

Interesting records of ants and *Lasius alienus* (Förster, 1850) (Hymenoptera, Formicidae) presented new to Norway

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A colony of *Lasius alienus* (Förster, 1850) was found close to the harbour in Trondheim City in 2014. The species was expected to occur in Norway, but not as far north. It cannot be excluded at the moment that the colony is a result of introduction by human activity. *L. alienus* is species number 66 documented as outdoor living species in Norway. Additional records of *Temnothorax nylanderi* (Förster, 1850) and *Leptothorax gredleri* Mayr, 1855 from Norway are presented.

Key words: Formicidae, *Lasius alienus*, *Temnothorax nylanderi*, *Leptothorax gredleri*, distribution, faunistic, Norway.

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Introduction

The records we present were sampled in 2014 and 2015, when Klára Bezděčková and Pavel Bezděčka visited Norway. In 2014 they visited Trondheim. In 2015 all the authors travelled together in South-Norway. As a result we collected ants from many localities. Some of the interesting findings are presented here. The aim of the paper is to document and discuss the distribution and occurrence of the ant species.

Material and methods

The biogeographical county-part abbreviations follow Økland (1981). The EIS grid numbers follow the versions presented in Norwegian

Journal of entomology. Other abbreviations are: KB = Klára Bezděčková, PB = Pavel Bezděčka, MHJ = Museum of the Highlands Jihlava, Czech Republic and TK = Torstein Kvamme. The nomenclature follows Czechowski *et al.* (2012) and the identifications are based on Seifert (1992) and Douwes (2012).

The records

L. alienus (Förster, 1850)

STI, Trondheim City: Skansen area, between the harbour and a railway line (EIS 92) 63°25'52''N 10°22'37''E, 13.VII.2014, (leg. et det. KB & PB). One colony was found established in soil. The area is characterised by human influence and is used for recreation (Figure 1). The sample was



FIGURE 1. The locality at STI, Trondheim: Skansen (EIS 92), between the port and a railway where *Lasius alienus* (Förster, 1850) was recorded. The red arrow shows the spot where the colony was found. Photo: K. Bezděčková.

split and one part is preserved in ethanol in the collection of MHJ (Czech Republic). The second part is preserved in ethanol in the collection of TK (Ås, Norway).

***L. gredleri* Mayr, 1855**

AK, Frogn: Håøya (EIS 28) 59°42'00.1"N 10°33'31.3"E, 17.VIII.2015, (leg. TK, det. PB, KB & TK). One colony was found in a twig of Scots pine (*Pinus sylvestris*) on the ground. The locality was sun-exposed and situated on the upper part of a small, rocky hill dominated by trees of Scots pine. On the same locality, also in a fallen twig, colonies of *Leptothorax muscorum* (Nylander, 1846) were found. The sample is preserved in ethanol in the collection of TK (Ås, Norway).

***T. nylanderi* (Förster, 1850)**

VAY, Kristiansand: Nedre Timenes (EIS 2) 58°09'42.4"N 8°06'02.0"E, 14.VIII.2015, (leg. et

det. KB & PB). One single worker was sampled in an oak forest. The specimen is preserved in the collection of MHJ (Czech Republic).

AK, Frogn: Håøya (EIS 28) 59°42'00.1"N 10°33'31.3"E, 17.VIII.2015, (leg. et det. KB, PB & TK). Altogether 12 colonies were sampled from thin twigs on the ground. The samples are preserved in the collections of MHJ (Czech Republic) and TK (Ås, Norway).

VE, Borre: Borrehaugene (EIS 19) 59°27'02.1"N 10°26'26.4"E, 19.VIII.2015, (leg. et det. KB and PB). One colony sample was collected. The sample is preserved in the collection of MHJ (Czech Republic).

When travelling around we also visited **VE**, Borre: Løvøya, Vestre Veggbukta (EIS 19) 59°27'02.1"N 10°26'26.4"E, 19.VIII.2015, (leg. et det. KB, PB & TK). Along the road, just inside the forest edge of among the broadleaved vegetation we sampled colonies of *T. nylanderi* (cf. Ødegaard et al. 2015). Totally 8 colonies in small twigs on the ground, as thin as less than 1 cm were sampled. Most of the twigs were from oak (*Quercus* sp.), but occasionally also in twigs from maple (*Acer platanoides*). One colony was found under a stone. The samples are preserved in the collection of MHJ (Czech Republic) and TK (Ås, Norway).

Discussion

Lasius psammophilus Seifert, 1992 figured earlier under the name *Lasius alienus* (Förster, 1850) in Norway (Collingwood 1979, Kvamme 1982). A revision of Norwegian specimens concluded that all the specimens from Norway were *L. psammophilus* and *L. alienus* was consequently deleted from the Norwegian list (Kvamme 1999). No later documentation showed that *L. alienus* occurs in Norway (Kvamme & Wetås 2010, Douwes 2012, Ødegaard et al. 2015).

