CATALOGUS

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An annotated checklist of the Hydradephaga of Belgium (Coleoptera: Dytiscidae, Gyrinidae, Haliplidae, Hygrobiidae, Noteridae)

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Abstract

An updated checklist of the Belgian Hydradephaga is presented. In total 146 species of Hydradephaga are known from Belgium with certainty. This includes 112 Dytiscidae, 11 Gyrinidae, 20 Haliplidae, one Hygrobiidae and two Noteridae. *Graphoderus austriacus* (Sturm, 1834) is recorded from Belgium for the first time. New provincial records are given for 15 species. 17 species that were mentioned by early authors are omitted from the Belgian species list. 22 species have only been recorded prior to 2000 and are considered to be extinct in Belgium. All Belgian species are listed and for each species the bibliography and distribution is provided.

Keywords: water beetles, diving beetles, whirligigs, burrowing water beetles, crawling water beetles

Samenvatting

Een geüpdatete soortenlijst van de Belgische Hydradephaga wordt gepresenteerd. In totaal werden er de aanwezigheid van 146 soorten Hydradephaga in België bevestigd. Dit omvat 112 soorten waterroofkevers (Dytiscidae), 11 schrijvertjes (Gyrinidae), 20 watertreders (Haliplidae), één pieptor (Hygrobiidae) en twee diksprietwaterroofkevers (Noteridae). *Graphoderus austriacus* (Sturm, 1834) wordt voor de eerste keer gemeld voor België. Nieuwe provinciale records worden gegeven voor 15 soorten. 17 soorten die door eerdere auteurs werden gemeld zijn van de lijst geschrapt. 22 soorten werden na 2000 niet meer aangetroffen en zijn vermoedelijk uitgestorven in België. Alle Belgische soorten worden opgelijst en van alle soorten wordt de bibliografie en verspreiding gegeven.

Résumé

Une liste actualisée des Hydradephaga de Belgique est présentée. Au total, 146 espèces sont confirmées et comprend 112 Dytiscidae, 11 Gyrinidae, 20 Haliplidae, un Hygrobiidae et deux Noteridae. Graphoderus austriacus (Sturm, 1834) est signalé pour la première fois de Belgique. De nouvelles occurrences provinciales sont données pour 15 espèces. 17 espèces signalées anciennement ont été retirées de la liste. 22 espèces n'ont pas été retrouvées après 2000 et sont probablement éteintes en Belgique. Toutes les espèces belges sont listées, la bibliographie et la distribution sont fournies pour chaque espèce.

Introduction

The taxonomic composition of Hydradephaga in Europe is relatively well studied. Especially in Central, Northern and Western Europe the distribution range of most species is well known, both historically and recently. As a result numerous past erroneous records have been omitted from national and regional checklists and new discoveries are promptly published. Lobl & Smetana (2003) provided a first part of the Catalogue of Palearctic beetles, in which for all species the countries in which they have been recorded are listed. This first part included all Hydradephaga with the Dytiscidae compiled by Nilsson (2003a), Gyrinidae by Mazzoldi (2003), Haliplidae by van Vondel (2003), Hygrobiidae by Nilsson (2003b) and the Noteridae by Nilsson (2003c). The catalogue of Palearctic Dytiscidae has been updated annually since 2007 (Nilsson & Hajek, 2023) and is the most reliable reference for the presence or absence of a species in a certain region or country. A similar updated version exists for the Gyrinidae (Hájek & Fery 2022). Nilsson (2011) provided a checklist of the Noteridae of the world which also lists the countries for each species.

The first regional species list in Belgium, which included Hydradephaga, was published by Mathieu (1857, 1859), Preudhomme de Borre (1879-1891). Updated, national checklists of Hydradephaga families were published by Preudhomme de Borre (1886a), Van Dorsselaer (1919a-c, 1920, 1957a-c) and Mouchamps (1957) and most recent by Dopagne (1995). The early works, however, included several errors some of which were adopted by later authors and often resurface, while others were apparently never fully corrected in the first place. As a result, there still seems to be some ambiguity on the presence of several species, both historically and recently. More recently interest in the study of Hydradephaga, and especially Dytiscidae, has been renewed (Scheers, 2011, 2012, 2014a-e, 2017a, b, 2018; Scheers & Lambeets, 2014; Scheers *et al*., 2014; Scheers & Packet, 2015; Thys 2014a-c, 2017; Thys & Scheers (2013), Thys & Vanormelingen, 2021). However, only the records of a selected number of rare or interesting species were published and often the publications are limited to a specific region. Therefore the current status of most species in Belgium remains largely unpublished. Several upcoming projects, both in Belgium and abroad, reveal the need of a referable checklist of the presence and general status of the Belgian species. The aim of this manuscript is to provide an updated and annotated checklist of the Hydradephaga of Belgium with a focus on correcting past erroneous records and including recent additions. Additionally the current status (presence or absence) of all Belgian species for each of the regions and provinces, and a full bibliography is provided.

History of the study of Hydradephaga in Belgium

In early days, the study of Coleoptera in Belgium was quite popular, and Hydradephaga were no exception. The first account of Belgian beetles was published by Mathieu (1857). This work contained 122 species of Hydradephaga, including several doubtful records. This work was the foundation on which Preudhomme de Borre (1879, 1882a-d, 1883a-c, 1885a-b, 1886a-c, 1887, 1888a-e, 1889a-c, 1890a-g, 1891) based his publications on the beetle fauna of the, at that time, eight Belgian regions. In 1886 he published a list of the Hydradephaga of Belgium specifically (Preudhomme de Borre, 1886a). In the first decades of the 20th century, René Van Dorsselaer started working on Hydradephaga, and in 1919-1920 he published updated species list of the different families (Van Dorsselaer, 1919a-c; 1920). From 1919 onwards, he and some colleagues, published several articles with regional list and new records of rare Hydradephaga (Ball, 1919; 1920; Derenne, 1952a-b; Frennet, 1919; 1920; 1921; 1937; Goetghebuer, 1930; Van Dorsselaer, 1921; 1927; 1938; 1945; 1948). These resulted in a better knowledge of the Hydradephaga and updated checklists of the Dytiscidae (including Noteridae), Haliplidae,

Hygrobiidae (Van Dorsselaer, 1957) and Gyrinidae (Mouchamps, 1957). From 1977 to 1987, after a period in which little is published on Belgian aquatic Coleoptera, an intensive survey on aquatic beetles was carried out in the provinces West and East Flanders and the east of Limburg. Only part of the results of this survey was published (Keirens, 1984; Van Stalle & Bosmans, 1981, 1982; Bosmans & Van Stalle, 1983). Originally this was meant to continue and cover Flanders as a whole, but this survey was never finished. Records of Hydradephaga during this period are limited and scattered outside the surveyed regions. In 1994 Bosmans (1994) published a first red list of the Hydradephaga in Flanders and in 1995 (Dopagne, 1995) provides a new and updated catalogue of the Belgian Dytiscidae, Hygrobiidae and Noteridae. In the period from 1995 until 2012, despite being a period in which water beetles got more attention in the neighbouring countries of Great Britain, the Netherlands and Germany, inventories and publications on Belgian water beetles seem to be lacking. In the last decade the Belgian Hydradephaga, and especially the families Dytiscidae, Hygrobiidae and Noteridae, have been, yet again, the subject of rather intensive sampling, resulting in new species being discovered for Belgium (Scheers, 2014b; 2017a; 2018; Scheers *et al*., 2014) and new regional records (Scheers, 2014a,c,d; 2017a; Scheers & Packet, 2015).

Material and methods

In order to make this checklist, all records in literature, museum and most private collections where checked and put in a database. All available data up to, and including, 2022 are included in present manuscript. The species are arranged first on family level, followed by subfamily, tribe and then alphabetically. The nomenclature follows Nilsson & Hájek (2023) (Dytiscidae), Hájek & Fery (2022) (Gyrinidae), van Vondel (2005) (Haliplidae), Hawlitschek *et al*. (2012) (Hygrobiidae) and Nilsson (2011) (Noteridae). Notes on recent taxonomic changes (e.g. last 10 years) are also included.

For each species all publications which mention the presence of this species in Belgium are listed in chronological order. Only reliable published records are cited, doubtful records and records based on misidentifications are cited and commented under ‘notes’.

Additionally new records are provided for each species for provinces for which the species is newly recorded. These new records are also arranged chronologically.

Abbreviations used:

CGNF:	Collection Garth N. Foster, Scotland
CKS:	Collection Kevin Scheers, Belgium
CNT:	Collection Nobby Thys, Belgium
CRG:	Collection Raoul Gerend, Luxembourg
RBINS:	Collection of the Royal Belgian Institute of Natural Sciences, Belgium

In this checklist two periods are differentiated: occurrences before 2000 and from 2000 onwards. This distinction is made mainly based on the collecting effort and the number of records before and after this threshold. Only reliable records were used for the occurrence on regional and province level.

Provinces are depicted in Fig. 1A. The ecological regions used in the text are mapped in Fig. 1B and the elevation in Fig. 1C, since both can be of importance to interpret and understand the distribution of specific species.

Legend in distribution maps (Figs 2-147): white: not recorded; light orange: only recorded before 2000; dark orange: recorded since 2000 (Fig. 148).

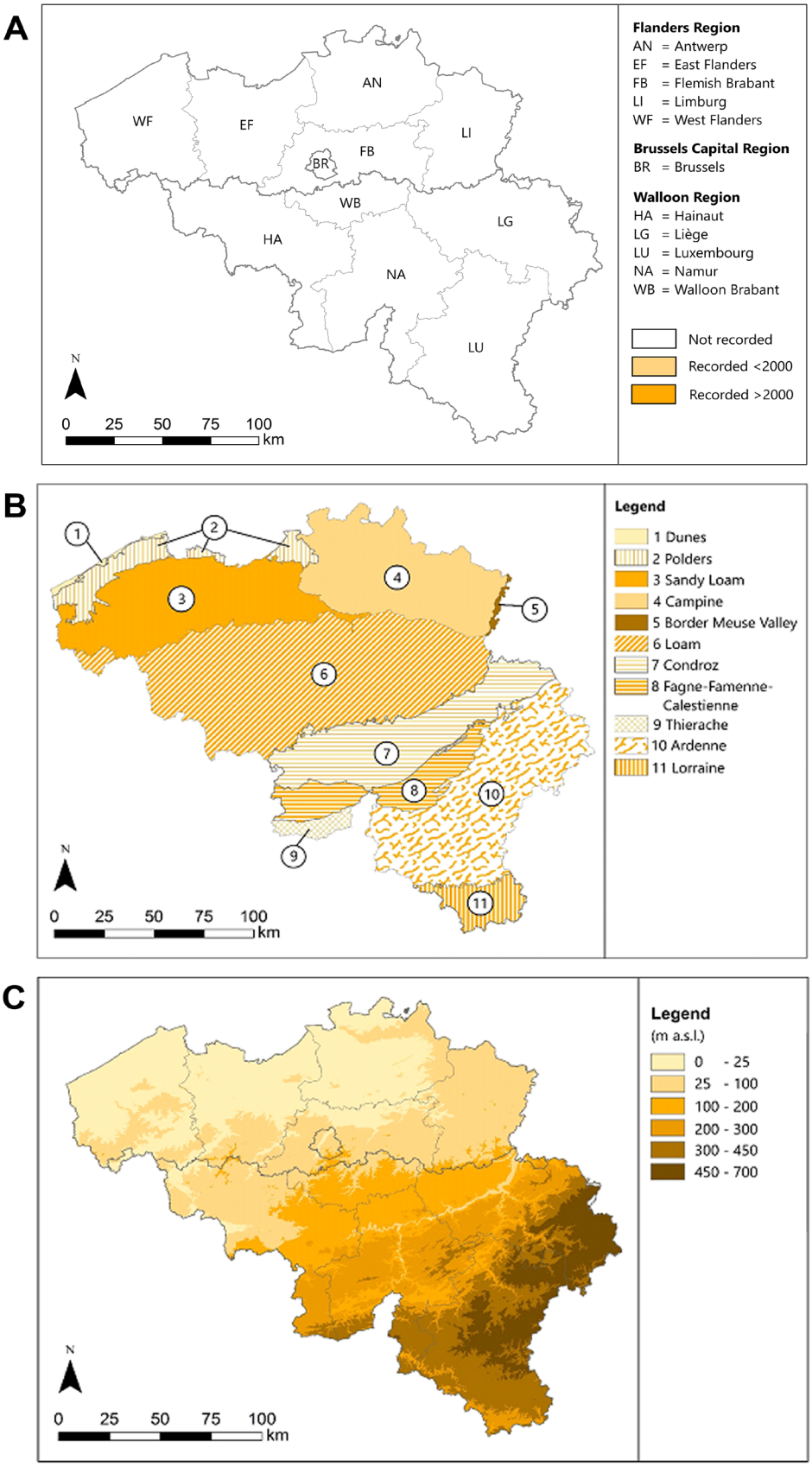

Fig. 1. **A**, Provinces and regions map of Belgium, and the general legend for the distribution maps (Figs 2-147). **B**, Ecoregions map of Belgium. **C**, Elevation map of Belgium.

Taxonomy

Family **Dytiscidae** Leach, 1815
Subfamily **Agabinae** Thomson, 1867
Tribe **Agabini**

Agabus* (*Gaurodytes*) *affinis (Paykull, 1798)

Fig. 2

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1886a), Van Dorsselaer (1919c, 1921), Janssens (1938), Van Dorsselaer (1948, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e, b), Thys (2014a, 2021).

New provincial records: West Flanders: Beernem, Bulskampveld, 51.111°N, 3.308°E, 08.XII.2013, 5 ind., leg & det. K. Scheers, CKS; Beernem, Bulskampveld, 51.109°N, 3.308°E, 05.V.2014, 1 ind., leg. & det. K. Scheers, CKS; Beernem, Bulskampveld, 51.108°N, 3.294°E, 06.XI.2017, 10 ind., leg. K. Scheers, CKS.

Distribution: largely confined to the Campine region and the raised bogs in the Ardennes. Very rare and localised outside these regions where it seems to persist in very small and isolated heathland remnants (Fig. 2).

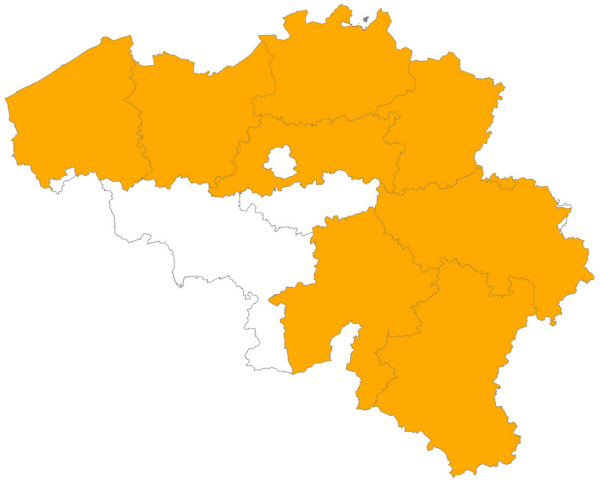

Fig. 2. Presence of *Agabus (Gaurodytes) affinis* (Paykull, 1798) per province in Belgium.

Note: These are the first records for West Flanders.

Agabus* (*Gaurodytes*) *biguttatus (Olivier, 1795)

Fig. 3

Publications: Mathieu (1859), Preudhomme de Borre (1883b,c, 1886a, 1888b, 1889a), Van Dorsselaer (1919c, 1948), Janssens (1957), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2012).

Distribution: known from scattered records all over the southern half of Belgium. Extremely rare in recent times with only a handful records since 2000. It's possible that the strong decline partly reflects undersampling of small streams and springs in the Walloon region (Fig. 3).

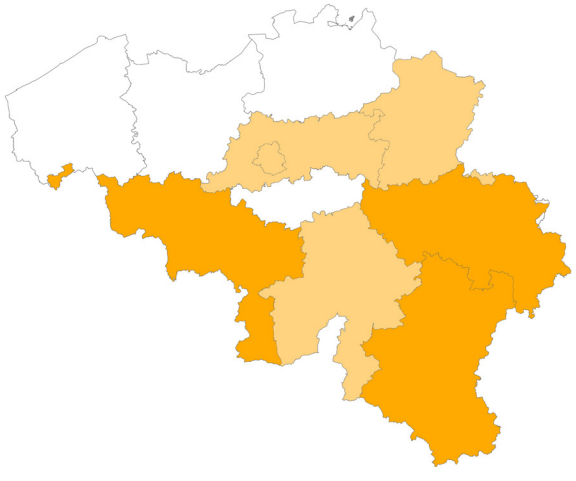

Fig. 3. Presence of *Agabus (Gaurodytes) biguttatus* (Olivier, 1795) per province in Belgium.

Note: Recent research indicate that *Agabus biguttatus s.l.* concerns a species complex of at least three cryptic species (Ribera *et al.,* 2001; Bergsten *et al.*, 2012a). It is probable that two of these cryptic species coexist in Belgium, similarly to the situation in Great Britain (Foster *et al.,* 2016).

Agabus* (*Gaurodytes*) *bipustulatus (Linnaeus, 1767)

Fig. 4

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a, b, 1886a, 1888b, 1890a,d), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Janssens (1957), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Litt (1988), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Bosmans (1998), Heylen et al (2003), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a), Scheers (2017a).

Distribution: This very eurytopic species is the most common species of Hydradephaga in Belgium (Fig. 4).

Fig. 4. Presence of *Agabus (Gaurodytes) bipustulatus* (Linnaeus, 1767) per province in Belgium.

Agabus* (*Gaurodytes*) *brunneus (Fabricius, 1798)

Fig. 5

Publications: Preudhome De Borre (1886a, 1890a); Fohher (1891); Van Dorsselaer (1919c, 1957c); Bosmans (1994); Dopagne (1995); Scheers (2012).

Distribution: Formerly known from the stream Stiemerbeek near Genk in Flanders and a few sites in the Luxembourg and Namur provinces in the Walloon region. *Agabus brunneus* has not been recorded in Belgium since a long time and nowadays this species is considered as extinct (Fig. 5).

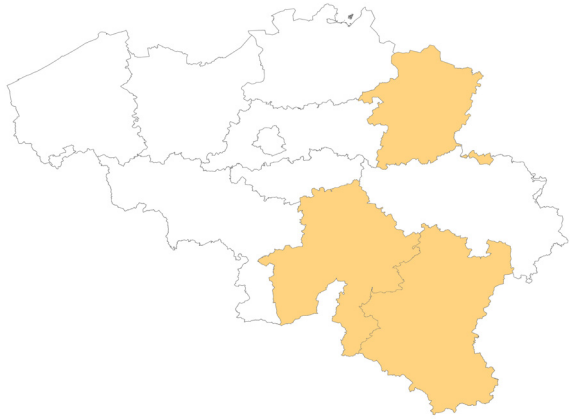

Fig. 5. Presence of *Agabus (Gaurodytes) brunneus* (Fabricius, 1798) per province in Belgium.

Agabus* (*Acatodes*) *congener (Thunberg, 1794)

Fig. 6

Publications: Preudhomme de Borre (1883c, 1886a), Van Dorsselaer (1919c, 1921), Janssens (1938), Van Dorsselaer (1948), Janssens (1957), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e).

Distribution: Confined to the Campine region and the raised bogs in the Walloon region (Liège, Luxembourg). Before 1950 also known from the Brussels Capital Region, Flemish Brabant and Hainaut (Fig. 6).

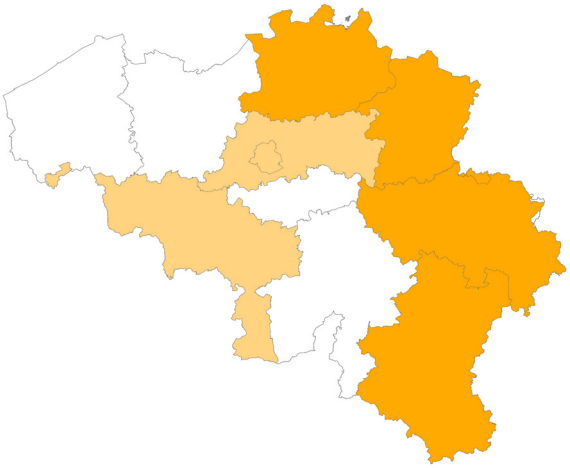

Fig. 6. Presence of *Agabus (Acatodes) congener* (Thunberg, 1794) per province in Belgium.

Agabus* (*Gaurodytes*) *conspersus (Marsham, 1802)

Fig. 7

Publications: Mathieu (1857), Preudhomme de Borre (1886a, 1890c), Van Dorsselaer (1919c, 1927, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Confined to more or less oligohaline ponds, ditches and marshes in the polders near the coast and the Scheldt estuary. There are no recent records from the southwestern part of the Belgian coast (southwest of Ostend) (Fig. 7).

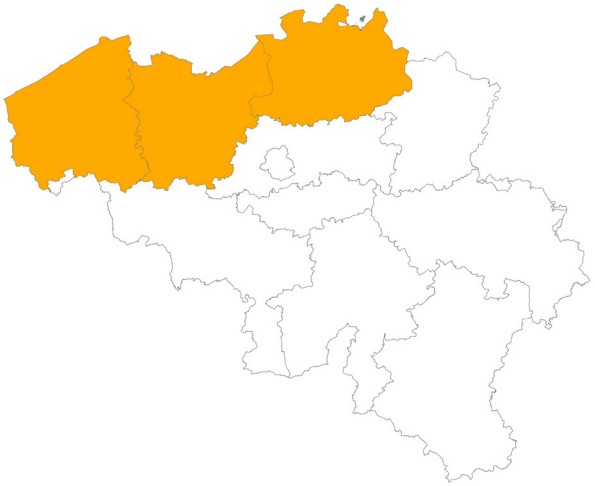

Fig. 7. Presence of *Agabus (Gaurodytes) conspersus* (Marsham, 1802) per province in Belgium.

Agabus* (*Gaurodytes*) *didymus (Olivier, 1795)

Fig. 8

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a, b, 1886a, 1888b, 1890a), Ball (1919), Van Dorsselaer (1919c, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e).

Distribution: Known from all provinces but mainly distributed in the low laying northern half of Belgium. In the southeast recent records are lacking (Fig. 8).

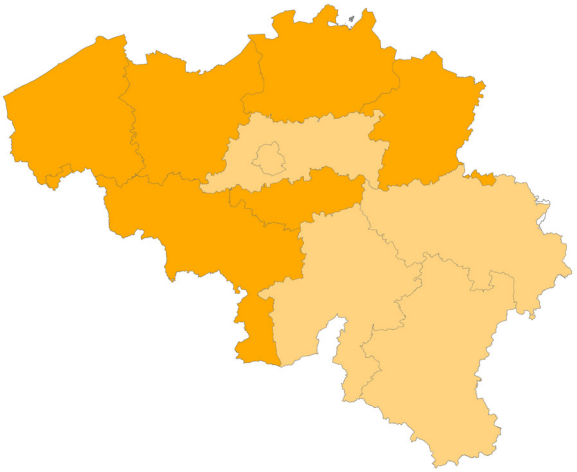

Fig. 8. Presence of *Agabus (Gaurodytes) didymus* (Olivier, 1795) per province in Belgium.

Agabus* (*Gaurodytes*) *guttatus guttatus (Paykull, 1798)

Fig. 9

Publications: Mathieu (1857), Preudhomme de Borre (1883b,c, 1885a, 1886a, 1888b), Ball (1919), Van Dorsselaer (1919c), Janssens (1957), Van Dorsselaer (1957c), Barvaux (1987), Bosmans (1994), Dopagne (1995), Litt (2000), Scheers (2012, 2014a), Thys (2014a).

Distribution: Common throughout the Walloon region, especially in the east and south. In Flanders rare and confined to the south. Also present in the Forêt des Soignes in the Brussels Capital Region (Fig. 9).

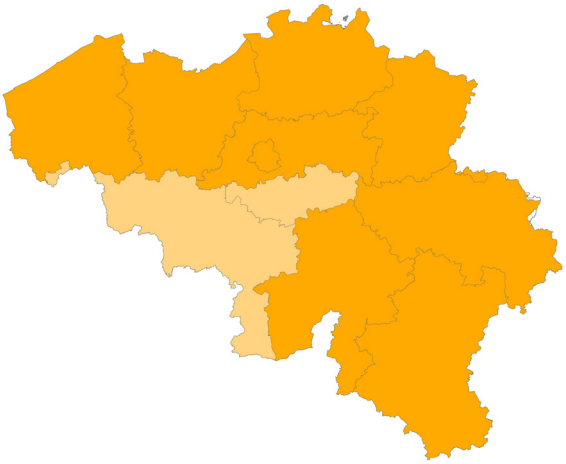

Fig. 9. Presence of *Agabus (Gaurodytes) guttatus guttatus* (Paykull, 1798) per province in Belgium.

Agabus* (*Agabus*) *labiatus (Brahm, 1790)

Fig. 10

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885b, 1886a, 1890a), Van Dorsselaer (1919c, 1921, 1927, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Restricted to ponds etc. in heathlands in the Campine region. There are also historical records of this species from the Brussels Capital Region and from the provinces Hainaut and Liège in the Walloon region (Fig. 10).

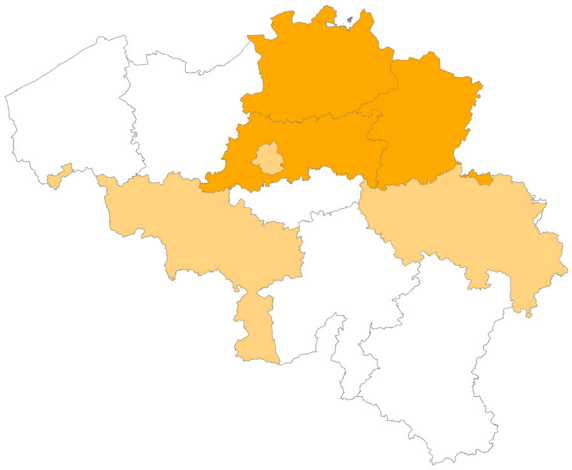

Fig. 10. Presence of *Agabus (Agabus) labiatus* (Brahm, 1790) per province in Belgium.

Agabus* (*Gaurodytes*) *melanarius Aubé, 1836

Fig. 11

Publications: Van Dorsselaer (1919c, 1938), Janssens (1957), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Dethier *et al.* (2008), Scheers (2012), Thys (2014a).

Distribution: Common in the Walloon region, rare in the loam region in the south of Flanders (East Flanders, Flemish Brabant and Limburg) and in the Forêt de Soignes in the Brussels Capital Region. Absent from the lowlands in the north of the country (Fig. 11).

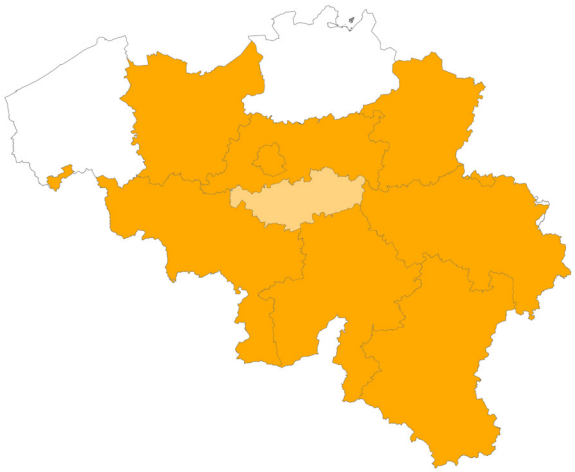

Fig. 11. Presence of *Agabus (Gaurodytes) melanarius* Aubé, 1836 per province in Belgium.

Agabus* (*Gaurodytes*) *nebulosus (Forster, 1771)

Fig. 12

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1890a,c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Heylen *et al.* (2003), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: A common species, especially in the Dune and Polder districts (Fig. 12).

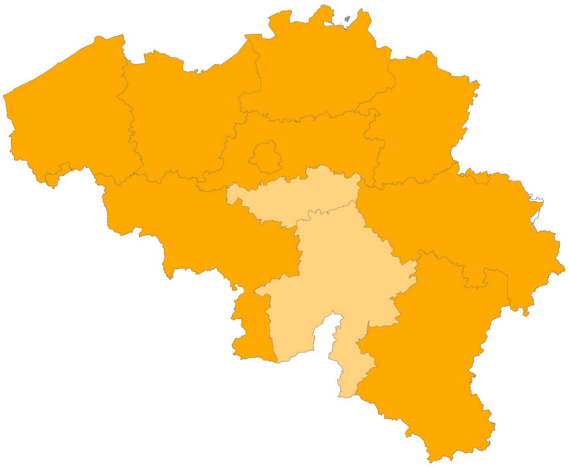

Fig. 12. Presence of *Agabus (Gaurodytes) nebulosus* (Forster, 1771) per province in Belgium.

Agabus* (*Gaurodytes*) *paludosus (Fabricius, 1801)

Fig. 13

Publications: Mathieu (1857); Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1888b, 1890a, 1890e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c, 1957c), Bosmans (1994), Dopagne (1995), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Rather common throughout Belgium (Fig. 13).

