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Four new and six rediscovered water beetles for Belgium (Coleoptera: Elmidae, Helophoridae, Heteroceridae, Hydraenidae, Scirtidae)

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Abstract

This article describes the findings of four water beetles which are recorded from Belgium for the first time: *Oulimnius major* (Rey, 1889) (Elmidae), *Augyles intermedius* Kiesenwetter, 1843 (Heteroceridae), *Cyphon putonii* Brisout, 1863 (Scirtidae), *Cyphon ruficeps* Tournier, 1868 (Scirtidae). Furthermore, recent records of five species that were not recorded from Belgium since many decades are also provided: *Esolus pygmaeus* Müller, 1806 (Elmidae), *Normandia nitens* (Müller, 1817) (Elmidae), *Helophorus fulgidicollis* Motschulsky, 1860 (Helophoridae), *Helophorus longitarsis* Wollaston, 1864, *Ochthebius auriculatus* Rey, 1885 (Hydraenidae), *Ochthebius pusillus* Stephens, 1835 (Hydraenidae). These beetles were identified during a project with the aim of compiling a catalog of the Belgian aquatic beetles.

Keywords: Belgian aquatic beetles, catalog, faunistic

Samenvatting

In deze publicatie beschrijven we de waarnemingen van vier waterkevers die voor de eerste keer gemeld worden voor België: *Oulimnius major* (Rey, 1889) (Elmidae), *Augyles intermedius* Kiesenwetter, 1843 (Heteroceridae), *Cyphon putonii* Brisout, 1863 (Scirtidae), *Cyphon ruficeps* Tournier, 1868 (Scirtidae). Daarnaast worden nieuwe vondsten opgelijst van vijf soorten die al geruime tijd niet meer in België werden gevonden: *Esolus pygmaeus* Müller, 1806 (Elmidae), *Normandia nitens* (Müller, 1817) (Elmidae), *Helophorus fulgidicollis* Motschulsky, 1860 (Helophoridae), *Helophorus longitarsis* Wollaston, 1864, *Ochthebius auriculatus* Rey, 1885 (Hydraenidae), *Ochthebius pusillus* Stephens, 1835 (Hydraenidae). Deze kevers werden geïdentificeerd tijdens de voorbereiding van een catalogus van de Belgische aquatische kevers.

Résumé

Cet article rapporte la découverte de quatre espèces nouvelles de coléoptères aquatiques pour la faune belge : *Oulimnius major* (Rey, 1889) (Elmidae), *Augyles intermedius* Kiesenwetter, 1843 (Heteroceridae), *Cyphon putonii* Brisout, 1863 (Scirtidae), *Cyphon ruficeps* Tournier, 1868 (Scirtidae). En outre, 5 espèces qui n'avaient plus été observées depuis des décennies ont été à nouveau signalées : *Esolus pygmaeus* Müller, 1806 (Elmidae), *Normandia nitens* (Müller, 1817) (Elmidae), *Helophorus fulgidicollis* Motschulsky, 1860 (Helophoridae), *Helophorus longitarsis* Wollaston, 1864 (Helophoridae), *Ochthebius auriculatus* Rey, 1885 (Hydraenidae), *Ochthebius pusillus* Stephens, 1835 (Hydraenidae). Ces coléoptères ont été identifiés lors d'un projet visant à établir un catalogue des coléoptères aquatiques belges.

Introduction

In order to compile a catalog of the Belgian aquatic beetles, all Belgian records of the Coleoptera families in the suborders of Polyphaga and Myxophaga have been gathered and verified since 2018. Large scale inventories in the field as well as verification of the collection at the Royal Belgian Institute for Natural Sciences (RBINS) and private collections as well as verification of records of these families on the citizen science data portal waarnemingen.be resulted in a database with more than 10.000 records of over 300 species.

Compiling these records, species were encountered which were not previously reported in Belgium. We hereby present four of these species. Additionally, the rediscovery of five species which have not been recorded since many decades is mentioned.

