Chapter 8
An Annotated List of Ants (Hymenoptera: Formicidae) from the Grasslands of Alberta and Saskatchewan

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Abstract. A list of 53 species of ants, all known from the grassland regions of Alberta and Saskatchewan, is presented, along with collecting localities and annotations regarding the biology of each species. As the fauna is not well-known, this list is considered preliminary.

Résumé. Ce chapitre présente une liste de 54 espèces de fourmis décrites dans les régions des prairies de l’Alberta et de la Saskatchewan, ainsi que des informations sur les lieux de capture et des détails sur la biologie de chaque espèce. Cette faune étant toujours mal connue, cette liste doit être considérée comme préliminaire.

Introduction

In North American grasslands, ants play a significant role in the turnover of soil, nutrient cycling, and the breakdown of organic matter (Briese 1982; Smidt et al. 2012). They are important predators of other invertebrates and significant prey for both invertebrates and vertebrates (Sanders and van Veen 2011). As herbivores, ants can be effective seed harvesters, which frequently results in seed dispersal (Turnbull et al. 1983; Berg-Binder and Suarez 2012), and are often counted as secondary herbivores by feeding on the honeydew from farmed Sternorrhyncha (Newton et al. 2011). With such diverse ecological roles, it is clear that ants are important to grassland ecosystems.

Many factors can affect the diversity of ants in grassland ecosystems, and grasslands in both Alberta and British Columbia show high ant diversity compared with other northern temperate ecosystems (Heron 2005; Glasier 2012). Soil attributes are often cited as the most influential determinant of ant diversity in grassland ecosystems (Bestelmeyer and Wiens 2001; Boulton et al. 2005). Soils with high clay content tend to have lower species diversity, whereas sandier soils have high species diversity (Bestelmeyer and Wiens 2001; Glasier 2012; Radtke et al. 2014). Croplands have a negative effect on ant diversity, both because of tillage (Robertson et al. 1994; Yates and Andrew 2011) and because of the use of pesticides (Choate and Drummond 2012); only an estimated 30% of the mixedgrass prairie remains undisturbed in North America (Hall et al. 2011). Grazing has varying effects on ant diversity in grassland ecosystems (Heron 1996; Folgarait 1998; Smidt et al. 2012), and moderate grazing has increased ant diversity in the Okanagan of British Columbia (Heron 1996; Smidt et al. 2012), suggesting that appropriate rangeland management can maintain or enhance biodiversity. Many grassland ants in Alberta have...
mutualistic relationships with sternorrhynchan (Newton et al. 2011), which can have both positive and negative effects on sternorrhynchan host plants (Perry et al. 2004). Invasive plant species tend to have little effect on ant diversity (French and Major 2001; Radtke et al. 2014), although the presence of ants may be beneficial to invasive plants (Berg-Binder and Suarez 2012). In Grasslands National Park, Saskatchewan, ant composition, but not diversity, has been shown to change when an introduced grass, *Agropyron cristatum* (Linnaeus), is present in an area (Radtke et al. 2014).

The following annotated list of grassland ants from Alberta and Saskatchewan is based on studies by Newton et al. (2011), Glasier (2012), and Radtke et al. (2014) and an examination of collections from the University of Alberta E. H. Strickland Museum, the University of Calgary entomology collection, and James Glasier’s personal collection. It is noteworthy that in Alberta, 14 of the 16 known ant genera and 55 of the 93 known species are found in grasslands (Glasier et al. 2013), while in Saskatchewan (with a less well-known fauna), 11 of the 12 known ant genera and 33 of the 60 known species are found in grasslands (Glasier et al. 2013). Additionally, like many other organisms (e.g., Hall et al. 2011), many ant species found in Canadian grasslands are at the northerly extent of their ranges (Heron 2005; Glasier et al. 2013).

![Map of grassland localities where ants were sampled in Alberta and Saskatchewan. Locality names and descriptions can be found in Table 1.](image)
Checklist of Grassland Ants of Alberta and Saskatchewan

The following checklist of 53 species is arranged according to the classification of Fisher and Cover (2007). All have been reported from grasslands in Alberta or Saskatchewan. Localities are described in Table 1 and are mapped out in Fig. 1.

Sources for Locality Records in Species List
A: Collected by the authors. Voucher specimens have been deposited in the E. H. Strickland Entomological Museum at the University of Alberta.
BDCU: University of Calgary Entomology Collection, Calgary, Alberta.
JN: Newton et al. (2011).
PMAE: Royal Alberta Museum Entomology Collection, Edmonton, Alberta.
R: Radtke et al. (2014): Voucher specimens have been deposited in the E. H. Strickland Entomological Museum at the University of Alberta.

