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An update of the checklist of the Belgian ant fauna with comments on new species for the country (Hymenoptera, Formicidae) *

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Abstract

An update of the checklist of the Belgian ant fauna is presented. Until June 2001 (date of the previous checklist) 73 species were reported for Belgium of which some species were found only once and their persistent occurrence in Belgium was therefore catalogued as doubtful. Since 2001 several papers mentioning new species for the Belgian ant fauna, a Flemish distribution atlas and a provisional red list of the ants of Flanders were published. Also a lot of inventory works in Flanders and Wallonia have been carried out. These recent studies and papers have raised the need for a new coherent survey of all known Belgian records and an update of the checklist. Until December 2005, 82 ant species and two additional taxa (a hybrid and a microgyne) were reported for Belgium. Ten of them are (temporary) considered as extinct in Belgium because they were not recorded anymore during the last 50 years. During the last 25 years, 59 species and two additional taxa have been recorded from Flanders. In Wallonia 73 species and two additional taxa were found and 15 of them have to be considered as extinct in this region because lack of records during the last 25 years. Due to recent intensive inventory work in Flanders only one species is considered as extinct in that part of the country. Thus an important inventory work remains to be

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done especially in Wallonia and a lot of so-called extinct species will probably be rediscovered.

Keywords: faunistics, Formicidae, Belgium.

Résumé

Un catalogue mis à jour des fourmis de la faune belge est présenté. Jusqu'en juin 2001 (date du précédent catalogue), 73 espèces étaient répertoriées dans le pays, incluant certaines espèces trouvées une seule fois et dont la persistance était jugée comme douteuse. Depuis 2001, plusieurs publications mentionnant des espèces nouvelles pour la faune belge, un atlas de distribution des fourmis de la Flandre et une liste rouge des espèces menacées de cette région ont été publiées. Plusieurs recherches ont également été menées en Flandre et en Wallonie. Les apports faunistiques de ces différentes études et publications ont entraîné le besoin d'un nouveau catalogue actualisant l'inventaire de toutes les espèces trouvées sur le territoire belge. En décembre 2005, la faune belge compte ainsi 82 espèces de fourmis (plus un hybride et une microgyne). Dix de ces espèces sont actuellement considérées comme éteintes en raison de l'absence de données au cours des 50 dernières années. En Flandre, 59 espèces plus un hybride et une microgyne ont été signalées depuis 1980. Les espèces connues en Wallonie sont au nombre de 73 plus un hybride et une microgyne, mais 15 d'entre-elles n'ont plus été notées depuis 25 ans. Le fait qu'une seule fourmi soit déclarée disparue en Flandre résulte des recherches intensives effectuées ces dernières années. Le développement de tels inventaires sur le territoire wallon permettrait sans doute la redécouverte d'espèces actuellement considérées comme éteintes.

Samenvatting

Een actualisatie van de checklist van de mieren van België wordt hier voorgesteld. Tot en met juni 2001 (datum vorige checklist) werden in België 73 verschillende mierensoorten gevonden waarvan enkele slechts één keer werden waargenomen. Deze soorten werden toen als twijfelachtige soorten voor België beschouwd. Sinds 2001 werden heel wat vermeldingen van nieuwe soorten voor ons land, een voorlopige verspreidingsatlas en een Rode Lijst van de mieren van Vlaanderen gepubliceerd. Ook heel wat inventarisaties met bijzondere aandacht voor mieren werden in Vlaanderen en in mindere mate Wallonië uitgevoerd. Deze recente studies en publicaties deden de vraag naar een nieuw overzicht en een herziening van de checklist van de mieren van België groeien. Tot en met december 2005 werden in ons land 82 soorten mieren en 2 bijkomende taxa waargenomen. Van tien soorten ontbreken echter waarnemingen tijdens de laatste 50 jaar en die soorten worden daarom als uitgestorven in België beschouwd. Gedurende de laatste 25 jaar werden in Vlaanderen 59 soorten en twee bijkomende taxa gevonden. In Wallonië zijn tot dusver 73 soorten en twee bijkomende taxa gevonden waarvan er 15 als uitgestorven in deze regio beschouwd worden omdat er van die soorten de laatste 25 jaar geen waarnemingen zijn. In Vlaanderen wordt momenteel slechts één soort als uitgestorven beschouwd wat vooral te wijten is aan uitgebreide, recente inventarisaties. We pleiten dan ook vooral voor een aanvulling van grootschalige inventarisaties in Wallonië en roepen op tot een zoektocht naar hier vermelde in Wallonië uitgestorven soorten.