Material and methods

All records that are presented here were gathered during entomological excursions. Specimens were collected by the authors, Jean Fagot and Philip Robben or gathered in general sampling campaigns. Captures were made using various techniques such as light, strike and water net. The identifications were made by the first author using DROST *et al.* (1992), KLAUSNITZER (2009) and MASCAGNI (2013).

Results

NEW SPECIES FOR BELGIUM

Family Elmidae Curtis, 1830

***Oulimnius major* (Rey, 1889). Belg. nov. sp.**
(Fig. 1)

MATERIAL EXAMINED: 1 ♂, Hamont-Achel (prov. Limburg), in the stream 'Warmbeek', 16/X/2017, leg. Flemish Environmental Agency (VMM, Vlaamse Milieumaatschappij), det. & coll. Thys N.

DISTRIBUTION. This is a European species, known from England, France, the Netherlands, Portugal and Spain (LÖBL & LÖBL, 2016).

ECOLOGY. *Oulimnius major* lives in clean, slow flowing or standing (probably groundwater fed) waters. The habitat resembles that of *Oulimnius rivularis* (Rosenhauer, 1856) but probably *O. major* is more vulnerable to pollution (pers. comm. Bas Drost, 2019).

Family Heteroceridae MacLeay, 1825

***Augyles intermedius* Kiesenwetter, 1843. Belg. nov. sp.**
(Fig. 2)

MATERIAL EXAMINED: 1 ♀, Oudenaarde (prov. East Flanders), Ename Forest, 'Grootbos Noord', light trap, 15/VII/2013; leg. Robben P., det Thys N. & Mascagni A., coll. Robben P. (TACK *et al.*, 2021).

DISTRIBUTION. The Palearctic distribution of this species is Europe (known from Austria, Croatia, Germany, Hungary, Italy, Netherlands, Romania, Slovenia and Switzerland) and Asia (Kazakhstan, Russia) (LÖBL & SMETANA, 2006). MASCAGNI (2013) notes that the species also occurs in France, Germany and the Netherlands and describes the habitat as sand and mud along rivers and streams.



Fig. 1. *Oulimnius major* collected in Hamont-Achel 16/X/2017, male genitalia. A, dorsal view. B, lateral view.
© Nobby Thys.



Fig. 2. *Augyles intermedius* collected in Oudenaarde 15/VII/2013, habitus. © Johan en Philip Robben.

Family Scirtidae Fleming, 1921

***Cyphon putonii* Brisout de Barbeville, 1863. Belg. nov. sp.**
(Fig. 3 A-B)

MATERIAL EXAMINED: 2 ♂♂ and 1 ♀, Stokkem (prov. Limburg), Negenoord, 03/VI/2017, by sweeping the vegetation with an insect net, leg., det. & coll. van Nunen F.

DISTRIBUTION. According to KLAUSNITZER (2009) *Cyphon putonii* is an Atlanto-Mediterranean species and in Europe mentioned for Austria, France, Germany, Poland, Spain and Switzerland. The adults of this species can be found from early May until September.

The three specimens were beaten from trees at a spot where there was much *Salix* sp., near the river the Meuse.

***Cyphon ruficeps* Tournier, 1868. Belg. nov. sp.**

MATERIAL EXAMINED: 1 ♂, Jalhay (prov. Liège), Tourbière de Solwaster, 02/VII/2018, leg. Fagot J., det. & coll. Thys N.; 1 ♂, Sint-Joris-Winge (prov. Flemish Brabant), Walenbos, 08/VII/2019, leg., det. & coll. Thys N.; idem 10/VI/2020, idem 01/VII/2020, idem 14/VIII/2020; 1 ♂, Pepinster (prov. Liège), 05/VII/2021, by sweeping the vegetation in the water with an insect net, leg., det. & coll. Thys N.

DISTRIBUTION. Distributed mainly in central and south-eastern Europe, occurring from European Russia and Georgia in the east, reaching Germany and France in the west and Latvia in the north (KLAUSNITZER, 2009; BOUKAL *et al.*, 2007).