Family Formicidae
Subfamily Dolichoderinae:
Genus Tapinoma
Tapinoma sessile (Say)
Subfamily Formicinae:
Genus Brachymyrmex
Brachymyrmex depilis Emery
Genus Camponotus
Subgenus Camponotus
Camponotus modoc Wheeler
Subgenus Myrmetoma
Camponotus nearcticus Emery
Subgenus Tanaemyrmex
Camponotus vicinus Mayr
Genus Formica
Formica fusca Group
Formica argentea Wheeler
Formica canadensis Santschi
Formica montana Wheeler
Formica neoclara Emery
Formica subpolita Mayr
Formica podzolica Francoeur
Formica neogagates Group
Formica bradleyi Wheeler
Formica lasioides Emery
Formica limata Wheeler
Formica neogagates Viereck
Formica perpilosa Wheeler
Formica sanguinea Group
Formica aserva Forel
Formica emeryi Wheeler
Formica obtusipilosa Emery
Formica rubicunda Emery
Formica microgyna Group
Formica microgyna Wheeler
Formica rufa Group
Formica fossaceps Buren
Formica obscuripes Forel
Formica obscuriventris Mayr
Formica oreas Wheeler
Formica planipilis Creighton
Formica exsectoides Group:
Formica opaciventris Mayr

Genus Lasius:
Subgenus Acanthomyops
Lasius coloradensis Wheeler
Lasius latipes (Walsh)
Lasius subglaber Emery
Subgenus Lasius
Lasius alienus ( Förster)
Lasius crypticus Wilson
Lasius neonger Emery
Lasius niger (Linnaeus)
Lasius pallitarsis (Provancher)
Subgenus Cautolasius
Lasius fallax Wilson
Lasius flavus (Fabricius)
Subgenus Chilolasius
Lasius subumbatus Viereck
Lasius unbratus (Nylander)

Subfamily Myrmicinae
Genus Formicoxenus
Formicoxenus provancheri (Emery)
Genus Myrmica
Myrmica americana Weber
Myrmica brevispinosa Wheeler
Myrmica crassirugus Francoeur
Myrmica fracticornis Forel
Myrmica incompleta Provancher
Myrmica latifrons Stürcke
Myrmica undescribed species
code AF-eva André Francoeur
Genus Leptothorax
Leptothorax muscorum
(Nylander)
Genus Monomorium
Monomorium minimum (Buckley)
Genus Pogonomyrmex
Pogonomyrmex occidentalis
(Cresson)
Genus Solenopsis
Solenopsis molesta (Say)
Genus Temnothorax
Temnothorax ambiguus (Emery)
Temnothorax rugatulus (Emery)
Table 1. Grassland sites in Alberta and Saskatchewan where ant specimens have been collected. All sites are in alphabetical order and are mapped in Fig. 1.

<table>
<thead>
<tr>
<th>Grassland Site</th>
<th>Province</th>
<th>Map ID Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearwater Lake</td>
<td>Saskatchewan</td>
<td>17</td>
<td>Semi-forested with Populus spp. with open prairie</td>
</tr>
<tr>
<td>Delisle</td>
<td>Saskatchewan</td>
<td>15</td>
<td>Grassed grassland</td>
</tr>
<tr>
<td>Dinosaur Provincial Park</td>
<td>Alberta</td>
<td>4</td>
<td>Badlands and cottonwood flats</td>
</tr>
<tr>
<td>Drumheller</td>
<td>Alberta</td>
<td>3</td>
<td>Badlands and cottonwood flats</td>
</tr>
<tr>
<td>Empress Sand Dunes</td>
<td>Alberta</td>
<td>12</td>
<td>Semi-overgrown sand dunes covered in prairie</td>
</tr>
<tr>
<td>Grasslands National Park</td>
<td>Saskatchewan</td>
<td>19</td>
<td>Dry mixed shortgrass prairie</td>
</tr>
<tr>
<td>Great Sand Hills</td>
<td>Saskatchewan</td>
<td>16</td>
<td>Open to semi-overgrown sand dunes covered in grassland with sporadic stands of Populus spp.</td>
</tr>
<tr>
<td>Hay Lakes</td>
<td>Alberta</td>
<td>1</td>
<td>Aspen parkland and grassland</td>
</tr>
<tr>
<td>Kinsella Ranch</td>
<td>Alberta</td>
<td>2</td>
<td>Aspen parkland and fescue grassland</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>Alberta</td>
<td>5</td>
<td>Urban area</td>
</tr>
<tr>
<td>Mattheis Ranch: University of Alberta Rangeland Institute</td>
<td>Alberta</td>
<td>6</td>
<td>Mixed grazed natural prairie, along with overgrown sand dunes</td>
</tr>
<tr>
<td>Medicine Hat</td>
<td>Alberta</td>
<td>7</td>
<td>Urban area</td>
</tr>
<tr>
<td>Onefour Station</td>
<td>Alberta</td>
<td>8</td>
<td>Mixed grassland</td>
</tr>
<tr>
<td>Prelate</td>
<td>Saskatchewan</td>
<td>18</td>
<td>Prairie</td>
</tr>
<tr>
<td>Rolling Hills</td>
<td>Alberta</td>
<td>10</td>
<td>Prairie</td>
</tr>
<tr>
<td>Sandy Point</td>
<td>Alberta</td>
<td>11</td>
<td>Prairie, salt flats, and coulee areas</td>
</tr>
<tr>
<td>Suffield Military Base</td>
<td>Alberta</td>
<td>14</td>
<td>Native mixedgrass prairie</td>
</tr>
<tr>
<td>Tilley</td>
<td>Alberta</td>
<td>9</td>
<td>Prairie</td>
</tr>
<tr>
<td>Writing-on-Stone Provincial Park</td>
<td>Alberta</td>
<td>13</td>
<td>Badlands and cottonwood flats</td>
</tr>
</tbody>
</table>

Species Annotations:

*Brachymyrmex depilis* Emery

Distribution: Most of southern Canada and most of the United States (Wheeler and Wheeler 1986; Mackay and Mackay 2002).