Introduction

Nowadays in western Europe and more specifically in countries neighbouring Belgium, faunistic studies on ants experience a strong revival due to the recent publication of several excellent works for identification (SEIFERT, 1996; SCHOETERS & VANKERKHOVEN, 2001; CZECHOWSKI *et al.*, 2002) and distribution atlases (e.g. DEKONINCK *et al.*, 2003a; PEETERS *et al.*, 2004). Last years especially in Flanders more intensive inventory work resulted in various papers and an ant database FORMIDABEL (FORMIcidae DAtabase BELgium).

In 2001 a checklist of the Belgian ant fauna was published and the number of known ant species until June 2001, counted 73 species, at least once found in Belgium (DEKONINCK & VANKERKHOVEN, 2001a). Since 2001 various papers that mention new species for the Belgian fauna (BAUGNÉE, 2003; DEKONINCK *et al.*, 2002; 2003a,b; 2004, DEKONINCK & GROOTAERT, 2005), a Flemish distribution atlas and a provisional red list of the ants of Flanders were published (DEKONINCK *et al.*, 2003a). These papers and some new taxonomically insights suggested that a lot of species could be (re)-discovered and have raised the need for an update of the checklist.

In the present paper we give an update of the checklist as well as comments on new Belgian ant species. Furthermore a Flemish and Walloon checklist are given and lists of so-called extinct species in Belgium (no records during last 50 years), Flanders (no records during last 25 years) and Wallonia (no records during last 25 years) are added.

Material en methods

The checklist presented here is based on the previous checklist (DEKONINCK & VANKERKHOVEN, 2001a), recent faunistic papers (BAUGNÉE, 2002; 2003; 2004; DEKONINCK & PAULY, 2002; DEKONINCK *et al.*, 2002; 2003a; 2004), some recent investigations on nature management in Flanders (240 pitfalls (=80 sites) that were emptied during six months e.g. MAES *et al.*, 2003, DEKONINCK *et al.*, 2005) and Wallonia (150 pitfalls (=50 sites) that were emptied during six months, e.g. DEKONINCK *et al.*, in press), and recent unpublished records of the authors added with records of P. BOER, J. CORTENS, H. DE KONINCK, M. DETHIER, C. GASPAR, J.-F. GODEAU, P. WEGNEZ and M. LONEUX.

Most of the old material (collection BONDROIT at the Royal Belgian Institute of Natural Sciences (RBINS) in Brussels) and new material (personal collection of W. DEKONINCK, F. VANKERKHOVEN, J.-Y. BAUGNÉE and P. BOER) was checked according to new taxonomical insights and with recent identification keys (CSŐSZ & SEIFERT, 2003; RADCHENKO & ELMES, 2003; SEIFERT 1996; 1997; 2000a,b; 2002; 2003; 2004). All Belgian records are brought together in the database "FORMIDABEL" containing all Belgian ant-material checked so far (at present 10,230 records; see also www.formicidae.be).

Because of different ecological, soil and climatic conditions and differences in management ideas, governmental policy and aims, separate Flemish (including Brussels) and Wallonian regional checklists are presented. In Flanders some species were exclusively found in the Voeren region, an isolated part of (the Province of Limburg) Flanders in the north of the Province of Liège along the border of The Netherlands; their presence in Flanders is indicated by "Voer" in the checklist. In Wallonia some species were until now exclusively found in the Hautes Fagnes, a wet heath and bog area in the eastern part of the Province of Liège; their occurrence in Wallonia is indicated with "HF" in the checklist.

Results

Checklist for Belgium

Species recorded in Belgium until December 2005 are listed in Table 1. 82 species and 2 additional taxa (hybrid of *Formica polyctena* x *rufa* and microgyne of *Myrmica ruginodis* NYLANDER 1846) were found so far. Of 10 species we have no records during the last 50 years and we consider them as extinct in Belgium. They are listed in Table 2.