ECOLOGY. Larvae of this species can be found in shallow water in swamps and in the riparian zone of ponds and lakes. Larvae are detritivore and feed on organic material. Pupation occurs on the banks (THYS, 2019).

REDISCOVERED SPECIES FOR BELGIUM

Family *Helophoridae* Leach, 1815

***Helophorus fulgidicollis* Motschulsky, 1860**

MATERIAL EXAMINED: 3 ♀♀, Monnikenwerve, Lissewege (prov. West-Flanders), 21/III/2021, by sieving shallow water spots, leg. det. & coll. Thys N.

DISTRIBUTION. This is a European species, known from South Scandinavia to the English Channel and the Irish Sea, the Atlantic Coast (Lisbon) and the Western Mediterranean (including Morocco), eastwards to West Italy (PRZEWOŹNY, 2022). It is found exclusively along the coasts (HANSEN, 1987). This halobiont species was sampled in muddy puddles in nature reserve Monnikenwerve. This species was recorded from Antwerp in 1909 and 1953 and found in Zwin (Knokke-Heist) in 1927 (coll. RBINS). The new record is the first Belgian record in 68 years.

***Helophorus longitarsis* Wollaston, 1864**

MATERIAL EXAMINED: 5 ♀♀, Kleine Vlakte, Knokke-Heist (prov. West-Flanders), 20/IX/2022, by sieving shallow water spots, leg. det. & coll. Thys N.