Grassland Sites: Alberta: Sandy Point Park (A).

Biological Notes: Tiny (length 1.5–2.0 mm), monomorphic, light-amber coloured ants (Mackay and Mackay 2002). Colonies are often polygynous. This ant is widespread across North America. *B. depilis* is primarily subterranean, making it difficult to find (Wheeler and Wheeler 1963). It feeds on small arthropods and farms subterranean Sternorrhyncha (Wheeler and Wheeler 1963; Mackay and Mackay 2002).

*Camponotus modoc* Wheeler

Distribution: British Columbia to central Alberta, south to California and New Mexico (Wheeler and Wheeler 1986; Mackay and Mackay 2002; Hansen and Klotz 2005).

Grassland Sites: AB: Dinosaur Provincial Park (A), Kinsella Ranch (JN); SSK: Reported but no locality given (HK).

Biological Notes: Large (length 7.0–13.0 mm), dimorphic, black with blackish-red thoraces (Hansen and Klotz 2005). Colonies are usually monogynous (Hansen and Klotz 2005). Can be structural pests in rotten wood, but usually nest in the heartwood of live trees or in dead wood. Often farm Sternorrhyncha on trees or bushes (Hansen and Klotz 2005).
Camponotus nearcticus Emery
Grassland Sites: AB: Dinosaur Provincial Park (A), Drumheller (UASM), Mattheis Ranch (A); SSK: Reported but no locality given (HK).
Biological Notes: Medium sized (length 4.0–7.0 mm), dimorphic, red and black ants (Hansen and Klotz 2005). Colonies are often polygynous (Hansen and Klotz 2005). An arboreal species, commonly nests in dead branches of deciduous trees. Probably far more common than collected, because nests are often found in the upper canopy of trees and therefore difficult to find. Colonies farm Sternorrhyncha on the leaves of their home trees (Hansen and Klotz 2005).

Camponotus vicinus Mayr
Distribution: Central Alberta south to New Mexico, British Columbia to Saskatchewan (Wheeler and Wheeler 1986; Mackay and Mackay 2002; Hansen and Klotz 2005)
Grassland Sites: AB: Dinosaur Provincial Park (A); SSK: Grasslands National Park (A).
Biological Notes: Large (length 7.0–13.0 mm), dimorphic, black and red ants. Colonies are polygynous (Hansen and Klotz 2005). Often nest in soil, though will also use dead wood. Often found in drier habitats compared to other Camponotus species. Sometimes structural pests of wooden structures (Hansen and Klotz 2005).

Formica argentea Wheeler
Distribution: Most common in central and western North America; from southern British Columbia to southern Quebec, and Central Alberta to southern Arizona (Franceour 1973; Wheeler and Wheeler 1986).
Grassland Sites: AB: Dinosaur Provincial Park (A), Lethbridge (A), Mattheis Ranch (A), Sandy Point Park (A); SSK: Clearwater Lake (BDCU), Great Sand Hills (BDCU).
Biological Notes: Medium sized (length 3.0–6.5 mm), polymorphic, black ants. Found in woodlands or areas with some brush cover, such as pin cherry (Prunus pensylvanica Linnaeus). Often nests in sandier soils; creating low mounds. Smaller colonies are often found under rocks. Farm Sternorrhyncha on low lying bushes and are predators of other arthropods. Formica argentea are a host for several slave-making ant species, including Formica aserva (Mackay and Mackay 2002).

Formica aserva Forel
Distribution: Most of North America except for the most extreme northern and southern areas (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Dinosaur Provincial Park (A).
Biological Notes: Medium (length 4.0–6.0 mm), polymorphic, red and black ants. Colonies are polygynous. An adaptable species, found in a wide range of habitats. Often found nesting in dead wood. A facultative slave maker of Formica podzolica, Formica argentea, and Formica neoclara (Ellison et al. 2012). Farms Sternorrhyncha on shrubs and trees, and are major predators of other invertebrates (Wheeler and Wheeler 1963).

Formica bradleyi Wheeler
Distribution: Prairie provinces of Canada and great plains of the United States (Mackay and Mackay 2002).
Grassland Sites: AB: Empress Sand Dunes (A), Mattheis Ranch (A); SSK: Great Sand Hills (A).
Biological Notes: Small (length 3.0–5.0 mm), polymorphic, reddish-orange ants. Found exclusively in very sandy soils, most common in sand dune fields (Wheeler and Wheeler 1963). Farms Sternorrhyncha on grasses and hunts invertebrates for food (Mackay and Mackay 2002).

