhin 1847) but has not been observed there since (Godron 1863). Already known from the Netherlands and Belgium in the early 20th century (Everts 1922; Libbrecht 1988), it remained localized and seemingly disappeared from Belgium before 1950. Known from the Rhineland since the late 19th century (Glaser 1871, 1881), the species has nonetheless remained continuously present along the Rhine and its major tributaries (Horion 1956; Schawaller 1972; Zebe 1972; Köhler 2011b). Records from Saarland date up to 1962 (Lillig 1999). The species is likely extinct in Luxembourg due to habitat loss.

***Blaps* (s. str.) *mucronata* Latreille, 1804**
Fig. 8.

Material. 1♀, Oberanven 4 VIII.[1900], V. Ferrant lgt. (MNHNL138525); 1 ex., Luxembourg, 15.IX[1900], V. Ferrant lgt. (MNHNL138526); 1 ex., ditto, 17 VII.[1900] (MNHNL138527); 1♂, Luxembourg Arbed, 20.VI.1948, A. Kuntgen lgt. (MNHNL138528); 2 exx., Luxembourg, 3.IV.1957, A. Mousset lgt. (MNHNL138529–30); 1ex., Luxembourg Ground, 28.V.2002, M. Theisen lgt. (MNHNL138531); 1♂, Grevenmacher, Rue de l'Eglise, 8 X.2014, S. Christian lgt. (MNHNL138532).

Note. A thermophilic synanthropic species of South European origin (Everts, 1922), recorded in all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al*. 2025), historically common but in decline due to habitat loss. In Belgium, the species appears to be undergoing a southward range contraction, also driven by climatic factors (Libbrecht 1988). Correspondingly, in Luxembourg, it seems still present only in the Guttland.

***Opatrum* (s. str.) *sabulosum sabulosum* (Linnaeus, 1761)**

Olm 1892: 37; Kraus 1893: 35.

Material. 1 ex., Drauffelt [Clervaux], 27.V.[1900], V. Ferrant lgt. (MNHNL138533); 1 ex., Luxembourg, VI.[1900], V. Ferrant lgt. (MNHNL138534); 1 ex., ditto, 4.VII.[1900] (MNHNL138535); 2 exx., ditto, 1.VIII.[1900] (MNHNL138536); 1 ex., Clervaux, VII.[1900], V. Ferrant lgt. (MNHNL138537); 1 ex., Oberanven, 12.V.[1900], V. Ferrant lgt. (MNHNL138538); 2 exx., Mamer, 24.IV.1954, A. Mousset lgt. (MNHNL138539); 1 ex., ditto, 12.IV.1966 (MNHNL138540); 1 ex., ditto, 5.VI.1966 (MNHNL138541); 1 ex., ditto, 12.V.1969 (MNHNL138542); 2 exx., Schifflange, 6.V.1973, A. Mousset lgt. (MNHNL138543–44); 1 ex., Kiemerchen [Saeul], 24.VII.1987 (MNHNL138545).

Note. A xerophilic species, associated with sandy habitats, locally present throughout all adjacent regions (Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al.* 2025), Historically considered very common in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863) and not rare in the Netherlands (Everts 1903), the species has been in steep decline in Belgium since the 1950s (Libbrecht 1988). Known from a longtime in Luxembourg (Olm 1892; Kraus 1893), it seems to be undergoing a southward range contraction, driven by climatic factors. However, the species is still abundant in Saarland, where it is not considered endangered (Lillig 1999).

Diaperinae Latreille, 1802

**Crypticus* (s. str.) *quisquilius quisquilius* (Linnaeus, 1760)

Fig. 9.

Material. 2 exx., Beaufort, VI.[1900], V. Ferrant lgt. (MNHNL138546–47); 2 exx., Bridel, V.[1900], V. Ferrant lgt. (MNHNL138548–49); 1♀, Mamer, 28 VIII.1965, A. Mousset lgt. (MNHNL138550); 1♂, ditto, 5.VI.1966 (MNHNL138551); 1♂, Hobscheid, VII.1976, A. Mousset lgt. (MNHNL138552); 1♂, Steinfort, 18.VI.1977, A. Mousset lgt. (MNHNL138553); 1 ex, Luxembourg City, Bambësch, Eicherfeld, 7.VII.2019, F. Vitali lgt. (CFV); 1 ex., ditto, 16.VI.2021 (CFV).