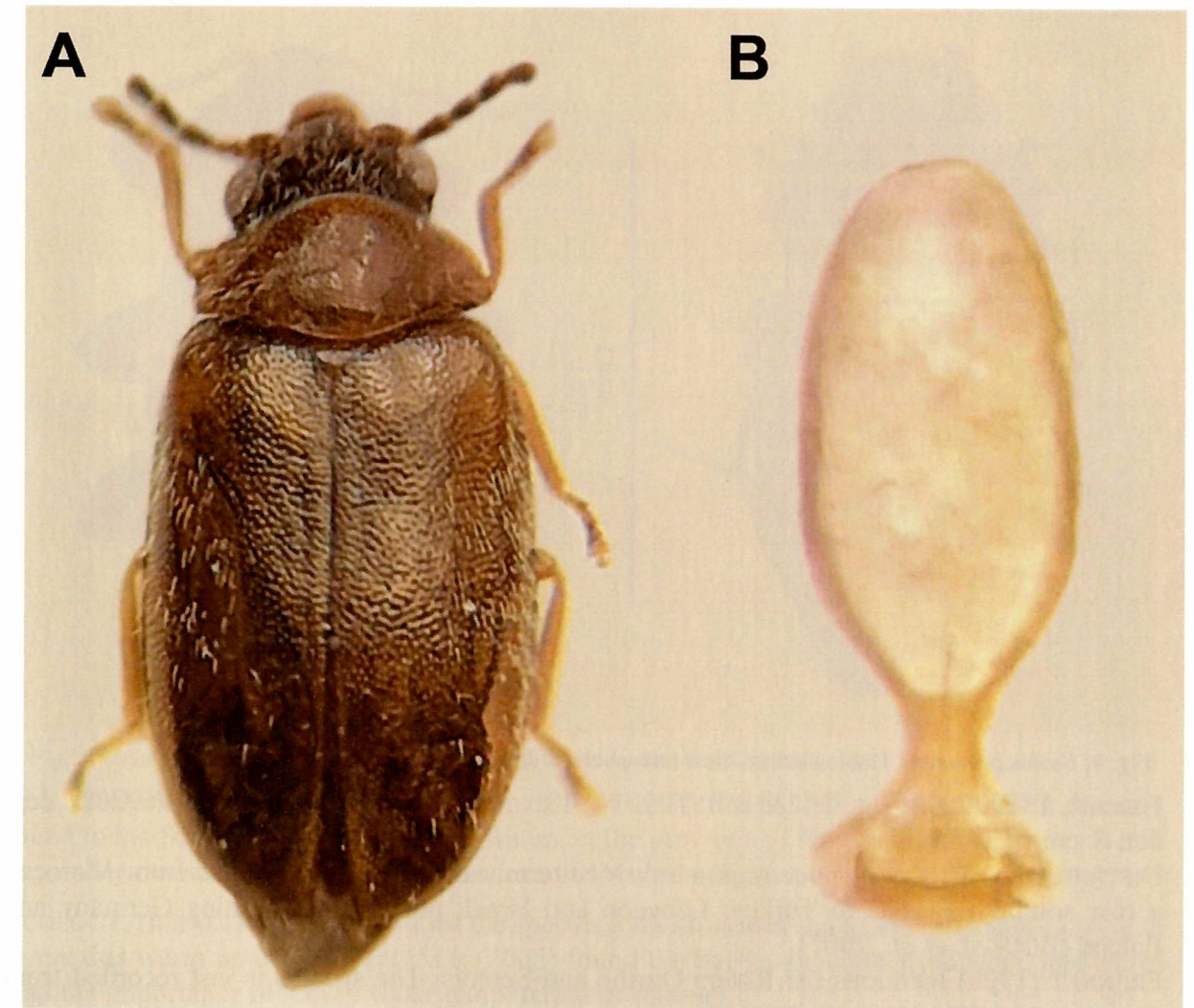


Fig. 3. *Cyphon putonii* collected in Stokkem 03/VI/2017. A, habitus, dorsal view. B, male genitalia, dorsal view. © F. van Nunen.

DISTRIBUTION. Distributed from Spain, including the Canary Islands, and southern England across central Europe and the Mediterranean to southern Ukraine, Russia, Turkey, and northern Kazakhstan (BOUKAL *et al.*, 2007)

This species is last recorded on 02/VII/1965 in Torgny (coll. RBINS) and has about 10 records from before 1950 but none are situated in the coastal area. In a pond with fresh water in the nature reserve Kleine Vlakte, the species was found at less than 500 m of the zwin estuarium on a soil that is called a transition soil.

Family *Elmidae* Curtis 1830

***Esolus pygmaeus* (Müller, 1806)**
(Fig. 4)

MATERIAL EXAMINED: 1 ex., Vis Prés, Gedinne (prov. Namur), 19/VII/2019, leg. det. & coll. Thys N.; 1 ex., Chairière, Vresse-Sur-Semois (prov. Namur), 19/VII/2019, leg. det. & coll. Thys N.; 1 ex., le Gravier, Vresse-Sur-Semois (prov. Namur), 19/VII/2019, leg. det. & coll. Thys N.; 1 ex., Laforêt (prov. Namur), 20/VII/2019, leg. det. & coll. Thys N.; 1 ex., le Gravier, Vresse-Sur-Semois (prov. Namur), 19/VII/2020, leg. det. & coll. THYS N.; 1 ex., Chairière, Vresse-Sur-Semois (prov. Namur), 20/VII/2020, leg. det. & coll. Thys N.; 1 ex., Noiseux (prov.