*Formica canadensis* Santschi
Distribution: South western Canada and the western United States (Francoeur 1973; Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Dinosaur Provincial Park (A), Sandy Point (A); SSK: Grassland National Park (PMAE), Great Sand Hills (A).
Biological Notes: Medium sized (length 4.0–6.0 mm), polymorphic, brownish-black ants (Mackay and Mackay 2002). Found in open prairies, often in domed nests with an extremely hard outer layer. Farms aphids on low-lying plants and is a predator of other invertebrates.

*Formica emeryi* Wheeler
Distribution: Alberta south to Colorado (Greg 1963).
Grassland Sites: AB: Medicine Hat (UASM); SSK: Grassland National Park (PMAE)
Biological Notes: Medium sized (5.0–7.0 mm), polymorphic, brownish-red and black ants. Facultative slave makers of the *Formica neogagates* group (Gregg 1963). A rare ant within its range.

*Formica fossaceps* Buren
Distribution: Southern parts west and central Canada and mid-western United States (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Onefour Station (A), Writing on Stone Provincial Park (A).
Biological Notes: Large (length 3.5–8.0 mm), polymorphic, red and black ants. Build large, domed nests in woodlands and open grasslands (Wheeler and Wheeler 1963). This ant has been reported to farm Sternorrhyncha (Bradley and Hinks 1968) but little other biological information is known.

*Formica lasioides* Emery
Distribution: Southern-western Canada, and the majority of the western United States (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Kinsella Ranch(JN), Mattheis Ranch (A), Sandy Point Park (A); SSK: Delisle (BDCU), Grassland National Park(R)(PMAE).
Biological Notes: Small (length 2.5–5.0 mm), polymorphic, reddish-black ants. Found in a wide range of habitats, but nests are usually cryptic and not very obvious (Wheeler and Wheeler 1963, 1986; Mackay and Mackay 2002). This species is host to several slave-making species, including *Formica obtusopilosa* and *Formica rubicunda* (Wheeler and Wheeler 1986; Mackay and Mackay 2002).

*Formica limata* Wheeler
Distribution: Southern-western Canada, and the majority of the western United States (Wheeler and Wheeler1986; Mackay and Mackay 2002).
Grassland Sites: AB: Empress Sand Dunes (A), Suffield Military Base (PMAE); SSK: Clearwater Lake (BDCU), Grasslands National Park (R)(PMAE).
Biological Notes: Small (length 2.5–5.0 mm), polymorphic, reddish-brown ants. Colonies
are small often cryptic and hard to find. Are known to tend Sternorrhyncha on grasses, but also hunt other invertebrates (Wheeler and Wheeler 1963).

*Formica microgyna* Wheeler
Distribution: South western Canada and west central United States (Wheeler and Wheeler 1986; Mackay and Mackay 2002).

Grassland Sites: AB: Mattheis Ranch (A); SSK: Grasslands National Park (R)(PMAE).

Biological Notes: Medium sized (length 5.5–7.0 mm), polymorphic, red and black ants. This species constructs thatched nests in open areas or nests under logs and stones. A temporary social parasite of *fusca* group ants (Wheeler and Wheeler 1963), once the colony becomes established it is known to enslave a wide range of *Formica* species, from the *fusca* group, *neogagates* group and even a few species from the *rufa* group (Mackay and Mackay 2002).

*Formica montana* Wheeler
Distribution: Southern extremes of western Canada and western United States (Franceour 1973; Wheeler and Wheeler 1986; Mackay and Mackay 2002).

Grassland Sites: AB: Sandy Point Park (A), Tilley (BDCU); SSK: Clearwater Lake (BDCU), Grasslands National Park (R)(PMAE).

Biological Notes: Medium sized (length 4.0–6.0 mm), polymorphic, dark brown ants (Mackay and Mackay 2002). Found in open prairies, often in domed nests. Farms aphids on low-lying plants and is a predator of other invertebrates.

*Formica neoclara* Emery
Distribution: Most of North America; from Yukon to California: British Columbia to North Dakota (Wheeler and Wheeler 1986).

Grassland Sites: AB: Dinosaur Provincial Park (A), Empress Sand Dunes (A), Lethbridge (A), Mattheis Ranch (A), Medicine Hat (A), Sandy Point Park (A), Tilley (BDCU); SSK: Clearwater Lake (BDCU), Grasslands National Park(R)(PMAE), Great Sand Hills (A), Prelate (BDCU),

Biological Notes: Medium sized (length 3.0–6.0 mm), polymorphic, reddish-yellow and brown ants. Forms low-lying mound colonies which are often polygynous (Mackay and Mackay 2002). Commonly found in disturbed areas, including urban areas, and around farm buildings (Wheeler and Wheeler 1986). Host to many of the *Formica sanguinea* group slave making ants.

*Formica neogagates* Viereck
Distribution: Middle to Southern Canada, and the majority of the western United States (Wheeler and Wheeler1986; Mackay and Mackay 2002).