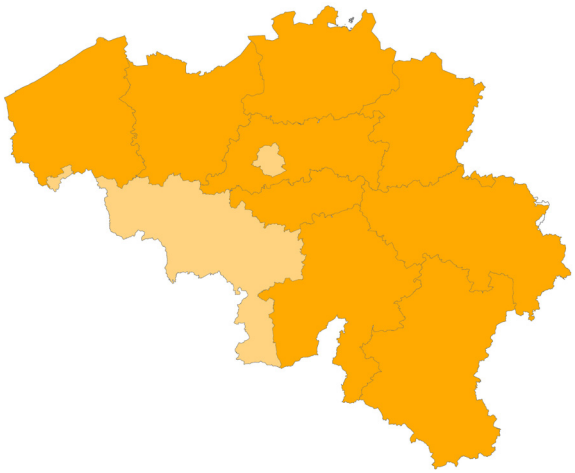

Fig. 13. Presence of *Agabus (Gaurodytes) paludosus* (Fabricius, 1801) per province in Belgium.

Agabus* (*Gaurodytes*) *striolatus (Gyllenhal, 1808)
Fig. 14

Publications: Preudhomme de Borre (1886a), Ball (1919), Van Dorsselaer (1919c, 1921), Goetghebuer (1930), Van Dorsselaer (1948, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a, 2021).

Distribution: A very rare species which is only known from a handful of localities in Flanders (East Flanders, Antwerp, Flemish Brabant and Limburg) which is apparently absent from the Brussels Capital Region and the Walloon region (Fig. 14).

Fig. 14. Presence of *Agabus (Gaurodytes) striolatus* (Gyllenhal, 1808) per province in Belgium.

Agabus* (*Acatodes*) *sturmii (Gyllenhal, 1808)
Fig. 15

Publications: Mathieu (1857), Preudhomme de Borre (1883b,c, 1885a,b, 1886a, 1888b, 1890a), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: A rather common species throughout Belgium, lacking recent records from the Brussels Capital Region (Fig. 15).

Fig. 15. Presence of *Agabus (Acatodes) sturmii* (Gyllenhal, 1808) per province in Belgium.

Agabus* (*Agabus*) *uliginosus (Linnaeus, 1760)
Fig. 16

Publications: Mathieu (1857), Preudhomme de Borre (1886a, 1890a,e), Ball (1919), Van Dorsselaer (1919c), Guilleaume & Vreurick (1926), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014b,e), Thys (2014a).

Distribution: Mainly restricted to the regions with sandy soils (Fig. 16).

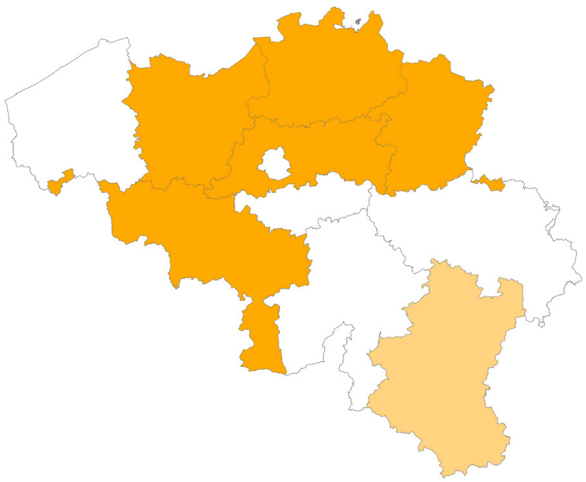

Fig. 16. Presence of *Agabus (Agabus) uliginosus* (Linnaeus, 1760) per province in Belgium.

Note: The females (and probably associated males) are dimorphic. In Belgium the normal female form is the shiny type, but at least one record is known from the dull form (var. *dispar* Bold, 1849).

Agabus* (*Agabus*) *undulatus (Schrank, 1776)
Fig. 17

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1890c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e), Thys (2014a).

Distribution: Localised but not uncommon in the central part of Flanders, rather rare in West Flanders, and very rare in Hainaut. There are also historic records from Limburg and Walloon Brabant (Fig. 17).

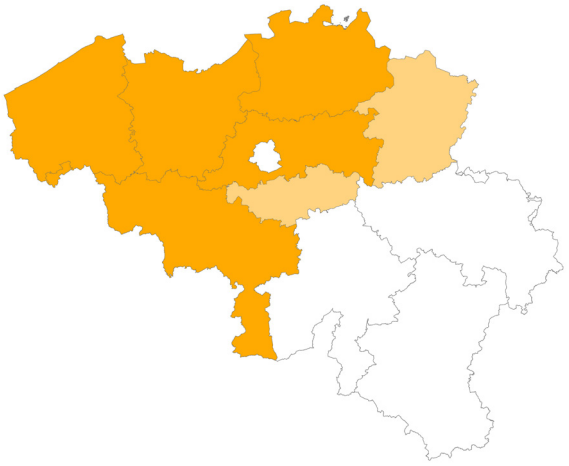

Fig. 17. Presence of *Agabus (Agabus) undulatus* (Schrank, 1776) per province in Belgium.

Agabus* (*Gaurodytes*) *unguicularis (Thomson, 1867)

Fig. 18

Publications: Van Dorsselaer (1948, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e), Thys (2014a).

New provincial records: Luxembourg: Vance, pond with sedges and detritus, 1993, 1 ind., leg. & det. R. Gerend, CRG.

Distribution: A rare species with its main distribution in the Campine region (Fig. 18).
Note: First record for the province Luxembourg and the Walloon region as a whole.

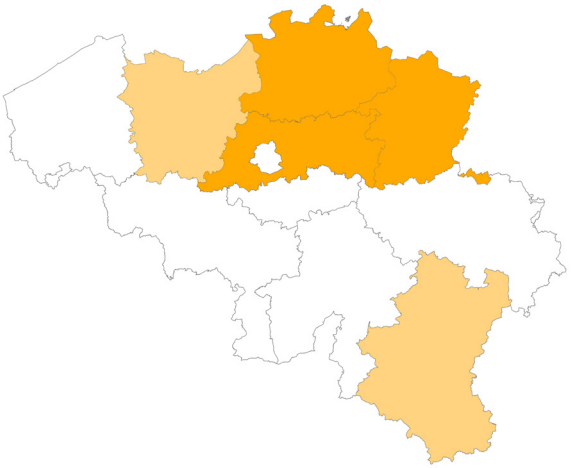

Fig. 18. Presence of *Agabus (Gaurodytes) unguicularis* (Thomson, 1867) per province in Belgium.

Ilybius aenescens Thomson, 1870

Fig. 19

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1885b, 1886a, 1890a), Ball (1919), Van Dorsselaer (1919c, 1945, 1948, 1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Somewhat restricted to the Campine region where this species is a typical inhabitant of oligotrophic ponds and bogs in heathland. Furthermore *I. aenescens* also occurs locally in pools in raised bogs in the Ardennes. Historical records are known from the Brussels Capital Region and Walloon Brabant where suitable habitat, along with this species has disappeared (Fig. 19).

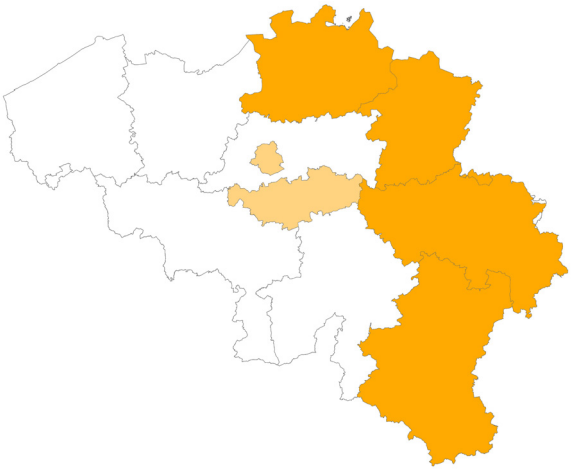

Fig. 19. Presence of *Ilybius aenescens* Thomson, 1870 per province in Belgium.

Ilybius ater (De Geer, 1774)
Fig. 20

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885a,b, 1886a, 1888b, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Litt (1988), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a,b).

Distribution: Common throughout Belgium. There is no recent record from the Brussels Capital Region (Fig. 20).

Fig. 20. Presence of *Ilybius ater* (De Geer, 1774) per province in Belgium.

Ilybius chalconatus (Panzer, 1796)
Fig. 21

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1888b, 1890a, c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Barvaux (1987), Litt (1988), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a,b), Scheers (2017a).

Distribution: Common throughout Belgium. Recent records are lacking from Walloon Brabant and the Brussels Capital Region (Fig. 21).

Fig. 21. Presence of *Ilybius chalconatus* (Panzer, 1796) per province in Belgium.

Ilybius crassus Thomson 1856
Fig. 22

Publications: Burmeister (1981); Dopagne (1995).

New provincial records: Luxembourg: Tailles, Chanfa, 50.231°N, 5.752°E, 29.VII.2012, 3 ind., leg. & det. G.N. Foster, CGNF.

Distribution: Very rare and localised. Restricted to the raised bogs of the Hautes Fagnes (Liège) and Plateau des Tailles (Luxembourg). There are only a handful of records, and the distribution within these two known areas is very poorly known (Fig. 22).

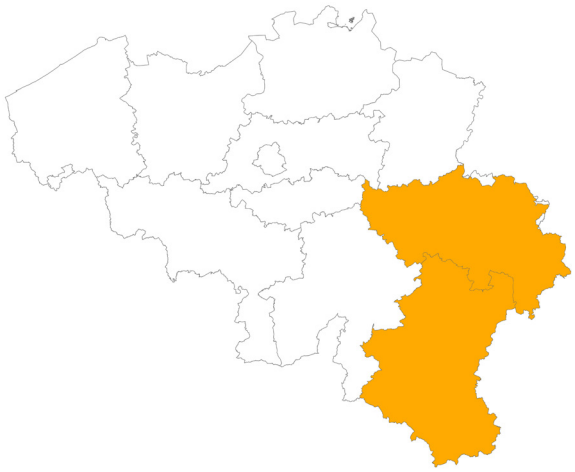

Fig. 22. Presence of *Ilybius crassus* Thomson, 1856 per province in Belgium.

Note: Known in central Europe, from isolated records in mountain peatbogs (Dettner, 1977), the presence of *I. crassus* in Germany near the Belgian border was already (Scholz, 1923) and the presence of this species in the Belgian Hautes Fagnes was expected (Collart, 1942). It was however not until 1981 that this species was first recorded in Belgium (Burmeister, 1981). Within the Hautes Fagnes it is found in several sites (Scheers unpublished). The new record is the first record of the province Luxembourg.

Ilybius fenestratus (Fabricius, 1781)
Fig. 23

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1888b, 1890a,c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: *Ilybius fenestratus* is not common in Belgium. There are scattered records throughout the country, but the majority are from the Campine region (Antwerp and Limburg). Recent records are known from all provinces except Walloon Brabant (Fig. 23).

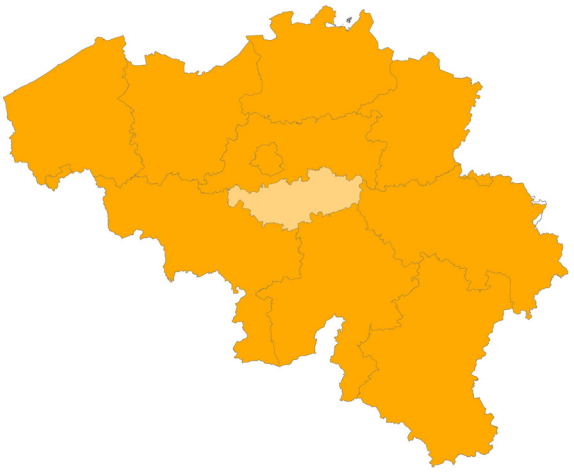

Fig. 23. Presence of *Ilybius fenestratus* (Fabricius, 1781) per province in Belgium.

Ilybius fuliginosus fuliginosus (Fabricius, 1792)
Fig. 24

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1888b, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Barvaux (1987), Litt (1988), Bosmans (1994), Dopagne (1995), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Very common throughout Belgium (Fig. 24).

Fig. 24. Presence of *Ilybius fuliginosus fuliginosus* (Fabricius, 1792) per province in Belgium.

Ilybius guttiger (Gyllenhal, 1808)
Fig. 25

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1885a, 1886a, 1890e), Van Dorsselaer (1919c, 1948, 1957c), Bosmans & Ryserhove (1977), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: This species has a limited distribution in Belgium which is more or less restricted to the Campine region. There are historical records known from Hainaut and Liège (Fig. 25).

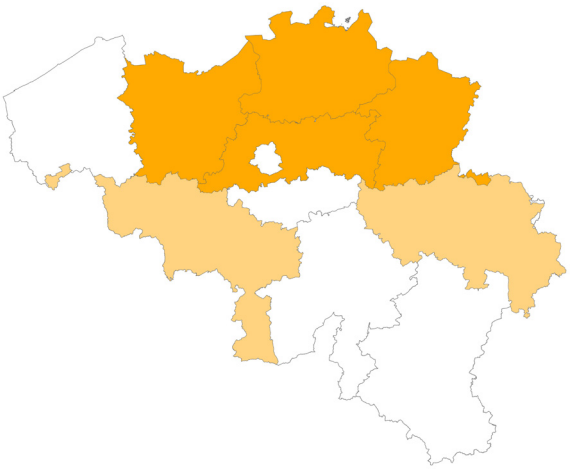

Fig. 25. Presence of *Ilybius guttiger* (Gyllenhal, 1808) per province in Belgium.

Ilybius montanus (Stephens, 1828)
Fig. 26

Publications: Van Dorsselaer (1948, 1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Not uncommon in heathland habitats in the Campine region. Also present in small isolated heathland remnants in East and West Flanders. There are also a few isolated records from Liège and Namur and historical records from the Brussels Capital Region (Fig. 26).

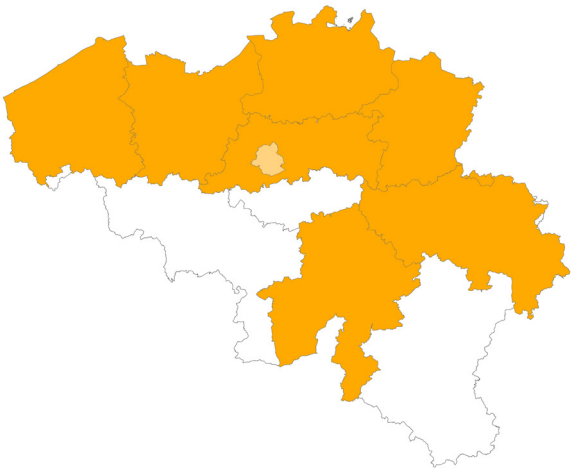

Fig. 26. Presence of *Ilybius montanus* (Stephens, 1828) per province in Belgium.

Ilybius neglectus (Erichson, 1837)
Fig. 27

Publications: Scheers (2018).

New provincial records: Flemish Brabant: Boortmeerbeek, 50.995°N, 4.575°E, 04.VI.2021, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: At present only known from two records in Belgium (Flemish Brabant and Hainaut) (Fig. 27).

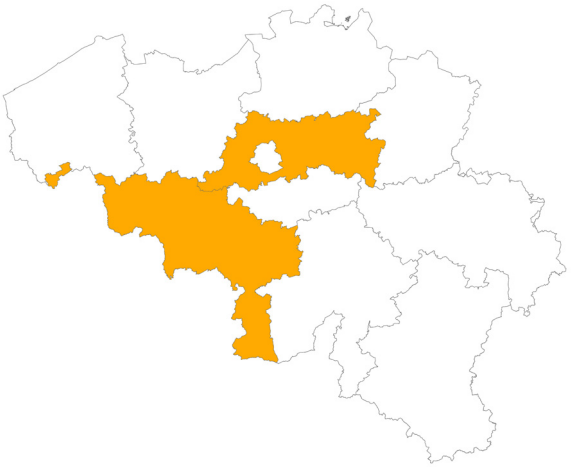

Fig. 27. Presence of *Ilybius neglectus* (Erichson, 1837) per province in Belgium.

Note: Preudhomme De Borre (1890d), mentioned a specimen taken in the forest Bois de la Douve at Ploegsteert (Hainaut) by M. Lethierry. Based on the description given by Preudhomme De Borre (1890d) the identification is possibly correct. The specimen mentioned by Preudhomme De Borre (1890d) is however not present in any of the known collections and the identification could therefore not be validated. Therefore we refrained of including this record in Fig. 27 and table 1. The additional specimen from Kalmthout mentioned by Van Dorsselaer (1948, 1957), as *Agabus neglectus*, concerned a misidentified male *Ilybius chalconatus*. This misidentification was discussed by Scheers (2018). Newly recorded for Flemish Brabant and for Flanders as a whole.

Ilybius quadriguttatus (Lacordaire, 1835)
Fig. 28

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a, b).

Distribution: Common throughout the north of the country, but less common towards the south (Fig. 28).

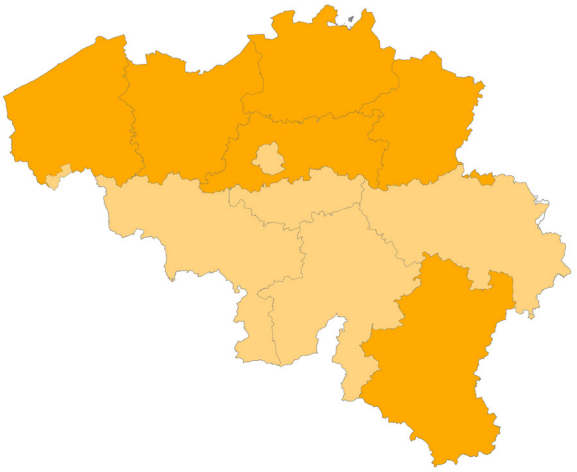

Fig. 28. Presence of *Ilybius quadriguttatus* (Lacordaire, 1835) per province in Belgium.

Ilybius subaeneus Erichson, 1837
Fig. 29

Publications: De Bormans (1883), Preudhomme de Borre (1883a, 1886a, 1890a,e), Van Dorsselaer (1919c, 1948, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e, 2017b).

Distribution: *Ilybius subaeneus* is a rare species in Belgium with most records, including recent ones, scattered across Flanders. In the Walloon region there are historic records known from Liège and Namur (Fig. 29). Nearly all recent records are from sandy soils, both alkaline and acidic.

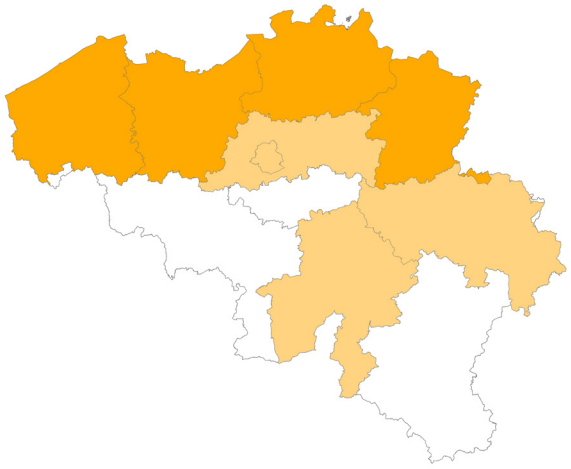

Fig. 29. Presence of *Ilybius subaeneus* Erichson, 1837 per province in Belgium.

Platambus maculatus (Linnaeus, 1758)
Fig. 30

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a, 1886a, 1888b), Rousseau (1889), Preudhomme de Borre (1890a,c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Sarlet (1945), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Common throughout the Walloon region south of the Sambre and Meuse rivers, becoming less common towards the northeast. In West Flanders there are only a few historic records and recent records are absent. Also in the Brussels Capital Region there are no recent records (Fig. 30).

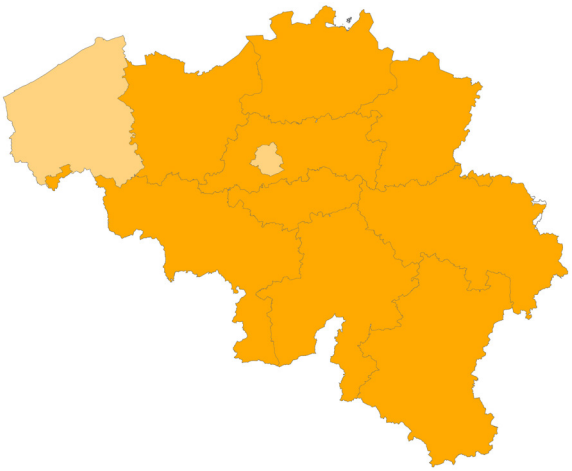

Fig. 30. Presence of *Platambus maculatus* (Linnaeus, 1758) per province in Belgium.

Subfamily **Colymbetinae** Erichson, 1837

Colymbetes fuscus (Linnaeus, 1758)
Fig. 31

Publications: Mathieu (1857), Donckier (1879), Preudhomme de Borre (1883b, 1885a,b, 1886a, 1887, 1888b,c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a), Scheers & Packet (2015).

Distribution: Very common throughout Belgium (Fig. 31).

Fig. 31. Presence of *Colymbetes fuscus* (Linnaeus, 1758) per province in Belgium.

Nartus grapii (Gyllenhal, 1808)
Fig. 32

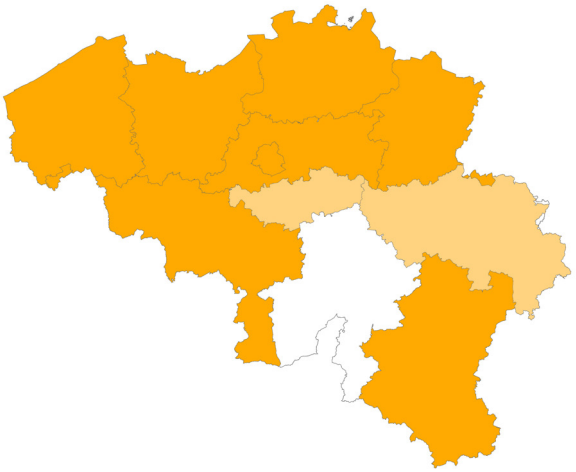

Fig. 32. Presence of *Nartus grapii* (Gyllenhal, 1808) per province in Belgium.

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1887, 1890a,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans (1994), Dopagne (1995), Verbelen (2007), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a,b, 2021).

New provincial records: Luxembourg: Etalle, Etang de l'Illé, 49.671°N, 5.587°E, 09.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; Etalle, Les Abattis, 49.688°N, 5.556°E, 09.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; Etalle, Etang de l'Illé, 49.667°N, 5.583°E, 10.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; Durbuy, Briqueterie de Rome, 50.337°N, 5.453°E, 07.VI.2014, 1 ind., leg. & det. K. Scheers, CKS; Durbuy, Briqueterie de Rome, 50.335°N, 5.453°E, 07.VI.2014, 1 ind., leg. & det. K. Scheers, CKS; Arlon, Sablière de Sampont, 49.675°N, 5.699°E, 1 ind., leg. & det. N. Thys, CNT; West Flanders: Oudenburg, 51.202°N, 2.979°E, 27.IV.2013, 3 ind., leg. & det. K. Scheers, CKS; Oostkamp, Blauwkasteelhoek, 19.VII.2013, 1 ind., leg. & det. N. Thys, CNT; Damme, 51.298°N, 3.359°E, 30.III.2014, 10 ind., leg. & det. K. Scheers, CKS; Zedelgem, Vloethemveld, 51.150°N, 3.102°E, 26.V.2014, 1 ind., leg. & det. K. Scheers, CKS; Kortrijk, Kennedybos, 50.804°N, 3.273°E, 31.V.2014, 2 ind., leg. & det. K. Scheers, CKS; Zwevegem, Evolispark, 50.823°N, 3.314°E, 31.V.2014, 2 ind., leg. & det. K. Scheers, CKS; Dentergem, Baliekouter, 50.938°N, 3.386°E, 30.VIII.2014, 1 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.156°N, 3.269°E, 04.VII.2017, 1 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.155°N, 3.269°E, 07.VIII.2017, 7 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.155°N, 3.269°E, 09.VIII.2017, 5 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.155°N, 3.269°E, 09.VIII.2017, 2 ind., leg. & det. K. Scheers, CKS; Beernem, Gevaerts-Noord, 51.142°N, 3.309°E, 26.IX.2017, 1 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.155°N, 3.269°E, 16.IV.2018, 1 ind., leg. & det. K. Scheers, CKS; Oostkamp, Leiemeersen, 51.155°N, 3.269°E, 15.V.2018, 3 ind., leg. & det. K. Scheers, CKS; Zillebeke, De Vierlingen, 50.818°N, 2.935°E, 18.V.2018, 2 ind., leg. & det. K. Scheers, CKS; Oostduinkerke, Ter Yde, 51.131°N, 2.690°E, 20.VIII.2018, 1 ind., leg. & det. K. Scheers, CKS; Zeebrugge, De Fonteintjes, 51.323°N, 3.160°E, 22.VII.2020.

Distribution: Rather uncommon and localized, but there is evidence that this species is increasing (Fig. 32).

Note: First records for the provinces Luxembourg and West Flanders.

Rhantus bistriatus (Bergsträsser, 1778)
Fig. 33

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1886a, 1887, 1890e), Van Dorsselaer (1919c, 1927, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e, 2017b).

Distribution: Extinct in Belgium. Historic records known from the central and eastern regions (Fig. 33). Last recorded near Kalmthout (Antwerp) in 1921.

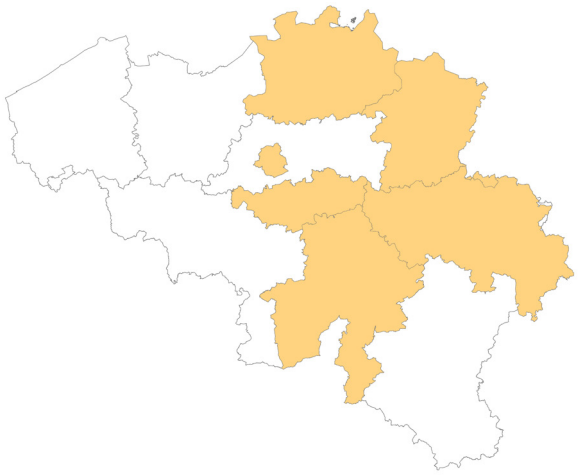

Fig. 33. Presence of *Rhantus bistriatus* (Bergsträsser, 1778) per province in Belgium.

Rhantus exsoletus (Forster, 1771)
Fig. 34

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1885a,b, 1886a, 1887, 1888b, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Not rare, but largely restricted to the Campine region (Fig. 34).

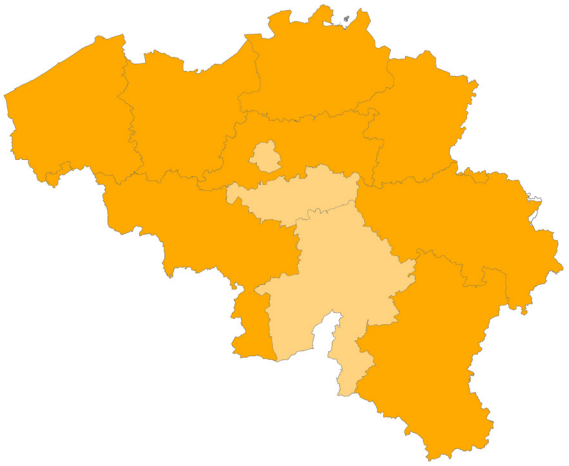

Fig. 34. Presence of *Rhantus exsoletus* (Forster, 1771) per province in Belgium.

Rhantus frontalis (Marsham, 1902)
Fig. 35

Publications: Mathieu (1857), Preudhomme de Borre (1885a, 1886a, 1887, 1890a,c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Distributed in the North of Belgium at lower elevation. Most common near the coast (Fig. 35).

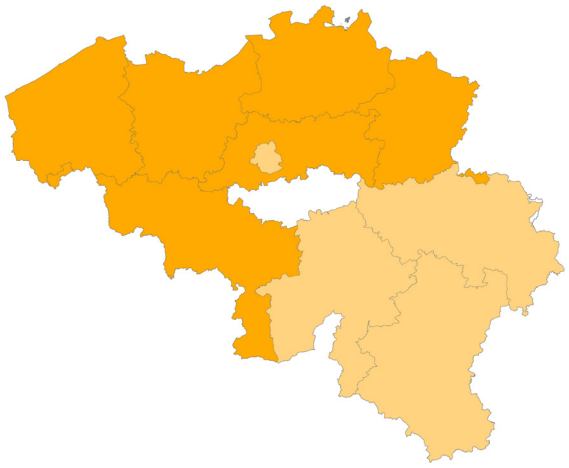

Fig. 35. Presence of *Rhantus frontalis* (Marsham, 1902) per province in Belgium.

Rhantus latitans Sharp, 1882
Fig. 36

Publications: Van Dorsselaer (1919c, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2012).

Distribution: There are only a few known Belgian records. It has been recorded from the Brussels Capital Region, Limburg and Luxembourg (Fig. 36).

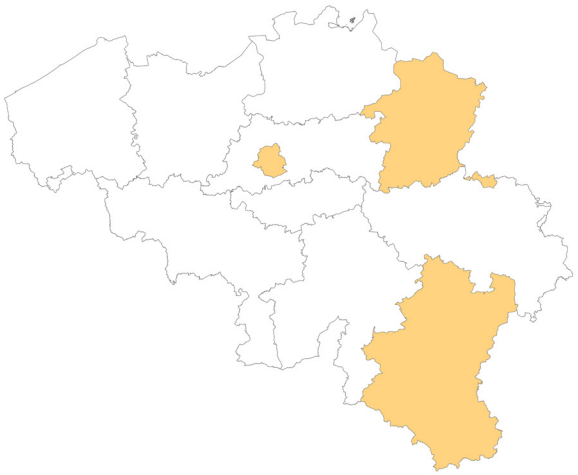

Fig. 36. Presence of *Rhantus latitans* Sharp, 1882 per province in Belgium.