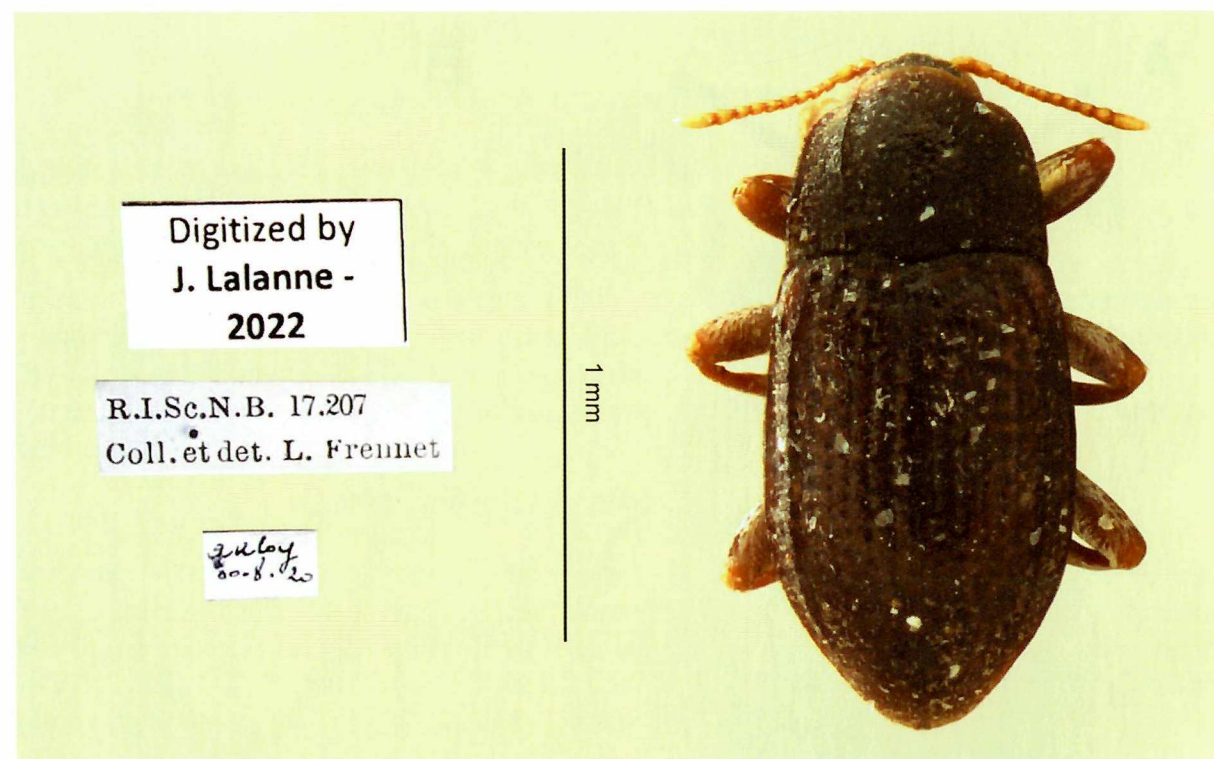


Fig. 4. *Esolus pygmaeus*. Habitus dorsal view and labels. © Julien Lalanne.

Namur), 15/IX/2020, leg. det. & coll. Thys N.; 1 ex., Bohan (prov. Namur), 22/VII/2021, leg. det. & coll. Thys N.

DISTRIBUTION. *Esolus pygmaeus* is a sub-Mediterranean species distributed from Morocco across southern Europe to Turkey, Lebanon and Israel; northwards reaching Germany and Poland (BOUKAL *et al.*, 2007).

FRENNET (1920) mentions the Rivers Ourthe and Semois. The species is last recorded from Chiny on 20/VIII/1953 (coll. RBINS).

This species is found in the province of Namur, in the river Semois and other running waters in this area and one site in the river Ourthe.

ECOLOGY. Lives in unpolluted, large rivers and mountain-streams (DROST *et al.*, 1992). Associated with borders with sand and/or stones (Landesamt für Natur, Umwelt und Verbraucherschutz Nordrhein-Westfalen, 2013). JÄCH (2005) mentions the habitat is similar to this of *E. parallelepipedus* but *E. pygmaeus* lives only in waters that warm up during summer.

Normandia nitens (Müller, 1817)

MATERIAL EXAMINED: 1 ex., Vresse-Sur-Semois (prov. Namur), 20/VII/2019, leg. det. & coll. Thys N.; 1 ex., Laforêt, Vresse-Sur-Semois (prov. Namur), 17/VII/2020, leg. det. & coll. Thys N.; 1 ex., Hermeton (prov. Namur), 21/XII/2020, leg. det. & coll. Thys N.; 1 ex., Villers-devant-Orval (prov. Luxembourg), 02/IV/2021, leg. det. & coll. Thys N.; 1 ex., Virton (prov. Luxembourg), 03/IV/2021, leg. det. & coll. Thys N.; 1 ex., Erezée (prov. Luxembourg), 11/VI/2021, leg. det. & coll. Thys N.