Of four species we only have indoor records of nests in heated buildings and greenhouses; they probably can not survive outdoors in Belgium. Although introduced, these tramp species are considered as Belgian species and are mentioned in the checklist: *Hypoponera schauinslandi* (EMERY 1899), *Linepithema humile* (MAYR 1868), *Monomorium pharaonis* (LINNAEUS 1758) and *Tetramorium bicarinatum* (NYLANDER 1846). They are marked with a # in Table 1.

Checklist for Wallonia

In Wallonia 73 species and two additional taxa were found until December 2005 of which only 58 species (and two additional taxa) were recorded during the last 25 years. Eight of them are exclusively found in the Hautes Fagnes (HF in Table 1): *Camponotus herculeanus* LINNAEUS 1758, *Formica exsecta* NYLANDER 1846, *Formica foreli* EMERY 1909, *Formica lemani* BONDROIT 1917, *Formica pressilabris* NYLANDER 1846, *Lasius citrinus* EMERY 1922, *Lasius bicornis* (FÖRSTER 1850) *Myrmica karavajevi* (ARNOLDI 1930), and for 7 of them the last record goes back more than 50 years ago. At present, only one of these "Hautes Fagnes species", *F. lemani*, is not extinct in Wallonia and can still be commonly found in the Hautes Fagnes.

In total 15 species are considered as extinct in Wallonia (no records from the last 25 years). Records of the above-mentioned 7 extinct species only found in the Hautes Fagnes and of *Anergates atratulus* (SCHENCK 1852), *Dolichoderus quadripunctatus* (LINNAEUS 1771), *Lasius distinguendus* (EMERY 1916), *Manica rubida* (LATREILLE 1802), *Messor structor* (LATREILLE 1798), *Myrmica sulcinodis* NYLANDER 1846, *Polyergus rufescens* (LATREILLE 1798) and *Strongylognathus testaceus* (SCHENCK 1852) are lacking in Wallonia during the last 25 years.

Table 1. New checklist of the Belgian ant fauna up to December 2005.

Subfamily	Genus	Subgenus	Species	Flanders	Wallonia
Dolichoderinae	*Dolichoderus*		*Dolichoderus quadripunctatus* (LINNAEUS 1771)	(+)	(+)
	Linepithema		*Linepithema humile* (MAYR 1868) * #	+	-
	Tapinoma		*Tapinoma ambiguum* EMERY 1925	+	-
	Tapinoma		*Tapinoma erraticum* (LATREILLE 1798)	+	+
Formicinae	*Camponotus*		*Camponotus herculeanus* (LINNAEUS 1758)	-	(HF)
	Camponotus		*Camponotus ligniperda* (LATREILLE 1802)	-	+
	Camponotus		*Camponotus piceus* (LEACH 1825)	-	+
	Camponotus		*Camponotus vagus* (SCOPOLI 1763)	+	-
	Formica	*Coptoformica*	*Formica exsecta* NYLANDER 1846	-	(HF)
	Formica	*Coptoformica*	*Formica foreli* EMERY 1909	-	(HF)
	Formica	*Coptoformica*	*Formica pressilabris* NYLANDER 1846	-	(HF)
	Formica	*Formica* s.str.	*Formica polyctena* FÖRSTER 1850	+	+
	Formica	*Formica* s.str.	*Formica pratensis* RETZIUS 1783	+	+
	Formica	*Formica* s.str.	*Formica rufa* LINNAEUS 1761	+	+
	Formica	*Raptiformica*	*Formica sanguinea* LATREILLE 1798	+	+
	Formica	*Serviformica*	*Formica cunicularia* LATREILLE 1798	+	+
	Formica	*Serviformica*	*Formica fusca* LINNAEUS 1758	+	+
	Formica	*Serviformica*	*Formica lemani* BONDROIT 1917	-	HF
	Formica	*Serviformica*	*Formica lusatica* SEIFERT 1997	+	+
	Formica	*Serviformica*	*Formica picea* NYLANDER 1846	+	+
	Formica	*Serviformica*	*Formica rufibarbis* FABRICIUS 1793	+	+
	Lasius	*Cautolasius*	*Lasius flavus* (FABRICIUS 1781)	+	+
	Lasius	*Cautolasius*	*Lasius myops* (FOREL 1894) *	+	+
	Lasius	*Chthonolasius*	*Lasius bicornis* (FÖRSTER 1850)	Voer	(HF)
	Lasius	*Chthonolasius*	*Lasius citrinus* EMERY 1922	-	(HF)
	Lasius	*Chthonolasius*	*Lasius distinguendus* (EMERY 1916)	-	(+)
	Lasius	*Chthonolasius*	*Lasius jensi* SEIFERT 1982	+	+
	Lasius	*Chthonolasius*	*Lasius meridionalis* (BONDROIT 1919)	+	-
	Lasius	*Chthonolasius*	*Lasius mixtus* (NYLANDER 1846)	+	+