Rhantus suturalis (MacLeay, 1825)
Fig. 37

Publications: Mathieu (1857), Preudhomme de Borre (1883b, 1885a,b, 1886a, 1887, 1888b,d, 1889c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans & Ryserhove (1977), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: A very common species everywhere (Fig. 37).

Fig. 37. Presence of *Rhantus suturalis* (MacLeay, 1825) per province in Belgium.

Rhantus suturellus (Harris, 1828)
Fig. 38

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1885a, b, 1887, 1890a), Ball (1919), Van Dorsselaer (1919c, 1945, 1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Nowadays restricted to the Campine region. Historic records are also known from Hainaut, Walloon Brabant and Liège where the habitat has now disappeared (Fig. 38).

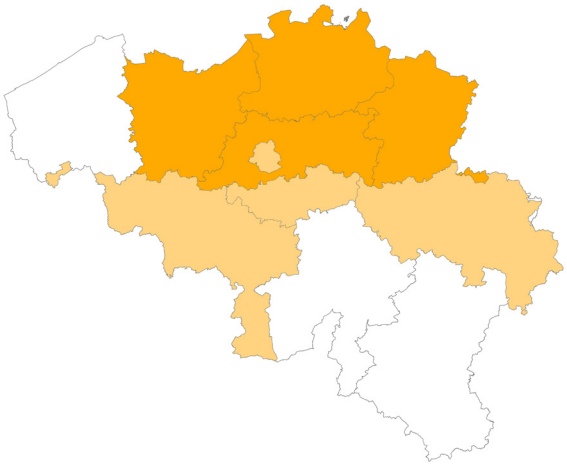

Fig. 38. Presence of *Rhantus suturellus* (Harris, 1828) per province in Belgium.

Subfamily **Copelatinae** Van den Branden, 1885

Liopterus haemorrhoidalis (Fabricius, 1787)
Fig. 39

Publications: Mathieu (1857), Preudhomme De Borre (1883a, 1885a,b, 1886a, 1890a,c,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014b,e), Thys (2014a, 2021).

New provincial records: Luxembourg: Etalle, 49.666°N, 5.595°E, 10.VIII.2010, 10 ind., leg. & det. K. Scheers, CKS; Durbuy, Briqueterie de Rome, 50.335°N, 5.453°E, 07.VI.2014, 4 ind., leg. & det. K. Scheers, CKS; Durbuy, Briqueterie de Rome, 50.337°N, 5.454°E, 07.VI.2014, 10 ind., leg. & det. K. Scheers, CKS; Durbuy, Briqueterie de Rome, 50.337°N, 5.453°E, 07.VI.2014, 8 ind., leg. & det. K. Scheers, CKS; Florenville, 49.649°N, 5.336°E, 02.IV.2021, 1 ind., leg. & det. N. Thys, CNT. Namur: Warisoulx, 50.545°N, 4.865°E, 24.II.2021, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: A common species at low and medium elevation (Fig. 39).

Fig. 39. Presence of *Liopterus haemorrhoidalis* (Fabricius, 1787) per province in Belgium.

Note: Newly recorded for the provinces Luxembourg and Namur.

Subfamily **Laccophilinae** Gistel, 1856

Laccophilus hyalinus (De Geer, 1774)
Fig. 40

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,b,c, 1885a,b, 1886a, 1888e), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Heylen *et al.* (2003), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Rather common throughout Belgium (Fig. 40). The main habitat of this species, larger permanent ponds and streams, is rather poorly sampled in recent decades.

Fig. 40. Presence of *Laccophilus hyalinus* (De Geer, 1774) per province in Belgium.

Laccophilus minutus (Linnaeus, 1758)
Fig. 41

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,b,c, 1885a,b, 1886a), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Very common throughout Belgium (Fig. 41).

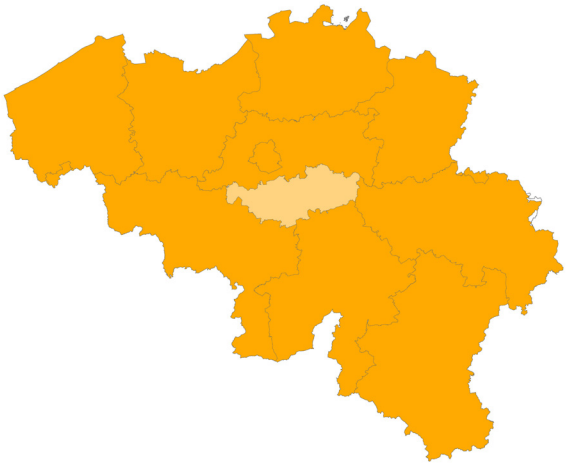

Fig. 41. Presence of *Laccophilus minutus* (Linnaeus, 1758) per province in Belgium.

Laccophilus poecilus Klug, 1834
Fig. 42

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a, 1890a), Van Dorsselaer (1919c, 1945, 1957c), Bosmans & Van Stalle (1983), Litt (1988), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

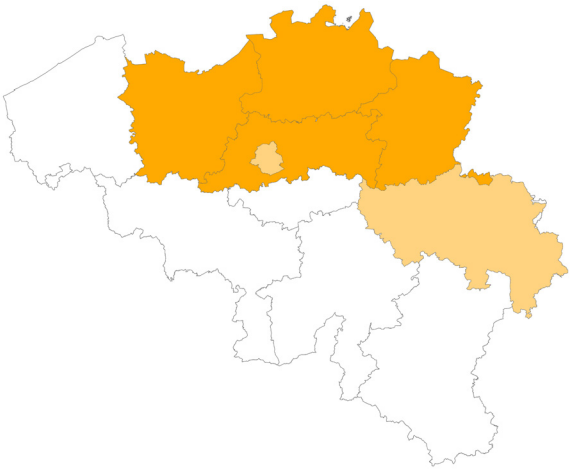

Fig. 42. Presence of *Laccophilus poecilus* Klug, 1834 per province in Belgium.

New provincial records: East Flanders: Verrebroek, Haazop, 51.246°N, 4.235°E, 01.V.2013, 10 ind., leg. & det. K. Scheers, CKS; Verrebroek, Haazop, 51.246°N, 4.235°E, 19.V.2013, 9 ind., leg. & det. K. Scheers, CKS; Steendorp, Roomkouter, 51.125°N, 4.259°E, 19.IV.2020, 1 ind., leg. & det. K. Scheers, CKS; Sint-Jan-In-Eremo, Draaiput, 51.257°N, 3.557°E, 28.IV.2020, 1 ind., leg. & det. K. Scheers, CKS; Verrebroek, Zuidelijke Bufferzone, 51.248°N, 4.242°E, 08.V.2020, 1 ind., leg. & det. K. Scheers, CKS; Verrebroek, Haazop, 51.245°N, 4.237°E, 13.VI.2020, 1 ind., leg. & det. K. Scheers, CKS; Verrebroek, Zuidelijke Bufferzone, 51.246°N, 4.211°E, 13.VI.2020, 1 ind., leg. & det. K. Scheers, CKS; Verrebroek, Haazop, 51.245°N, 4.239°E, 04.II.2021, 3 ind., leg. & det. K. Scheers, CKS; Verrebroek, Haazop, 51.245°N, 4.239°E, 07.IV.2021, 1 ind., leg. & det. K. Scheers, CKS; Kieldrecht, Drijdyck, 51.266°N, 4.196°E, 02.VII.2021, 1 ind., leg. & det. K. Scheers, CKS; Beveren, Havengebied zuid, 51.265°N, 4.214°E, 09.VII.2021, 3 ind., leg. & det. K. Scheers,

CKS; Verrebroek, Verrebroekse plassen, 51.260°N, 4.214°E, 09.VII.2021, 6 ind., leg. & det. K. Scheers, CKS; Verrebroek, Verrebroekse blikken, 51.255°N, 4.209°E, 09.VII.2021, 2 ind., leg. & det. K. Scheers, CKS; Verrebroek, Verrebroekse blikken, 51.255°N, 4.208°E, 09.VII.2021, 2 ind., leg. & det. K. Scheers, CKS; Sint-Gillis-Waas, Kreken van Saleghem, 51.240°N, 4.135°E, 21.VII.2021, 1 ind., leg. & det. K. Scheers, CKS; Verrebroek, Haazop, 51.245°N, 4.239°E, 16.IV.2022, 3 ind., leg. & det. K. Scheers, CKS; Kallo, Steenlandpolder, 51.255°N, 4.260°E, 25.VIII.2022, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: Mainly restricted to the northeast of the country (Fig. 42).

Note: This species was previously not known from East-Flanders (Bosmans & Van Stalle, 1983). In the last decade there is an clear increase in both the number of records and the overall distribution of this species in Belgium (Scheers, unpublished data).

Subfamily **Cybisterinae** Sharp, 1880

Cybister* (*Cybister*) *lateralimarginalis lateralimarginalis (De Geer, 1774)

Fig. 43

Publications: Mathieu (1857), Jacobs (1879), Preudhomme de Borre (1885a,b, 1886a), Anonyme (1887b), Preudhomme de Borre (1887, 1888c), Rousseau (1889), Preudhomme de Borre (1890a,c), Van Dorsselaer (1919c, 1927, 1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

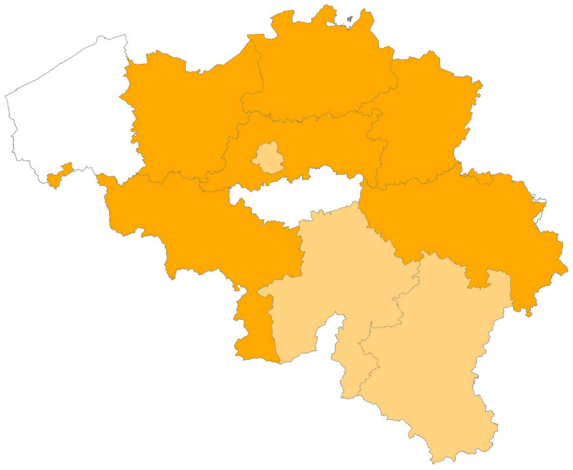

Fig. 43. Presence of *Cybister (Cybister) lateralimarginalis lateralimarginalis* (De Geer, 1774) per province in Belgium.

Distribution: A recently expanding species with its main distribution in the Campine region where it is a common species. Outside the Campine region recently expanding into northeast East Flanders and just reaching Liège (Fig. 43). Furthermore *C. lateralimarginalis* is increasingly present in Hainaut. Not yet known from the province of Luxembourg, but the occurrence in the neighbouring Grand Duchy of Luxembourg (Gerend, 2014) indicates it could also be present in the Lorraine region.

Note: Additionally there is one record from the province West Flanders which was not included in figure 43 and table 1. This record concerns a single female specimen photographed in 2019 on a driveway near Knokke. Since this region has been rather well surveyed in the last decade, without encountering this species, the observed specimen possibly concerns a hitchhiking specimen from elsewhere. Until additional specimens are found in this region to confirm the presence of a population, we regard this species as currently not present in West Flanders. It is however likely that this species will colonize this province in the near future if the current expansion observed in Belgium continues.

Subfamily **Dytiscinae** Leach, 1815
Tribe **Aciliini** Thomson, 1867

Acilius* (*Acilius*) *canaliculatus (Nicolai, 1822)
Fig. 44

Publications: Mathieu (1857), Preudhomme De Borre (1885a,b, 1885b, 1886a, 1890a,c), Ball (1919), Van Dorsselaer (1919c), Muller (1923), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a), Scheers & Packet (2015).

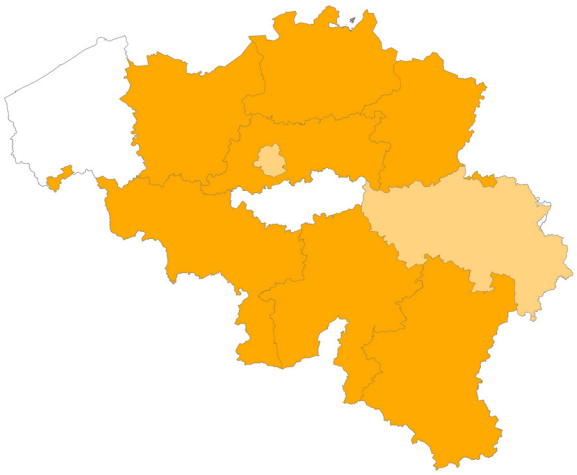

Fig. 44. Presence of *Acilius (Acilius) canaliculatus* (Nicolai, 1822) per province in Belgium.

New provincial records: Luxembourg: Etalle, Etang de l'Illé, 49.671°N, 5.587°E, 09.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; idem, 11.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; Etalle, Les Abattis, 49.688°N, 5.556°E, 09.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS; Etalle, Etang de l'Illé, 49.667°N, 5.583°E, 10.VIII.2010, 10 ind., leg. & det. K. Scheers, CKS; Villers-Sur-Semois, 49.688°N, 5.568°E, 10.VIII.2010, 10 ind., leg. & det. K. Scheers, CKS; Namur: Feschaux, 50.141°N, 4.887°E, 02.IX.2018, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: A common species in the Campine region, rare elsewhere (Fig. 44). There are indications that this species is increasing its range during the last two decades.

Note: First records for the provinces Luxembourg and Namur.

Acilius* (*Acilius*) *sulcatus (Linnaeus, 1758)
Fig. 45

Publications: Mathieu (1857), Preudhomme de Borre (1883b, 1885a,b, 1886a, 1887, 1888b,c, 1890a,c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Litt (1988), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a,b), Scheers & Packet (2015).

Distribution: Common throughout Belgium (Fig. 45).

Fig. 45. Presence of *Acilius (Acilius) sulcatus* (Linnaeus, 1758) per province in Belgium.

Graphoderus austriacus (Sturm, 1834)
Fig. 46

Publications: /
New records: Antwerp: Herselt, Het Goor-Asbroek, 51,060°N, 4.853°E, 11.VI.2017, 1 ind., leg. & det. R. Gerend, CRG; idem, 1 ind., leg. & det. L. Hendrich.

Distribution: This species is newly discovered for Belgium in 2017 near Herselt (Antwerp). So far only known from this single site (Fig. 46).

Fig. 46. Presence of *Graphoderus austriacus* (Sturm, 1834) per province in Belgium.

Note: These are the first records of this species for Belgium. *Graphoderus austriatus* is recently expanding its range (L. Hendrich pers. comm.). It is likely that this species is present at other sites in the region where it was discovered. Future sampling in other suitable sites near Herselt specifically and in the Campine region as a whole is necessary to obtain a better view on its current distribution and a good opportunity to monitor further expansion. This species was also erroneously mentioned by Dopagne (1995) based on a misidentification of a specimen of *G. cinereus* (specimen deposited in the RBINS).

Graphoderus bilineatus (De Geer, 1774)
Fig. 47

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1887, 1888c, 1889a, 1890a), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e, 2015, 2017b).

Distribution: Old records are known from the Campine region, the Damvallei (East Flanders) and Hainaut (Fig. 47). This species was last recorded in 1950 (Scheers, 2017b).

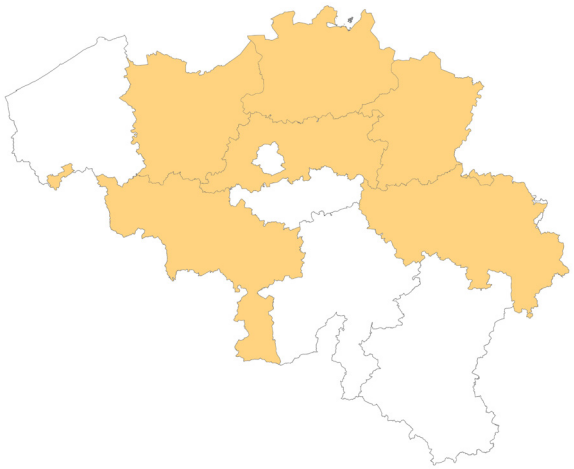

Fig. 47. Presence of *Graphoderus bilineatus* (De Geer, 1774) per province in Belgium.

Note: *Graphoderus bilineatus* is considered extinct in Belgium (Scheers, 2015; 2017b)

Graphoderus cinereus (Linnaeus, 1758)
Fig. 48

Publications: Mathieu (1857), Preudhomme de Borre (1885a,b, 1886a, 1887, 1888a,c, 1890a), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945), Debatisse (1946), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Rather common in Flanders and the northwest of Hainaut. Uncommon in the south of the country (Fig. 48). The distribution largely reflects the low lying areas.

Fig. 48. Presence of *Graphoderus cinereus* (Linnaeus, 1758) per province in Belgium.

Graphoderus zonatus zonatus (Hoppe, 1795)
Fig. 49

Publications: Mathieu (1857), Preudhomme de Borre (1879, 1886a, 1887, 1889a, 1890a), Frennet (1919), Van Dorsselaer (1919c), Frennet (1937), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Van De Vijver *et al*. (1997), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Not uncommon in heathland ponds in the Campine region in the northeast of Belgium. Outside this region there are isolated records known from heathland remnants and more recently also in two sites in the coastal dunes (Fig. 49).

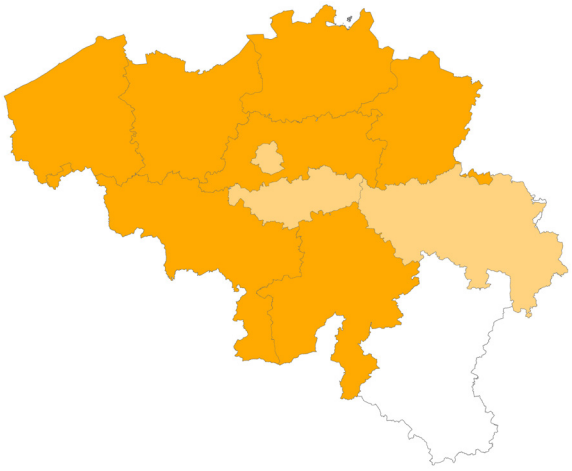

Fig. 49. Presence of *Graphoderus zonatus zonatus* (Hoppe, 1795) per province in Belgium.

Tribe **Dytiscini** Leach, 1815

Dytiscus circumcinctus Ahrens, 1811
Fig. 50

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1887), Rousseau (1889), Preudhomme de Borre (1890c), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e), Scheers & Lambeets (2014).

Distribution: Known from a number of records from the northeast of Belgium (Fig. 50). This species has not been reported since 1948 and in considered to be extinct in Belgium.

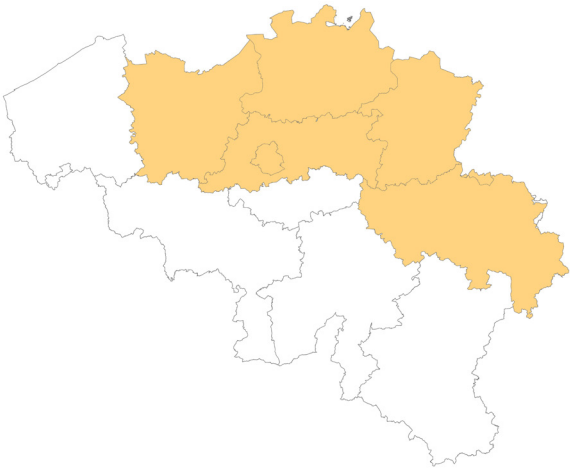

Fig. 50. Presence of *Dytiscus circumcinctus* Ahrens, 1811 per province in Belgium.

Dytiscus circumflexus Fabricius, 1801
Fig. 51

Publications: Mathieu (1857), Lameere (1881), Preudhomme de Borre (1885b, 1886a, b, 1887, 1889a, 1890a, c), Ball (1919), Van Dorsselaer (1919c), Ball (1920), Biebuynck (1920a), Goetghebuer (1930), Fagel *et al.* (1931); Janssens (1931); Debatisse (1946), Van Dorsselaer (1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2012, 2014e), Scheers & Lambeets (2014).

Distribution: Not uncommon near the dune and Polder districts in East and West Flanders. Furthermore there are some isolated, but stable, inland populations in the centre and north of Flanders. There are no recent, validated records from the Walloon region (Fig. 51).

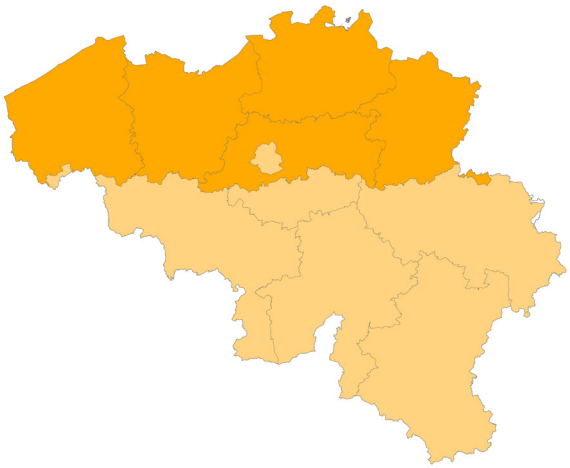

Fig. 51. Presence of *Dytiscus circumflexus* Fabricius, 1801 per province in Belgium.

Dytiscus dimidiatus Bergsträsser, 1778

Fig. 52

Publications: Mathieu (1857), Preudhomme de Borre (1885a,b, 1886a, 1887, 1888b, 1890a, 1890c), Ball (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Scheers & Lambeets (2014), Thys (2014a).

Distribution: Historically known from all over the country, but nowadays restricted to the provinces of Antwerp, East Flanders, Flemish Brabant, Hainaut and Limburg (Fig. 52).

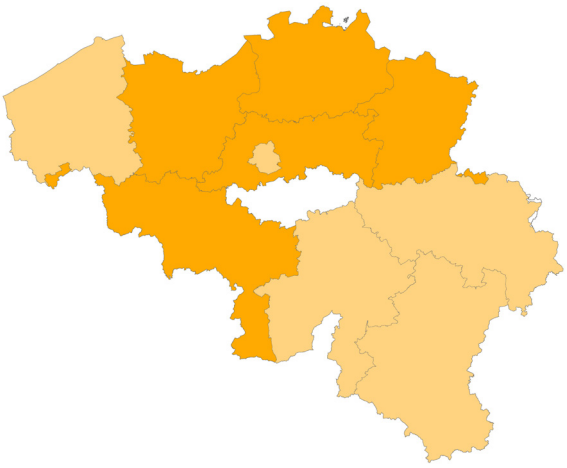

Fig. 52. Presence of *Dytiscus dimidiatus* Bergsträsser, 1778 per province in Belgium.

Dytiscus lapponicus lapponicus Gyllenhal, 1808

Fig. 53

Publications: Balfour-Browne (1950), Van Dorsselaer (1957c), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Scheers (2011, 2012, 2014e), Scheers & Lambeets (2014), Scheers & Packet (2015).

Distribution: Only known from the Campine district in Antwerp and Limburg and from a single doubtful record from Liège (Warsage) (Fig. 53).

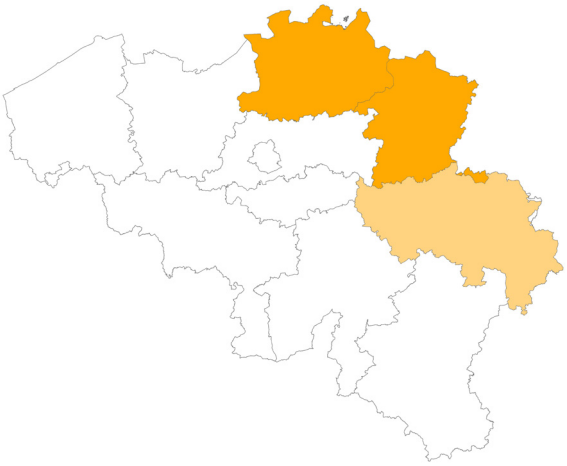

Fig. 53. Presence of *Dytiscus lapponicus lapponicus* Gyllenhal, 1808 per province in Belgium.

Note: Balfour-Browne (1950) mentions that "an odd female was found in a farm pond at Warsage [Liège] in Belgium in November, 1933" and adds "the first record for that country [Belgium] and almost certainly a stray specimen from a nearby Dutch habitat". Van Dorsselaer (1957c) also includes the record from Warsage, apparently collected by J. Muller, and adds that the species has also been taken at Kalmthout in 1956 [where it is still present to date]. The record of Warsage is a very strange one. The specimen is present in the collection of the RBINS, and the identification is correct. It is however extremely unlikely that this species would occur in a farm pond, and there is no suitable habitat anywhere in this region. Moreover this species is regarded as flightless (Kehl & Dettner, 2007), and a stray specimen, as suggested by Balfour-Browne (1950) seems unlikely. Most probably the record is based on a mislabelling, but since the specimen is present in the collection of the RBINS and the record was not doubted by previous authors, we refrain from rejecting this record.

Dytiscus latissimus Linnaeus, 1758

Fig. 54

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a,c), Anonyme (1887a), Preudhomme de Borre (1890a), Van Dorsselaer (1919c, 1957c), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e), Scheers & Lambeets (2014).

Distribution: Extinct in Belgium. Historic records are known from Antwerp, Hainaut and Limburg (Fig. 54).

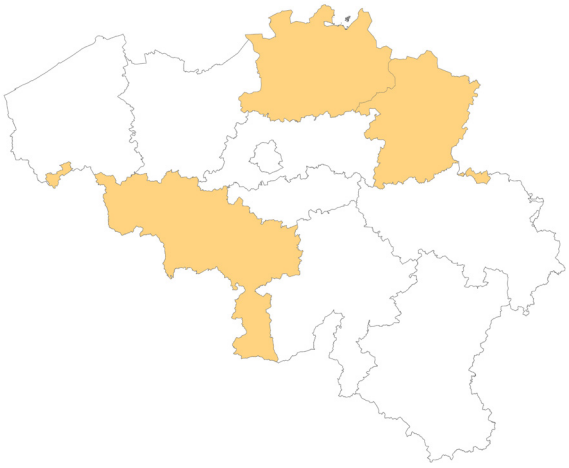

Fig. 54. Presence of *Dytiscus latissimus* Linnaeus, 1758 per province in Belgium.

Dytiscus marginalis marginalis Linnaeus, 1758

Fig. 55

Publications: Mathieu (1857), Donckier (1879), Preudhomme de Borre (1883b, 1885a,b, 1886a, 1887, 1888b,c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Sarlet (1945), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Litt (1988), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Scheers & Lambeets (2014), Thys (2014a), Scheers & Packet (2015).

Distribution: Very common throughout Belgium (Fig. 55).

Fig. 55. Presence of *Dytiscus marginalis marginalis* Linnaeus, 1758 per province in Belgium.

Dytiscus semisulcatus Müller, 1776
Fig. 56

Publications: Mathieu (1857), Preudhomme de Borre (1883b, 1885a,b, 1886a, 1887, 1888b,c, 1890a,c), Ball (1919), Van Dorsselaer (1919c, 1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Scheers (2012), Thys & Scheers (2013), Scheers (2014e), Scheers & Lambeets (2014).

Distribution: Known for all Belgian provinces, and apparently not rare in former days; occurring in the coastal dunes, heathland ponds, marshes and streams, both at low and medium altitude. Nowadays *D. semisulcatus* has completely disappeared from Flanders and the Brussels Capital Region and only persists in some areas in Hainaut, Namur and Luxembourg near the French border (Fig. 56).

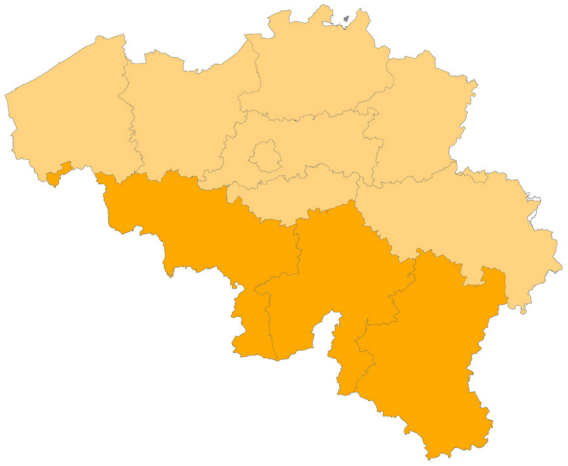

Fig. 56. Presence of *Dytiscus semisulcatus* Müller, 1776 per province in Belgium.

Tribe **Hydaticini** Sharp, 1880

Hydaticus* (*Hydaticus*) *seminiger (De Geer, 1774)
Fig. 57

Publications: Mathieu (1857); Preudhomme de Borre (1885a,b, 1886a, 1887, 1888f, 1890a,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a, b).

Distribution: *H. seminiger* is common at low altitude in Flanders and in Hainaut with scattered records in the rest of Belgium. This species has apparently never been recorded from Walloon Brabant (Fig. 57).

