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Two records of the rare ant *Lasius bicornis* in Belgium

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Abstract

During the spring of 2008 and spring of 2009 aleate gynes of *Lasius bicornis* (FÖRSTER, 1850) were discovered in Awirs (Flémalle) and Elewijt (Zemst). Records of this species in Belgium and surrounding countries are very rare. We give comments on the habitat and ant communities at the sites where this species was actually rediscovered.

Keywords: Formicidae, *Lasius bicornis*, faunistics

Résumé

Au printemps 2008 et 2009 des gynes ailées de *Lasius bicornis* (FÖRSTER, 1850) étaient découvertes aux Awirs (Flémalle) et à Elewijt (Zemst). Les captures de cette espèce en Belgique et dans les pays avoisinants sont très rares. Nous donnons des indications sur l'habitat et les communautés de fourmis présentes sur les sites où cette espèce a, en fait, été redécouverte.

Introduction

Ant inventory work was launched since two years in the southern part of Belgium (Wallonia). Many Wallonian records have been brought together to be added to the Belgian ant database FORMIDABEL (see also www.fourmisWalBru.be). Several rare species had already been reported. Here we comment a record of the temporary parasitic *Lasius bicornis* at Awirs (Flémalle) and also a record of this species in Elewijt. So far the only confirmed Belgian record of this species in Western-Europe, goes back to 2003. During the summer of that year an aleate gyne of *L. bicornis* was collected with a Malaise trap at Sint-Pieters-Voeren (Belgium) in a mixed oak, beech plantation on a formerly grassland that had been abandoned at the end of the 80's (DEKONINCK & GROOTAERT, 2005). However Bondroit (1918) already mentioned a record of this species from somewhere close to "Aix-aux-Chapelle" (Aachen, Germany). DEKONINCK & GROOTAERT (2005) considered the record from 2003 as a rediscovery of this species in Belgium after more than 80 years. Nevertheless it was never clear if the specimen collected near Aachen was a former Belgian record of this species, so most likely the record from Sint-Pieters-Voeren was actually the first record of this species in Belgium.

Lasius bicornis at Flémalle

During a field trip on 4/V/2008 in Awirs one aleate gyne was discovered. It was foraging on top of a steep rocky slope. Probably this gyne emerged recently and was still searching for a suitable *Lasius* s. str. or *Cautolasius* nest to take over. The site where the species was discovered is a steep slope (often used by walkers) surrounded with a great deciduous forest composed of oak, birch, willow and maple, with on top a large meadow with grasses. The second author revisited the site two times in May but could not discover a nest of *L. bicornis*.

As well the slope, the grassland as the surrounding forest and forest edges, were intensively surveyed for ants. Besides *L. bicornis* also 23 other ant species were recorded at this site: *Myrmica ruginodis* NYLANDER, 1846; *Myrmica rubra* (LINNAEUS, 1758); *Myrmica scabrinodis* NYLANDER, 1846; *Myrmica sabuleti* MEINERT, 1861; *Formica cunicularia* LATREILLE, 1798; *Formica rufibarbis* FABRICIUS, 1793; *Formica fusca* LINNAEUS, 1758; *Tapinoma*

erraticum (LATREILLE, 1798); *Ponera coarctata* (LATREILLE, 1802); *Myrmecina graminicola* (LATREILLE, 1802); *Temnothorax nylanderi* (FÖRSTER, 1850); *Temnothorax unifasciatus* (LATREILLE, 1798); *Temnothorax interruptus* (SCHENCK, 1852); *Stenammina debile* (FÖRSTER, 1850); *Tetramorium impurum* (FÖRSTER, 1850); *Tetramorium caespitum* (LINNAEUS, 1758); *Lasius fuliginosus* (LATREILLE, 1798); *Lasius flavus* (FABRICIUS, 1781); *Lasius niger* (LINNAEUS, 1758); *Lasius platythorax* SEIFERT, 1991; *Lasius brunneus* (LATREILLE, 1798); *Lasius mixtus* (NYLANDER, 1846) and *Lasius umbratus* (NYLANDER, 1846).

On top of the steep slope the nest densities of *L. flavus* were very high (10 nest/100m²). One of the nests was colonized by *L. mixtus*. Approximately in the near forest a populous colony of *L. fuliginosus* was found whereas many nests of *L. umbratus* were found all over the site but always in more or less closed forested places. Probably this warm site with high ant biodiversity and moreover with very high nest densities of *L. flavus* seems to be very favourable for the development of *Chthonolasius* sp. colonies and also in particular of *Lasius bicornis*.

Lasius bicornis at Elewijt

During light trap sampling (ML 160WE, E27 Philips) on 13-vi-2009, one aleate gyne of *L. bicornis* was collected together with several gynes and males of *Lasius fuliginosus*. The light trap operated from 22:00 until 24:00 and was disposed in the garden of the third author. At the site a few old apple trees, oak, willow and hazel as also locally high amount of decaying wood were present. In the garden 7 other ant species were found: *M. ruginodis*, *M. rubra*, *M. scabrinodis*, *Temnothorax nylanderi*, *Tetramorium* sp., *L. flavus*, *L. niger* and *L. fuliginosus*.

Nesting place and nuptial flights of *Lasius bicornis* in Western-Europe

L. bicornis nests are known to occur in mouldered branches of living and decaying trees along forest edges, in parks and orchards (SEIFERT, 1996; VAN LOON, 2004). Because of its rare status, only few data on its ecology, nuptial flights and chorology are available (SEIFERT, 2007). In Germany aleate specimens have been collected from the end of April until September (SEIFERT, 1993; 1996). In Belgium we have no additional information on its nesting

place. However we have indications that the species can be found in solitary old trees as in orchards and in very open thermophilic oak forests (DEKONINCK & GROOTAERT, 2005).

In France Henry CALLOT collected several aleate gynes on his balcony at the 4th floor by means of UV light traps (Strasbourg-Ville, close to the University, near the Botanical Garden on 25/IV/1997; temperature 23°C, weather nice and warm). He also recorded a nest of *L. bicornis* in a crack in the soil caused by the falling of an old oak tree that had been tired open in the forest edge in the south of Brumath forest (Bas-Rhin) on 16/I/1988. This nest was very populous.

SEIFERT (2007) reports that nests can be found at the base of deciduous trees and that they are very difficult to find. He also mentions that this species can be found in urban sites.

Lasius bicornis a species of European concern

All over Europe *L. bicornis* is considered as a very rare ant species. In The Netherlands *L. bicornis* was only recently rediscovered by UV light-trapping in Tilburg on 28/IV/2008 and the second last record goes back to 1926 (BOER, 2009). All 'formerly' Dutch localities (5) are situated in the south of the country near the Belgian border (BOER, 2004; VAN LOON, 2004). According to SEIFERT (1988) *L. bicornis* is not known from the British Isles but elsewhere widely distributed all over continental Europe. It is apparently nowhere abundant and only rarely found. In most of the other European countries where it is recorded, the species is mentioned as a threatened ant species (COLLINGWOOD, 1979; SEIFERT, 1998; RADCHENKO *et al.*, 1999; STEINER *et al.*, 2002; BOER *et al.*, 2003) and this is certainly also the case in Belgium.

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