(continued)

	Lasius	*Chthonolasius*	*Lasius sabularum* (BONDROIT 1918)	+	+
	Lasius	*Chthonolasius*	*Lasius umbratus* (NYLANDER 1846)	+	+
	Lasius	*Dendrolasius*	*Lasius fuliginosus* (LATREILLE 1798)	+	+
	Lasius	*Lasius* s.str.	*Lasius alienus* (FÖRSTER 1850)	+	+
	Lasius	*Lasius* s.str.	*Lasius brunneus* (LATREILLE 1798)	+	+
	Lasius	*Lasius* s.str.	*Lasius emarginatus* (OLIVIER 1791)	+	+
	Lasius	*Lasius* s.str.	*Lasius neglectus* VAN LOON, BOOMSMA & ANDRÁSFALVY 1990 *	+	-
	Lasius	*Lasius* s.str.	*Lasius niger* (LINNAEUS 1758)	+	+
	Lasius	*Lasius* s.str.	*Lasius platythorax* SEIFERT 1991	+	+
	Lasius	*Lasius* s.str.	*Lasius psammophilus* SEIFERT 1992	+	+
	Plagiolepis		*Plagiolepis vindobonensis* LOMNICKI 1925	-	+
	Polyergus		*Polyergus rufescens* (LATREILLE 1798)	+	(+)
Myrmicinae	*Anergates*		*Anergates atratulus* (SCHENCK 1852)	+	(+)
	Aphaenogaster		*Aphaenogaster subterranea* (LATREILLE 1798)	-	+
	Formicoxenus		*Formicoxenus nitidulus* (NYLANDER 1846)	+	+
	Leptothorax		*Leptothorax acervorum* (FABRICIUS 1793)	+	+
	Leptothorax		*Leptothorax muscorum* (NYLANDER 1846)	+	+
	Manica		*Manica rubida* (LATREILLE 1802)	-	(+)
	Messor		*Messor structor* (LATREILLE 1798)	-	(+)
	Monomorium		*Monomorium pharaonis* (LINNAEUS 1758) #	+	+
	Myrmecina		*Myrmecina graminicola* (LATREILLE 1802)	+	+
	Myrmica		*Myrmica karavajevi* (ARNOLDI 1930)	-	(HF)
	Myrmica		*Myrmica lobicornis* NYLANDER 1846	Voer	+
	Myrmica		*Myrmica lonae* FINZI 1926	+	-
	Myrmica		*Myrmica microrubra* SEIFERT 1993	+	+
	Myrmica		*Myrmica rubra* (LINNAEUS 1758)	+	+
	Myrmica		*Myrmica ruginodis* NYLANDER 1846	+	+
	Myrmica		*Myrmica rugulosa* NYLANDER 1849	+	+
	Myrmica		*Myrmica sabuleti* MEINERT 1861	+	+
	Myrmica		*Myrmica scabrinodis* NYLANDER 1846	+	+
	Myrmica		*Myrmica schencki* EMERY 1895	+	+

(continued)