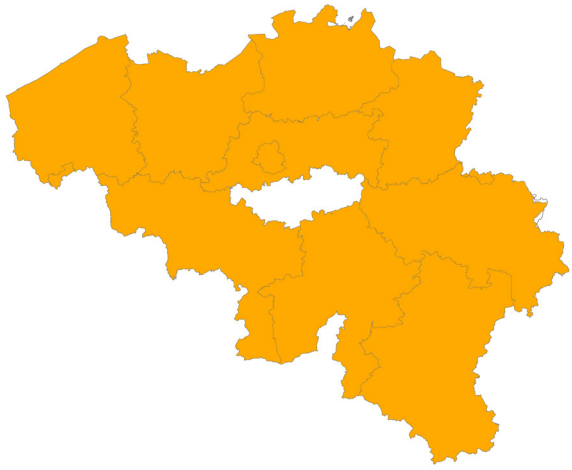

Fig. 57. Presence of *Hydaticus (Hydaticus) seminiger* (De Geer, 1774) per province in Belgium.

Hydaticus* (*Hydaticus*) *transversalis transversalis (Pontoppidan, 1763)
Fig. 58

Publications: Mathieu (1857), Preudhomme de Borre (1885a,b, 1886a, 1887, 1888c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Scheers (2012), Thys & Scheers (2013), Scheers (2014e).

New provincial records: Luxembourg: Etalle, Etang de l'Illé, 49.671°N, 5.587°E, 11.VIII.2010, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: Before 1950 known from all over the country (except Namur) and considered a rather common species (Mathieu, 1857; Van Dorsselaer, 1957). Recently only known from two sites in West Flanders and one site in Luxembourg (Fig. 58).

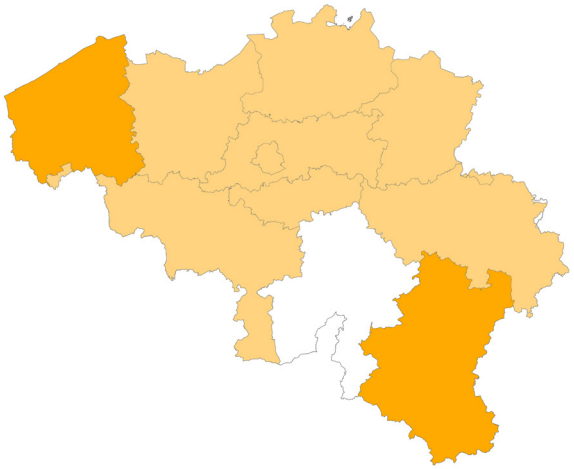

Fig. 58. Presence of *Hydaticus (Hydaticus) transversalis transversalis* (Pontoppidan, 1763) per province in Belgium.

Note: *Hydaticus transversalis* has drastically decreased since the 1950's and is nowadays extremely rare in Belgium. Newly recorded for the Luxembourg province.

Subfamily **Hydroporinae** Erichson, 1837
Tribe **Laccornini** Wolfe & Roughley, 1990

Laccornis oblongus (Stephens, 1835)
Fig. 59

Publications: Van Dorsselaer (1921, 1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012).

New provincial records: Luxembourg: Vance, pond with Carex and detritus, 25.IV.1992, 1 ind., leg. & det. R. Gerend, CRG.

Distribution: *L. oblongus* was first recorded by Van Dorsselaer (1948) based on a single specimen caught by himself near Wezemaal. Van Dorsselaer (1948) also mentions a record from 'slijkens' near Ostend, this record could however not been confirmed. In 1992, a single specimen of this species was more discovered in a pond in the south of the Luxembourg province (R. Gerend, pers. comm.). These are the only two reliable records of this species from Belgium (Fig. 59).

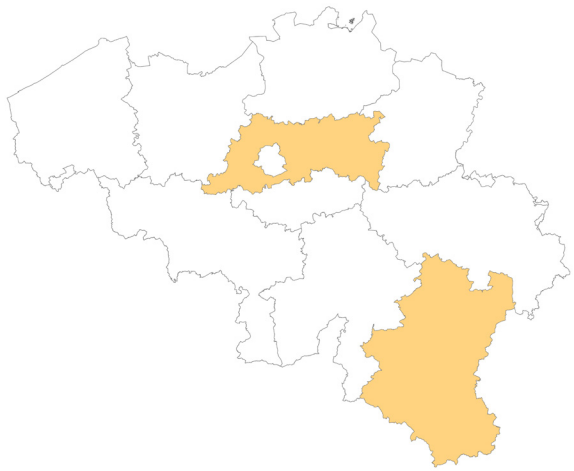

Fig. 59. Presence of *Laccornis oblongus* (Stephens, 1835) per province in Belgium.

Note: The extreme rareness of *L. oblongus* in Belgium is puzzling if compared to the situation in the Netherlands where this species is rare, but known from nearly all provinces. More targeted sampling in suitable habitat in the Campine region and in the Lorraine region, where the last specimen was taken, could result in new records of this rare species.

Tribe **Hydroporini** Aubé, 1836
Subtribe **Hydroporina** Aubé, 1836

Hydroporus angustatus Sturm, 1835
Fig. 60

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1885a,b, 1886a, 1890a), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014b,e), Thys (2014a), Scheers (2017a).

Distribution: A common species in Flanders, somewhat less common in the Walloon region (Fig. 60).

Fig. 60. Presence of *Hydroporus angustatus* Sturm, 1835 per province in Belgium.

Hydroporus discretus discretus Fairmaire & Brisout, 1859
Fig. 61

Publications: Troostembergh (1879), Preudhomme de Borre (1882c, 1885a,b, 1886a), Ball (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1948), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: The records are scattered throughout Belgium (Fig. 61). The main habitat, small seeps and springs in hilly terrain, is poorly sampled in Belgium and the distribution of this species is probably highly underestimated.

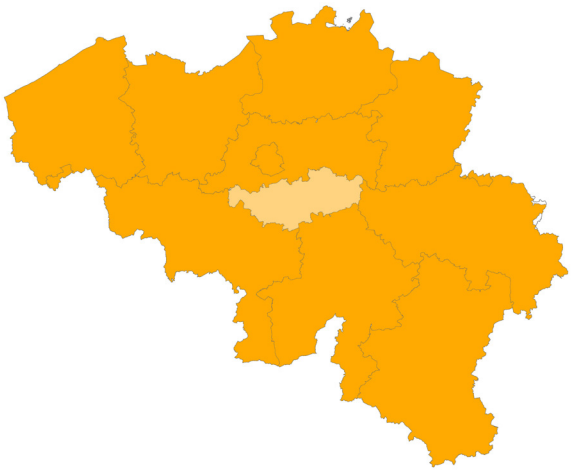

Fig. 61. Presence of *Hydroporus discretus discretus* Fairmaire & Brisout, 1859 per province in Belgium.

Hydroporus dorsalis s.s. (Fabricius, 1787)

Fig. 62

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885b, 1886a, 1889b, 1890a,c), Ball (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1945, 1948, 1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Scheers *et al.* (2014), Thys (2014a).

Distribution: More or less restricted to Antwerp, East Flanders and Flemish Brabant with old records from West Flanders, Limburg and Luxembourg (Fig. 62). The lack of recent records from Limburg, were suitable habitat is present in the north and centre of the province, is puzzling.

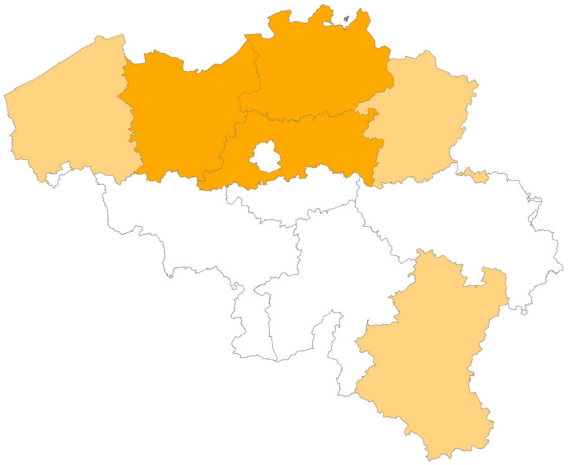

Fig. 62. Presence of *Hydroporus dorsalis* (Fabricius, 1787) per province in Belgium.

Note: This species was synonymised with *H. figuratus* for a long time until Bergsten et al. (2012b) recognised two cryptic and seemingly syntopic species. Both species have a nearly identical overall distribution (Bergsten et al. 2012b). All published records posterior 2012 can refer to either *H. dorsalis* or *H. figuratus*. The presence of both species in Belgium was discussed by Scheers et al. (2014). Until recently this species was placed in the genus *Suphrodytes* des Gozis, 1914 but this genus was recently synonymized with *Hydroporus* Clairville, 1806 (Bergsten et al., 2012b) based on genetic analysis.

Hydroporus elongatulus Sturm, 1835

Fig. 63

Publications: Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: A very rare species of which only a few records are known. Previously recorded in the Brussels Capital Region, Antwerp and Limburg (Fig. 63). Nowadays considered extinct (Scheers, 2012).

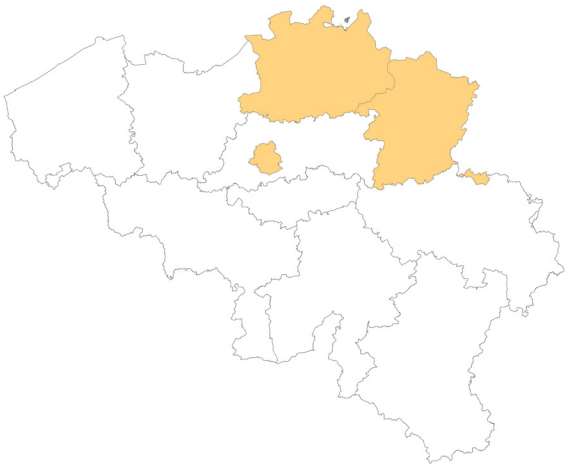

Fig. 63. Presence of *Hydroporus elongatulus* Sturm, 1835 per province in Belgium.

Note: Both Keirens (1984) and Bosmans (1994) mention a record of this species from Ronse (East Flanders) in 1977. This record is very doubtful, since there is no suitable habitat in this region and no other associated species are known from this locality. Probably this record is based on a misidentification and is consequently not included in fig 63 and table 1.

Hydroporus erythrocephalus (Linnaeus, 1758)
Fig. 64

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885a,b, 1886a, 1888b, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014b,e), Thys (2014a,b).

Distribution: Common in Belgium with its main distribution in the Campine district (Fig. 64).

Fig. 64. Presence of *Hydroporus erythrocephalus* (Linnaeus, 1758) per province in Belgium.

Hydroporus ferrugineus Stephens, 1829
Fig. 65

Publications: Van Dorsselaer (1938), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Dopagne (1995), Scheers (2012, 2014a).

Distribution: Known from springs, seeps and small streams in the Brussels Capital Region, East Flanders, Hainaut, Liège, Luxembourg and Namur (Scheers, 2014a) (Fig. 65).

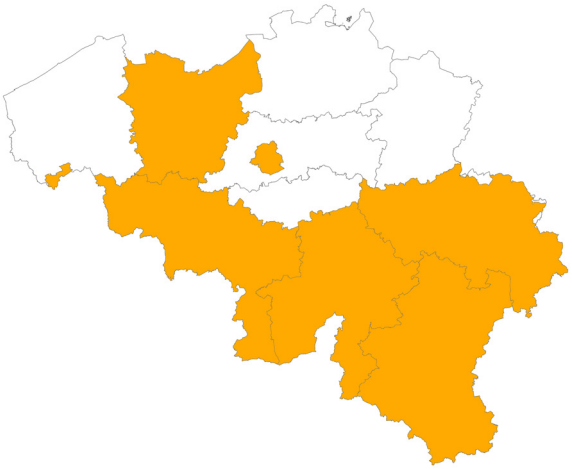

Fig. 65. Presence of *Hydroporus ferrugineus* Stephens, 1829 per province in Belgium.

Note: Historically only known from the Hautes Fagnes (Liège) and only recently discovered in other provinces (Scheers, 2014a).

Hydroporus figuratus (Gyllenhal, 1826)
Fig. 66

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885b, 1886a, 1889b, 1890a,c), Ball (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1945, 1948, 1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Scheers *et al.* (2014), Thys (2014a).

Distribution: Not uncommon in Flanders but rare in the Walloon region, where recent records are lacking. *Hydroporus figuratus* is much more common and widespread than *H. dorsalis* (*s.s.*) (Fig. 66).

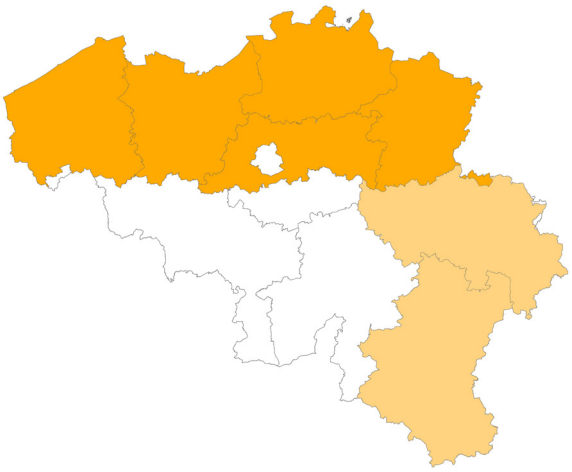

Fig. 66. Presence of *Hydroporus figuratus* (Gyllenhal, 1826) per province in Belgium.

Note: Only separated from *H. dorsalis* in 2012 (Bergsten et al., 2012b), and all older records of *H. dorsalis* can refer to either *H. dorsalis* or *H. figuratus*. The presence of both species in Belgium was discussed by Scheers *et al*. (2014). See also note under *H. dorsalis*. Above all published records of *H. dorsalis s.l.* listed under *H. dorsalis s.s.* are repeated here.

Hydroporus gyllenhalii Schiødte, 1841
Fig. 67

Publications: Mathieu (1857), De Bormans (1883), Preudhomme de Borre (1883a, 1885b, 1886a, 1888c, 1890a,c,e), Van Dorsselaer (1919b), Goetghebuer (1930), Sarlet (1945), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014a,b,e), Thys (2014a).

Distribution: Not uncommon in the Campine district and in the raised bogs in the Walloon region (Fig. 67). Elsewhere in heathland remnants on sandy soil.

Fig. 67. Presence of *Hydroporus gyllenhalii* Schiødte, 1841 per province in Belgium.

Hydroporus incognitus Sharp, 1869
Fig. 68

Publications: Troostembergh (1879), Preudhomme de Borre (1883a,b, 1885a,b, 1886a, 1889b, 1890a,c), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Rather common throughout Belgium (Fig. 68).

Fig. 68. Presence of *Hydroporus incognitus* Sharp, 1869 per province in Belgium.

Hydroporus longicornis Sharp, 1871
Fig. 69

Publications: Dettner (1985), Thys (2014c).

Distribution: Very rare and known from only three sites in Belgium (Fig. 69).

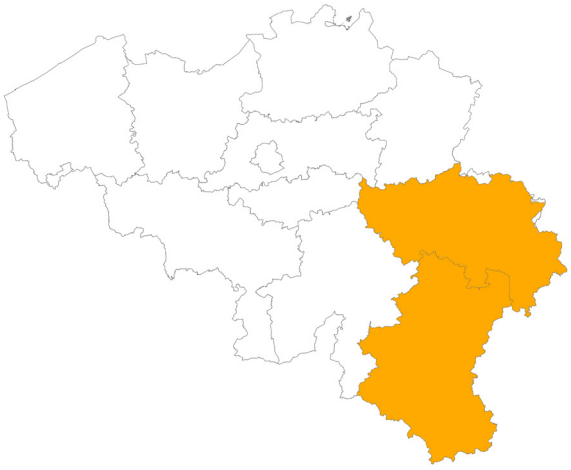

Fig. 69. Presence of *Hydroporus longicornis* Sharp, 1871 per province in Belgium.

Note: The habitat of this species is poorly sampled in Belgium and this rare species is expected to be discovered at new sites in the provinces Liège and Luxembourg in the future.

Hydroporus longulus Mulsant & Rey, 1861
Fig. 70

Publications: Van Dorsselaer (1921, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Fery (1999), Scheers (2012).

New provincial records: Liège: Bevercé, 50.442°N, 6.068°E, 17.VII.2010, 13 ind., leg. & det. K. Scheers, CKS; Basse-Bodeux, 50.356°N, 5.779°E, 26.I.2014, 1 ind., leg. & det. K. Scheers, CKS; Reuland, 50.185°N, 6.173°E, 31.XII.2015, 6 ind., leg. & det. K. Scheers, CKS Namur: Gedinne, 17.VIII.2001, 1 ind., leg. & det. K. Scheers, CKS; Houyet, 50.182°N, 5.008°E, 14.VII.2013, 11 ind., leg. & det. K. scheers & N. thys, CKS & CNT.

Distribution: Very rare species in Belgium, previously known from Forêt de Soignes in Brussels and Flemish Brabant (Van Dorsselaer, 1948; Keirens, 1984), where it has disappeared, and from a few sites in the province Luxembourg. Recent records are known from Liège, Luxemburg and Namur (Fig. 70).

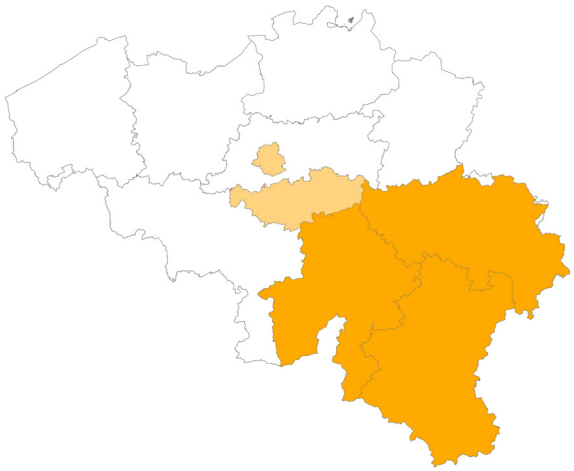

Fig. 70. Presence of *Hydroporus longulus* Mulsant & Rey, 1861 per province in Belgium.

Note: Presumably the scarcity of records partly reflects the low sampling efforts of its habitat. Newly recorded in the Province of Liège and Namur.

Hydroporus marginatus (Duftschmid, 1805)
Fig. 71

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a, 1886a), Van Dorsselaer (1919b, 1927, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012).

Distribution: Records are scattered in the east of the country (Fig. 71). Not found for many decades and considered extinct in Belgium.

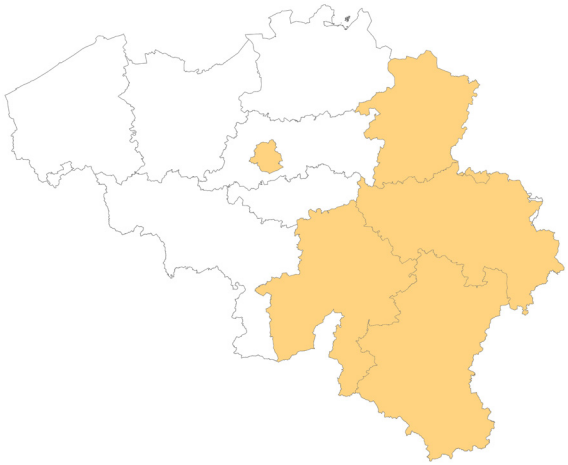

Fig. 71. Presence of *Hydroporus marginatus* (Duftschmid, 1805) per province in Belgium.

Hydroporus melanarius Sturm, 1835
Fig. 72

Publications: Preudhomme de Borre (1886a, 1890c), Van Dorsselaer (1919b, 1921), Janssens (1938), Van Dorsselaer (1938, 1948), Roelofs & Segers (1951), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014a,b,e), Thys (2014a).

Distribution: Rather uncommon and mainly distributed in the Campine district and heathland remnants in lowland Belgium and raised bogs at higher elevation (Fig. 72).

Fig. 72. Presence of *Hydroporus melanarius* Sturm, 1835 per province in Belgium.

Hydroporus memnonius Nicolai, 1822
Fig. 73

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1885a,b, 1886a), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1948), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a, 2021).

Distribution: Common throughout Belgium (Fig. 73).

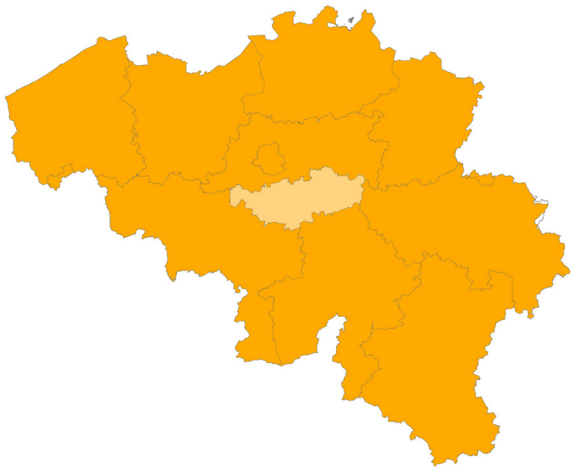

Fig. 73. Presence of *Hydroporus memnonius* Nicolai, 1822 per province in Belgium.

Note: This species is dimorphic, with matt and shiny female forms, which seem to have distinct distributions (Bilton *et al.*, 2008). However, in Belgium only the matt form (var. *castaneus* Aubé, 1838) is known.

Hydroporus morio Aubé, 1838

Fig. 74

Publications: Derenne (1952a); Van Dorsselaer (1957); Keirens (1984).

Distribution: Only collected four times in Belgium, once by Derenne (Derenne, 1952a) in the Hautes Fagnes, twice (in 1954 and 1955) in a Sphagnum pool in the Hautes Fagnes at Baraque Michel (Liège) (Keirens, 1984) and last in 1988 near Deigné (Liège) by the second author. *Hydroporus morio* has not been recorded since, despite targeted sampling efforts.

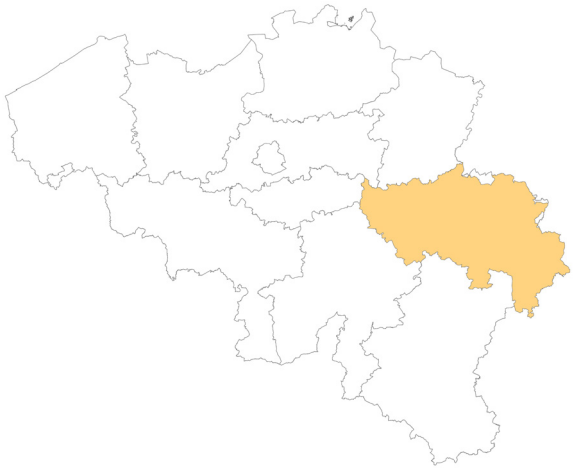

Fig. 74. Presence of *Hydroporus morio* Aubé, 1838 per province in Belgium.

Note: The records mentioned by Mathieu (1857) (Maastricht and Mons) are considered erroneous since there is no suitable habitat in these regions and no specimens are available in any of the studied collections to validate these records and therefore not included in table 1 and fig. 74.

Hydroporus neglectus Schaum, 1845

Fig. 75

Publications: Preudhomme de Borre (1883c, 1886a), Frennet (1919), Van Dorsselaer (1919b, 1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014b,e), Thys (2014a).

New provincial records: Hainaut: Braine-le-Comte, 50.595°N, 4.169°E, 06.I.2013, 10 ind., leg. & det. K. Scheers, CKS; Braine-le-Comte, 50.599°N, 4.169°E, 06.I.2013, 8 ind., leg. & det. K. Scheers, CKS.

Distribution: Rather rare and mainly distributed in the Campine district and heathland remnants in lowland Belgium (Fig. 75).

Note: Newly recorded for Hainaut.

Fig. 75. Presence of *Hydroporus neglectus* Schaum, 1845 per province in Belgium.

Hydroporus nigrita (Fabricius, 1792)
Fig. 76

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a,b,c, 1885a, b, 1886a, 1890c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: *Hydroporus nigrita* occurs throughout Belgium. Recent records are missing from the Brussels Capital Region and Walloon Brabant, which is solely attributed to insufficient sampling (Fig. 76).

Fig. 76. Presence of *Hydroporus nigrita* (Fabricius, 1792) per province in Belgium.

Hydroporus obscurus Sturm, 1835
Fig. 77

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883c, 1885a,b, 1886a), Ball (1919), Van Dorsselaer (1919b, 1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a, 2021).

Distribution: More or less restricted to the Campine district and some raised bogs in the Walloon region (Fig. 77). A single historic record from the coastal dunes (which are distinctively chalk-rich) near Knokke (1934) is by no doubt the result of misidentification or mislabelling and therefore omitted.

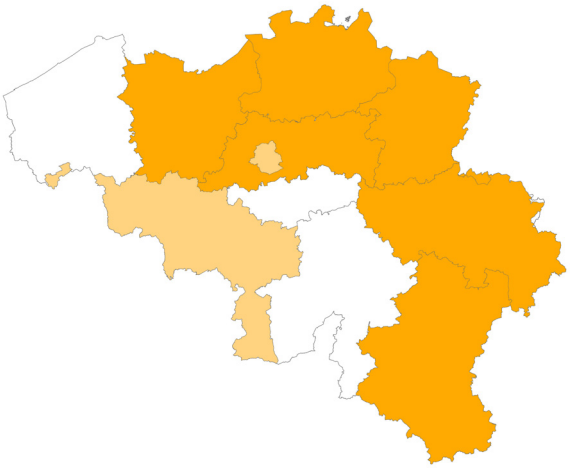

Fig. 77. Presence of *Hydroporus obscurus* Sturm, 1835 per province in Belgium.

Hydroporus palustris (Linnaeus, 1760)

Fig. 78

Publications: Mathieu (1857), Preudhomme de Borre (1882c, 1883a,b,c, 1885a,b, 1886a, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Janssens (1957), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Heylen *et al.* (2003), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a), Scheers (2017a).

Distribution: Very common throughout Belgium (Fig. 78).

Fig. 78. Presence of *Hydroporus palustris* (Linnaeus, 1760) per province in Belgium.

Hydroporus planus (Fabricius, 1782)

Fig. 79

Publications: Mathieu (1857), Preudhomme de Borre (1882c, 1883a,b,c, 1885a,b, 1886a, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Janssens (1957), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a), Scheers (2017a).

Distribution: Very common throughout Belgium (Fig. 79).

Fig. 79. Presence of *Hydroporus planus* (Fabricius, 1782) per province in Belgium.

Hydroporus pubescens (Gyllenhal, 1808)
Fig. 80

Publications: Mathieu (1857), Preudhomme de Borre (1882c, 1883a,b,c, 1885a,b, 1886a, 1890a,c,f,g), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Sarlet (1945), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a), Scheers (2017a).

Distribution: Very common throughout the country (Fig. 80).

Fig. 80. Presence of *Hydroporus pubescens* (Gyllenhal, 1808) per province in Belgium.

Hydroporus rufifrons (Müller, 1776)
Fig. 81

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a, 1890e), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012), Thys & Scheers (2013), Scheers (2014e).

Distribution: Historically this species was mainly distributed in the centre of the country, but at present this species is known from only a single small population in a ditch on private property (Fig. 81).

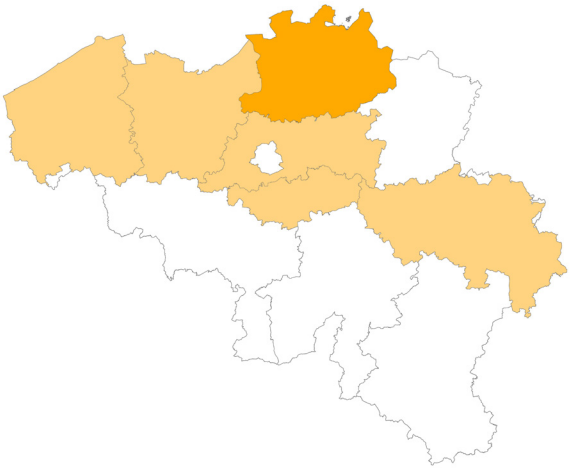

Fig. 81. Presence of *Hydroporus rufifrons* (Müller, 1776) per province in Belgium.

Note: *Hydroporus rufifrons* was last collected in 2016 and the current status of the only known persisting population, after several years of extreme drought, is unknown.

Hydroporus scalesianus Stephens, 1828
Fig. 82

Publications: Scheers (2012; 2014b), Thys (2014a).

Distribution: An uncommon species with records all over the Campine region and one isolated population in the province of East Flanders (Scheers, 2014b) (Fig. 82).

Fig. 82. Presence of *Hydroporus scalesianus* Stephens, 1828 per province in Belgium.

Note: First mentioned Mathieu (1857) under the name *Hydroporus pygmaeus* Sturmer, 1835 from Lille and 'les Flandres'. This was repeated by Van Dorsselaer (1919, 1957c). There are however no specimens in any of the historic collections and the species was omitted from the Belgium species list by Keirens (1984). The first reliable records of this species are provided by Scheers (2014b).

Hydroporus striola (Gyllenhal, 1826)
Fig. 83

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1889a, 1890a), Ball (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Rather uncommon in the Flanders region and very rare in the Walloon region. Recent records from the Brussels Capital Region are lacking and the species has apparently never been recorded from Walloon Brabant and Namur (Fig. 83).