Grassland Sites: AB: Empress Sand Dunes (A), Mattheis Ranch (A), Sandy Point Park (A); SSK: Clearwater Lake(BDCU), Grasslands National Park(R)(PMAE), Great Sand Hills (A)(BDCU).

Biological Notes: Small (length 2.5–5.0 mm), polymorphic, brown ants. A common species, found in a wide range of habitats; from woodlands to open grasslands (Mackay and Mackay 2002). This species is host to several slave-making species, including *Formica obtusopilosa* and *Formica rubicunda* (Wheeler and Wheeler 1986; Mackay and Mackay 2002).

*Formica obscuripes* Forel
Distribution: Common across most of North America: New Mexico to Central Alberta;
British Columbia to Michigan (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Dinosaur Provincial Park (A), Mattheis Ranch (A); SSK: Delisle (BDCU), Clearwater Lake (BDCU), Grasslands National Park (R)(PMAE), Great Sand Hills (BDCU).
Biological Notes: Medium sized (length 3.5–7.5 mm), polymorphic, red and black ants. This ant makes large, thatched, domed nests. They are often found farming Sternorrhyncha, but are also important predators of other invertebrates (Wheeler and Wheeler 1963, 1986). These are some of the more aggressive grassland ant species, vigorously defending their nests and “domesticated” Sternorrhyncha.

*Formica obscuriventris* Mayr
Distribution: Common across most western North America (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Dinosaur Provincial Park (A), Kinsella (JN).
Biological Notes: Medium sized (length 3.5–7.5 mm), polymorphic, dark red and black ants. This ant makes large, thatched, domed nests. Aggressively defend their nests, food sources, and farmed Sternorrhyncha (Wheeler and Wheeler 1986). Often found in woodland areas (Wheeler and Wheeler 1963).

*Formica obtusopilosa* Emery
Distribution: Alberta to Minnesota, southward to New Mexico (Wheeler and Wheeler 1986).
Grassland Sites: AB: Mattheis Ranch (A), Rolling Hills (A); SSK: Grasslands National Park (R)(PMAE).
Biological Notes: Medium sized (length 3.5–6.5 mm), polymorphic, red and black ants. Quick moving, facultative slave making ant; enslaves *Formica neogagates* and *F. fusca* groups (Wheeler and Wheeler 1963). Builds low lying mounds or nests under rocks (Mackay and Mackay 2002).

*Formica opaciventris* Mayr
Distribution: Alberta to North Dakota; south to Nevada (Wheeler and Wheeler 1986).
Grassland Sites: AB: Sandy Point Park (A).
Biological Notes: Medium sized (length 4.5–6.0 mm), polymorphic, yellowish-red and black ants. Found in a range of habitats, from open grasslands to forest edges (Mackay and Mackay 2002). This species forms low domed mounds with some thatching (Wheeler and Wheeler 1963; Mackay and Mackay 2002). Farms Sternorrhyncha and can be aggressive in defending their nests (Wheeler and Wheeler 1963)

*Formica oreas* Wheeler
Grassland Sites: AB: Dinosaur Provincial Park (A), Kinsella Ranch (JN), Mattheis Ranch (A); SSK: Clearwater Lake (BDCU).
Biological Notes: Medium sized (length 3.5–7.0 mm), polymorphic, red and black ants. Aggressive in the defense of their nests and food sources (Wheeler and Wheeler 1986). Often tend Sternorrhyncha (Wheeler and Wheeler 1986). Build low lying, thatched nests. Found in woodlands and along the edge of forests (Mackay and Mackay 2002).
Formica perpilosa Wheeler
Distribution: Southern edge of western Canada, and the majority of the western United States (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
Grassland Sites: AB: Empress Sand Dunes (A); SSK: Grasslands National Park (R).
Biological Notes: Small (length 2.5–5.0 mm), polymorphic, dark-red and black ants. Often found in dry, open habitats. Build low mounds, often at the base of plants (Mackay and Mackay 2002).

Formica planipilis Creighton
Grassland Sites: AB: Dinosaur Provincial Park (A), Mattheis Ranch (A), Suffield Military Base (A); SSK: Reported but no locality given (WW).
Biological Notes: Medium sized (length 3.5–6.5 mm), yellowish-red and black ants. Found in a wide range of habitats; riparian woodlands to moist grasslands (Mackay and Mackay 2002). Builds low lying thatched nests. Often farms Sternorrhyncha, especially on shrubs (Wheeler and Wheeler 1963).

Formica podzolica Francoeur
Distribution: Most of North America except for the most extreme north and south areas (Francoeur 1973; Mackay and Mackay 2002).
Grassland Sites: AB: Dinosaur Provincial Park (A), Drumheller (A), Medicine Hat (A), Mattheis Ranch (A); SSK: Delisle (BCDU).
Biological Notes: Medium sized (length 3.0–6.0 mm), polymorphic, black ants. Often found in lawns, urban areas, and slightly disturbed areas (Mackay and Mackay 2002). Like Formica argentea, often found in areas with brush or tree cover, and builds large, low lying mounds. Colonies are polygynous. This species is a host for several slave-making ant species, including Formica aserva (Savolainen and Deslippe 2001).