DISTRIBUTION. This is an Atlantico-Mediterranean species distributed in North Africa, England, western, central and south-eastern Europe; isolated records known from Belarus, all Baltic states, northern Russia, and southern Fennoscandia (BOUKAL *et al.*, 2007).



Fig. 5. *Ochthebius auriculatus*. Habitus dorsal view and labels. © Julien Lalanne.

This species is last recorded in Chiny on 10/VI/1920 (coll. RBINS). The species is recently found in the Semois and other running waters in the province of Namur like the Hermeton and in smaller rivers and streams in the province of Luxembourg.

ECOLOGY. HEBAUER (1980) mentions the species lives on stones and in sand of chalk-rich clean rivers that warm up in summer. JÄCH (2005) found the beetles in submerged wood and states also the importance of a high water temperature in summer.

Family Hydraenidae Mulsant, 1844

Ochthebius auriculatus Rey, 1885

(Fig. 5)

MATERIAL EXAMINED: 6 ex., Zwin (pitfall ZU9), Knokke-Heist (prov. West-Flanders), 26/V/2021, leg. det. & coll. Thys N.; 2 ex., Zwin (pitfall ZU9), Knokke-Heist (prov. West-Flanders), 07/VI/2021, leg. det. & coll. Thys N.; 1 ex., Zwin (pitfall ZU8), Knokke-Heist (Prov. West-Flanders), 13/IX/2021, leg. det. & coll. Thys N.

DISTRIBUTION. This species is known from Europe in Denmark, France, Great Britain, Germany, Ireland, Netherlands, Sweden (LÖBL & LÖBL, 2016).

Pitfall samples from Natuurpunt Studie in this nature reserve trapped this species on two different locations on three different data.

Locality ZU8 is a dry dike that is surrounded by mudflats and salt marshes and locality ZU9 is situated next to the salt marshes.

ECOLOGY. This halobiont species inhabits sandy margins of brackish and salt water (DROST *et al.*, 1992).