Note. A small xerophilic species, associated with sandy habitats, widespread and locally common throughout all adjacent regions (Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al.* 2025), except in Lorraine, where it appears to have been rare (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Soldati 2007). Once abundant, it has been in decline in Belgium since the 1950s (Libbrecht 1988). In Luxembourg, it appears to be widespread only in the Guttland.

Scaphidema metallica (Fabricius, 1792)

Gerend & Braunert 1997: 211; Köhler 2009: 109; 2011a: 130.

Material. 1♀, Bertrange, 11.V.1974, A. Mousset lgt. (MNHNL138554).

Note. A small mycetophagous species widespread and abundant throughout all adjacent regions (Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al.* 2025). Formerly regarded as rare in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863), the species is no longer considered so (Soldati 2007). In Luxembourg, records are available only from the Guttland, but the species is expected to be widespread across the whole country.

Alphitophagus bifasciatus (Say, 1824)

Köhler 2013: 101.

Material. 1 ex., Frisange, Aspelt, at light, 12.VII.1997, M. Meyer lgt. (MNHNL138555).

Note. A detritivore, sometimes synanthropic species, recorded in all adjacent regions (Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al*. 2025), where it is not abundantly collected, possibly due to its minute body size. In Luxembourg, records are available only from the Guttland, but the species is expected to be widespread across the whole country.