Lasius alienus was expected to occur in Norway since it is reported from Sweden. However, we did not expect it to occur as far north as Trondheim. The nearest record is from Revinge in Skåne County, South-Sweden (Douwes 2012) (Figure 2). The Norwegian record was done close

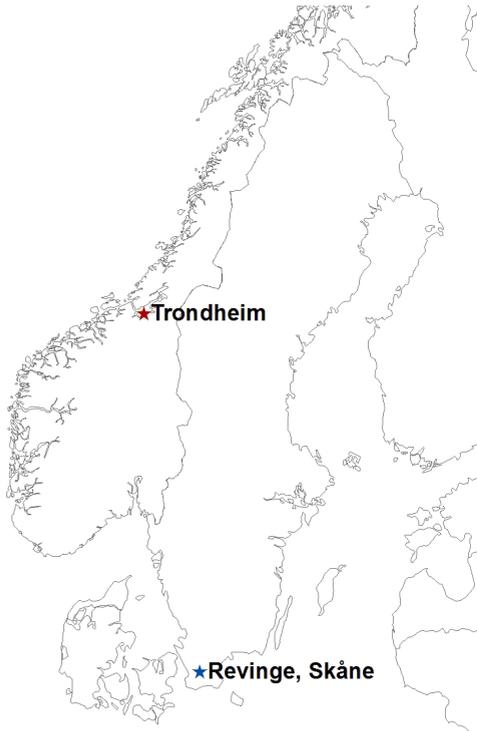


FIGURE 2. The known records of *Lasius alienus* (Förster, 1850) in Scandinavia. The red star is the new record from Trondheim. The blue star is the nearest and only record in Sweden, based on Douwes (2012).

to a harbour area, a railway and roads in Trondheim City. Thus we cannot exclude that the established colony is a result of an introduction. However, we have no data that shows an introduction from neither another locality in Norway nor from abroad.

The preference for warm and dry habitats is stated by Seifert (2007). Czechowski *et al.* (2012) categorized *L. alienus* as a South-Palaeartic species, with tolerance for mesohygrophilic and mesothermophilic conditions. *L. alienus* is widely distributed in Europe and eastwards to East-Siberia (Czechowski *et al.* 2012). This tells that the species has a tolerance for continental climate (cold winters and warm summers) as well as more Atlantic influenced climate (mild winters and cooler summers) like in Trondheim. An established colony is a proof of a suitable climate. Seifert (1992, 2007) mentioned that *L. alienus* often occurs in habitats rich in lime. The record in

Sweden is not from a lime-rich habitat, but Douwes (2012) mentioned that *L. alienus* benefits from lime. Obviously the species has some plasticity in choice of habitats. The preference for warm and dry habitats, rich in lime, is only a preference and not a demand. The conclusion drawn is that the species might be overlooked and further search might show that *L. alienus* is distributed in other parts of Norway or alternatively established as a result of an introduction. Future morphometric or DNA studies might shed light on the problems, but is beyond the scope of this paper.

Leptothorax gredderi Mayr, 1855 was first recorded in Norway as late as 2011 (Ødegaard 2013) from **AK** Oslo: Montebello (EIS 28) and **VE** Horten: Knutsrød (EIS 19). Totally only 3 records of the species have been done in Norway. We assume that the species is overlooked due to the morphological similarity with *Leptothorax muscorum* (Nylander, 1846), which is also emphasised by Douwes (2012) and Ødegaard (2013). In Sweden the species shows a southern distribution. The records in Norway also indicate the same (Figure 3).



FIGURE 3. All the known Norwegian records of *Leptothorax gredderi* Mayr, 1855. The red star shows the new record. The blue triangles are based on records from Ødegaard (2013).

Temnothorax nylanderi (Förster, 1850) was recorded first time in Norway 2008 (Kvamme & Olsen 2011). Later, the species was found on VE, Borre: Løvøya (EIS 19); TEY, Bamble: Nustad Nature Reserve (EIS 11) and TEI, Seljord: Heggenes (EIS 17) (Ødegaard et al. 2015). The Norwegian records are depicted on Figure 4. Our conclusion is that the species is locally common. *T. nylanderi* has been overlooked and can be expected to be found at more localities.

This record of *L. alienus* represents species number 66 of the outdoor living ant species registered in Norway. We do not distinguish between native species or introduced species here as long as they have been found established outdoor. It is a possibility that also *Camponotus vagus* (Scopoli, 1763) originally arrived Norway as a result of human activity, but we do not know. Another example is *Hypoponera punctatissima* (Roger, 1859), which is a tramp species of tropical origin according to Czechowski et al. (2012). It is probably introduced to Norway originally, but this has been discussed a long time (Holgerson 1943, Skøtt 1971, Collingwood 1979, Kvamme & Wetås 2010, Douwes 2012). However, this species is recorded from both outdoor and indoor habitats in Scandinavia (cf. Douwes 2012). In Norway it is found outdoor living, but mainly in manmade habitats like sawdust piles etc. (Holgerson 1943, Collingwood 1979, Kvamme & Wetås 2010). On this basis we conclude that *H. punctatissima* and *C. vagus* are parts of the present Norwegian fauna and that the number of known outdoor living ant species in Norway is 66 today.

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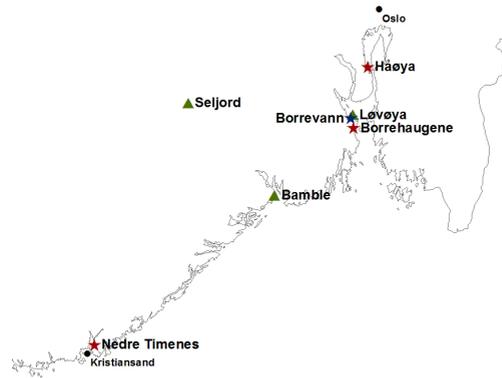


FIGURE 4. The map shows the known records of *Temnothorax nylanderi* (Förster, 1850). The red stars show the new records; the blue star is the first record in Norway, and the blue triangles are records from Ødegaard et al. (2015).

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