	Myrmica		*Myrmica specioides* BONDROIT 1918	+	+
	Myrmica		*Myrmica sulcinodis* NYLANDER 1846	+	(+)
	Solenopsis		*Solenopsis fugax* (LATREILLE 1798)	+	+
	Stenamma		*Stenamma debile* (FÖRSTER 1850)	+	+
	Stenamma		*Stenamma westwoodi* WESTWOOD 1840	+	-
	Strongylognathus		*Strongylognathus testaceus* (SCHENCK 1852)	+	(+)
	Temnothorax		*Temnothorax affinis* MAYR 1855 *	+	-
	Temnothorax		*Temnothorax albipennis* (CURTIS 1854) *	-	+
	Temnothorax		*Temnothorax interruptus* (SCHENCK 1852)	-	+
	Temnothorax		*Temnothorax nigriceps* MAYR 1855	-	+
	Temnothorax		*Temnothorax nylanderi* (FÖRSTER 1850)	+	+
	Temnothorax		*Temnothorax parvulus* (SCHENCK 1852)	-	+
	Temnothorax		*Temnothorax tuberum* (FABRICIUS 1775)	-	+
	Temnothorax		*Temnothorax unifasciatus* (LATREILLE 1798)	Voer	+
	Tetramorium		*Tetramorium bicarinatum* (NYLANDER 1846) * #	-	+
	Tetramorium		*Tetramorium caespitum* (LINNAEUS 1758)	+	+
	Tetramorium		*Tetramorium impurum* (FÖRSTER 1850)	+	+
Ponerinae	*Hypoponera*		*Hypoponera punctatissima* (ROGER 1859)	+	+
	Hypoponera		*Hypoponera schauinslandi* (EMERY 1899) * #	+	-
	Ponera		*Ponera coarctata* (LATREILLE 1802)	+	+
	Ponera		*Ponera testacea* EMERY 1895 *	-	+
Pseudomyrmecinae	*Tetraponera*		*Tetraponera allaborans* (WALKER 1859) *	-	+
Additional taxa	*Formica*		*Formica polyctena* x *rufa* *	+	+
	Myrmica		Microgyne *Myrmica ruginodis* *	+	+

+ = Present, - = absent and (+) = no records during last 25 years; HF = in Wallonia only known from Hautes Fagnes; (HF) = no records from the Hautes Fagnes during the last 25 years; Voer = in Flanders only known from Voeren region; * = new species since last checklist from 2001 and # = tramp species only found indoors.

Table 2. Ant species considered as extinct in Belgium since without records during the last 50 years.

Species extinct in Belgium	Last record	Reference
Dolichoderus quadripunctatus (LINNAEUS 1771)	Brussels and Profondeville before 1918	BONDROIT (1918)
Camponotus herculeanus LINNAEUS 1758	Hautes Fagnes (Rocher Frédericq) in 1938	VAN BOVEN (1970)
Formica exsecta NYLANDER 1846	Hautes Fagnes in 1912	BONDROIT (1912)
Formica foreli EMERY 1909	Hautes Fagnes before 1918	BONDROIT (1918)
Formica pressilabris NYLANDER 1846	Hautes Fagnes in 1912	BONDROIT (1912)
Lasius citrinus EMERY 1922	Chèvremont in 1920	Coll. BONDROIT RBINS
Lasius distinguendus (EMERY 1916)	Acoz in 1966	GASPAR (1971) map 214
Manica rubida (LATREILLE 1802)	Liège before 1918	BONDROIT (1918)
Messor structor (LATREILLE 1798)	Waulsort before 1918	BONDROIT (1918)
Myrmica karavajevi (ARNOLDI 1930)	Hautes Fagnes (Baraque Michel) in 1951	VAN BOVEN (1970)

Checklist for Flanders

In Flanders (and Brussels) 60 ant species and two additional taxa were recorded so far. Three of them are only known from the Voeren region and were only recently recorded there, i.e., *Lasius bicornis* (DEKONINCK & GROOTAERT, 2005), *Myrmica lobicornis* NYLANDER 1846 (DEKONINCK *et al.*, 2004) and *Temnothorax unifasciatus* (LATREILLE 1798) (collected by P. BOER on 02.V.2004 in Sint-Martens-Voeren). From all species known so far in Flanders we have records during the last 25 years except for *Dolichoderus quadripunctatus*, which we consider as extinct in Flanders.

