

## First records of *Hydroporus scalesianus* Stephens, 1828 (Coleoptera: Dytiscidae) for Belgium

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### Abstract

In this article *Hydroporus scalesianus* Stephens, 1828 is reported as new for Belgium. All records are summarised and mapped. Furthermore, the distribution and habitat are briefly discussed.

**Keywords:** Dytiscidae, *Hydroporus scalesianus*, water beetle, Belgium.

### Samenvatting

In dit artikel wordt *Hydroporus scalesianus* Stephens, 1828 voor het eerst gemeld voor België. Alle vondsten worden opgelijst en een verspreidingskaart wordt gegeven. Verder wordt de verspreiding en habitat kort besproken.

### Résumé

Dans cet article *Hydroporus scalesianus* Stephens, 1828 est signalé pour la première fois de Belgique. Toutes les observations sont données et situées sur une carte. De plus, la distribution et l'habitat sont brièvement discutés.

### Introduction

The small water beetle *Hydroporus scalesianus* (Fig. 1) is a relatively widespread North and Central European species, known from France and Great Britain to northern Italy, the former Czechoslovakia and Russia (NILSSON & HOLMEN, 1995). The species is present in the Netherlands and Germany, thus the occurrence in Belgium was to be expected. VAN DORSSELAER (1957) repeated the record by MATHIEU (1857) from Lille (Antwerp) but neither the collection of Mathieu nor Van Dorsseleer contains specimens of this species. KEIRENS (1984) mentions a probably erroneous determined specimen in the collection of Goetghebuer without collecting data (neither date, locality nor country) and states that the occurrence of the species in Belgium still has to be confirmed.

In 2009, *H. scalesianus* was collected in two oligotrophic lakes northeast of Herentals. In the following years, the species was found several times at various locations.

### Detailed account of the Belgian records

Schoutenheiven, Herentals (Antwerpen), 11.IX.2010 (Leg. Scheers K.): 1 ex. in oligotrophic lake.

Herentals (Antwerpen), 11.IX.2010 (Leg. Scheers K.): 1 ex. in a oligotrophic lake with *Juncus effusus*.

Maasmechelen (Limburg), 30.III.2011 (Leg. Crevecoeur L.): 2 ex. in *Sphagnum* in quaking bog.

Maasmechelen (Limburg), 30.III.2011 (Leg. Kohler J.): 1 ex.

Stappersven, Kalmthoutse Heide, Kalmthout (Antwerpen), 03.V.2011 (Leg. Scheers K.): locally common at the margin where *Juncus effusus* dominates.

Landschap De Liereman, Oud-Turnhout (Antwerpen), 11.V.2011 (Leg. Scheers K.): 1 ex. in *Sphagnum* moss at margin of oligotrophic lake.

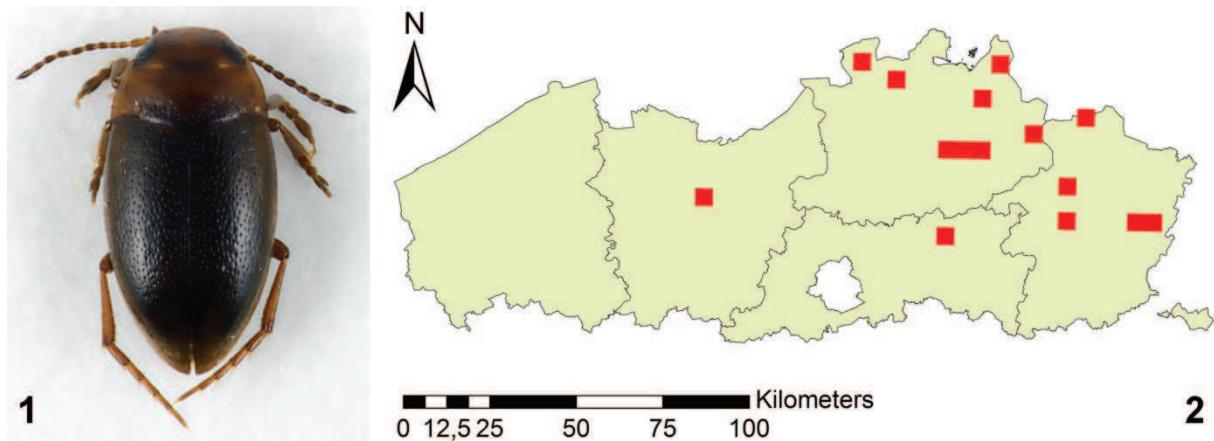


Fig. 1. Dorsal view of *Hydroporus scalesianus* Stephens, 1828 (total length: 2.3 mm).

Fig. 2. Distribution map of *Hydroporus scalesianus* Stephens, 1828 in Flanders, all records (red quadrants) are post 2008.