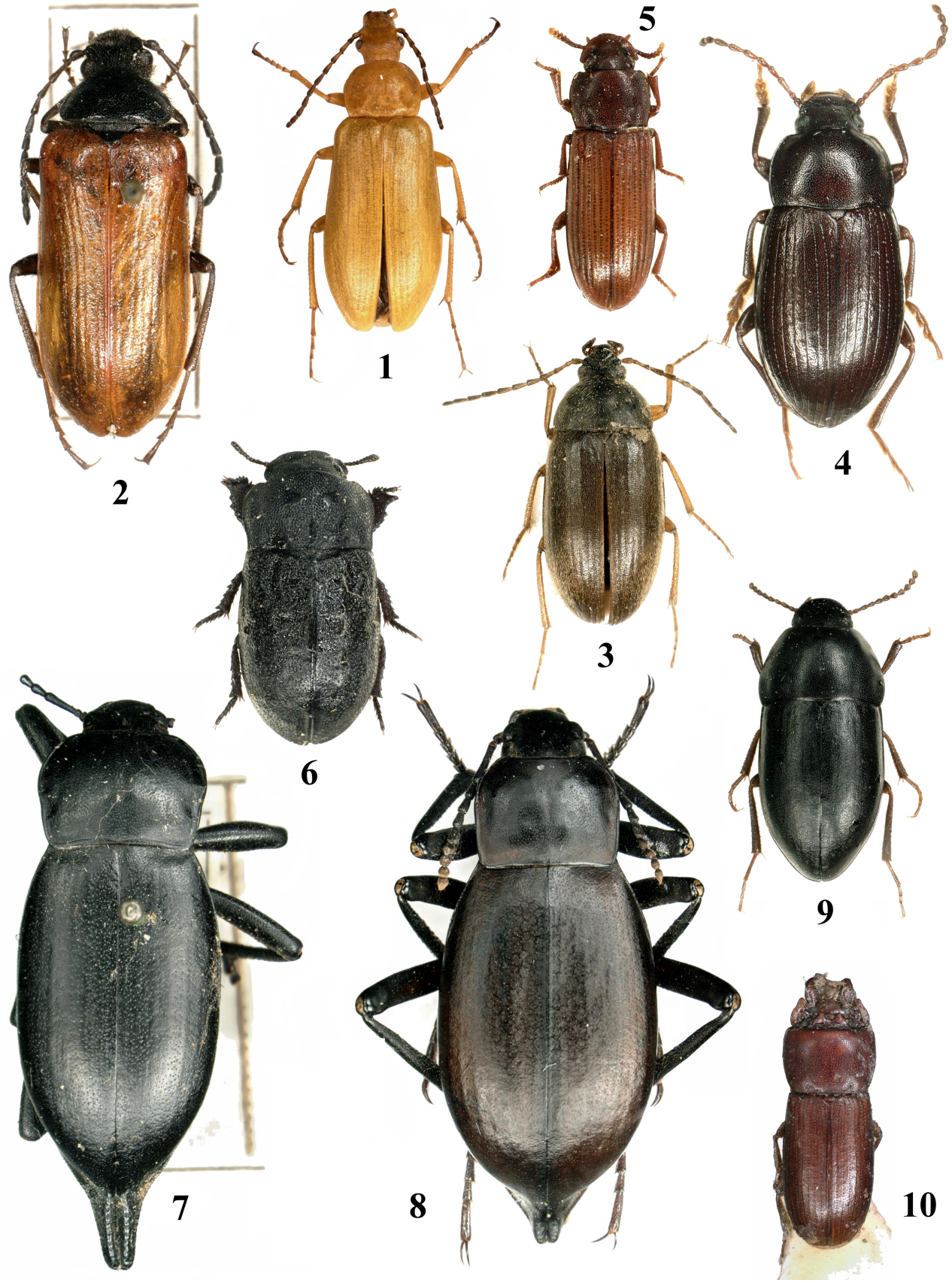

FIGURE 1–10. 1. *Cteniopus sulphureus* (Linnaeus, 1758). 2. *Omophlus lepturoides* (Linnaeus, 1758). 3. *Isomira murina* (Linnaeus, 1758). 4. *Nalassus laevioctostriatus* (Goeze, 1777). 5. *Tribolium confusum* Jacquelin du Val, 1861. 6. *Melanimon tibialis* (Fabricius, 1781). 7. *Blaps mortisaga* (Linnaeus, 1758). 8. *Blaps mucronata* Latreille, 1804. 9. *Crypticus quisquilius quisquilius* (Linnaeus, 1760). 10. *Gnatocerus cornutus* (Fabricius, 1798) (size of habitus not proportional to sizes of specimens).

***Gnatocerus* (s. str.) *cornutus* (Fabricius, 1798)**
Fig. 10.

Material. 1♂, Mamer, 23.VI.[1890], F. Ferrant lgt. (MNHNL138556).

Note. This minute synanthropic species, most probably of Central American origin (Delobel & Tran 1993) and cosmopolitan for some time, is generally found in bakeries and flour mills in adjacent regions, except in Saarland (Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Lillig 1999; Thomaes *et al*. 2025). In Lorraine, the species is known from old records in Vosges (Soldati 2007) and has been found very recently in Meurthe-et-Moselle (F. Soldati *in litt.*). Its current presence in Luxembourg remains doubtful. It is most likely that Ferrant collected this specimen in his own mill at Thillsmillen (formerly Ferrantsmillen).

***Pentaphyllus testaceus* (Hellwig, 1792)**

Köhler 2011a: 130; 2012: 125; 2013: 101.

Note. A small mycetophagous species, associated with *Laetiporus sulphureus* (Bull.) Murrill, widespread and abundant throughout all adjacent regions (Godron 1863; Everts 1922; Libbrecht 1988, Köhler & Klausnitzer 1998; Lillig 1999; Soldati 2007; Thomaes *et al*. 2025). In Luxembourg, bibliographic records are available only from the Guttland, but the species is expected to be widespread across the whole country.

***Platydema violacea* (Fabricius, 1790)**

Gerend & Braunert 1997: 211.

Material. 3 exx., Vianden, 23.VII.1976, C. Hahn lgt. (MNHNL138557–59); 1♂, Strassen, 29.III.1996, A. Mousset lgt. (MNHNL138560); 1♂, ditto, 1.IV.1996 (MNHNL138561); 2♀♀, ditto, 17.I.1998 (MNHNL138562–63); 12 exx., Luxembourg City, Bambësch, on *Quercus*, 4.IV.2009, F. Vitali lgt. (CFV).

Note. A mycetophagous species associated with the genus *Auricularia* Bull. ex Juss., recorded throughout all adjacent regions (Everts 1903; Libbrecht 1988; Köhler & Klausnitzer 1998; Soldati 2007; Thomaes *et al*. 2025). However, it appears to be very rare in the Netherlands (Everts 1903), in decline in Belgium (Troukens 2005), rare and endangered in Saarland (Lillig 1999), while seemingly expanding northward in Rhineland (Lillig 1999). Formerly regarded as very rare in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863), it is now considered localized but not very rare (F. Soldati *in litt*.). In Luxembourg, the species is localized but locally abundant.

***Diaperis boleti* (Linnaeus, 1758)**

Köhler 2011a: 130.

Material. 1 ex, Luxembourg City, Bambësch, on *Betula*, 4.IV.2009, F. Vitali lgt. (CFV).