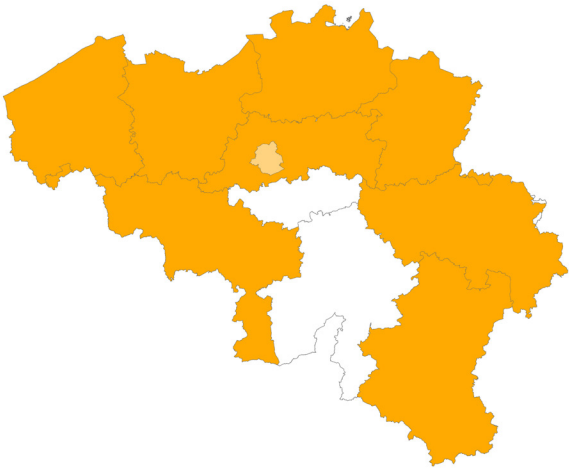

Fig. 83. Presence of *Hydroporus striola* (Gyllenhal, 1826) per province in Belgium.

Hydroporus tessellatus (Drapiez, 1819)
Fig. 84

Publications: Mathieu (1857), Preudhomme de Borre (1882c, 1883a, 1885a,b, 1886a, 1890a,c,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e, 2017a).

Distribution: A rather common species in West- and East-Flanders, the northeast of Hainaut and adjacent areas, very rare in the rest of the country where nearly all records represent single specimens (Fig. 84).

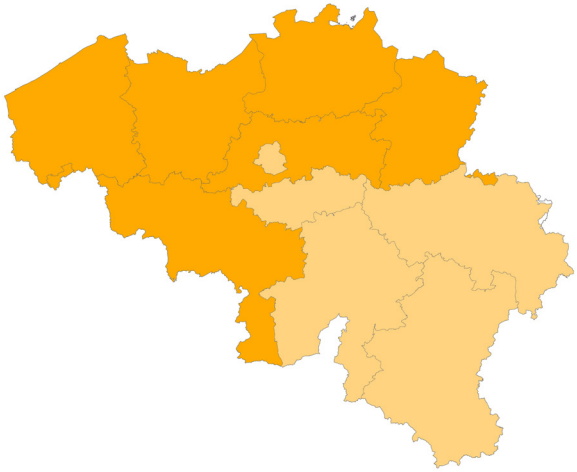

Fig. 84. Presence of *Hydroporus tessellatus* (Drapiez, 1819) per province in Belgium.

Note: The north-eastern limit of the distribution area of *H. tessellatus* runs through Belgium and seems to be limited by climatological conditions. It seems very likely that this species will expand further towards the east and into the south of Belgium in the future.

Hydroporus tristis (Paykull, 1798)
Fig. 85

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1885b, 1886a, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Janssens (1957), Van Dorsselaer (1957c), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014b,e), Thys (2014a).

Distribution: Rather common in the Campine district. Also known from more isolated heathland remnants in lowland Belgium and raised bogs at higher elevation (Fig. 85).

Fig. 85. Presence of *Hydroporus tristis* (Paykull, 1798) per province in Belgium.

Hydroporus umbrosus (Gyllenhal, 1808)
Fig. 86

Publications: Mathieu (1857), Preudhomme de Borre (1883c, 1885b, 1886a, 1890a), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1945, 1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Scheers (2011, 2012, 2014b,e), Thys (2014a).

Distribution: Rather uncommon and recently restricted to the Campine district and some small isolated heathland remnants and raised bogs elsewhere (Fig. 86).

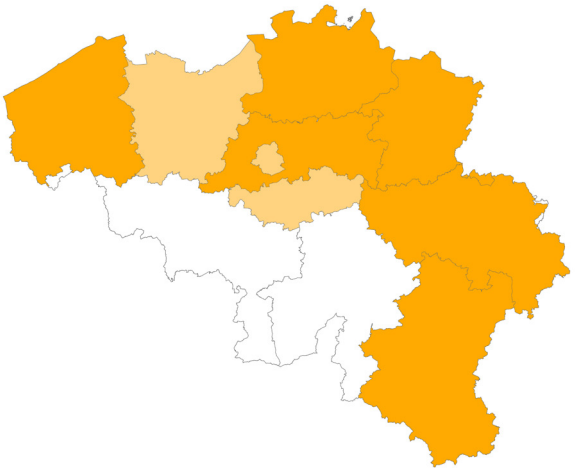

Fig. 86. Presence of *Hydroporus umbrosus* (Gyllenhal, 1808) per province in Belgium.

Subtribe **Deronectina**

Deronectes latus (Stephens, 1829)
Fig. 87

Publications: Preudhomme de Borre (1883c, 1886a, 1889a), Van Dorsselaer (1919b), Derenne (1952b), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Fery & Brancucci (1997), Scheers (2012).

Distribution: This species is nowadays restricted to Liège and Namur. Historic records are known from Hainaut, Limburg and, more surprisingly, also West Flanders (Fig. 87). There are no records from Luxembourg but based on the availability of suitable habitat it is expected to occur there.

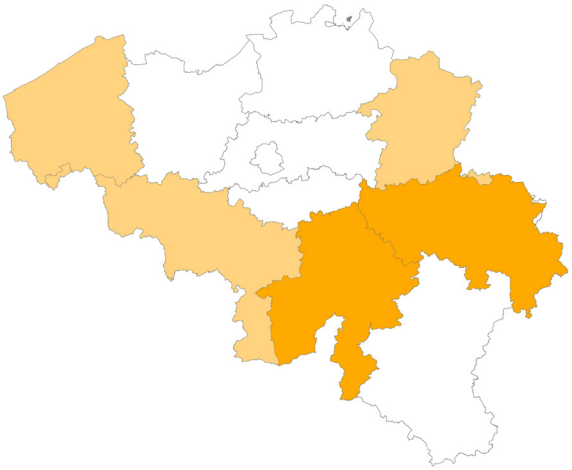

Fig. 87. Presence of *Deronectes latus* (Stephens, 1829) per province in Belgium.

Note: The record of a single specimen in a cattle pond in Wortegem (West-Flanders) in 1979 mentioned by Bosmans (1994) could not be confirmed since the material was been lost. It seems however unlikely that this record is correct, and it most probably refers to an unmarked *Hydroporus figuratus*. On the other hand Fery & Brancucci (1997) give another, much earlier, record from roughly the same region near Houthem (1895).

Deronectes platynotus platynotus (Germar, 1834)
Fig. 88

Publications: Van Dorsselaer (1938), Sarlet (1945), Derenne (1952b), Janssens (1957), Van Dorsselaer (1957c), Fery & Brancucci (1997), Keirens (1984), Bosmans (1994), Dopagne (1995).

Distribution: Known from a few small streams in Liège, Luxembourg and Namur (Fig. 88). Recent records from Luxembourg and Namur are lacking, but this could be the result of insufficient sampling effort.

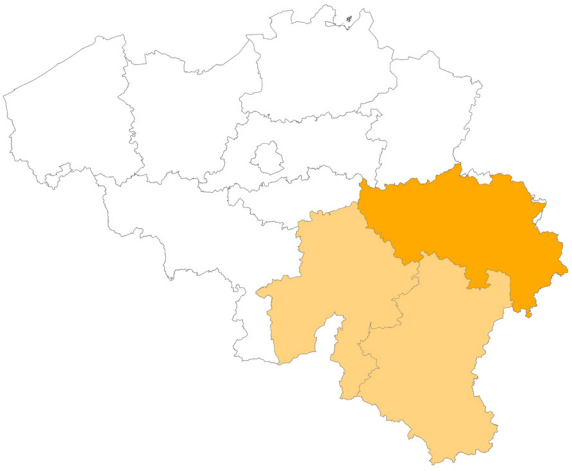

Fig. 88. Presence of *Deronectes platynotus platynotus* (Germar, 1834) per province in Belgium.

Nebrioporus canaliculatus (Lacordaire, 1835)
Fig. 89

Publications: Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Recorded all over the country (Fig. 89). The small number of recent records, which are limited to Antwerp, East Flanders, Limburg and West Flanders, indicate a recent decline. The idea of a potential recent decline is further strengthened by the sudden disappearance of this species in the northeast of East-Flanders, where it was present in many sites until 2018, but has not been seen since, despite the presence of suitable habitat, the persistence of other co-occurring pioneer species and intensive sampling.

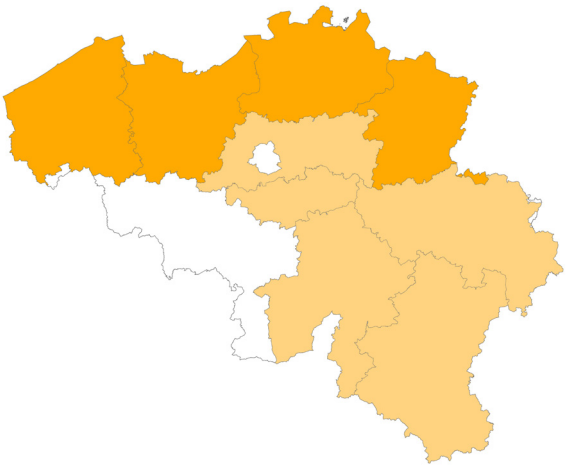

Fig. 89. Presence of *Nebrioporus canaliculatus* (Lacordaire, 1835) per province in Belgium.

Note: Van Dorsselaer (1919b) notes that he had seen two specimens of this species in the collection of De Wespelaere collected in the valley of La Lesse. At that time he expressed his serious doubts about this record and did not include this species in his Belgian checklist. It was not until 1957, after this species had turned up in several provinces, that this species was included on the Belgian species list (Van Dorsselaer, 1957c).

Nebrioporus elegans (Panzer, 1794)
Fig. 90

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a, 1885b, 1886a, 1888a,c, 1889a), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Known from all provinces with exception of West Flanders. Recent records are known from most provinces but are lacking from the Brussels Capital Region and Walloon Brabant (Fig. 90).

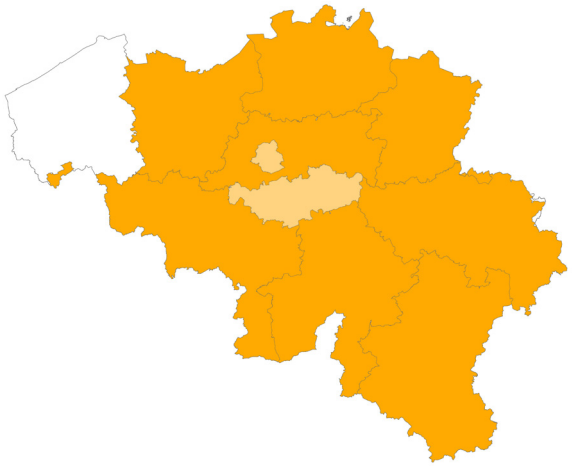

Fig. 90. Presence of *Nebrioporus elegans* (Panzer, 1794) per province in Belgium.

Nectoporus sanmarkii sanmarkii (Sahlberg, 1826)
Fig. 91

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a, 1888b), Schouteden (1912), Van Dorsselaer (1919b, 1957c), Maquet (1983), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012).

Distribution: This species occurs in streams and rivers in the provinces Liège, Luxembourg and Namur (Fig. 91).

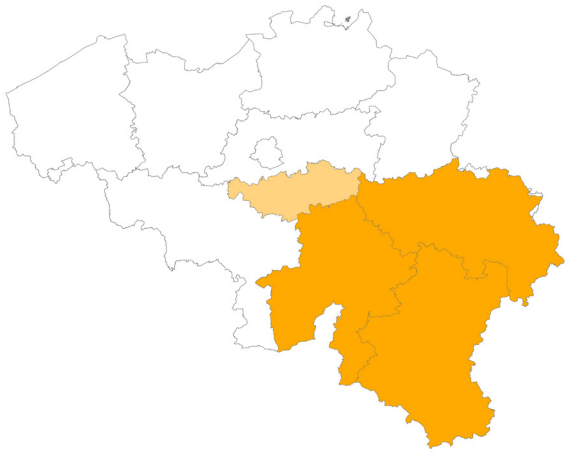

Fig. 91. Presence of *Nectoporus sanmarkii sanmarkii* (Sahlberg, 1826) per province in Belgium.

Note: There is one historical record from Walloon Brabant (La Hulpe), which was misinterpreted as Flemish by Bosmans (1994). This species and its habitat are poorly sampled and *N. s. sanmarkii* is probably more common in the east and south of the Walloon region then recent records indicate.

Scarodytes halensis (Fabricius, 1787)

Fig. 92

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a,b,c, 1885a, 1886a, 1888b, 1890c), D' Orchimont (1910), Van Dorsselaer (1919b, 1957c), Sarlet (1945), Debatisse (1946), Keirens (1984), Litt (1988), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Historical records are known from all over Belgium but there are no recent records and this species seems to have disappeared completely (Fig. 92).

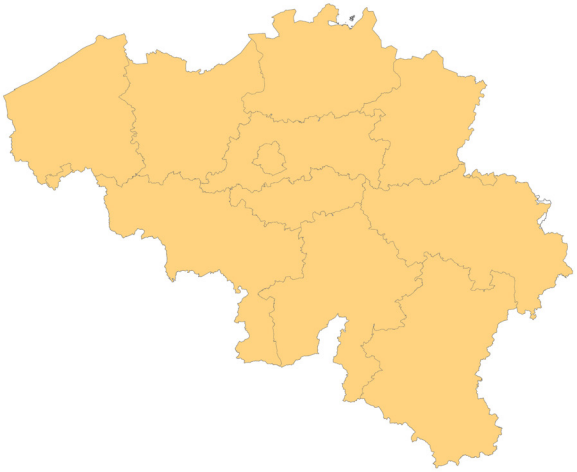

Fig. 92. Presence of *Scarodytes halensis* (Fabricius, 1787) per province in Belgium.

Stictotarsus duodecimpustulatus (Fabricius, 1792)

Fig. 93

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1885b, 1886a, 1888a,c, 1890a), De Wispelaere (1910), Ball (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Known from all provinces except Hainaut (Fig. 93). There is only a handful recent records indicating that this species is decreasing (cf. Scheers, 2012).

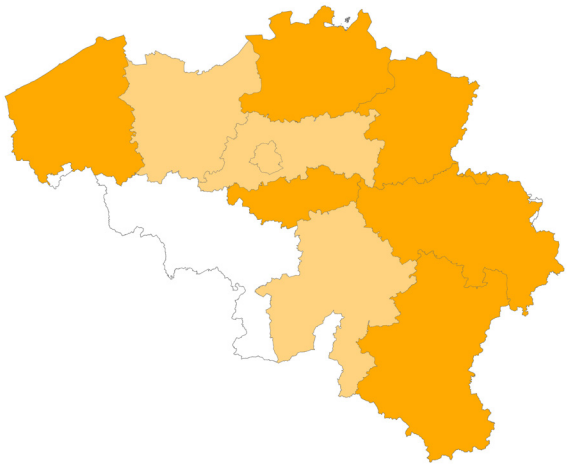

Fig. 93. Presence of *Stictotarsus duodecimpustulatus* (Fabricius, 1792) per province in Belgium.

Subtribe **Siettitiina Smrž, 1982**

Graptodytes bilineatus (Sturm, 1835)
Fig. 94

Publications: Mathieu (1857), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014c,e), Thys (2014a,b), Scheers (2017a).

New provincial records: Hainaut: Hensies, Marais d'Harchies, 50.455°N, 3.681°E, 22.III.2015, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: Records are known from all provinces except Walloon Brabant and Namur (Fig. 94).

Note: Although mentioned that this species is encountered in the province Luxembroug, Preudhomme de Borre (1886a) did not include this species in his Belgian catalogue. This is here rectified based on both the record by Mathieu (1857) and recent records. An increasing species in Belgium (Scheers, 2014c). Newly recorded for the province Hainaut.

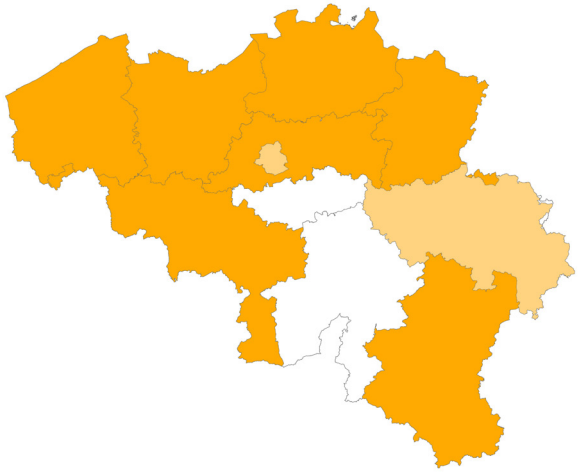

Fig. 94. Presence of *Graptodytes bilineatus* (Sturm, 1835) per province in Belgium.

Graptodytes flavipes (Olivier, 1795)
Fig. 95

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a, 1885b, 1886a), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: In former days recorded from several sites in the northeast of Belgium, but now considered extinct (Fig. 95).

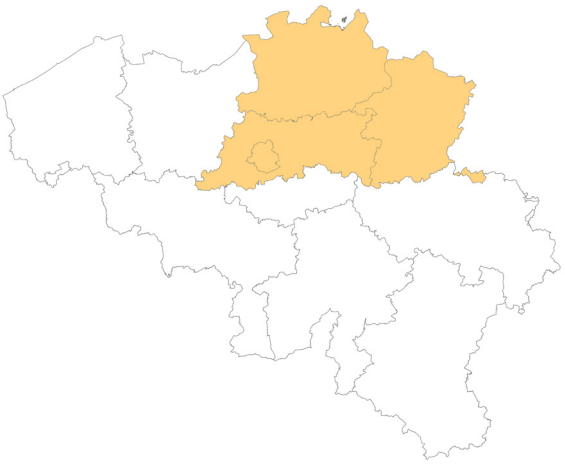

Fig. 95. Presence of *Graptodytes flavipes* (Olivier, 1795) per province in Belgium.

Graptodytes granularis (Linnaeus, 1767)
Fig. 96

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1885b, 1886a, 1888d, 1890b,c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1945, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Known from most provinces and apparently not rare in former days, but recently only known from two sites in Antwerp (Fig. 96).

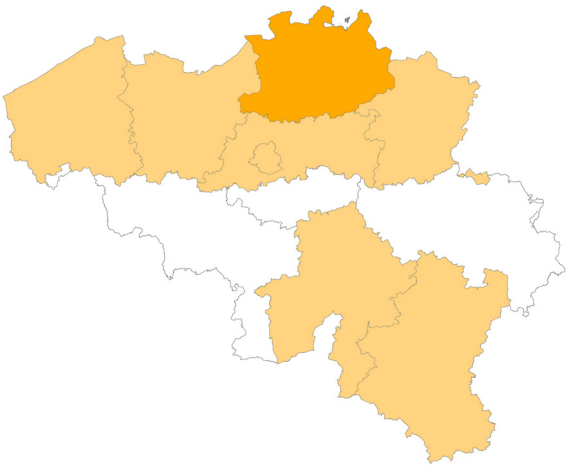

Fig. 96. Presence of *Graptodytes granularis* (Linnaeus, 1767) per province in Belgium.

Note: The records from the polder district mentioned by Bosmans (1994) could not been re-examined and it is possible that these actually refer to *G. bilineatus*.

Graptodytes pictus (Fabricius, 1787)
Fig. 97

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a,c, 1885a,b, 1886a, 1890c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Heylen *et al.* (2003), Scheers (2011), Scheers (2012, 2014e), Thys (2014a), Scheers (2017a).

Distribution: Rather common throughout Belgium (Fig. 97).

Fig. 97. Presence of *Graptodytes pictus* (Fabricius, 1787) per province in Belgium.

Porhydrus lineatus (Fabricius, 1775)
Fig. 98

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a,b,c, 1885a,b, 1886a, 1890c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Known from all provinces. There are however only very few recent records known (Antwerp, East Flanders and Luxemburg) (Fig. 98).

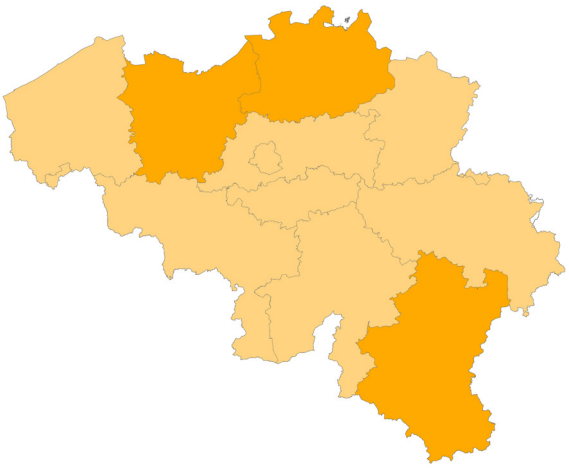

Fig. 98. Presence of *Porhydrus lineatus* (Fabricius, 1775) per province in Belgium.

Tribe Hydrovatini Sharp, 1880

Hydrovatus clypealis Sharp, 1876
Fig. 99

Publications: Scheers (2017a).

Distribution: Known only from West Flanders (Fig. 99).

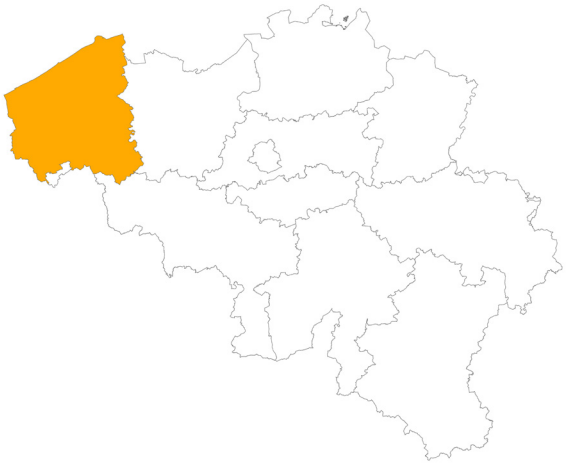

Fig. 99. Presence of *Hydrovatus clypealis* Sharp, 1876 per province in Belgium.

Note: Cited for Belgium by Preudhomme de Borre (1890d). Van Dorsselaer (1919b) considered this record doubtful and likely the result of confusion with *H. cuspidatus* and omitted the species from the Belgian species list (Van Dorsselaer, 1919b, 1957c). There are no specimens of *H. clypealis* with this collection data in any of the studied Belgian collections. This species was however recently discovered in Belgium (Scheers, 2017a) and seems to be expanding (Scheers, unpublished data).

Hydrovatus cuspidatus (Kunze, 1818)
Fig. 100

Publications: Mathieu (1857), De Wispelaere (1910), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Heylen *et al.* (2003), Scheers (2011, 2012, 2014c,e), Thys (2014a), Scheers (2017a).

Distribution: *Hydrovatus cuspidatus* was apparently extremely rare before 2000, but nowadays rather common throughout the north of the country (Scheers, 2014c; 2017a) (Fig. 100).

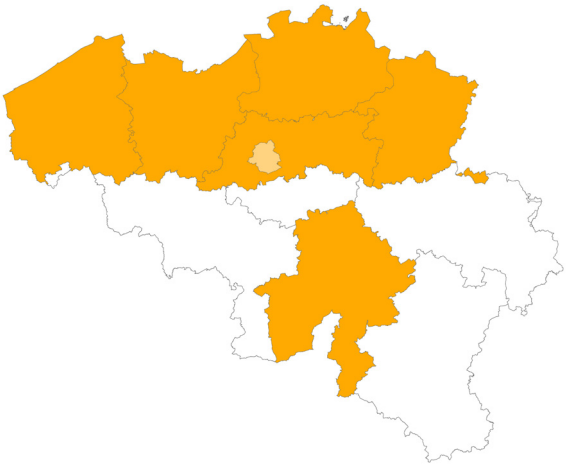

Fig. 100. Presence of *Hydrovatus cuspidatus* (Kunze, 1818) per province in Belgium.

Note: Although mentioned from Brussels by Mathieu (1857) this species was, probably by error, not included in the works by Preudhomme de Borre (1883a, 1886a, 1887).

Tribe Hygrotini Portevin, 1929

Clemnius decoratus (Gyllenhal, 1810)
Fig. 101

Publications: Preudhomme (1886a), De Wispelaere (1910), Ball (1919), Frennet (1919), Lestage (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1945, 1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012), Thys & Scheers (2013), Scheers (2014b,e), Thys (2014a).

Distribution: Not uncommon in the Flanders region with its main distribution in the Campine district and sandy soils elsewhere. Rare in the Walloon region and recently only known from Hainaut (Fig. 101).

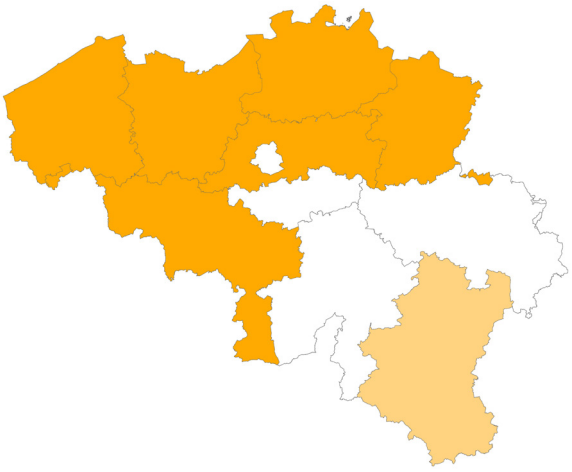

Fig. 101. Presence of *Clemnius decoratus* (Gyllenhal, 1810) per province in Belgium.

Note: Until recently this species was known classified under *Hygrotus s.str.* Stephens, 1828, but recent research placed this species in the newly described genus *Clemnius* Villastrigo, Ribera, Manuel, Millán & Fery, 2017 (Villastrigo *et al.*, 2017).

Hygrotus* (*Coelambus*) *confluens (Fabricius, 1787)
Fig. 102

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883a,b, 1885a, 1886a, 1888e, 1890c, 1891), Van Dorsselaer (1919b), Van Wiele (1925), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2011, 2012, 2014e), Thys (2014a).

New provincial records: Luxembourg: Lacuisine, stream in forest, 49.739°N, 5.300°E, 11.VII.2009, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: Common near the coast in the Dune and Polder region, not rare in the region north of the Sambre and Meuse rivers, but rare in the south (Fig. 102).

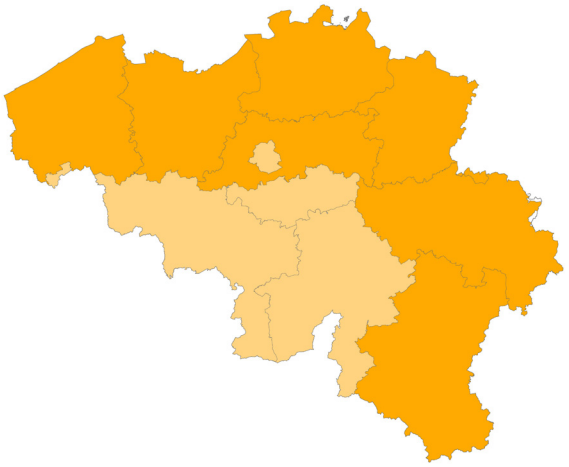

Fig. 102. Presence of *Hygrotus (Coelambus) confluens* (Fabricius, 1787) per province in Belgium.

Note: Newly recorded for the province Luxembourg.

Hygrotus* (*Coelambus*) *nigrolineatus (Steven, 1808)
Fig. 103

Publications: Mercken & Pillen (1987), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Records are scattered in the lowlands with most records in the Polder district. Not known from the Brussels Capital Region and the Walloon region (Fig. 103).

Fig. 103. Presence of *Hygrotus (Coelambus) nigrolineatus* (Steven, 1808) per province in Belgium.

Note: *Hygrotus nigrolineatus* is a relatively recent addition to Western Europe. This species was first recorded in Germany in the first half of the 20th century (Schaeflein, 1971), followed by the Netherlands (Reclaire & Van Der Wiel, 1948), Great Britain (Carr, 1984) and France (Queney, 1996). In Belgium this species was first recorded in 1986 by Mercken & Pillen (1987) based on three records in the province es Antwerp and West Flanders. Recently a specimen of *H. nigrolineatus* collected near Zemst (Flemish Brabant) in 1985 was discovered in a private collection which predates the previously known first record.

Hygrotus* (*Hygrotus*) *inaequalis (Fabricius, 1777)

Fig. 104

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a, 1885a,b, 1886a, 1890c,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Keirens (1984), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Heylen *et al.* (2003), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a), Scheers (2017a).

Distribution: Known from all provinces (Fig. 104). Very common throughout Flanders. In the Walloon region rather common north of the rivers Sambre and Meuse, but uncommon in the south.

Fig. 104. Presence of *Hygrotus (Hygrotus) inaequalis* (Fabricius, 1777) per province in Belgium.

Hygrotus* (*Hygrotus*) *versicolor (Schaller, 1783)

Fig. 105

Publications: Mathieu (1857), Preudhomme de Borre (1883a,b,c, 1885a,b, 1886a, 1890a,c,e), Ball (1919), Frennet (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Heylen *et al.* (2003), Scheers (2012), Thys & Scheers (2013), Scheers (2014e), Thys (2014a).

Distribution: Not uncommon but local in the north and increasingly rare towards the south (Fig. 105).