Formica rubicunda Emery
Distribution: Southern Canada and most of the United States (Mackay and Mackay 2002).
Grassland Sites: AB: Mattheis Ranch (A); SSK: Grasslands National Park (PMAE).
Biological Notes: Medium sized (length 3.5–6.0 mm), polymorphic, red and black ants. This species constructs thatched nests in open areas or nests under logs and stones (Wheeler and Wheeler 1963). It is known to enslave a wide range of Formica species, from the fusca group, neogagates group, and even the rufa group (Mackay and Mackay 2002).

Formica subpolita Mayr
Distribution: Western North America, British Columbia south to California (Clark and Blom 2007).
Grassland Sites: AB: Medicine Hat (UASM).
Biological Notes: Medium sized (length 3.0–5.5 mm), polymorphic, dark red ants. Has been associated with sage brush (Clark and Blom 2007), and often found in riparian woodlands. Known to tend Sternorrhyncha (Mackay and Mackay 2002). Locally abundant, but uncommon in Alberta.

Formicoxenus provancheri (Emery)
Distribution: Canada and northern United States
Grassland Sites: AB: Hay Lakes (A), Sandy Point Park (A).
Biological Notes: Small (length 2.5–3.0 mm), monomorphic, red ants. A guest ant that has only been found in *Myrmica incompleta* nests. This ant relies on its host to supply food and protection, but often builds its own galleries adjacent to the host galleries, where it houses its larva.

*Lasius alienus* (Förster)
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Dinosaur Provincial Park (A), Drumheller (UASM), Medicine Hat (UASM).
Biological Notes: Small (length 2.0–3.0 mm), monomorphic, dark brown ants. An uncommon species in Alberta. Farm Sternorrhyncha both above and below ground (Mackay and Mackay 2002). Commonly nests in wood or under stones in well shaded areas (Wheeler and Wheeler 1963).

*Lasius coloradensis* Wheeler
Distribution: British Columbia to Manitoba; South to New Mexico (Wheeler and Wheeler 1986).
Grassland Sites: AB: Kinsella Ranch (JN), Mattheis Ranch (A), Sandy Point Park (A); SSK: Grasslands National Park (PMAE).
Biological Notes: Small (length 2.0–4.0 mm), monomorphic, yellowish-orange ants. Nests are subterranean and can be difficult to find; small mounds at the base of plants can be used to help detect their colonies (Mackay and Mackay 2002). Farm subterranean Sternorrhyncha on plant roots (Newton *et al*. 2011). When crushed give off a strong citronella smell (Wheeler and Wheeler 1963).

*Lasius crypticus* Wilson
Distribution: Western North America
Grassland Sites: AB: Dinosaur Provincial Park (A), Drumheller (UASM), Kinsella Ranch (JN), Mattheis Ranch (A), Onefour Station (A), Sandy Point Park (A); SSK: Grasslands National Park(R)(PMAE), Great Sand Hills(A)(BDCU).
Biological Notes: Small (length 2.5–3.5 mm), monomorphic, yellowish-brown ants. Colonies are often polygynous and spread over a wide area. Common in grasslands and open areas (Mackay and Mackay 2002). Farms Sternorrhyncha below ground on plant roots, but also opportunistically hunts arthropods (Wheeler and Wheeler 1963; Newton *et al*. 2011).

*Lasius fallax* Wilson
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Hay Lakes (A), Kinsella Ranch (JN).
Biological Notes: Tiny (length 2.0–2.5 mm), monomorphic, yellow ants. Often found in more wooded areas compared to *Lasius flavus* (Mackay and Mackay 2002). Colonies are subterranean, where workers farm Sternorrhyncha on the roots of plants (Newton *et al*. 2011).

*Lasius flavus* (Fabricius)
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Kinsella Ranch (JN), Mattheis Ranch (A), Sandy Point Park (A).
Biological Notes: Tiny (Length 2.0–2.5 mm), monomorphic, yellow ants. Colonies are subterranean, where workers farm Sternorrhyncha on the roots of plants (Newton *et al*. 2011).
Lasius latipes (Walsh)
Distribution: Southern Canada and most of the central United States (Mackay and Mackay 2002).
Grassland Sites: AB: Empress Sand Dunes (A), Mattheis Ranch (A), Suffield Military Base (PMAE), Sandy Point Park (A); SSK: Great Sand Hills (A).
Biological Notes: Small (length 3.0–4.0 mm), monomorphic, brownish-yellow ants. A temporary social parasite of other Lasius species such as L. neoniger and L. crypticus (Mackay and Mackay 2002); freshly mated queens invade host colonies, kill the host queen and the workers then help her raise her own workers until the colony becomes mono-specific with just L. latipes workers. Farm subterranean Sternorrhyncha on plant roots (Wheeler and Wheeler 1963). Mature colonies build small to medium mounds in the prairies.

