

New and little known ants (Hymenoptera, Formicidae) in Norway

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Leptothorax gredleri Mayr, 1855 is reported from Norway for the first time. The first colony of *Myrmicina graminicola* (Latreille, 1802), and the second records of *Myrmica karavajevi* (Arnoldi, 1930), and *Lasius meridionalis* (Bondroit, 1820) are reported in addition to some records of rarely collected species.

Key words: Hymenoptera, Formicidae, *Formica fennica*, *Leptothorax gredleri*, *Myrmica karavajevi*, *Lasius meridionalis*, Norway.

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Introduction

The knowledge on ants in Norway has steadily increased from the 1880s until now (Kvamme 2010). Due to recent taxonomic advance and increased interest for the group the number of ant species is still expected to increase further. The last update (Kvamme & Olsen 2011) reports 55 species of outdoor living species. With this report the number of ant species in Norway raises to 57.

The current report is a part of a national strategy for increasing knowledge of biodiversity in Norway (<http://www.biodiversity.no/>) where the Norwegian Institute for Nature Research (NINA) leads a large scale mapping project for insects (INVENT-ART). The main aims of this project were to find new species to Norway and to collect new data on the poorest known species. As many ant species have a very specialized way of living, it was necessary to target potential species and make particular search for each of them in their natural habitats. The project had particular focus on dry and warm habitat types such as sandy areas and southern faced screes which typically have a rich fauna of ants. In order to collect data on particularly rare species in other habitats, additional samples were taken at selected mires of

southeastern Norway. This report summarizes the most interesting records from this effort.

Material and methods

The pinned material was preserved in the insect collections at NINA. The rest of the material was preserved in 80% ethanol and kept in the collections at NTNU Vitenskapsmuseet. All records are available at the interoperable biodiversity database services Species Maps (run by the Norwegian Biodiversity Information Centre), and at the Global Biodiversity Information Facility (GBIF). Several specimens of *Leptothorax* Mayr, 1855, and *Coptoformica* Müller, 1923, have been DNA-barcoded (project NOFOR) and can be accessed from the BOLD public database (BOLDSystems 2013). All specimens are identified and collected by the author unless other is mentioned.

Abbreviations and codes: PT = pit fall trap, WT = window flight interception trap, * new to Norway. Red List codes according to the 2010 Norwegian Red List of Species (Kålås *et al.* 2010): NT = near threatened, VU = vulnerable.

The species

**Leptothorax gredleri* Mayr, 1855

AK, Oslo: Montebello, UTM 32V E593200 N6644835, WT 15 July–11 August 2011. One worker in WT situated in a hollow oak; Hovedøya, UTM 32V E596607 N6640923, 29 March 2012, one worker found under bark of a slender pine stick (1.5 cm diameter) lying on warm calcareous slates. Later (3 July 2012), two workers were sweep netted at the same locality; **VE**, Horten: Knutsrød, 32V E581584 N6587483, 13 June 2012. A small colony was found under bark of a slender, dry oak branch lying on ground. An additional queen and a worker were sweep netted at the same locality 9 August 2012. This is the first report of this species from Norway. As *L. gredleri* is easily mixed up with *L. muscorum*, it is probable that the species is overlooked in Norway.

Myrmica sabuleti Meinert, 1861

Ø, Hvaler: Kirkøy, Ørekroken, UTM 32V E615123 N6545336, 7 June 2012. One worker found among sparse vegetation on a sandy shore; Halden, Ystehede UTM 32V E638406 N6549835, 6 July 2013. One colony found in a sand pit; Råde, Husebystranda UTM 32V E599065 N65775837, 10 May 2013. Five workers found among sparse vegetation on a sandy shore; **MRI**, Sunndal: Myra UTM 32V E0494759 N6943263, 27 July 2013. One worker found among sandy soils. The species previously has been reported only twice from Norway at **Ø**, Halden 1958 (Seifert 2000a) and **SFI**, Lærdal (Kvamme 1999). The occurrence of this species in Sunndal represents the northernmost record in Scandinavia. Previously, *M. sabuleti* was mixed up with *M. lonae* Finzi, 1926, and all the Norwegian material of this complex was revised by Kvamme (1999). More intensive search in dry, sandy habitats will probably reveal further records of this species in Norway.

Myrmica karavajevi (Arnoldi, 1930)

HES, Eidskog: Merastmyra, UTM 32V E664051 N6647014, 4 August 2012. Two males in a nest of *Myrmica scabrinodis* Nylander, 1846; Linåsmyra S, UTM 33V E346379 N6648452, 15 August 2012. Leg. Arne Fjellberg. Two males and

three females in a nest of *M. scabrinodis*. This is the second report of this species from Norway which previously is known only from **HES**, Eidskog: Momyra (Collingwood 1976).

^{VU}*Myrmecina graminicola* (Latreille, 1802)

Ø, Moss: Jeløy, Reierbukta, UTM 32V E592079 N6588456, 17 August 2012. A colony found among gravel covered with mosses close to the shore line. This is the first record of a colony of this species in Norway. New records of alate males are from: **TEY**, Kragerø: Jomfruland UTM 32V E535024 N6526900, (3 males), 19 August 2009; **TEI**, Seljord: Heggenes, UTM 32V E487711 N6589122, (2 males), 18 August 2009; **BØ**, Hole: Utstranda, UTM 32V E571856 N6651887 (1 male), 20 August 2011.