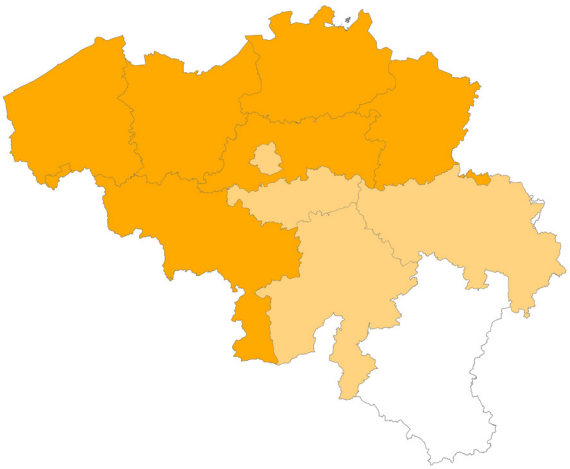

Fig. 105. Presence of *Hygrotus (Hygrotus) versicolor* (Schaller, 1783) per province in Belgium.

Hygrotus* (*Leptolambus*) *impressopunctatus (Schaller, 1783)
Fig. 106

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a, 1885a,b, 1886a, 1888c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dall'Asta (1995), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: A common species throughout Belgium (Fig. 106).

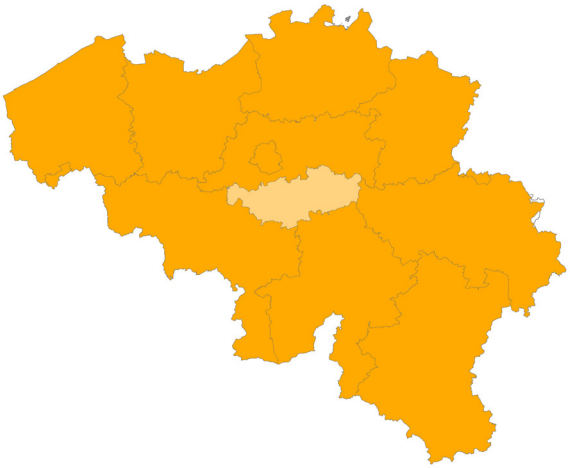

Fig. 106. Presence of *Hygrotus (Leptolambus) impressopunctatus* (Schaller, 1783) per province in Belgium.

Note: Formerly placed in the subgenus *Coelambus* (Thomson, 1860), which was inconsistently used either as genus or subgenus by former authors. Recently this (and the next two) species have been transferred to a new subgenus *Leptolambus* Villastrigo, Ribera, Manuel, Millán & Fery, 2017 (Villastrigo *et al*., 2017).

Hygrotus* (*Leptolambus*) *novemlineatus (Stephens, 1829)
Fig. 107

Publications: Preudhomme de Borre (1885b, 1886a), Schouteden (1912), Van Dorsselaer (1919b), Frennet (1921), Van Dorsselaer (1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Only known from historic records from Antwerp (Fig. 107). Considered extinct in Belgium.

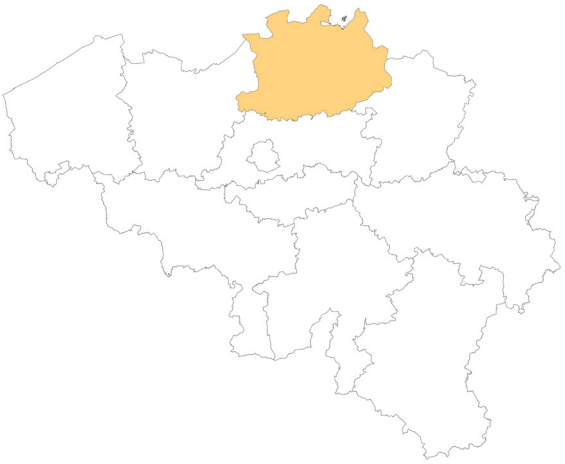

Fig. 107. Presence of *Hygrotus (Leptolambus) novemlineatus* (Stephens, 1829) per province in Belgium.

Note: Recently this species have been transferred to a new subgenus *Leptolambus* Villastrigo, Ribera, Manuel, Millán & Fery, 2017 (Villastrigo *et al*., 2017).

Hygrotus* (*Leptolambus*) *parallellogrammus (Ahrens, 1812)
Fig. 108

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a, 1890c), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014e).

Distribution: Known from the Dune and Polder districts, very rare elsewhere. Not known from the Brussels Capital Region and the Walloon region (Fig. 108).

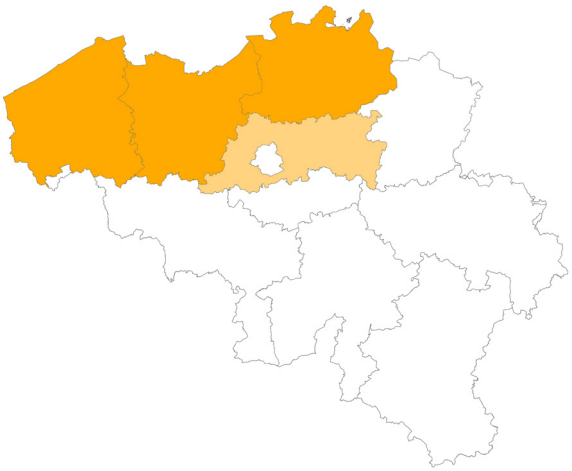

Fig. 108. Presence of *Hygrotus (Leptolambus) parallellogrammus* (Ahrens, 1812) per province in Belgium.

Note: Recently this species have been transferred to a new subgenus *Leptolambus* Villastrigo, Ribera, Manuel, Millán & Fery, 2017 (Villastrigo *et al*., 2017).

Tribe Hyphydrini Sharp, 1880

Hyphydrus ovatus (Linnaeus, 1760)
Fig. 109

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,c, 1885a,b, 1886a, 1890c), Ball (1919), Van Dorsselaer (1919b), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Dethier *et al.* (2008), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Common at low altitude and somewhat less common at medium altitude in the south and east of Belgium. Recent records are lacking from Walloon Brabant (Fig. 109).

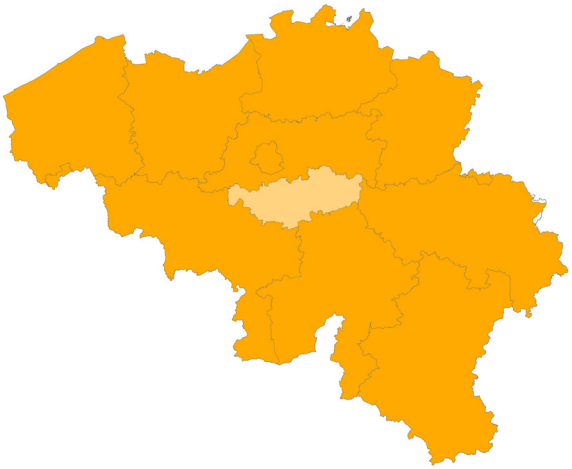

Fig. 109. Presence of *Hyphydrus ovatus* (Linnaeus, 1760) per province in Belgium.

Tribe Bidessini Sharp, 1880

Bidessus grossepunctatus Vorbringer, 1907
Fig. 110

Publications: Van Dorsselaer (1948, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Scheers (2012), Thys & Scheers (2013), Scheers (2014e).

New records: West Flanders: Beernem, Gevaerts-Noord, 51.142°N, 3.309°E, 26.IX.2017, 1 ind., leg. & det. K. Scheers, CKS.

Distribution: Locally in the northeast, very few records outside this region (Fig. 110).

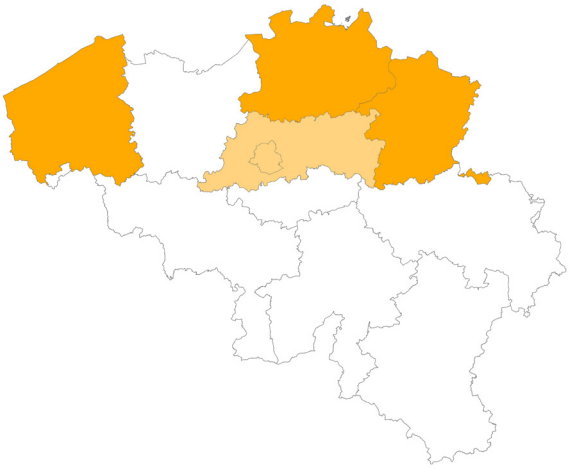

Fig. 110. Presence of *Bidessus grossepunctatus* Vorbringer, 1907 per province in Belgium.

Note: Scheers (2012) regarded this species as probably regionally extinct. Recent records, however, were discovered shortly after and new records indicate this species is well established in the Campine Region. This species is here newly recorded for West Flanders.

Bidessus unistriatus (Goeze, 1777)
Fig. 111

Publications: Mathieu (1857), Preudhomme de Borre (1882b, 1883c, 1885b, 1886a, 1888e, 1890b), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Keirens (1984), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Common in the Campine region, but rather rare elsewhere (Fig. 111).

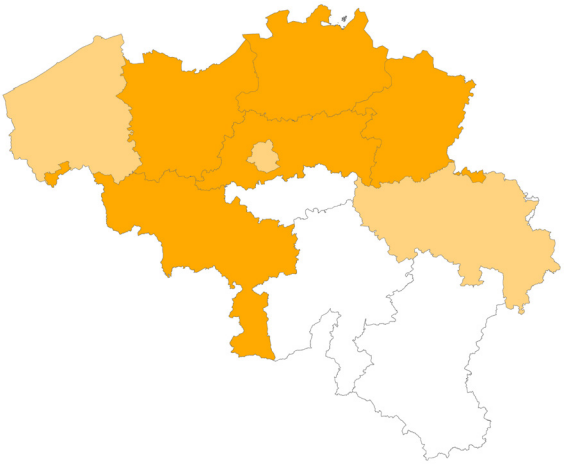

Fig. 111. Presence of *Bidessus unistriatus* (Goeze, 1777) per province in Belgium.

Hydroglyphus geminus (Fabricius, 1792)
Fig. 112

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,c, 1885a,b, 1886a, 1888a, 1890c), Ball (1919), Frennet (1919), Van Dorsselaer (1919b, 1957c), Bosmans & Ryserhove (1977), Keirens (1984), Litt (1988), Bosmans (1994), Dopagne (1995), Bosmans (1998), Scheers (2011, 2012, 2014e), Thys (2014a).

Distribution: Common throughout Belgium (Fig. 112).

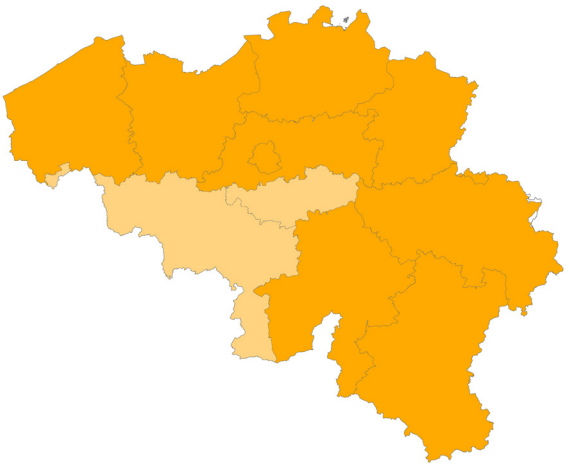

Fig. 112. Presence of *Hydroglyphus geminus* (Fabricius, 1792) per province in Belgium.

Yola bicarinata bicarinata (Latreille, 1804)
Fig. 113

Publications: Keirens (1984), Bosmans & Keirens (1986), Bosmans (1994), Dopagne (1995), Scheers (2012, 2014d,e).

New provincial records: Flemish Brabant: Zemst, Bos van Aa, 51.0°N, 4.384°E, 10 ind., 04.VII.2020, leg. & det. K. Scheers, CSK; Zemst, Bos van Aa, 50.990°N, 4.397°E, 10 ind., 04.VII.2020, leg. & det. K. Scheers, CSK; Zemst, Bos van Aa, 50.990°N, 4.397°E, 10 ind., 25.V.2021, leg. & det. K. Scheers, CSK.

Distribution: *Yola bicarinata bicarinata* has a very limited distribution in Belgium (Fig. 113) but seems to be expanding. A very localised species, but often extremely abundant in the right habitat.

Fig. 113. Presence of *Yola bicarinata bicarinata* (Latreille, 1804) per province in Belgium.

Note: Well established in the extreme northeast of East Flanders, recently also rediscovered for Antwerp near Boom and newly recorded for Flemish Brabant.

Family **Hygrobiidae** Régimbart, 1878

Hygrobia hermanni (Fabricius, 1775)
Fig. 114

Publications: Mathieu (1857), Becker (1879), Preudhomme de Borre (1883a,b, 1885a,b, 1886a, 1890a), Ball (1919), Van Dorsselaer (1919a), Biebuyck (1920b), Goetghebuer (1930), Van Dorsselaer (1957b), Boosten (1965, 1972), Dopagne (1992), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Scheers (2011), Thys (2014a).

Distribution: Common throughout Belgium, especially in the northern half (Fig. 114). The lack of recent records from the Luxemburg province only reflects the low sampling efforts in that province in recent times.

Fig. 114. Presence of *Hygrobia hermanni* (Fabricius, 1775) per province in Belgium.

Note: Although this species was still expanding towards the north in the Netherlands in the mid 20th century (Cuppen, 2000), Dopange (1992) found no significant temporal changes in the distribution and status of this species in Belgium. Since the study of Dopagne (1992) however, it seems that this species has become more common, especially in the northeast of the country. Nowadays this species is common in northern Belgium and somewhat less frequent in the south.

Family **Noteridae** Thomson, 1860
Subfamily **Noterinae** C.G. Thomson, 1860
Tribe Noterini C.G. Thomson, 1860

Noterus clavicornis (De Geer, 1774)
Fig. 115

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,c, 1885a,b, 1886a, 1890e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Bosmans (1998), Heylen *et al.* (2003), Dethier *et al.* (2008), Scheers (2011), Thys (2014a), Scheers (2017a).

Distribution: A very common species throughout Belgium (Fig. 115).

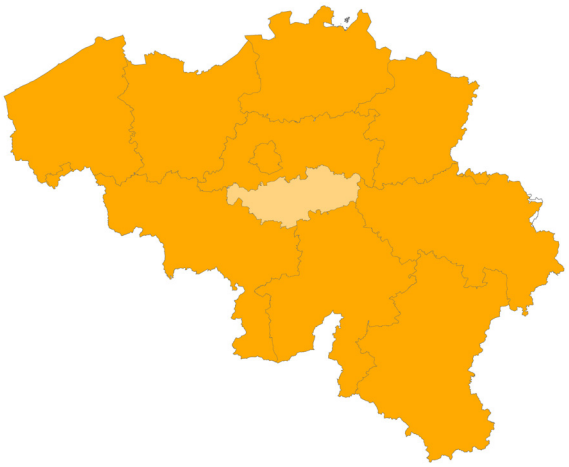

Fig. 115. Presence of *Noterus clavicornis* (De Geer, 1774) per province in Belgium.

Noterus crassicornis (Müller, 1776)
Fig. 116

Publications: Mathieu (1857), Preudhomme de Borre (1882b,c, 1883a,b,c, 1885a,b, 1886a, 1890e), Ball (1919), Frennet (1919), Van Dorsselaer (1919c), Goetghebuer (1930), Van Dorsselaer (1957c), Bosmans & Ryserhove (1977), Bosmans & Van Stalle (1983), Bosmans (1994), Dopagne (1995), Van De Vijver *et al.* (1997), Bosmans (1998), Scheers (2011), Thys (2014a).

Distribution: Common in the lowland (north of the rivers Sambre and Meuse) but rather rare in the Walloon region in the south (Fig. 116).

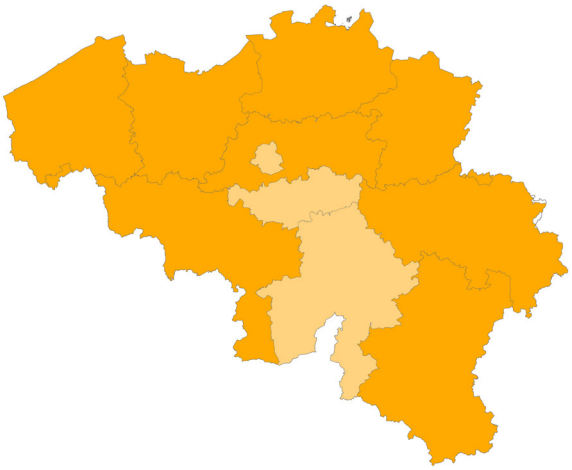

Fig. 11 6. Presence of *Noterus crassicornis* (Müller, 1776) per province in Belgium.

Family **Gyrinidae** Latreille, 1810
Subfamily **Gyrininae** Latreille, 1810
Tribe Gyrinini Latreille, 1810

Aulonogyrus concinnus (Klug, 1834)
Fig. 117

Publications: Mathieu (1857), Van Dorsselaer (1919a, 1920), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Only known from a handful of historic records from the province Antwerp and a single record near Bruges (West Flanders) (Fig. 117).

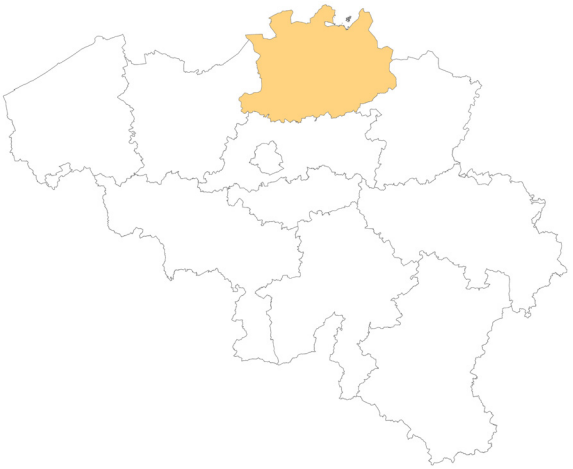

Fig. 117. Presence of *Aulonogyrus concinnus* (Klug, 1834) per province in Belgium.

Gyrinus aeratus Stephens, 1835
Fig. 118

Publications: Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Only known from a small number of old records (Fig. 118).

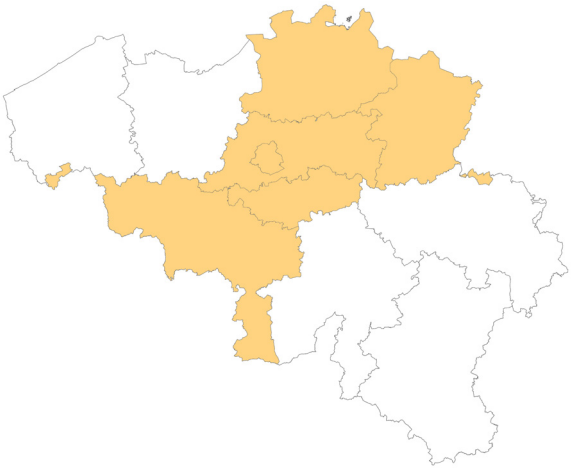

Fig. 118. Presence of *Gyrinus aeratus* Stephens, 1835 per province in Belgium.

Gyrinus caspius Ménétriés, 1832
Fig. 119

Publications: Preudhomme de Borre (1885b, 1886a, 1890c), Van Dorsselaer (1920), Janssens (1931), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: *G. caspius* has a strict coastal distribution in Belgium and is restricted to the Polder and Dune districts (Fig. 119).

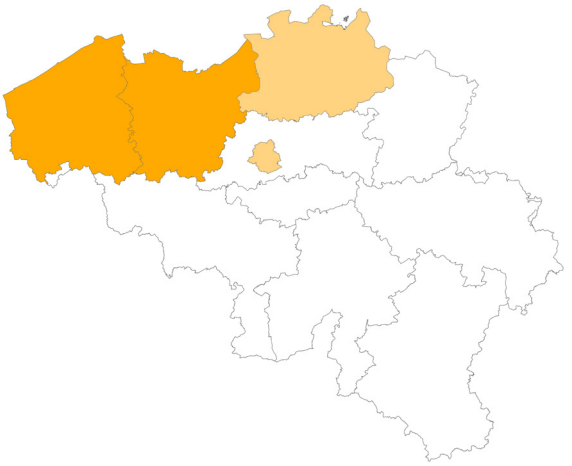

Fig. 119. Presence of *Gyrinus caspius* Ménétriés, 1832 per province in Belgium.

Gyrinus distinctus Aubé, 1836
Fig. 120

Publications: Mathieu (1857), Van Dorsselaer (1920), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Very rare. Only known with certainty from East Flanders and Flemish Brabant. There are no records post 2000 (Fig. 120).

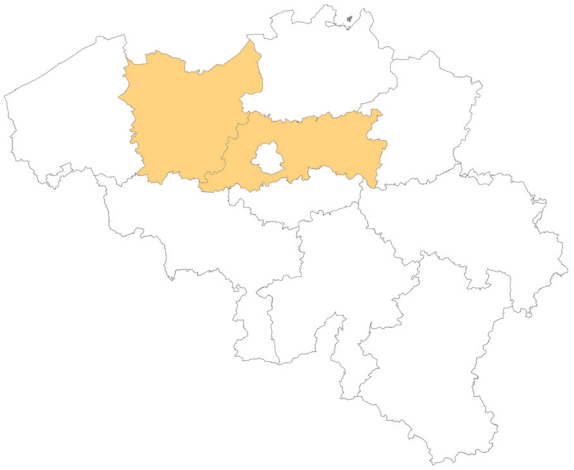

Fig. 120. Presence of *Gyrinus distinctus* Aubé, 1836 per province in Belgium.

Gyrinus marinus Gyllenhal, 1808
Fig. 121

Publications: Mathieu (1857), Preudhomme de Borre (1885a, 1886a, 1887, 1888a,c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1920), Mouchamps (1957), Bosmans & Ryserhove (1977), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Not rare but mainly restricted to sandy soils (Fig. 121).

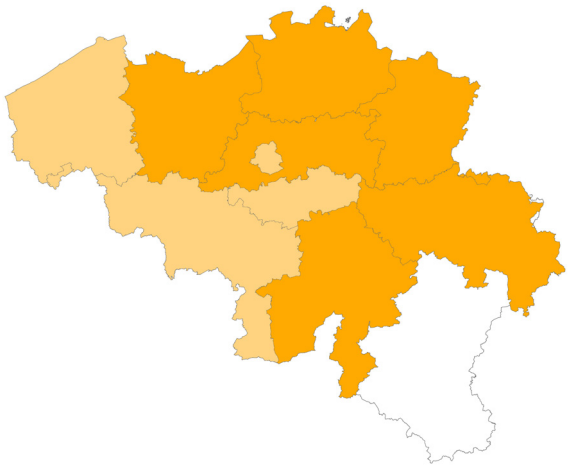

Fig. 121. Presence of *Gyrinus marinus* Gyllenhal, 1808 per province in Belgium.

Gyrinus minutus Fabricius, 1798
Fig. 122

Publications: Mathieu (1857), Preudhomme de Borre (1885b, 1886a, 1887, 1888c, 1890a), Van Dorsselaer (1920), Janssens (1931), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Known from the east of the country and the province Hainaut (Fig. 122). There are no recent records and *G. minutus* is considered to be extinct.

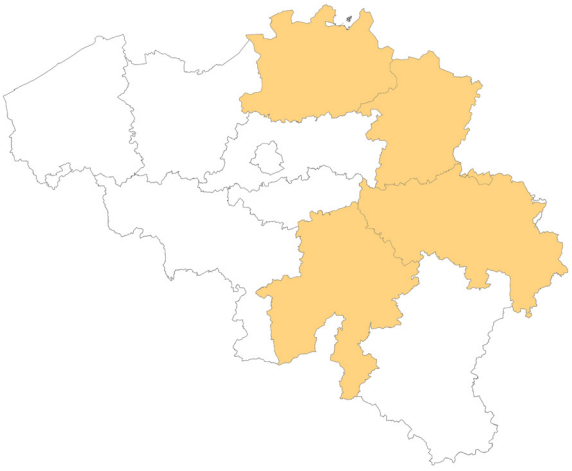

Fig. 122. Presence of *Gyrinus minutus* Fabricius, 1798 per province in Belgium.

Gyrinus natator Linnaeus, 1758
Fig. 123

Publications: Alderweireldt & De Winter (1992), Bosmans (1994).

Distribution: Only known from a single record in the province of Antwerp (Fig. 123).

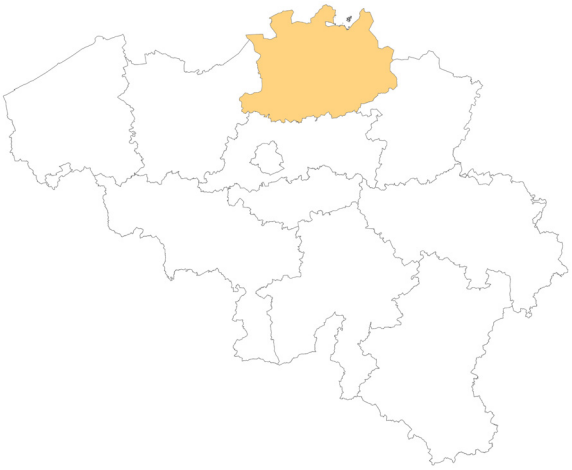

Fig. 123. Presence of *Gyrinus natator* Linnaeus, 1758 per province in Belgium.

Note: *Gyrinus substriatus* was for many years known under the name *G. natator*. All other records of *G. natator* in Belgian literature not mentioned above, refer to *G. substriatus*. This species was added to the Belgian species list by (Alderweireldt & De Winter, 1992) based on specimens found in one locality in Antwerp. We did not study these specimens.

Gyrinus paykulli Ochs, 1927
Fig. 124

Publications: Mathieu (1857), Preudhome de Borre (1886a, 1887, 1888a, 1890c), Ball (1919), Van Dorsselaer (1920), Janssens (1931), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994), Thys (2014a).

Distribution: Not uncommon near the coast and in the Campine district. Possibly more common in the Flanders region but undersampled. Rare in the Walloon region with records from Hainaut and Luxembourg (Fig. 124).

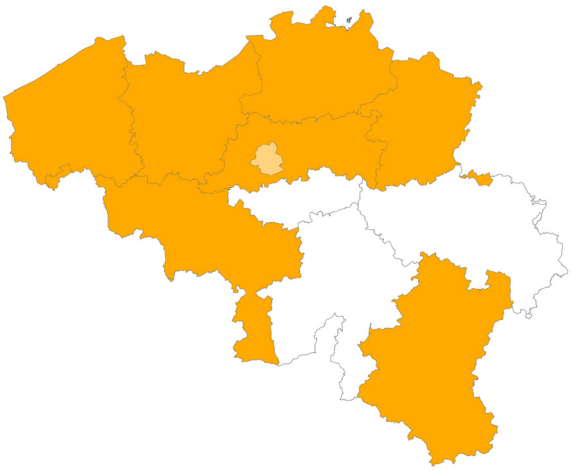

Fig. 124. Presence of *Gyrinus paykulli* Ochs, 1927 per province in Belgium.

Gyrinus substriatus Stephens, 1828
Fig. 125

Publications: Mathieu (1857), Preudhomme de Borre (1885a,b, 1886a, 1887, 1888a,b,c, 1890a,c), Ball (1919), Frennet (1919), Van Dorsselaer (1920), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994), Thys (2014a).

Distribution: Common throughout Belgium (Fig. 125).

Fig. 125. Presence of *Gyrinus substriatus* Stephens, 1828 per province in Belgium.

Gyrinus suffriani Scriba, 1855
Fig. 126

Publications: Van Dorsselaer (1920), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Very rare and only known from Antwerp, Flemish Brabant and Limburg with recent records restricted to Antwerp (Fig. 126).

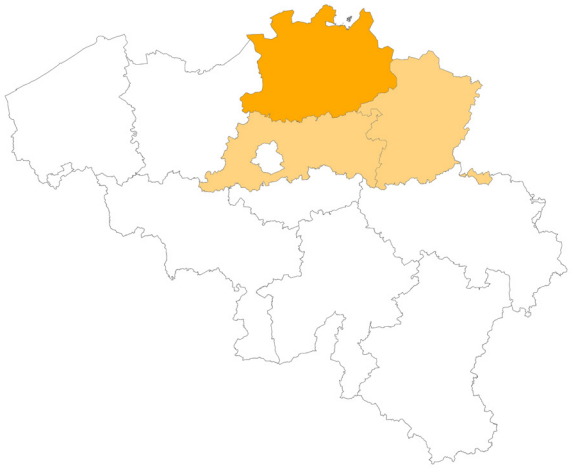

Fig. 126. Presence of *Gyrinus suffriani* Scriba, 1855 per province in Belgium.

Tribe Orectochilini Régimbart, 1828

Orectochilus villosus (Müller, 1776)
Fig. 127

Publications: Mathieu (1857), Preudhomme de Borre (1885a, 1886a, 1887, 1888b,c), Van Dorsselaer (1920), Mouchamps (1957), Van Stalle & Bosmans (1981), Bosmans (1994).

Distribution: Not uncommon south of the rivers Sambre and Meuse, increasingly rare towards the northwest. Not known from East and West Flanders (Fig. 127).