New species for the Belgian ant fauna since 2001

Hereafter all new species for the Belgian ant fauna since the checklist from 2001 are mentioned. For several species these records were already published; these species will not be discussed in detail here. The species are: *Lasius myops* (FOREL 1894) (DEKONINCK *et al.*, 2003a), *Lasius neglectus* VAN LOON, BOOMSMA & ANDRÁSFALVY 1990 (DEKONINCK *et al.*, 2002) and *Temnothorax affinis* MAYR 1855 (DEKONINCK *et al.*, 2003b). Other not yet published new species for the Belgian ant fauna are: *Ponera testacea* EMERY 1895, *Temnothorax albipennis* (CURTIS 1854), *Tetraponera allaborans*, *Hypoponera schauinslandi*, *Linepithema humile* and *Tetramorium bicarinatum*. The three latter species are added to the Belgian checklist for the first time and they are considered as accidental introductions and together with *Monomorium pharaonis* they are catalogued as Belgian tramp species.

Ponera testacea EMERY 1895

Material examined: 1 worker, Ave-et-Auffe, Turmont (Prov. Namur), FR5533, 21.IV.2005 (leg. J.-Y. BAUGNÉE, coll. RBINS).

BONDROIT (1918) mentioned a record of *Ponera coarctata* var. *testacea* from Yvoir, in the Meuse valley. Material of this location is missing in his collection in Brussels but we assume that this record indeed refers to one catalogued as *P. testacea* by CSŐSZ and SEIFERT in their re-description, rank elevation and lectotype designation of *Ponera coarctata* and *Ponera testacea* (CSŐSZ & SEIFERT, 2003). On 21.IV.2005 a worker of *P. testacea* (second Belgian record of *P. testacea*) was collected in the Lesse valley at Ave-et-Auffe, Turmont, under a large stone in a calcareous grassland. CSŐSZ & SEIFERT (2003) mention that *P. testacea* is a more xerothermophilic species than *P. coarctata* and that it seems to avoid shaded, moist woodland habitats. We expect that more records of this hidden species will show up when *Ponera* specimens from xerothermophilic Belgian habitats will be verified. For correct identification and distinguishing between *P. coarctata* and *P. testacea*, see CSŐSZ & SEIFERT (2003).

Temnothorax albipennis (CURTIS 1854)

Material examined:
1) 1 worker, Treignes, railway station (Prov. Namur), FR2050, 29.VII.2000 (leg. & coll. J.-Y. BAUGNÉE);
2) 5 workers, Nismes, Roche Trouée calcareous grassland (Prov. Namur), FR1147, 30.V.2003 until 12.VII.2003 (leg. H. DE KONINCK, coll. W. DEKONINCK);
3) 1 worker, Eprave, Gemeroie (Prov. Namur), FR5557, 15.V.2004 (leg. & coll. J.-Y. BAUGNÉE).

According to BOER (1999) *T. albipennis* is a thermophilic species found in several dune areas in The Netherlands. In The British Isles the species is known from rocky sites along the coast (ORLEDGE, 1998; MCLEMAN *et al.*, 2002). The only constant environmental requirement of the species in Western Europe seems to be its affinity with xero-mesomorphic habitat conditions. We suspect the species could also be present in other similar habitats in the Viroin region. This rather late discovery of *T. albipennis* in Belgium can be explained by the fact that this species could have been misidentified with its sibling-species *Temnothorax tuberum* (FABRICIUS 1775) or even as *Temnothorax unifasciatus* (LATREILLE 1798). For correct identification and discrimination of *T. albipennis* from *T. tuberum* and *T. unifasciatus* we recommend SEIFERT, 1996.

Tetraponera allaborans (WALKER 1859)

Material examined: 1 worker, Engis in an ancient quarry (Prov. Liège), FS7005, summer 2003 (leg. M. DETHIER, coll. W. DEKONINCK).

Most remarkable was the presence of a worker of *Tetraponera allaborans* (identification confirmed by Dr. P.S. WARD) in a pitfall from an ancient

quarry in Engis. As we found only one specimen during the complete sampling period (April – October 2003) its permanent presence in Belgium is doubtful. Another possible explanation why we only collected one specimen could be the fact that this omnivore species rarely forages on the ground and is normally found on trees and branches in its autochthonous habitat where nests are found in trees and in hollow twigs (WARD, 2001). Anyhow a profound search for the species in the summer of 2004 and 2005 in its typical habitat at the quarry of Engis did not lead to other records of *T. allaborans*. *Tetraponera allaborans* lives outdoors in Southeast Asia and Australia. It was probably accidentally introduced in the quarry of Engis in 2003 or earlier. We do not think that this Oriental and Australasian species will be able to persist outdoors in Belgium, even not in thermomorphic habitats such as ancient quarries, as we did not record *T. allaborans* anymore after 2003.