^{NT}*Lasius meridionalis* (Bondroit, 1820)

Ø, Hvaler: Skipstadkilen, UTM 32V E611304 N6547436, PT 29 June–11 July 2011. One female collected in a PT placed in a sparsely vegetated sandy meadow. This is the second record of this species from Norway which previously is known only from **VE**, Larvik: Stolpestad (Collingwood 1974).

Formica sg. *Coptoformica* and *Formica* (*C.*) *fennica* Seifert, 2000

The first record of *Formica* (*C.*) *fennica* was recently reported from Norway by Suvák (2013) (det. B. Seifert). Recent data from Finland (Punntila & Kilpeläinen 2009) shows that *F. fennica* is a dominating species on mires. Due to the recent description and difficult taxonomy of this species complex it is highly probable that *F. fennica* is an overlooked species in Scandinavia. A systematic study of approximately 100 ant mounds of *Coptoformica* on mires in Hedmark (Elverum, Trysil and Kongsvinger community) revealed several colonies which fit the description of *F. fennica* based on the presence of microhairs on the eyes combined with lack of setae on T1 and T2 and partly T3, and 0–3 setae on the front of the fore coxae, opposed to normal *Formica* (*C.*) *exsecta* Nylander, 1846 (Seifert 2000b). These colonies, however, belong to a form of *F. (C.) exsecta* with reduced pilosity, described as

F. rubens Forel, 1874 (= *etrusca* Emery, 1909, and *nemoralis* Dlussky, 1964). Currently, *F. (C.) rubens* is interpreted as a mutant conspecific with *F. (C.) exsecta* (Bernhard Seifert *in litt.*), but it is not impossible that *F. rubens* may turn out to be a good species in the future. All identifications of *F. fennica* should therefore be done with extreme caution. Other species of *Coptoformica*: *Formica (C.) exsecta*, *Formica (C.) suecica* Adlerz, 1902, and *F. (C.) forsslundi* Lohmander, 1949, were all common at the following sites: **HES**, Elverum: Klingenberg-Ulvå, UTM 32V E654146 N6768049, 2 and 13 July 2012; **HEN**, Trysil: Fliskjølen, UTM 33V E356017 N6795570.

***Formica cinerea* Mayr, 1853**

HES, Elverum: Strandstykket, UTM 32V E639301 N6755390, 30 March 2012; Starmoen 32V Ø0646567-N6749271, 22 July 2013. Several colonies were found in sand pits at both sites. In Norway, this species is still only known from the Elverum-area from where it was published by Collingwood (1974). As this species seems to be very common in the Elverum-area, it is a bit strange that it is not found in other areas concerning the large sampling effort of sandy areas in Norway during recent years (Ødegaard *et al.* 2011).

***Formica uralensis* Ruzsky, 1895**

HES, Eidskog: Linåsmyra, UTM 33V E346062 N6648578, 6 July 2012. One colony found among pine roots in a drier area of a large mire. *F. uralensis* was first recorded from Norway in FØ, Sør-Varanger: Pasvik (Fjellberg 1975), and later from HES, Elverum and Eidskog (Kvamme 1982). In Norway, *F. uralensis* seems to be the most scattered distributed of the mire dwelling *Formica* species. Other species like *Formica picea* Nylander, 1846, and *Formica forsslundi* (NT) were very common at this and nearby localities.

Discussion

Including the new records of *Formica (C.) fennica* and *Leptothorax gredleri* the number of outdoor living ants in Norway has reached 57 species. The

present effort indicates that it is still much to do before we have a satisfactory knowledge about distribution and occurrences of ants in Norway. A total of 81 species are known from the Nordic countries (Douwes *et al.* 2012), but most species not recorded in Norway have a pronounced southern distribution, and, therefore, are not very likely to be found in Norway. On the other hand, many species of ants seem to have a quite disjunct distribution with scattered and isolated occurrences, such as *Camponotus vagus* (Scopoli, 1763), *Dolichoderus quadripunctatus* (Linnaeus, 1771), and *Lasis carnolicus* (Mayr, 1861). Also, some species are recently revised and their true geographical range are still poorly known, which is the case for *Leptothorax gredleri* and *Formica fennica*. In addition, some species with parasitic life style are extremely difficult to find. These circumstances indicate that a few more species of ants are to be found in Norway also in the future, although close to 70 species, as proposed by Kvamme & Collingwood (2009), is probably too high if we do a careful assessment of which species that might be overlooked in Norway. A more proper estimate would probably be around 65 species.

The result from this study gives additional knowledge for a revision of the Norwegian Red List of Species. Particularly, the species associated with mires should be revised according to the IUCN criteria. It is also questioned whether *Myrmicina graminicola* should be red listed in Norway.

Common names for the new species have never been proposed. Thus, we propose that *Leptothorax gredleri* should be named “eikesmalmaur” due to its prevalence to nest in oak wood (Douwes *et al.* 2012), and *Formica fennica* should be named “taigaheimaur” as it seems to be a northern species associated with the taiga region (Punttila & Kilpeläinen 2009). It should be noted that the subgenus *Coptoformica* should be named “heimaur” according to the official name committee of Hymenoptera established by the Norwegian Biodiversity Information Centre.

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