Note. This mycetophagous species, associated with many Polyporales, is widespread but generally uncommon throughout all adjacent regions (Everts 1903; 1922; Libbrecht 1988, Köhler & Klausnitzer 1998; Lillig 1999; Troukens 2005; Thomaes *et al.* 2025). More common in Lorraine (Géhin 1846; Fournel & Géhin 1847; Godron 1863; Soldati 2007). In Luxembourg, records are available only from the Guttland, but the species is expected to be widespread across the whole country.

***Corticeus* (s. str.) *unicolor* Piller & Mitterpacher, 1783**

Gerend *et al*. 2007: 290; Köhler 2009: 65, 109; 2011a: 90, 130; 2012: 89, 125; 2013: 65, 102.

Material. 1 ex., Abweiler, 25.VII.1972, A. Mousset lgt. (MNHNL138564); 3 exx., Senningerberg, 28.IV.1977, A. Mousset lgt. (MNHNL138565–67); 1 ex., Manternach, Schlammbach, 26.II.1997, C. Braunert lgt. (MNHNL138568); 4 exx., Manternach, Michelslay, IX.1996, C. Braunert lgt. (MNHNL138569–70); 1 ex., Berdorf, Schnellert RFI,

Lehmring, 24.VIII.1997, C. Braunert lgt. (MNHNL138571); 1 ex, Luxembourg City, Bambësch, 25.V.2008, F. Vitali lgt. (CFV); 1 ex, ditto, on *Picea*, 26.IV.2009 (CFV); 1 ex, ditto, on *Quercus*, 24.V.2009 (CFV); 1 ex, Remich, Wellenstein, on *Quercus*, 4.V.2012 (CFV); 1ex, Hesperange, Petange, Moericke trap, 24.IV–15.V.2012, E. Carrières lgt. (CFV).

Note. A detriticolous and mycetophagous species, widespread throughout all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Everts, 1903; Köhler & Klausnitzer 1998; Soldati, 2007; Thomaes *et al*. 2025). The species is abundant in the Guttland, Saarland (Lillig 1999) and all departments of Lorraine (F. Soldati *in litt*.), but appears to be localized in Belgium (Libbrecht 1988) and the Netherlands.

Corticeus (s. str.) *bicolor* (Olivier, 1790)

Köhler 2012: 89, 125; 2013: 102.

Note. This detriticolous species, associated with elms, is widespread across all adjacent regions (Géhin 1846; Fournel & Géhin 1847; Köhler & Klausnitzer 1998; Soldati 2007; Thomaes *et al*. 2025). It is scarce and localized in the Guttland and Saarland, where it is considered endangered (Lillig 1999), but appears to be widespread in the Netherlands (Everts 1903) and very abundant in Belgium (Libbrecht 1988). Formerly quite common in Lorraine (Godron 1863), it is now rare and localized as a consequence of the decline of elm trees (F. Soldati *in litt*.).

Corticeus (s. str.) *linearis* (Fabricius, 1790)

Köhler 2013: 102.

Note. This species, a predator of pre-imaginal stages of Curculionidae Scolytinae on conifers, particularly *Pityogenes bidentatus* (Herbst, 1784) (Soldati 2007), is widespread across all adjacent regions (Everts 1903; Köhler & Klausnitzer 1998; Soldati 2007; Thomaes *et al*. 2025). Data suggest a southward range contraction in Belgium (Libbrecht 1988), while the species still appears to be abundant in Saarland (Lillig 1999). In Luxembourg, records are available only from the Guttland, where the species is scarce and localized.

Pimeliinae Latreille, 1802

Asida (s. str.) *sabulosa sabulosa* (Füssli, 1775)

Lhost 1983: 301; Libbrecht 1988: 11; Gerend 2023: 107–108. Figs 13–14.

Note. This xerophilic, thermophilic species is associated with sandy habitats and calcareous or volcanic soils. Absent from the Netherlands (Thomaes *et al*. 2025), it has been recorded in the extreme south-east of Belgium (Everts 1903; Libbrecht 1988), as well as in xerothermic areas of Saarland—where it is considered strongly endangered (Lillig 1999)—and Rhineland, along the Mosel and Rhine, where it is declining (Everts 1903; Lillig 1999). In Lorraine, it was considered a common species in the dry habitats of the Jura range (Géhin 1846; Fournel & Géhin 1847; Godron 1863) but it is now rare (F. Soldati *in litt*.). In Luxembourg, it appears to be restricted to the extreme south of the Guttland.