***Hypoponera schauinslandi* (EMERY 1899)**

Material examined:

1) 4 workers, Brussels in the Jardin Botanique, ES9733, labels without date (leg. & coll. J. BONDROIT);
2) gynes and workers from nuptial flight, Maarkedaal (Prov. Oost-Vlaanderen), ES42A, 10.XI.1995 and winter 1996 (leg. P. GROOTAERT, coll. RBINS).

This species was formerly recorded as *Hypoponera bondroiti* in DEKONINCK *et al.* (2003a) where two records of this species are mentioned. Recently SEIFERT (re)described *Hypoponera punctatissima* (ROGER 1859) and *H. schauinslandi* as two morphologically and biologically distinct species (SEIFERT, 2003). He checked the material from the collection of the RBINS. This resulted in the confirmation of adding a second *Hypoponera* species to the Belgian ant fauna earlier misnamed *H. bondroiti* in DEKONINCK *et al.* (2003a). The two records of *H. schauinslandi* are from heated buildings and we suggest the chance to find this species outdoors in Belgium is small. Its sibling species *H. punctatissima* has been found only once outdoors so far (DEKONINCK & VANKERKHOVEN, 2001b) and can be distinguished from *H. schauinslandi* using SEIFERT (2003).

***Linepithema humile* (MAYR 1868)**

Material examined:

1) 3 workers, Meise, greenhouses of the National Botanic Garden of Belgium, ES93C, summer 2003 (leg. & coll. W. DEKONINCK);
2) 3 workers, Ghent, greenhouses of the Botanical garden of Ghent University, ES5054, summer 2004 (leg. & coll. W. DEKONINCK).

For the Argentine ant we have records of permanent and 'persistent' populations in the greenhouses of the Botanical garden of Ghent University and at the National Botanic Garden of Belgium in Meise from the summer of 2003 and 2004. Already at the beginning of last century, workers of this species were found in the Botanical Garden in Brussels (BONDROIT, 1911). We are convinced that this tramp species, once imported, can survive in greenhouses in our country.

***Tetramorium bicarinatum* (NYLANDER 1846)**

Material examined: workers from two nests, Herstal (Prov. Liège), May 2004, FS8217 (leg. P. WEGNEZ, coll. J.-Y. BAUGNÉE).

Two nests of this, in our region only indoor living, ant species were found in May 2004 in a plant pot of *Azalea* sp. We do not know if the ants arrived in the building together with the plants or if the ants colonized the pot from elsewhere in the building. *Tetramorium bicarinatum* is a common tramp species usually found inside houses and was formerly known as *Tetramorium guineense*. *Tetramorium bicarinatum* is a widespread tropicopolitan tramp species originating most probably from the Oriental region. In temperate regions they only inhabit heated buildings (RADCHENKO *et al.*, 1998). Although VAN BOVEN & MABELIS (1986) mention *T. guineense* as a species that can be found in hothouses in our country; to our knowledge it was never reported before. *Tetramorium bicarinatum* can be recognised and distinguished from the other two *Tetramorium* species in our country, by the long spines on the propodeum and the long frontal carinae, projected far beyond the upper level of the eyes (RADCHENKO *et al.*, 1998).

Discussion and conclusion

With 82 recorded ant species, Belgium can be considered as a rather ant rich country. Ten of these species (see Table 2) seem to be lost forever since we lack records of them during the last 50 years. Nevertheless the hidden and very rare, parasitic species *Lasius citrinus*, *Myrmica karavajevi* and *Lasius distinguendus* can be rediscovered if searched for at the right time and place. They are also very rare species in our neighboring countries as Germany (SEIFERT, 1996), The Netherlands (BOER *et al.*, 2003; PEETERS *et al.*, 2004; BOER, 2005). As the other extinct species are easily to observe when present and records are already dating back more than 80 years, they are most probably extinct in Belgium due to the disappearance or destruction of their typical habitats. Especially the decline in area of undisturbed bogs and forests in the east of the country has been dramatic, explaining the extinction of some of the Hautes Fagnes species. For other species, such as *Dolichoderus quadripunctatus*, *Manica rubida* and *Messor structor*, the small numbers of records before 1918 (respectively 2, 1 and 1) indicate these species did not have well established populations in Belgium in that time. *Manica rubida*, for example, was already characterized as a possible introduction by BONDROIT in 1918. As the typical habitat types in which the latter three species are found in Germany (SEIFERT, 1996), did not drastically disappear in Belgium, we can assume these earlier records were rather due to accidental intruders or introductions and not to permanent populations.

