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## ***Paratrechina longicornis* (Latreille, 1802) another introduced and invasive ant species discovered in Belgium**

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### **Abstract**

In November 2010 workers of the crazy ant *Paratrechina longicornis* (Latreille, 1802) were collected in the indoor subtropical swimming pool facilities of Sunparks De Haan (constant temperature of 28-30°C and relative humidity >75%). Workers were foraging in and between flower and plant beds near the swimming pool and also in the changing cubicles, toilets and entrance rooms. Several nests sites were discovered in the indoor subtropical swimming pool infrastructure and in the restaurant building bordering the swimming infrastructure. There is a good chance that this species is also present in other indoor subtropical swimming pool facilities elsewhere in Belgium.

**Keywords:** *Paratrechina longicornis*, invasive species, introduction, first record

### **Introduction**

In the last years, more and more invasive and tramp ant species have been reported in Belgium (see Table 1). However, records in Belgium of one of world's most dispersed tramp ant, *Paratrechina longicornis*, were lacking so far. According to WETTERER (2008), *P. longicornis* is arguably the most broadly dispersed of all ant species, distributed widely across the Old World and New World in both the northern and southern hemispheres. Identically to other invasive and tramp ant species as the Ghost ant *Tapinoma melanocephalum* (Fabricius, 1793), the Argentine Ant *Linepithema humile* (Mayr, 1868), the Big-Headed Ant *Pheidole megacephala* (Fabricius, 1793), and the Little Fire Ant *Wasmannia auropunctata* (Roger,

1863), it is an ubiquitous household and garden pest species throughout much of the tropics and subtropics and is a pervasive indoor pest in temperate regions (WETTERER, 2008). Many *P. longicornis* records, including most if not all records from temperate latitudes, come from inside or near buildings. Because *P. longicornis* can live indoors anywhere that humans live, there is no limit to the latitude where it could thrive (WETTERER, 2008). Surprisingly this successful worldwide spread ant species with an ability to flourish in highly distributed and artificial environments had not been recorded in Belgium so far. Probably it was neglected by entomologist because of its – in Belgium – exclusively indoor living lifestyle.

Table 1. Records and references of ant tramp species reported recently in Belgium

Species	Year of detection	Reference
<i>Tapinoma melanocephalum</i> (Fabricius, 1793)	2006	DEKONINCK <i>et al.</i> , 2006a
<i>Tetramorium bicarinatum</i> (Nylander, 1846)	2004	DEKONINCK <i>et al.</i> , 2006b
<i>Technomyrmex vitiensis</i> Mann, 1921	2009	DEKONINCK <i>et al.</i> , 2010
<i>Lasius neglectus</i> Van Loon, Boomsma & Andrásfalvy, 1990	1978	DEKONINCK <i>et al.</i> , 2002
<i>Linepithema humile</i> Mayr, 1868	2003	DEKONINCK <i>et al.</i> , 2006b

### Material & Methods

In winter 2010 and spring 2011 two indoor Sunparks subtropical swimming pool infrastructures in Northwest Belgium (De Haan & Oostduinkerke) were intensively screened for ants. All ant specimens collected are stored at RBINS collection.

### Results and discussion

*First record of the crazy ant Paratrechina longicornis for Belgium*

Material collected and identified according to TRAGER (1984):

- Several workers of *Paratrechina longicornis*, collected in the indoor subtropical swimming pool infrastructure of Sunparks De Haan on 11-XI-2010 (leg: W. Dekoninck & D. Brouckaert, col. RBINS).
- Several workers of *Tapinoma melanocephalum*, collected in the indoor subtropical swimming pool infrastructure of Sunparks Oostduinkerke on 25-IV-2011 (leg: W. Dekoninck & D. Brouckaert, col. RBINS).

In the indoor swimming pool infrastructure of Sunparks De Haan, workers of the crazy ant were foraging in and between flower- and plant beds near the swimming pool as well as in the changing cubicles, toilets and entrance rooms. Several nests sites were discovered in the indoor subtropical swimming pool infrastructure and in the restaurant building bordering the swimming infrastructure. All the sites where we sampled *P. longicornis* are year round heated between 20 and 28°C and especially in the swimming pool infrastructure very humid conditions (subtropical) are constantly present. Moreover, food is consumed there by visitors and present all over in trash cans and even in a kitchen and bar. Due to its potential to explore very fast and intensively any food source, the crazy ant was very abundant in the swimming pool infrastructure of Sunparks De Haan where the

subtropical conditions create an ideal microclimate and habitat for this tramp ant.

*Subtropical swimming pool infrastructures: a permanent habitat for tramp ant species?*

The discovery of another tramp ant species, *Tapinoma melanocephalum*, in a nearby other indoor subtropical swimming pool infrastructure at Oostduinkerke suggests that similar places probably offer a permanent habitat for tramp ant species. However, at both places, only one tramp ant was abundant and present. Probably once a tramp ant has colonised such indoor swimming pool infrastructure, it becomes quickly very abundant so that other tramp ants if introduced are not able to colonise this habitat. We assume that when searched for in other similar indoor swimming pool infrastructures the same or other tramp ants (*Tetramorium bicarinatum*, *Technomyrmex vitiensis*, ...) will be present.

*Management and control of tramp species in subtropical swimming pool infrastructures*

Although so far no records of nuisance of tramp ants in subtropical swimming pool infrastructures have been mentioned, we can imagine that in some cases, crazy ants might cause problems for the visitors and users of the indoor swimming pools and infrastructure. There is also a good chance that dead bodies of workers or transported food or nest material might cause problems in technical devices and installations. Another important reason why to monitor and control these tramp ants in indoor swimming pool infrastructures is the possibility that in the summer, workers might be able to forage outdoors and even install temporary nests in surrounding habitats such as grasslands or gardens.

It seems most likely that the tramp ants have been introduced with the flowers and plants that have been installed near the swimming pools. To avoid other human introductions and

transport of infested plants, we recommend a more intensive inspection during transport of plants, materials etc. between and from indoor heated buildings and especially from greenhouses to indoor tropical swimming pool infrastructures and reversely. BOER & VIERBERGEN (2008) assume that when hygienic and control measures increase, exotic ant species such as *Paratrechina longicornis* might decrease. In the Netherlands, this species was probably one of the first that has disappeared for this reason (BOER & VIERBERGEN, 2008).

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## Effects of metal contamination on the activity and diversity of spiders in an ancient Pb-Zn mining area at Plombières (Belgium)

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#### Abstract

In the ancient Pb-Zn mining area of Plombières, spiders were monthly sampled with pitfall traps during one year. Based on the total soil concentrations of cadmium, copper, lead and zinc, it was expected that zinc would probably have the strongest adverse effect. Neither total zinc concentration, nor with water soluble and calciumchloride extractable concentrations affected total spider activity and species richness significantly. In fact, despite the high metal concentrations in the soil, it was not immediately clear that spider composition was affected in the study area. The apparent lack of effects at the high observed zinc concentrations was attributed to the relatively low bioavailability of zinc to the spiders at the study sites, which was also reflected by the low detected water soluble zinc concentrations. However, more detailed analysis revealed that the number web-building spiders decreased, while number of hunting spiders increased with increased calcium chloride extractable zinc concentrations.

**Keywords** : Araneae, bioavailability, zinc exposure.