Lasius neoniger Emery
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Dinosaur Provincial Park (A), Drumheller (UASM), Empress Sand Dunes (A), Kinsella Ranch (JN), Lethbridge (A), Medicine Hat (A), Mattheis Ranch (A), Onefour Station (A), Sandy Point Park (A) Tilley (BDCU); SSK: Grasslands National Park (R)(PMAE), Great Sand Hills (A).
Biological Notes: Small (length 2.5–3.5 mm), monomorphic, yellowish-brown ants. A common ant species known for making small craters around a singular entrance (Mackay and Mackay 2002). Colonies are often polygynous and cover a large area. Farms Sternorrhyncha below ground on plant roots, but also opportunistically hunts other invertebrates (Newton et al. 2011).

Lasius niger Linnaeus
Distribution: Most of North America (Mackay and Mackay 2002)
Grassland Sites: AB: Dinosaur Provincial Park (A), Kinsella (JN).
Biological Notes: Small (length 2.5–3.5 mm), monomorphic, dark brown ants. Found shaded areas, often along forest edges (Mackay and Mackay 2002). Farms Sternorrhyncha below ground and above ground, but also opportunistically hunts other invertebrates (Newton et al. 2011).

Lasius pallitarsis (Provancher)
Distribution: Most of western North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Kinsella Ranch (JN), Mattheis Ranch (A); SSK: Clearwater Lake (BDCU), Delisle (BDCU), Grasslands National Park (R)(PMAE).
Biological Notes: Small (length 2.5–4.5 mm), monomorphic, yellowish-brown ants. A common ant across most of Alberta. Often nest in moist environments; including dead wood and under rocks (Wheeler and Wheeler 1963). Observed farming Sternorrhyncha on both the roots and bases of grasses and other plants (Newton et al. 2011).

Lasius subglaber Emery
Biological Notes: Small (length 2.5–3.0 mm), monomorphic, brown ants. Difficult to find, because of its subterranean habits. As with most Lasius, this species farms subterranean Sternorrhyncha on plant roots (Newton et al. 2011).
Lasius subumbratus Viereck
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Hay Lakes (A); SSK: Grasslands National Park (R)(PMAE).
Biological Notes: Small (length 3.0–4.0 mm), monomorphic, pale yellow ants. Temporary social parasite of Lasius pallitarsis; Queens invade host colonies, kill the host queen and the workers then help her raise her own workers until the colony becomes mono-specific with just L. subumbratus workers (Wheeler and Wheeler 1963). Often nests under rocks and dead wood. Farm subterranean Sternorrhyncha on the roots of plants (Wheeler and Wheeler 1963).

Lasius umbratus (Nylander)
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Mattheis Ranch (A), Sandy Point Park (A); SSK: Grasslands National Park (PMAE).
Biological Notes: Small (length 3.0–4.0 mm), monomorphic, yellowish-orange ants. Temporary social parasites of Lasius alienus, L. crypticus, and L. neoniger. Queens invade host colonies, kill the host queen and the workers then help her raise her own workers until the colony becomes mono-specific with just L. umbratus workers (Wheeler and Wheeler 1963). Nests can form large mounds when colonies reach a large enough population. Farm subterranean Sternorrhyncha on the roots of plants (Wheeler and Wheeler 1963).

Leptothorax muscorum (Nylander)
Distribution: Most of North America (Mackay and Mackay 2002).
Grassland Sites: AB: Kinsella Ranch (JN); SSK: Grasslands National Park (PMAE).
Biological Notes: Tiny (length 2.0–3.0 mm), monomorphic, dark reddish-brown ants. A common species across North America, it may be a species complex of multiple cryptic species; taxonomic work is in dire need (Fisher and Cover 2007). Often found in forested or shaded areas (Wheeler and Wheeler 1963). Nests are most commonly found in dead wood (Lindgren and McIsaac 2002).

Monomorium minimum (Buckley)
Distribution: Southern Canada, most of the United States and into Mexico (Wheeler and Wheeler 1986).
Grassland Sites: AB: Mattheis Ranch (A), Sandy Point Park (A); SSK: Clearwater Lake (BDCU), Grasslands National Park (R)(PMAE).
Biological Notes: Tiny (length 1.5 mm), monomorphic, black ants. Has very populous, polygynous colonies (Wheeler and Wheeler 1986; Mackay and Mackay 2002). Nest in a wide variety of areas. Feed on a wide range food; including Sternorrhyncha honey-dew, plant secretions, and other invertebrates.

Myrmica americana Weber
Distribution: Southern Canada and most of the United States (Wheeler and Wheeler 1963).
Grassland Sites: AB: Empress Sand Dunes (A), Suffield Military Base (PMAE); SSK: Grasslands National Park (R)(PMAE).
Biological Notes: Medium (length 4.5–6 mm), monomorphic, dark red ants. An aggressive Myrmica species, it bites and stings when disturbed (Wheeler and Wheeler 1963). Found almost exclusively in open grasslands (Wheeler and Wheeler 1963). Myrmica americana is an opportunistic feeder and has a diet of invertebrates, fruits, plant excretions, and are known to tend Sternorrhyncha (Wheeler and Wheeler 1963; Mackay and Mackay 2002).
**Myrmica brevispinosa** Wheeler
Grassland Sites: AB: Empress Sand Dunes (A), Suffield Military Base (PMAE); SSK: Grasslands National Park (R)(PMAE), Great Sand Hills (A)
Biological Notes: Medium (3.5–6.0 mm), monomorphic, orange-brown ants. Associated with sandy soils (Ellison *et al.* 2012). Nests under stones, or in cryptic nests often in shaded areas (Mackay and Mackay 2002). Omnivorous, eats insects and plant exudates (Ellison *et al.* 2012).