Discussion

With 32 species, Luxembourg appears to be the country with the lowest species richness among the surrounding regions, which include (present and extinct species combined): 61 in Rhineland, 60 in Belgium, 54 in the Netherlands, 45 in Saarland, and at least 48 in Lorraine (F. Soldati *in litt*.). Considering that Luxembourg generally exhibits a number of species comparable to—or even exceeding—that of Saarland and the Netherlands for some studied coleopteran families (Vitali 2018; Brisinger & Vitali 2023; Vitali & Fanti 2024), the present checklist should be regarded as still incomplete.

Actually, the Netherlands reports a higher number of Cerambycidae species than Luxembourg. This is due to the

presence of introduced species associated with cultivated non-native conifers, while the number of native species is comparatively lower (Vitali 2018). Similarly, the Netherlands records the same number of introduced Tenebrionidae species as Belgium (13), and more than Rhineland (12), likely due to trade through the port of Amsterdam and, more broadly, extensive international exchanges. In comparison, Luxembourg reports only six introduced darkling beetles, a number comparable to that of Saarland (5).

Nonetheless, even when considering only the autochthonous species, the total in Luxembourg remains much lower than that of Saarland. Therefore, the presence in Luxembourg of at least some species known from neighboring regions can be expected, such as *Alphitobius diaperinus* (Panzer, 1796), *Diaclina fagi* (Panzer, 1799), *Stenomax aeneus* (Scopoli, 1763), *Uloma culinaris* (Linnaeus, 1758), *Myrmechixenus subterraneus* Chevrolat, 1835, *Mycetochara humeralis* (Fabricius, 1787), *Neomida haemorrhoidalis* (Fabricius, 1787), *Corticeus bicoloroides* (Roubal, 1933) and *C. fasciatus* (Fabricius, 1790). Most are saproxylic species inhabiting humid forests and are more or less associated with fungi, a typical condition of Luxembourgish woodlands. Thus, there is no reason why they could not be found there.

Another point of concern involves species that are currently threatened or potentially extinct. *Gnatocerus cornutus*, *Omophlus lepturoides*, and *Blaps mortisaga* are known exclusively from specimens collected prior to World War I.

Gnatocerus cornutus is an originally American synanthropic species that could potentially be intercepted again in the future. The other two species disappeared from Belgium during the 20th century (Thomaes *et al.* 2025) and are also in sharp decline in neighboring regions of Germany (Lillig 1999), likely due to the oceanization of the climate, which has disadvantaged continental and thermophilic species (Whitehouse 2006). Both should be considered likely extinct.

Similar patterns of extinction or decline—particularly southward range regression—have been observed in many insect species in Luxembourg (Proess 2004; Braunert 2009; Brisinger & Vitali 2023; Vitali 2012, 2018; Vitali & Fanti 2024; Vitali *et al*. 2012, 2023). Although data for Luxembourg are mostly deficient, a comparable trend seems to be affecting certain darkling beetles. These phenomena could also impact *Mycetochara maura*, *Palorus depressus*, *Melanimon tibialis*, *Blaps mucronata*, *Opatrum sabulosum*, and *Crypticus quisquilius*, as already observed in Belgium. Protection measures are likely to be of limited effectiveness, as these regressions are primarily driven by climatic factors.

Furthermore, the ongoing reforestation of Luxembourg (Vitali *et al*. 2012, 2023) presents an ambiguous scenario: it may limit thermophilic and xerophilic species (*Melanimon tibialis*, *Opatrum sabulosum*, *Crypticus quisquilius*) while benefiting saproxylic species (*Mycetochara maura*, *Palorus depressus*).

The status of currently protected species (RGD 2009) also warrants re-evaluation. There is no clear evidence that *Pseudocistela ceramboides* is truly threatened. Although rare, the species occurs at the northern edge of its distribution range, and its typical habitat does not appear to be compromised. *Allecula rhenana* and *A. morio* are regarded as "primeval forest relict species" and are often found together in old hollow beech trees. The former was recorded in Rhineland as recently as 1956 (Köhler 2012), and more recently in Saarland along with *A. morio* (Eisinger *et al*. 2021), although both remain extremely rare. While neither species has yet been recorded in Luxembourg, suitable habitat persists in several forested areas, particularly within nature reserves. These conditions suggest that future targeted surveys may be worthwhile to assess their potential presence and conservation status at the national level.

Acknowledgements

I warmly thank the subject director, Martin Lillig, as well as the referees, Piero Leo and Fabien Soldati, eminent specialists in Darkling Beetles, for having meticulously reviewed my manuscript and for considerably improving it with many constructive corrections and observations.

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