- Groot Schietveld, Brecht (Antwerpen), 14.V.2011 (Leg. Scheers K.): 1 ex. in acidic *Sphagnum* pool on peaty substrate.
- Keetheuvel, Kalmthoutse Heide, Kalmthout (Antwerpen), 18.V.2011 (Leg. Scheers K.): 1 ex. in pool with *Sphagnum* moss and *Juncus bulbosus*.
- Lavendelven, Herentals (Antwerpen), 24.V.2011 (Leg. Scheers K.): 4 ex. in floating *Sphagnum* carpet.
- Vallei van de Zwarte Beek, Koersel (Limburg), 26.XII.2011 (Leg. Scheers K.): 6 ex. in oligotrophic lake with dominance of *Juncus effusus* and *Sphagnum* mosses.
- Arendonk (Antwerpen), 08.I.2012 (Leg. Scheers K.): 1 ex. in oligotrophic lake.
- Laambekvallei, Zonhoven (Limburg), 21.I.2012 (Leg. Scheers K.): 4 ex. in *Sphagnum*-tussock at edge of lake.
- Het Hageven, Neerpelt (Limburg), 24.III.2012 (Leg. Scheers K.): 1 ex. in grassy pond.
- De Maat, Mol (Antwerpen), 30.III.2012 (Leg. Scheers K.): 2 ex. in *Sphagnum* at margin the oligotrophic lake.
- Arendonk (Antwerpen), 18.II.2013 (Leg. Scheers K.): 1 ex. in oligotrophic lake.
- Vorsdonkbos, Aarschot (Vlaams-Brabant), 05.III.2013 (Leg. Scheers K.): 1 ex. in small pond.
- Vallei van de Zwarte Beek, Koersel (Limburg), 13.XII.2013 (Leg. Scheers K.): 1 ex. in *Carex*-swamp.
- De Zegge, Geel (Antwerpen), 04.IX.2013 (Leg. Scheers K.): 1 ex. in *Sphagnum*-tussocks at margin of oligotrophic lake.
- Damvallei, Destelbergen (Oost-Vlaanderen), 15.X.2013 (Leg. Scheers K.): 1 ex. in shallow peaty ditch.

### Distribution

The species seems to be widespread in the campine region (north-eastern part of Belgium), with one outlier in the nature reserve Damvallei west of Ghent (Fig. 2). It is very likely that more research in the campine region would result in even more locations.

### Ecology

NILSSON & HOLMEN (1995) describe *H. scalesianus* as a typical inhabitant of floating *Sphagnum* carpets surrounding small lakes. CUPPEN (1986) classifies it as an acidophilous species, i.e. one tolerant of non-acidic conditions but preferring habitats from pH 4.1 to 6.5. In Britain and Ireland, it is not confined to such habitats, more often being found in base-enriched waters of neutral or high pH (FOSTER & FRIDAY, 2011).

With the exception of the records from the Damvallei, Vorsdonkbos Turfputten and the one in the nature reserve Hageven, all Belgian sites have oligotrophic, clear water and a peaty substratum with a dominance of *Sphagnum* with decaying leaf litter of *Juncus effusus* or *Carex* spec. This habitat is also

present near the locations at Vorsdonkbos Turfputten and Hageven, where in both cases only one specimen could be found.

At the Belgian sites, the species is mostly accompanied by species that are associated with bog habitats (Table 1). Four species were present in the same square meter for more than 70% of the sites: *Hydroporus erythrocephalus* (Linnaeus, 1758) (76%), *H. neglectus* Schaum, 1845 (76%), *H. umbrosus* (Gyllenhal, 1808) (76%) and *H. tristis* (Paykull, 1798) (71%). Also KERKERING & REISSMANN (2006) mention the presence of *Hydroporus erythrocephalus*, *H. tristis* and *H. gyllenhalii* Schiodte, 1841 in waters where *H. scalesianus* occurred.

Table 1. Accompanying species (in more than 50% of samples) of *Hydroporus scalesianus* Stephens, 1828.

Species	Number (n=17)	Percentage
<i>Hydroporus erythrocephalus</i>	13	76
<i>Hydroporus neglectus</i>	13	76
<i>Hydroporus umbrosus</i>	13	76
<i>Hydroporus tristis</i>	12	71
<i>Copelatus haemorrhoidalis</i>	10	59
<i>Hydroporus gyllenhalii</i>	10	59
<i>Agabus affinis</i>	9	53
<i>Hydroporus angustatus</i>	9	53

## Discussion

Because of the occurrence of *H. scalesianus* in The Netherlands, Germany, France and Great Britain, the presence of this species in Belgium was to be expected. Although it is not unlikely that *H. scalesianus* is already present in Belgium for some time, the recent increase of records points to a recent expansion. This theory is enforced by the fact that some of the new sites lay within historical better collected areas, as is the case with the surroundings of Herentals and the nature reserves Kalmthoutse Heide and Damvallei.

Also some other species with the same habitat preferences have increased during the last decennia. A good example is the increase of the number of records and the expansion in distribution of *Hydroporus neglectus*. Until 2000, this species had been recorded from only six quadrants (5x5km UTM squares) in Belgium (KEIRENS, 1984), since 2000 this species is known of 63 quadrants (SCHEERS, unpublished data). Also the area of occupancy did increase notably. Similar increases are known of *Agabus affinis* (Paykull, 1798), *A. uliginosus* (Linnaeus, 1761), *Hydroporus umbrosus*, *H. tristis*, *H. gyllenhalii*, *H. melanarius* Sturm, 1835 and *Hygrotus decoratus* (Gyllenhal, 1810). All north-central European species with a strong preference for oligotrophic, boggy water bodies and swamps.

In Ireland, *H. scalesianus* knows a comparable increase in number of sites and area of occupancy (FOSTER *et al.* 2009). Since the species was discovered there in 1986, it has subsequently been found in many lake fens and in cutover bogs and was in 2009 recorded in 53 10 km squares. Also in Great Britain and The Netherlands, there is an increase of recordings (FOSTER, 2010; CUPPEN & VAN MAANEN, 1999), but not as significant as in Belgium and Ireland.

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