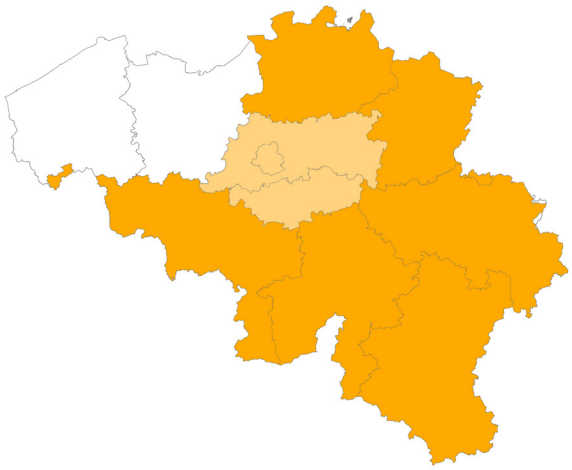

Fig. 127. Presence of *Orectochilus villosus* (Müller, 1776) per province in Belgium.

Family **Haliplidae** Aube, 1836

Brychius elevatus (Panzer, 1793)
Fig. 128

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b, 1883a,c, 1886a), D' Rousseau (1919), Van Dorsselaer (1919a, 1957a), Bosmans (1994).

Distribution: Recorded from all provinces except Flemish Brabant and West Flanders. Recent records are limited to the provinces Antwerp, Luxembourg and Namur (Fig. 128).

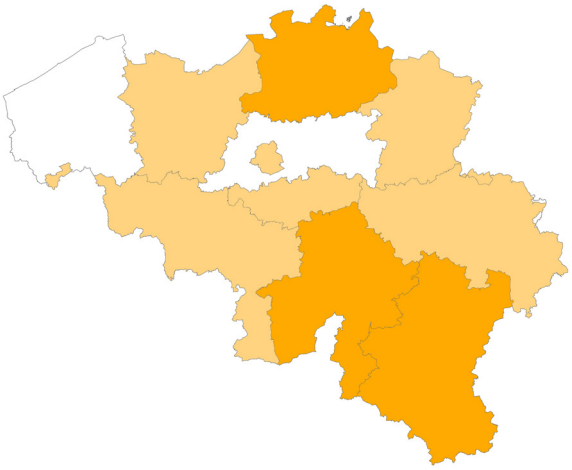

Fig. 128. Presence of *Brychius elevatus* (Panzer, 1793) per province in Belgium.

Haliplus apicalis Thomson, 1868
Fig. 129

Publications: Van Dorsselaer (1919a, 1948, 1957a, 1890a), Van Stalle & Bosmans (1982), Bosmans (1994) van Vondel (2006) .

Distribution: Only known from Antwerp and West-Flanders (Fig. 129).

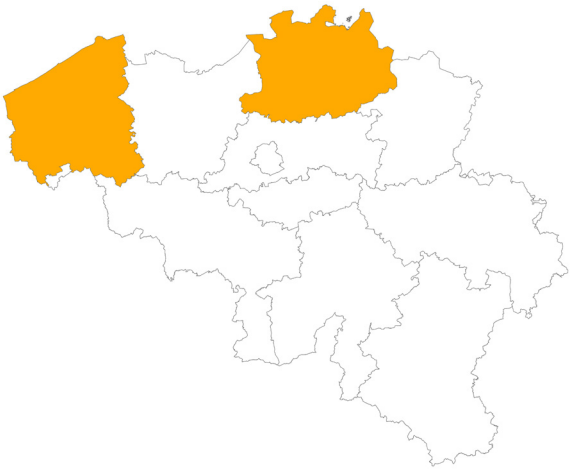

Fig. 129. Presence of *Haliplus apicalis* Thomson, 1868 per province in Belgium.

Haliplus confinis Stephens, 1828
Fig. 130

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a), Ball (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994).

Distribution: Recent records are known from all provinces in the Flanders region and from Hainaut. Furthermore there are older records from the Brussels Capital Region. This species is not recorded in the south (Fig. 130).

Fig. 130. Presence of *Haliplus confinis* Stephens, 1828 per province in Belgium.

Haliplus flavicollis Sturm, 1834
Fig. 131

Publications: Mathieu (1857), Preudhomme de Borre (1882c,d, 1883b,c, 1885b, 1886a), Ball (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), Thys (2014a).

Distribution: Common throughout Belgium. Apparently never recorded from Walloon Brabant (Fig. 131).

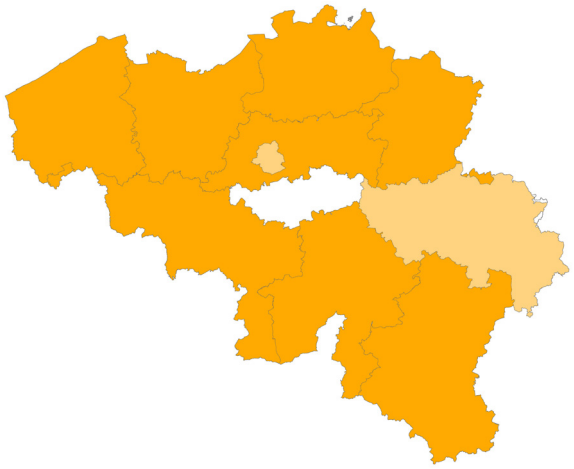

Fig. 131. Presence of *Haliplus flavicollis* Sturm, 1834 per province in Belgium.

Haliplus fluviatilis Aubé, 1836
Fig. 132

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b,c,d, 1883a,b, 1885b, 1886a), Ball (1919), Frennet (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Thys (2014a).

Distribution: Common throughout Belgium (Fig. 132).

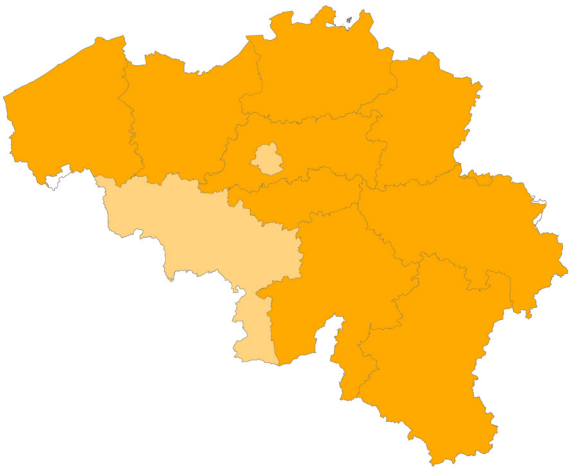

Fig. 132. Presence of *Haliplus fluviatilis* Aubé, 1836 per province in Belgium.

Haliplus fulvicollis Erichson, 1837
Fig. 133

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b, 1883a, 1885b, 1886a), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Thys (2017).

Distribution: Known from several provinces in the north of Belgium but with recent records limited to Antwerp (Fig. 133).

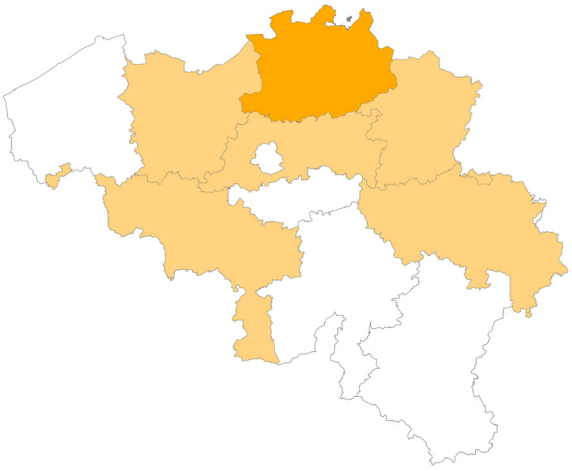

Fig. 133. Presence of *Haliplus fulvicollis* Erichson, 1837 per province in Belgium.

Haliplus fulvus (Fabricius, 1801)

Fig. 134

Publications: Mathieu (1857), Preudhomme de Borre (1882a,c,d, 1883a,b, 1885b, 1886a, 1890a), Ball (1919), Frennet (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Thys (2014a).

Distribution: Recorded from most provinces, but only several with recent records (Fig. 134).

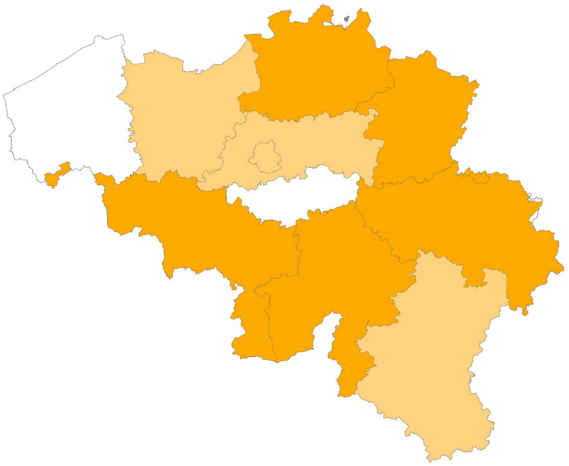

Fig. 134. Presence of *Haliplus fulvus* (Fabricius, 1801) per province in Belgium.

Haliplus furcatus Seidlitz, 1887

Fig. 135

Publications: Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006).

Distribution: Only known from old records from East and West Flanders (Fig. 135).

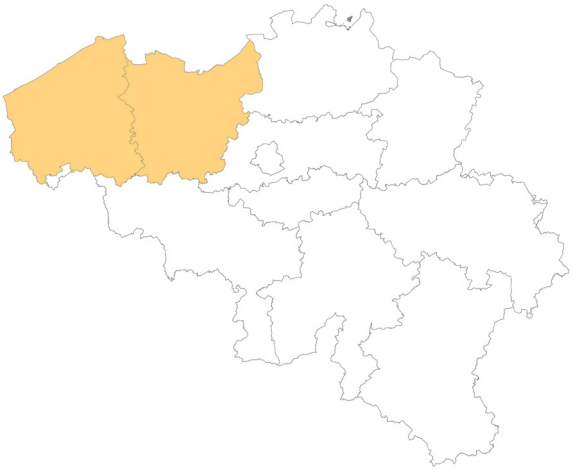

Fig. 135. Presence of *Haliplus furcatus* Seidlitz, 1887 per province in Belgium.

Haliplus heydeni Wehncke, 1875
Fig. 136

Publications: Ball (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Dethier *et al.* (2008), Thys (2014a).

Distribution: a common species throughout most of Belgium, but apparently lacking in the west (Fig. 136).

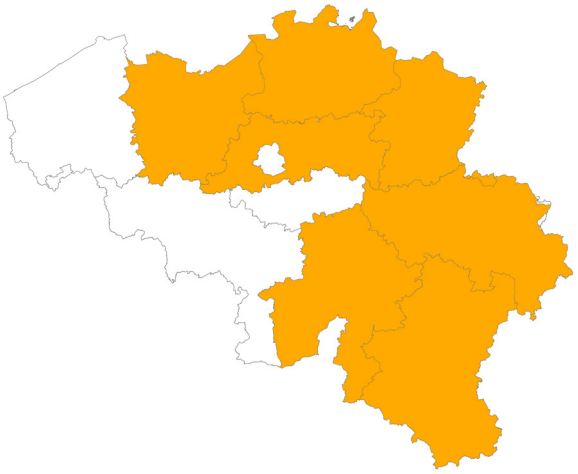

Fig. 136. Presence of *Haliplus heydeni* Wehncke, 1875 per province in Belgium.

Haliplus immaculatus Gerhardt, 1877
Fig. 137

Publications: Ball (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Thys (2014a).

Distribution: Recent records are known from all provinces in the Flanders region and from the Brussels Capital Region (Fig. 137). There is not a single record from the Walloon region, which probably partly reflects undersampling.

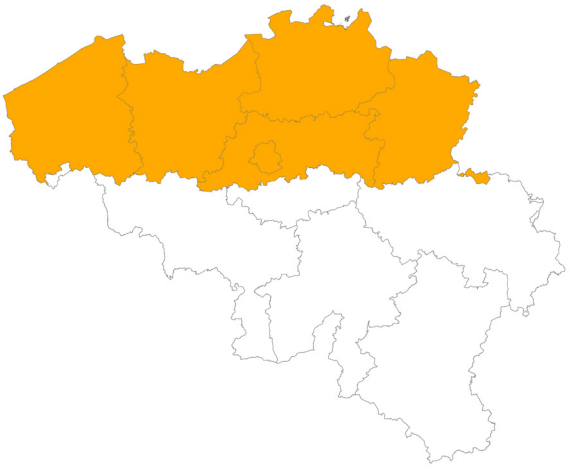

Fig. 137. Presence of *Haliplus immaculatus* Gerhardt, 1877 per province in Belgium.

Haliplus laminatus (Schaller, 1783)
Fig. 138

Publications: Mathieu (1857), Preudhomme de Borre (1882d, 1883a,b,c, 1886a, 1889a), Ball (1919), Frennet (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982) van Vondel (1991), Bosmans (1994), Thys (2014a).

Distribution: Recently recorded in Flemish Brabant, Limburg, Luxembourg and Namur. Before 2000 also known from the Brussels Capital Region, East Flanders and Liège (Fig. 138).

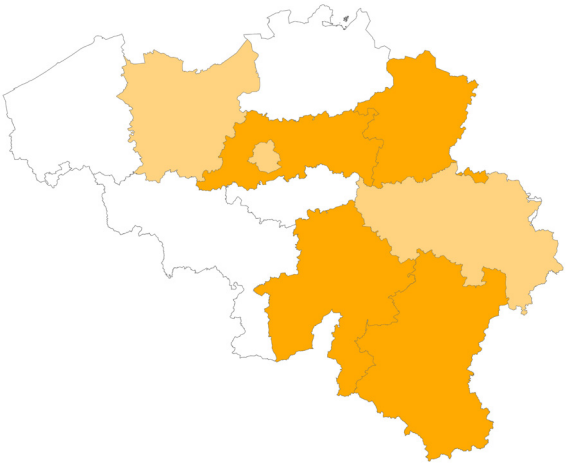

Fig. 138. Presence of *Haliplus laminatus* (Schaller, 1783) per province in Belgium.

Haliplus lineatocollis (Marsham, 1802)
Fig. 139

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b,c,d, 1883a,b,c, 1885b, 1886a), Ball (1919), Frennet (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), Thys (2014a).

Distribution: Very common throughout Belgium (Fig. 139).

Fig. 139. Presence of *Haliplus lineatocollis* (Marsham, 1802) per province in Belgium.

Haliplus lineolatus Mannerheim, 1844

Fig. 140

Publications: Van Dorsselaer (1919a, 1948, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006).

Distribution: Formerly known from Antwerp, East Flanders and West Flanders (Fig. 140). There are no recent records of this species.

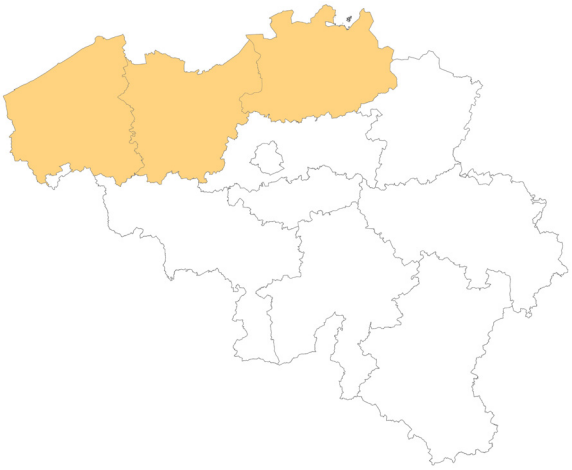

Fig. 140. Presence of *Haliplus lineolatus* Mannerheim, 1844 per province in Belgium.

Haliplus mucronatus Stephens, 1828

Fig. 141

Publications: Mathieu (1857), Preudhomme de Borre (1882d, 1886a), Van Dorsselaer (1919a), Ball (1920), Van Dorsselaer (1957a), Van Stalle & Bosmans (1982), van Vondel (1991), Bosmans (1994).

Distribution: Restricted to the coast (West Flanders) (Fig. 141).

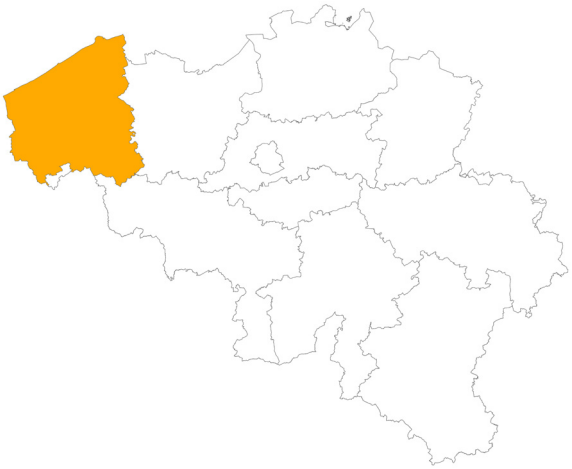

Fig. 141. Presence of *Haliplus mucronatus* Stephens, 1828 per province in Belgium.

Haliplus obliquus (Fabricius, 1787)
Fig. 142

Publications: Mathieu (1857), Preudhomme de Borre (1883a, 1886a, 1889a), Ball (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), Thys (2014a, c).

Distribution: Scattered records throughout northern Belgium (Fig. 142).

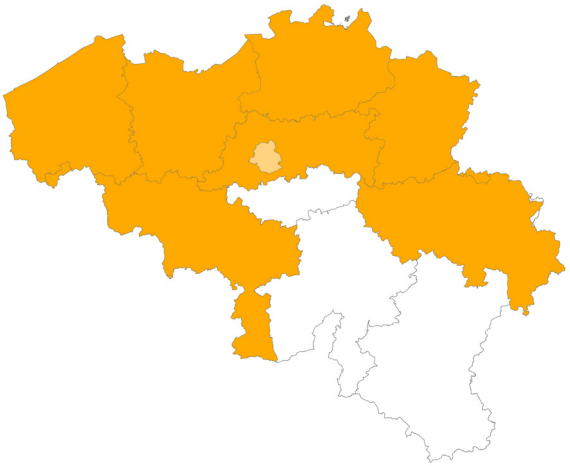

Fig. 142. Presence of *Haliplus obliquus* (Fabricius, 1787) per province in Belgium.

Haliplus ruficollis (De Geer, 1774)
Fig. 143

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b,c,d, 1883a,b,c, 1885b, 1886a), Ball (1919), Frennet (1919), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994), van Vondel (2006), Dethier *et al.* (2008), Thys (2014a).

Distribution: Common in the northern half of the country but rather rare in the south (Fig. 143).

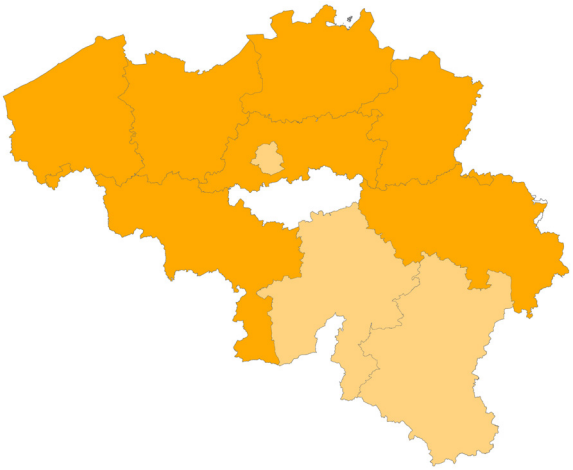

Fig. 143. Presence of *Haliplus ruficollis* (De Geer, 1774) per province in Belgium.

Haliplus variegatus Sturm, 1834
Fig. 144

Publications: Mathieu (1857), Preudhomme de Borre (1883a,c, 1886a, 1890d), Ball (1919), Van Dorsselaer (1919a, 1957a), van Vondel (1991), Bosmans (1994).

Distribution: Records are known from the Brussels Capital region, East Flanders, Flemish Brabant, Liège and West Flanders (Fig. 144). There are no recent records and the species is considered as extinct in Belgium (Van Stalle & Bosmans, 1982; Bosmans, 1994).

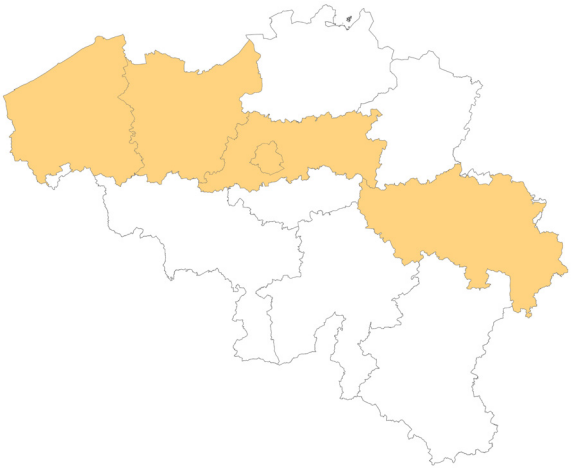

Fig. 144. Presence of *Haliplus variegatus* Sturm, 1834 per province in Belgium.

Haliplus varius Nicolai, 1822
Fig. 145

Publications: Mathieu (1857), Van Dorsselaer (1919a, 1957a), Van Stalle & Bosmans (1982), Bosmans (1994).

Distribution: Known historically from Antwerp, the Brussels Capital Region, East Flanders, Flemish Brabant and West Flanders (Fig. 145). *Haliplus varius* has not been recorded since many years and is considered as extinct in Belgium (Van Stalle & Bosmans, 1982; Bosmans, 1994).

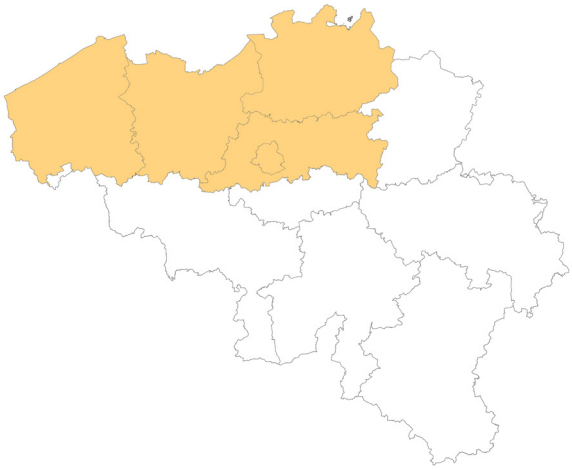

Fig. 145. Presence of *Haliplus varius* Nicolai, 1822 per province in Belgium.

Haliplus sibiricus Motschulsky, 1860
Fig. 146

Publications: Van Vondel (2006), Thys (2014a,c).

Distribution: Recent records are restricted to the east of the country with historic records from Antwerp, the Brussel Capital Region and East Flanders (Fig. 146).

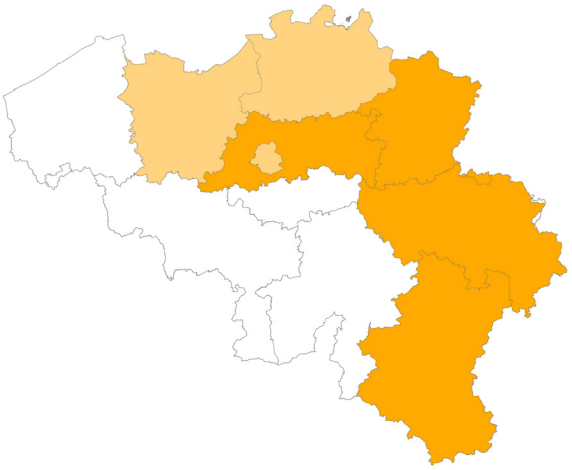

Fig. 146. Presence of *Haliplus sibiricus* Motschulsky, 1860 per province in Belgium.

Peltodytes caesus (Duftschmid, 1805)
Fig. 147

Publications: Mathieu (1857), Preudhomme de Borre (1882a,b,c,d, 1883a, 1885b, 1886a, 1888c), Ball (1919), Frennet (1919), Van Dorsselaer (1919a), Van Dorsselaer (1957a), Van Stalle & Bosmans (1982), van Vondel (1992), Bosmans (1994), Thys (2014a).

Distribution: Very common in the Flanders region (Fig. 147). The lack of recent records from the Walloon Region is obviously due to undersampling.

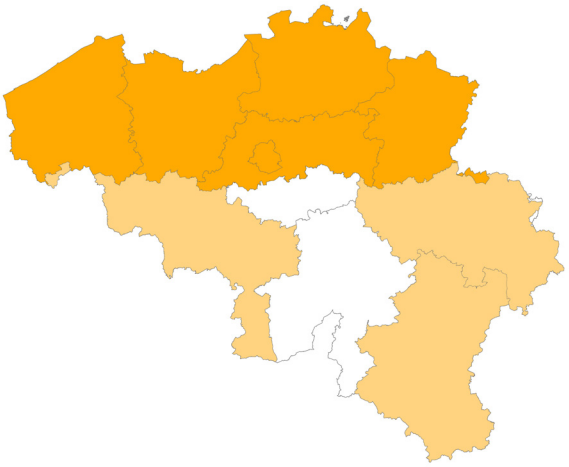

Fig. 147. Presence of *Peltodytes caesus* (Duftschmid, 1805) per province in Belgium.

Omitted species

Boreonectes griseostriatus (De Geer, 1774)

Published records: Mathieu (1857), Van Dorsselaer (1919b), Guignot (1947)

Note: Mathieu (1857) mentions this species from Blankenberge and Nieuwpoort. Later Van Dorsselaer (1919) mentions he collected one specimen near Nieuwpoort in 1913 which was also repeated by Guignot (1947). However, in his latest catalogue (Van Dorsselaer, 1957) he states that the presence of this species was based on a mislabelled specimen and removes the species from the Belgian species list. At the RBINS there is only the unlabelled (the incorrect

label has apparently been removed by Van Dorsselaer) specimen present in the collection of Van Dorsselaer (Keirens, 1984). Since *Boreonectes griseostriatus* is a boreoalpine species (Nilsson & Holmen, 1995) and the old, doubtful records are from sea-level at the coast, it is safe to presume all Belgian records are based on misidentifications or mislabelling.

Colymbetes striatus (Linnaeus, 1758)

Published records: Van Dorsselaer (1919c, 1957c).

Note: Van Dorsselaer (1957c), although including *C. striatus* in the Belgium species list, notes that the Belgian records possibly could refer to misidentification of *C. fuscus.* Indeed the single Belgian record of *C. striatus* is based on a misidentified specimen of *C. fuscus* which is in the collection of Jacobs deposited in the RBINS.

Deronectes moestus (Fairmaire, 1858)

Published records: Preudhomme de Borre (1883a, 1886a).

Note: This species was included in the Belgium species list by Preudhomme de Borre (1883a, 1886a) but not adopted by later authors. *Deronectes moestus* is a strictly Mediterranean species restricted to streams in Morocco, the Iberian peninsula, Southern France, Switzerland, Italy and the Balkan peninsula (Fransiscolo, 1979; Nilsson & Hajek, 2022). The record from Preudhomme de Borre (1883a, 1886a) is undoubtedly erroneous.

Graptodytes varius (Aubé, 1838)

Published records: Guignot (1947).

Note: Guignot (1947) includes Belgium in the distribution of this species. There are however no Belgian specimens of this species in any of the studied collections. None of the Belgian authors recorded this species from Belgium and this species is not expected to occur here. *Graptodytes varius* is distributed from Morocco through Southern Europe, reaching southern Germany in the north of its range (Schaeflein, 1971; Fransiscolo, 1979). This species is not known from northern France outside the Rhine valley (Queney, 2011).

Gyrinus dejeani Brullé, 1832

Published records: Mathieu (1857), Van Dorsselaer (1920).

Note: This species was mentioned by Mathieu (1857) as occurring near Brussels (Brussels Capital Region), Mechelen (Antwerp) and Leuven (Flemish Brabant) and "not uncommon" in Belgium. Van Dorsselaer (1920), although including this species based on Mathieu (1857), mentions that he never saw any Belgian specimens of this species and that the presence of this species in Belgium is doubtful. Mouchamps (1957) and Van Stalle & Bosmans (1981) do not include this species when listing the Belgian Gyrinidae. *Gyrinus dejeani* is a species with a southern distribution in Europe and is not expected to occur in Belgium.

Gyrinus urinator Illiger, 1807

Published records: Mathieu (1857), Van Dorsselaer (1920).

Note: According to Mathieu (1857) this species is collected 'loin en loin' [here and there]. Van Dorsselaer (1920) includes this species based on the work from Mathieu (1857) but adds that he does not know of any exact localities. This species is no longer included in the checklist of Belgian Gyrinidae by Mouchamps (1957), nor is it mentioned by Van Stalle & Bosmans (1981). There are no specimens in any of the studied Belgian collections and its presence in Belgium is very doubtful.

Hydaticus* (*Hydaticus*) *continentalis J. Balfour-Browne, 1944

Published records: Mathieu (1857), Van Dorsselaer (1919c, 1957c).

Note: According to Mathieu (1857) this species, under the synonym *H. stagnalis* Fabricius, 1787, is rare in Belgium but lists several provinces in which it was recorded. These records are not repeated by Preudhomme de Borre (1886c). Van Dorsselaer (1919c, 1957c), however, does include this species in his checklist and lists the same regions as Mathieu (1857) and adds that it has not been collected since (Van Dorsselaer, 1957c). This species is not known to occur in Belgium or adjacent regions and the Belgian records are either based on misidentification of *H. seminiger*, which closely resembles this species, or mislabelling.

Hydaticus* (*Prodaticus*) *grammicus (Germar, 1827)

Published records: Mathieu (1857), Preudhomme de Borre (1886a, 1888c), Van Dorsselaer (1919c, 1957c).