In Wallonia 73 species and two additional taxa were recorded since 1900, while 60 species and two additional taxa were found in Flanders. (see Figure 1). On the other hand, at present only one species has to be considered as extinct in Flanders, i.e. with exception of *Dolichoderus quadripunctatus* we

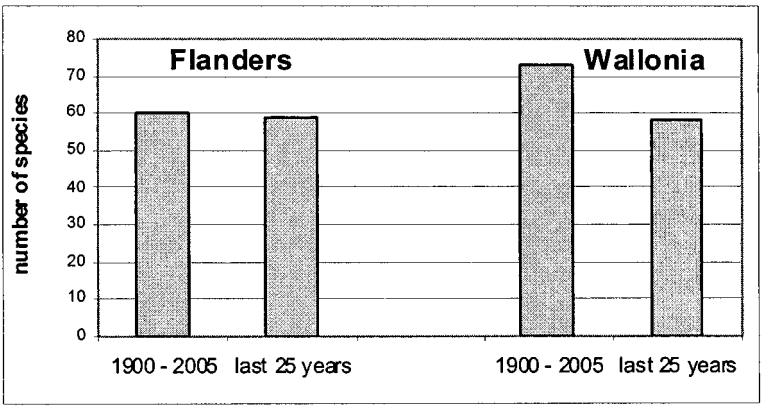

Fig. 1. Number of ant species recorded in Flanders and Wallonia from 1900 until 2005 and during the last 25 years.

have records during the last 25 years for all species so far found in Flanders. In Wallonia 15 species have not been recorded during recent years and the number of records of rare and very rare species is very low because only few inventory works were carried out. Perhaps some species are indeed extinct due to loss of their habitat. In Flanders a lot of recent studies and intensive searches for rare and very rare species resulted in a good representative overview of the Flemish ant fauna.

Some of the new species (*Hypoponera schauinslandi*, *Linepithema humile* and *Tetramorium bicarinatum*) have no outdoor records. We add them to the Belgian ant fauna because in nearby countries these species are already found outdoors (temporary) and probably also in Belgium this could soon be the case. Moreover heated buildings and greenhouses can be permanent or temporary habitats in Belgium for ant species such as *Monomorium pharaonis*.

The status in Belgium and even in Europe of those six species added to the Belgian fauna is very badly known, because these additions are recent. Moreover *Hypoponera schauinslandi* and *Ponera testacea* are recently re-described species (CSŐSZ & SEIFERT, 2003; SEIFERT, 2003).

Besides the listed 82 species and one hybrid and one microgyne, also some other new species for Belgium or other tramp species can be expected in the near future. Species as *Myrmica vandeli* BONDROIT 1920 (in wet heathlands and bogs), *Myrmica gallienii* BONDROIT 1919 (in wet heathlands), *Myrmica hirsuta* ELMES 1978 (in xeromorphic dunes and grasslands), *Myrmica schenckioides* BOER & NOORDIJK 2005 (a recently described species from drift sand areas in The Netherlands) (BOER & NOORDIJK, 2005), *Camponotus aethiops* (LATREILLE 1798), *Camponotus lateralis* (OLIVIER 1791), *Harpagoxenus sublaevis* (NYLANDER 1852), *Formica truncorum* FABRICIUS 1804, *Plagiolepis pygmaea* (LATREILLE 1798) and *Leptothorax gredleri* MAYR 1855

(last 6 species known from neighboring countries) could be discovered soon.

We can conclude with a call for further attention for ant faunistics in Belgium. A lot of species are to be (re)-discovered and a lot of regions are still under-inventoried. Especially in Wallonia ant faunistics can use a little push. We hope these checklists can help to encourage such studies.

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