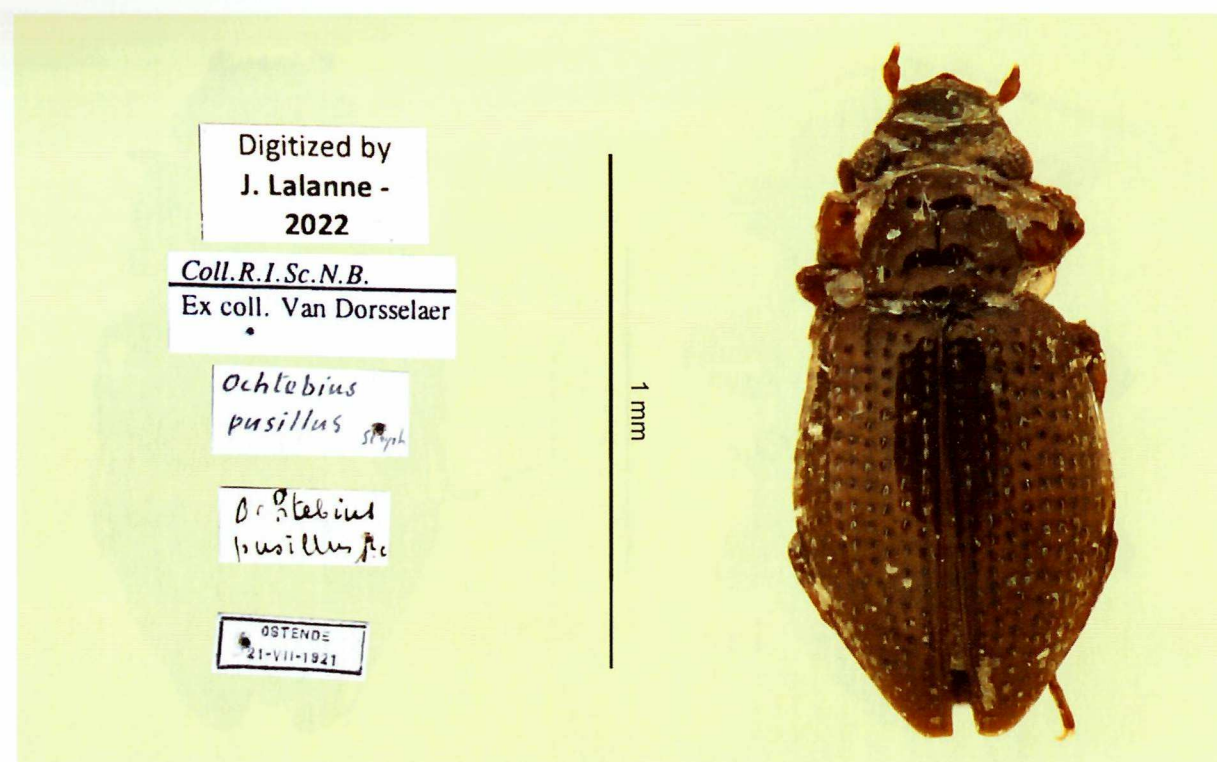


Fig. 6. *Ochthebius pusillus*. Habitus dorsal view and labels. © Julien Lalanne.

Ochthebius pusillus Stephens, 1835

(Fig. 6)

MATERIAL EXAMINED: 1 ♀, Burg-Reuland (Richtenberg), Federbach, réserve naturelle (prov. Liège), 14/XI/2021, leg. det. & coll. Thys N.; 1 ♀, Holsbeek, Wingevallei (prov. Flemisch Brabant), 26/IV/2021, leg. det. & coll. Thys N.

DISTRIBUTION. A widespread western Palearctic species ranging from Great Britain to Russia, reaching Turkey in the south-east but absent in northern Europe and western Mediterranean area (BOUKAL *et al.*, 2007). The species was found in a nature reserve in Burg-Reuland (Richtenberg), on clay soil next to a running water and in Holsbeek in a nature reserve on a clay soil near a small slowly running water.

ECOLOGY. It inhabits margins of standing or running water in areas where there is clay (DROST *et al.*, 1992).

Discussion

Aquatic beetles in the suborders of Polyphaga are relatively underrecorded, in comparison with water beetles in the suborder of Adephaga like Dytiscidae. Mostly it is easier to name Dytiscidae in the field, without extracting the genitals while many Elmidae, Scirtidae... need genital characteristics in order to determine the species.

Oulimnius major is found in France and the Netherlands, *Augyles intermedius* is found in France, Germany and the Netherlands, *Cyphon ruficeps* is found in France, Luxembourg, Germany and the Netherlands, *Cyphon putonii* in France and Germany (HESS, 1999; GEREND, 2003, 2006; VORST, 2010; Hendrich *et al.*, 2011; QUENEY, 2011). All these species are probably underrecorded but future will tell if new records will be found.

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Addendum et corrigendum

Liste actualisée des Scarabaeoidea présents ou ayant été présents en Belgique (Insecta, Coleoptera)

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Il convient d'ajouter l'espèce suivante au point:

E. Famille des Scarabaeidae Latreille, 1802 (sous-famille des Aphodiinae Leach, 1815 – tribu Aphodiini Leach, 1815) (MIESSEN, 2022).

Acrossus luridus (Fabricius, 1775)

Cette espèce aurait dû figurer au numéro 34 de notre liste. La faune belge étant ou ayant été dès lors riche de 131 espèces et non de 130.

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Nous remercions notre collègue Nicolas Dewandeleer pour nous avoir signalé cette omission.

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