Note: Preudhomme de Borre (1886a, 1888c) and Van Dorsselaer (1919c, 1957c) repeat Mathieu (1857) and note that this species was only cited from near Angleur and never found again. This species does not occur in the region adjacent to the Belgian border and the record from Mathieu (1857) is by no doubt incorrect.

Hydroporus fuscipennis Schaum in Schaum & Kiesenwetter, 1867

Published records: Preudhomme de Borre (1886a; 1888d), Van Dorsselaer (1919b).

Note: *Hydroporus fuscipennis* is a subboreal species which ranges from eastern European and western Siberian to the Nearctic region (Nilsson & Hájek, 2022). The closest populations are in northeast Germany (Schaeflein, 1971). There are no Belgian specimens of this species in any of the studied collections and the presence in Belgium is unrealistic. Historical records probably refer to the closely related *H. pubescens*.

Hydroporus necopinatus Fery, 1999

Published records: Ganglbauer (1892), Foster *et al.* (2016).

Note: This species was included as occurring in Belgium (as *H. cantabricus* Sharp, 1882) by Ganglbauer (1892) but rejected by Fery (1999). However, this error recently resurfaced in Foster *et al.* (2016). *Hydroporus necopinatus* is an Atlantic species occurring from the Iberian peninsula through western France reaching the extreme south of Great Britain. Within this rather limited distribution area three subspecies are recognised (Fery, 1999).

Hygrotus quinquelineatus (Zetterstedt, 1828)

Published records: Preudhomme De Borre (1886a), Van Dorsselaer (1919b).

Note: Preudhomme De Borre (1886a) mentions that this species was collected once in Belgium at Laeken (Brussels Capital Region) by C. Van Volxem. This record was repeated by Van Dorsselaer (1919b). In his next catalogue Van Dorsselaer (1957c) again excludes this species and mentions that the single record of this 'Nordic' species is based on confusion with *H. versicolor*. Based on the known distribution, *H. quinquelineatus* is not expected to occur in Belgium.

Hyphydrus aubei Ganglbauer, 1891

Published records: Mathieu (1857), Preudhomme de Borre (1883a, 1886a).

Note: In the past there has been some uncertainty on the presence of this species in Belgium which partly originated from nomenclatural confusion between the names *Hyphydrus variegatus* Aubé, 1838, a synonym for *H. aubei*, and *Hyphydrus ovatus var. variegatus* Stephens, 1828 which was used in the past for specimens of *H. ovatus* in which the pale pattern is more distinct (Mathieu, 1857; Van Dorsselaer, 1919b). Preudhomme de Borre (1886a) included *H. aubei* in the Belgium catalogue but notes that this is based solely on the specimens collected near Brussels by M. Kerremans, and that these specimens could not be located and thus not examined. This Mediterranean species has its northern limit in northern France (Guignot, 1947; Queney, 2011) and reaches the British Channel Isles (Balfour-Browne, 1940; Foster *et al.,* 2016). All previous Belgian records are without doubt incorrect, but a range expansion of this species in the future following more suitable climate conditions is not impossible.

Ilybius subtilis (Erichson, 1837)

Published records: Preudhomme de Borre (1890b).

Note: The record by Preudhomme de Borre (1890b) is undoubtedly erroneous and probably concerns a misidentification of either *Ilybius chalconatus* or *I. montanus*, the latter species was at that time regarded as a form of the former (*cf.* Balfour-Browne, 1950). This species was not adopted by later authors. *Ilybius subtilis* does however occur in Germany and northern France (Schaeflein, 1971; Queney, 2011; 2016) and the presence of this species in Belgium is therefore not impossible.

Melademа coriacea Laporte, 1835

Published records: Van Dorsselaer (1919c).

Note: Van Dorsselaer (1919c) mentions a single specimen of this species in the collection of M. De Wispelaere, collected near Rozières, which was given to him by M. Bondroit. Van Dorsselaer (1919c) adds "Although this astonishing capture cannot, it seems, offer any doubt, it nevertheless leaves me very skeptical", and does not include this species in his catalogues (Van Dorsselaer, 1919c, 1957c). *Melademа coriacea* has in continental Europe a strictly Mediterranean distribution (Bilton & Ribera, 2017) and its presence in Belgium is highly improbable.

Nebrioporus assimilis (Paykull, 1798)

Published records: Preudhomme De Borre (1882b, 1883b, 1886a), Van Dorsselaer (1919b, 1957c), Keirens (1984).

Note: This species was mentioned by Preudhomme De Borre (1882b, 1883b, 1886a) from the provinces Luxembourg and Namur. Van Dorsselaer (1919b, 1957c) only repeats these records. Keirens (1984) could not find any specimens in the studied collections in the RBINS and mentions that misidentification of the specimens cited by Preudhomme de Borre is a possibility. Although this species was included as a Belgian species by several authors, these records are undoubtedly erroneous. *Nebrioporus assimilis* is a Boreal species occurring in North and Central Europe where it is mostly confined to mountainous regions and its presence in Belgium is highly unlikely. In Western Europe this species is known from Britain, Ireland and from isolated populations in streams and lakes in eastern France and Germany at higher elevations.

Rhantus consputus (Sturm, 1834)

Published records: Van Dorsselaer (1919c).

Note: Van Dorsselaer (1919c) mentions that this species has been recorded from Belgium in the past but that he did not know of any exact sites and did not state where the information came from. *Rhantus consputus* was no longer included in his next catalogue (Van Dorsselaer, 1957c). The presence of this species in Belgium is undoubtedly erroneous. This species does occur in Germany (Schaeflein, 1971) and extreme north-eastern France (Guignot, 1947; Queney, 2011). *Rhantus consputus* is an eastern and central European species which reaches its most western limits in the Rhine-valley (Kögel, 1987).

Stictonectes lepidus (Olivier, 1795)

Published records: Preudhomme De Borre (1886a), Van Dorsselaer (1919b), Balfour-Browne (1940), Van Dorsselaer (1957c), Keirens (1984), Balfour-Browne (1940).

Note: All authors listed above refer to the same two records (Herstel and Chèvremont, both in the province Liège). Keirens (1984) however mentions that the specimens referred to seem to have been removed from the respectable collections (which are all included in the Collection of the RBINS). To this date no Belgian specimens could be located. Since the presence of this species in Belgium could not be confirmed, and there are no other records known in the neighbouring countries close to the Belgian border, this species is, for the time being, omitted from the Belgian species list.

Additional species occurring in the adjacent area

Hydroporus notatus Sturm, 1835 (FR DE NL)

This species is known from the neighbouring countries France, Germany and the Netherlands (Nilsson & Hajek, 2022). It seems likely that this species occurred in Belgium at some point. However, nowadays *H. notatus* is very rare in all western European countries and it seems very unlikely that this species is present in Belgium in recent times or will be in the near future.

Hydroporus glabriusculus Aubé, 1838 (FR DE NL)

This species is known from the neighbouring countries France, Germany and the Netherlands (Nilsson & Hajek, 2022). As in the previous species the rarity in the neighbouring countries indicates it is unlikely that this species will be discovered in Belgium in the future.

Bidessus minutissimus (Germar, 1823) (DE, FR, LUX)

B. minutissimus is a species with a predominantly Mediterranean distribution which reaches Germany, Great Britain, Ireland and Luxemburg in the north (Fery, 1992; Nilsson & Hajek, 2022). The presence in Luxemburg (Gerend, 2003) indicates this small species could be present in southern Belgium.

Hydroglyphus hamulatus (Gyllenhal, 1813) (DE, NL)

This species was recently discovered in the Netherlands in the provinces Overijssel and Gelderland at approximately 110 km from the border with Belgium (B. Koese pers. med.). *H. hamulatus* is a species with a more boreal distribution which seems to be spreading southwards (J. Köhler pers. med.). It is difficult to predict if this species could be expected in Belgium in the near future.

Ilybius wasastjernae (C.R. Sahlberg, 1824) (DE)

This species was collected in the Eifel (Germany) less than half a kilometre from the Belgian border (Burmeister, 1980). It seems likely that this species is present in the Hautes Fagnes. Recent efforts to find this species in Belgium have so far been unsuccessful.

Peltodytes rotundatus (Aubé, 1836) (FR, LUX)

This Mediterranean species is known from northern France (queney, 2011; 2016) and Luxembourg (Gerend, 2003). Especially the presence in Luxemburg indicates that this species could be present in the Lorraine region in the southernmost part in Belgium.

General Results

A total of 146 species of Hydradephaga have been recorded in Belgium. In Table 1, all species and their presence for each province before and since 2000 is given. Form these 146 species, 22 have not been recorded since 2000. Fig. 148 shows the total number of species that have been recorded for each province and the number of species since 2000.

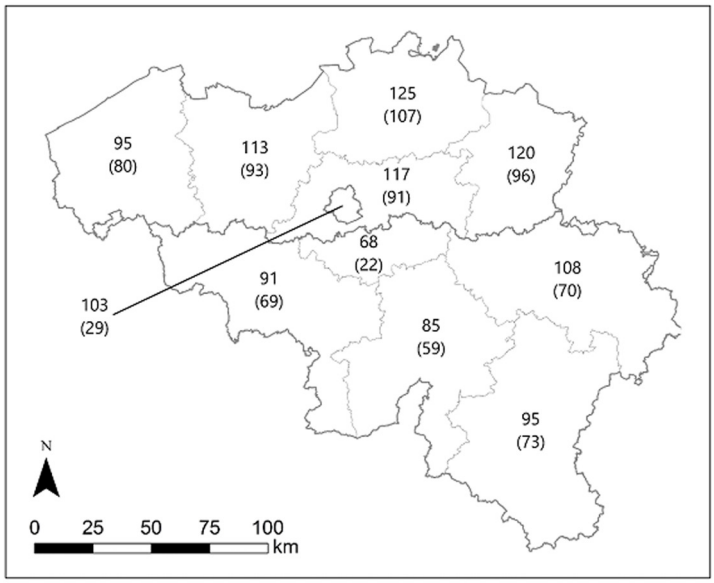

Fig. 148. Number of Hydradephaga species per province. Total number of species recorded for each province and the number of species recorded since 2000 (between brackets).

Table 1. Occurrence and status of the Belgian Hydradephaga in each region and the provinces. X= recorded; += recorded since 2000; = recorded only before 2000. The species are arranged according family and then listed in alphabetical order.

Species	VL	BXL	WAL	Antwerp	East Flanders	Flemish Brabant	Limburg	West Flanders	Brussels Capital Region	Hainaut	Liège	Luxembourg	Namur	Walloon Brabant
Dytiscidae														
Acilius (*Acilius*) *canaliculatus* (Nicolai, 1822)	x	x	x	+	+	+	+		-	+	-	+	+	
Acilius (*Acilius*) *sulcatus* (Linnaeus, 1758)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Agabus (*Gaurodytes*) *affinis* (Paykull, 1798)	x		x	+	+	+	+	+			+	+	+	
Agabus (*Gaurodytes*) *biguttatus* (Olivier, 1795)	x	x	x			-	-		-	+	+	+	-	
Agabus (*Gaurodytes*) *bipustulatus* (Linnaeus, 1767)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Agabus (*Gaurodytes*) *brunneus* (Fabricius, 1798)	x		x				-					-	-	
Agabus (*Acatodes*) *congener* (Thunberg, 1794)	x	x	x	+		-	+		-	-	+	+		
Agabus (*Gaurodytes*) *conspersus* (Marsham, 1802)	x			+	+			+						
Agabus (*Gaurodytes*) *didymus* (Olivier, 1795)	x	x	x	+	+	-	+	+	-	+	-	-	-	+
Agabus (*Gaurodytes*) *guttatus guttatus* (Paykull, 1798)	x	x	x	+	+	+	+	+	+	-	+	+	+	-
Agabus (*Agabus*) *labiatus* (Brahm, 1790)	x	x	x	+		+	+		-	-	-			
Agabus (*Gaurodytes*) *melanarius* Aubé, 1836	x	x	x		+	+	+		+	+	+	+	+	-
Agabus (*Gaurodytes*) *nebulosus* (Forster, 1771)	x	x	x	+	+	+	+	+	+	+	+	+	-	-
Agabus (*Gaurodytes*) *paludosus* (Fabricius, 1801)	x	x	x	+	+	+	+	+	-	-	+	+	+	+
Agabus (*Gaurodytes*) *striolatus* (Gyllenhal, 1808)	x			+	+	+	-							
Agabus (*Acatodes*) *sturmii* (Gyllenhal, 1808)	x	x	x	+	+	+	+	+	-	+	+	+	+	+
Agabus (*Agabus*) *uliginosus* (Linnaeus, 1760)	x		x	+	+	+	+			+		-		
Agabus (*Agabus*) *undulatus* (Schrank, 1776)	x		x	+	+	+	-	+		+				-
Agabus (*Gaurodytes*) *unguicularis* (Thomson, 1867)	x		x	+	-	+	+					-		
Bidessus grossepunctatus Vorbringer, 1907	x	x		+		-	+	+	-					
Bidessus unistriatus (Goeze, 1777)	x	x	x	+	+	+	+	-	-	+	-			
Clemnius decoratus (Gyllenhal, 1810)	x		x	+	+	+	+	+		+		-		
Colymbetes fuscus (Linnaeus, 1758)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Cybister (*Cybister*) *lateralimarginalis lateralimarginalis* (De Geer, 1774)	x	x	x	+	+	+	+		-	+	+	-	-	
Deronectes latus (Stephens, 1829)	x		x				-	-		-	+		+	
Deronectes platynotus platynotus (Germar, 1834)			x								+	-	-	
Dytiscus circumcinctus Ahrens, 1811	x	x	x	-	-	-	-		-		-			
Dytiscus circumflexus Fabricius, 1801	x	x	x	+	+	+	+	+	-	-	-	-	-	-
Dytiscus dimidiatus Bergsträsser, 1778	x	x	x	+	+	+	+	-	-	+	-	-	-	
Dytiscus lapponicus lapponicus Gyllenhal, 1808	x		x	+			+				-			
Dytiscus latissimus Linnaeus, 1758	x		x	-			-			-				
Dytiscus marginalis marginalis Linnaeus, 1758	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Dytiscus semisulcatus Müller, 1776	x	x	x	-	-	-	-	-	-	+	-	+	+	-
Graphoderus austriacus (Sturm, 1834)	x			+										
Graphoderus bilineatus (De Geer, 1774)	x		x	-	-	-	-			-	-			
Graphoderus cinereus (Linnaeus, 1758)	x	x	x	+	+	+	+	+	+	+	-	+	+	+

Species	VL	BXL	WAL	Antwerp	East Flanders	Flemish Brabant	Limburg	West Flanders	Brussels Capital Region	Hainaut	Liège	Luxembourg	Namur	Walloon Brabant
Graphoderus zonatus zonatus (Hoppe, 1795)	x	x	x	+	+	+	+	+	-	+	-		+	-
Graptodytes bilineatus (Sturm, 1835)	x	x	x	+	+	+	+	+	-	+	-	+		
Graptodytes flavipes (Olivier, 1795)	x	x		-		-	-		-					
Graptodytes granularis (Linnaeus, 1767)	x	x	x	+	-	-	-	-	-			-	-	
Graptodytes pictus (Fabricius, 1787)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroglyphus geminus (Fabricius, 1792)	x	x	x	+	+	+	+	+	+	-	+	+	+	-
Hydroporus angustatus Sturm, 1835	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroporus discretus discretus Fairmaire & Brisout, 1859	x	x	x	+	+	+	+	+	+	+	+	+	+	-
Hydroporus dorsalis (Fabricius, 1787)	x		x	+	+	+	-	-				-		
Hydroporus elongatulus Sturm, 1835	x	x		-			-		-					
Hydroporus erythrocephalus (Linnaeus, 1758)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroporus ferrugineus Stephens, 1829	x	x	x		+				+	+	+	+	+	
Hydroporus figuratus (Gyllenhal, 1826)	x		x	+	+	+	+	+			-	-		
Hydroporus gyllenhalii Schiødte, 1841	x	x	x	+	+	+	+	+	-	+	+	+	+	
Hydroporus incognitus Sharp, 1869	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Hydroporus longicornis Sharp, 1871			x								+	+		
Hydroporus longulus Mulsant & Rey, 1861	x	x	x			-			-		+	+	+	
Hydroporus marginatus (Duftschmid, 1805)	x	x	x				-		-		-	-	-	
Hydroporus melanarius Sturm, 1835	x	x	x	+	+	+	+	+	-	+	+	+	+	
Hydroporus memnonius Nicolai, 1822	x	x	x	+	+	+	+	+	+	+	+	+	+	-
Hydroporus morio Aubé, 1838			x								-			
Hydroporus neglectus Schaum, 1845	x		x	+	+	+	+	+		+	+			
Hydroporus nigrita (Fabricius, 1792)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroporus obscurus Sturm, 1835	x	x	x	+	+	+	+		-	-	+	+		
Hydroporus palustris (Linnaeus, 1760)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Hydroporus planus (Fabricius, 1782)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Hydroporus pubescens (Gyllenhal, 1808)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroporus rufifrons (Müller, 1776)	x		x	+	-	-		-			-			-
Hydroporus scalesianus Stephens, 1828	x			+	+	+	+							
Hydroporus striola (Gyllenhal, 1826)	x	x	x	+	+	+	+	+	-	+	+	+		
Hydroporus tessellatus (Drapiez, 1819)	x	x	x	+	+	+	+	+	-	+	-	-	-	-
Hydroporus tristis (Paykull, 1798)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Hydroporus umbrosus (Gyllenhal, 1808)	x	x	x	+	-	+	+	+	-		+	+		-
Hydrovatus clypealis Sharp, 1876	x							+						
Hydrovatus cuspidatus (Kunze, 1818)	x	x	x	+	+	+	+	+	-				+	
Hygrotus (*Coelambus*) *confluens* (Fabricius, 1787)	x	x	x	+	+	+	+	+	-	-	+	+	-	-
Hygrotus (*Coelambus*) *nigrolineatus* (Steven, 1808)	x			+	+	+	+	+						
Hygrotus (*Hygrotus*) *inaequalis* (Fabricius, 1777)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Hygrotus (*Hygrotus*) *versicolor* (Schaller, 1783)	x	x	x	+	+	+	+	+	-	+	-		-	-
Hygrotus (*Leptolambus*) *impressopunctatus* (Schaller, 1783)	x	x	x	+	+	+	+	+	+	+	+	+	+	-

Species	VL	BXL	WAL	Antwerp	East Flanders	Flemish Brabant	Limburg	WestF landers	Brussels Capital Region	Hainaut	Liège	Luxembourg	Namur	Walloon Brabant
Hygrotus (*Leptolambus*) *novemlineatus* (Stephens, 1829)	x			-										
Hygrotus (*Leptolambus*) *parallellogrammus* (Ahrens, 1812)	x		x	+	+			+						-
Hyphydrus ovatus (Linnaeus, 1760)	x	x	x	+	+	+	+	+	+	+	+	+	+	-
Ilybius aenescens Thomson, 1870	x	x	x	+			+		-		+	+		-
Ilybius ater (De Geer, 1774)	x	x	x	+	+	+	+	+	-	+	+	+	+	+
Ilybius chalconatus (Panzer, 1796)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Ilybius crassus Thomson1856			x								+	+		
Ilybius fenestratus (Fabricius, 1781)	x	x	x	+	+	+	+	+	+	+	+	+	+	-
Ilybius fuliginosus fuliginosus (Fabricius, 1792)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Ilybius guttiger (Gyllenhal, 1808)	x		x	+	+	+	+			-	-			
Ilybius montanus (Stephens, 1828)	x	x	x	+	+	+	+	+	-		+		+	
Ilybius neglectus (Erichson, 1837)	x		x			+				+				
Ilybius quadriguttatus (Lacordaire, 1835)	x	x	x	+	+	+	+	+	-	-	-	+	-	-
Ilybius subaeneus Erichson, 1837	x	x	x	+	+	-	+	+	-		-		-	
Laccophilus hyalinus (De Geer, 1774)	x	x	x	+	+	+	+	+	-	+	+	+	+	-
Laccophilus minutus (Linnaeus, 1758)	x	x	x	+	+	+	+	+	+	+	+	+	+	-
Laccophilus poecilus Klug, 1834	x	x	x	+	+	+	+		-		-			
Laccornis oblongus (Stephens, 1835)	x		x			-						-		
Liopterus haemorrhoidalis (Fabricius, 1787)	x	x	x	+	+	+	+	+	-	+	+	+	+	+
Nartus grapii (Gyllenhal, 1808)	x	x	x	+	+	+	+	+	+	+	-	+		-
Nebrioporus canaliculatus (Lacordaire, 1835)	x		x	+	+	-	+	+			-	-	-	-
Nebrioporus elegans (Panzer, 1794)	x	x	x	+	+	+	+		-	+	+	+	+	-
Nectoporus sanmarkii sanmarkii (Sahlberg, 1826)			x								+	+	+	-
Platambus maculatus (Linnaeus, 1758)	x	x	x	+	+	+	+	-	-	+	+	+	+	+
Porhydrus lineatus (Fabricius, 1775)	x	x	x	+	+	-	-	-	-	-	-	+	-	-
Rhantus bistriatus (Bergsträsser, 1778)	x	x	x	-			-		-		-		-	-
Rhantus exsoletus (Forster, 1771)	x	x	x	+	+	+	+	+	-	+	+	+	-	-
Rhantus frontalis (Marsham, 1902)	x	x	x	+	+	+	+	+	-	+	-	-	-	
Rhantus latitans Sharp, 1882	x	x					-		-			-		
Rhantus suturalis (MacLeay, 1825)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Rhantus suturellus (Harris, 1828)	x	x	x	+	+	+	+		-	-	-			-
Scarodytes halensis (Fabricius, 1787)	x	x	x	-	-	-	-	-	-	-	-	-	-	-
Stictotarsus duodecimpustulatus (Fabricius, 1792)	x	x	x	+	-	-	+	+	-		+	+	-	+
Yola bicarinata bicarinata (Latreille, 1804)	x			+	+	+								
Hydaticus (*Hydaticus*) *seminiger* (De Geer, 1774)	x	x	x	+	+	+	+	+	+	+	+	+	+	
Hydaticus (*Hydaticus*) *transversalis transversalis* (Pontoppidan, 1763)	x	x	x	-	-	-	-	+	-	-	-	+		-
Hygrobidae														
Hygrobia hermanni (Fabricius, 1775)	x	x	x	+	+	+	+	+	-	+	+	-	+	+
Noteridae														
Noterus clavicornis (De Geer, 1774)	x	x	x	+	+	+	+	+	+	+	+	+	+	-

Species	VL	BXL	WAL	Antwerp	East Flanders	Flemish Brabant	Limburg	WestFlanders	Brussels Capital Region	Hainaut	Liège	Luxembourg	Namur	Walloon Brabant
Noterus crassicornis (Müller, 1776)	x	x	x	+	+	+	+	+	-	+	+	+	-	-
Gyrinidae														
Aulonogyrus concinnus (Klug, 1834)	x			-										
Gyrinus aeratus Stephens, 1835	x	x	x	-		-	-		-	-				-
Gyrinus caspius Ménétriés, 1832	x	x		-	+			+	-					
Gyrinus distinctus Aubé, 1836	x				-	-								
Gyrinus marinus Gyllenhal, 1808	x	x	x	+	+	+	+	-	-	-	+		+	-
Gyrinus minutus Fabricius, 1798	x		x	-			-				-		-	
Gyrinus paykulli Ochs, 1927	x	x	x	+	+	+	+	+	-	+		+		
Gyrinus substriatus Stephens, 1828	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Gyrinus suffriani Scriba, 1855	x			+		-	-							
Orectochilus villosus (Müller, 1776)	x	x	x	+		-	+		-	+	+	+	+	-
Gyrinus natator Linnaeus, 1758	x			-										
Haliplidae														
Brychius elevatus (Panzer, 1793)	x	x	x	+	-		-		-	-	-	+	+	-
Haliplus apicalis Thomson, 1868	x			+				+						
Haliplus confinis Stephens, 1828	x	x	x	+	+	+	+	+	-	+				
Haliplus flavicollis Sturm, 1834	x	x	x	+	+	+	+	+	-	+	-	+	+	
Haliplus fluviatilis Aubé, 1836	x	x	x	+	+	+	+	+	-	-	+	+	+	+
Haliplus fulvicollis Erichson, 1837	x		x	+	-	-	-			-	-			
Haliplus fulvus (Fabricius, 1801)	x	x	x	+	-	-	+		-	+	+	-	+	
Haliplus furcatus Seidlitz, 1887	x				-			-						
Haliplus heydeni Wehncke, 1875	x		x	+	+	+	+				+	+	+	
Haliplus immaculatus Gerhardt, 1877	x	x		+	+	+	+	+	+					
Haliplus laminatus (Schaller, 1783)	x	x	x		-	+	+		-		-	+	+	
Haliplus lineatocollis (Marsham, 1802)	x	x	x	+	+	+	+	+	+	+	+	+	+	+
Haliplus lineolatus Mannerheim, 1844	x			-	-			-						
Haliplusmucronatus Stephens, 1828	x							+						
Haliplus obliquus (Fabricius, 1787)	x	x	x	+	+	+	+	+	-	+	+			
Haliplus ruficollis (De Geer, 1774)	x	x	x	+	+	+	+	+	-	+	+	-	-	
Haliplus variegatus Sturm, 1834	x	x	x		-	-		-	-		-			
Haliplus varius Nicolai, 1822	x	x		-	-	-		-	-					
Haliplus sibiricus Motschulsky, 1860	x	x	x	-	-	+	+		-		+	+		
Peltodytes caesus (Duftschmid, 1805)	x	x	x	+	+	+	+	+	+	-	-	-		

Conclusion and Discussion

A total of 146 species of Hydradephaga have been recorded from Belgium. The family Dytiscidae, of which 112 species have been recorded in Belgium is by far the most speciose Hydradephagean family in Belgium. Gyrinidae are represented in Belgium with 11 species and Haliplidae with 20 species. The Hygrobiidae and Noteridae are known in Belgium with one and two species respectively. This reflects the situation in Europe as a whole and thus this is not the result of a bias in sampling. Most of the species have a rather large distribution range, and most species also occur in all neighbouring countries, with the exception of a few Mediterranean species which reach there north-eastern limits in Belgium (*cf. Agabus brunneus, Hydrovatus clypealis* and to lesser extent also *Hydroporus tessellatus* and *Yola bicarinata*) or Boreal species with a scattered distribution in Western Europe limited to higher elevations (*cf. Hydroporus morio* and *Ilybius crassus*). The overall distribution of most species reflects the availability of suitable habitat in each province and region. Only a few species distribution patterns are solely dictated by climatological limitations, for example clearly the case in *Hydroporus tessellatus*. The limited size, and geographical position of Belgium is the main reason why the range limits of most species located are north or south of Belgium instead of running through it, and of course one of the main reasons no narrow range endemic species are to be expected.

Overall the species richness in the different provinces more or less reflects the natural situation, with a higher number of species in low laying areas including many wetlands or other areas with a high density of aquatic habitats and less species in provinces with low densities and variation of aquatic habitat. The highest number of species is recorded from Antwerp, where no less than 125 species of Hydradephaga have been recorded. This reflects the wide range of habitats in this province, from brackish ponds to oligotrophic ponds and acidic bogs. Antwerp is closely followed by Limburg (120 species), Flemish Brabant (117 species) and East-Flanders (113 species), which largely correlated with the present of sandy soils and acidic habitats. The relatively high number of species in the Brussels Capital Region, despite the small area if the region, reflects the high sampling efforts in the period 1850-1950. Nowadays this region is highly urbanised and only 29 species have been recorded since 2000. This strong decline in the Brussels Capital Region is mostly because of this strong urbanisation, but also because of undersampling in recent times.

There are a number of species occurring in the surrounding region which have not been recorded from Belgium but which could be expected. Of these, *Bidessus minutissimus* and *Peltodytes rotundatus* would be the most likely species since they are known from northern France and have also been collected in the Grand Duchy of Luxembourg. Both species should be searched for in the Lorraine region in the extreme south of the country. Furthermore, there are several species that have not been recorded in Belgium since 2000. Some of these species could still have small populations which have escaped detection in recent times (*cf. Hydroporus elongatulus, H. marginatus, H. morio, Gyrinus areatus, G. distinctus, Laccornis oblongus* and *Scarodytes halensis*), or can be expected to recolonise Belgium in the future (*Graptodytes flavipes*). Some other species, like *Dytiscus circumcinctus, D. latissimus, Graphoderus bilineatus, Gyrinus minutus* and *Hygrotus novemlineatus,* are with no doubt extinct in Belgium and are not expected to be able to recolonise the country on their own in the near future. Additionally the situation of some species in Belgium is so precarious that the species may very well become extinct in the next decade. This is the case with *Hydroporus rufifrons*, with, so far as is known, only one very small population remaining. Also, *Graptodytes granularis*, *Hydaticus transversalis* and *Porhydrus*

lineatus, three species that were considered common throughout Belgium in former days, seem to have been collapsed completely. The two former species are now known from only two, and the latter species of only three very small and isolated populations. Also, *Dytiscus dimidiatus* and *D. semisulcatus* seem to have been present all over Belgium and have decreased significantly since 1950, although for the former there are hopeful signs of recovery. Future research should, next to monitoring of spatio-temporal changes of all Belgian species, also focus on revisiting sites where some of these extremely rare species and species that have not been recorded in the last decades have been found in the past to confirm their current status.

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