**Myrmica crassirugis** Francoeur
Distribution: Western North America (Francoeur 2007).
Grassland Sites: AB: Mattheis Ranch (A); SSK: Grasslands National Park (R)(PMAE), Great Sand Hills (A).
Biological Notes: Medium (length 3.5–5.5 mm), monomorphic, dark red ants. Often found in sandy soils (Francoeur 2007). Omnivorous; has been observed moving insects to their nests, as well as collecting juices from a dropped orange.

**Myrmica fracticornis** Forel
Distribution: Most of North America (Wheeler and Wheeler 1963)
Grassland Sites: AB: Dinosaur Provincial Park (A), Kinsella Ranch (JN).
Biological Notes: Medium (length 3.5–5.5 mm), monomorphic, dark red ants. Colonies are often polygynous. Often found in wetter areas (Ellison *et al.* 2012). Nest in wood or small irregular shaped mounds. Diet consists of arthropods, fruit, plant secretions, and are known to farm aphids (Newton *et al.* 2011).

**Myrmica incompleta** Provancher
Distribution: Most of North America (Wheeler and Wheeler 1986)
Grassland Sites: AB: Hay Lakes (A), Sandy Point Park (A).
Biological Notes: Medium (length 4.5–5.5 mm), monomorphic, dark red ants. Often found in wetter areas in organic or clay based soils, rarely sandy soils (Ellison *et al.* 2012). Nest in wood or small irregular shaped mounds. Colonies are often polygynous. Diet consists of arthropods, fruit, plant secretions, and will farm Sternorrhyncha both above and belowground. Host to the guest ant *Formicoxenus provancheri* (Mackay and Mackay 2002).

**Myrmica latifrons** Stärcke
Distribution: Most of North America (Mackay and Mackay 2002)
Grassland Sites: AB: Kinsella Ranch (JN), Mattheis Ranch (A); SSK: Grasslands National Park (R)(PMAE).
Biological Notes: Medium (length 4.0–5.0 mm), monomorphic, dark red ants. Often found in moist areas and usually more shaded areas (Wheeler and Wheeler 1963; Ellison *et al.* 2012). Nests are small irregular shaped mounds in the soil. Omnivorous, feeds on fruit, nectar and insects (Ellison *et al.* 2012).

**Myrmica** (undescribed species) code AF-eva by André Francoeur
Distribution: Much of North America (Ellison *et al.* 2012).
Grassland Sites: AB: Dinosaur Provincial Park (A), Empress Sand Dunes (A), Mattheis Ranch (A); SSK: Grasslands National Park (R)(PMAE), Great Sand Hills (A).
Biological Notes: Medium (4.0–5.5 mm), monomorphic (though size can vary between
workers within a nest), brownish-red ants. Nests usually have one main entrance, often with a small mound around it. Observed eating other insects, collecting seeds, and farming Sternorrhyncha at the base of grass stems.

*Pogonomyrmex occidentalis* (Cresson)
**Distribution:** Great Plains (Wheeler and Wheeler 1986).
**Grassland Sites:** AB: Lethbridge (A), Medicine Hat (A)(UASM), Sandy Point Park (A); SSK: Great Sand Hills (A).
**Biological Notes:** Large (length 6.5–8.0 mm), polymorphic, orangish-red ants. Nests are typically covered in fine gravel, but other materials are sometimes used and form a low cone shape (Wheeler and Wheeler 1986). This species is known to have a painful sting, though is often only aggressive if its nest is disturbed. Harvests seeds from a wide range of plants, but prefer grass seeds, and will also take insects as food (Wheeler and Wheeler 1963).

*Solenopsis molesta* (Say)
**Distribution:** Southern Canada, most of the United States and into Mexico (Wheeler and Wheeler 1986).
**Grassland Sites:** AB: Sandy Point Park (A); SSK: Grasslands National Park (R)(PMAE).
**Biological Notes:** Tiny (length 1.0–1.7 mm), monomorphic, brown ants. Often called a “thief-ant” because they often nest near colonies of larger ants; where they will periodically dig into the others nests and steal stored food or take larva and eggs (Wheeler and Wheeler 1986). In Alberta often found near *Pogonomyrmex occidentalis* nests. One of the smallest ants present in Alberta and Saskatchewan.

*Tapinoma sessile* (Say)
**Distribution:** Most of North America (Wheeler and Wheeler 1986; Mackay and Mackay 2002).
**Grassland Sites:** AB: Dinosaur Provincial Park (A), Drumheller (UASM), Empress Sand Dunes (A), Hay Lakes (A), Kinsella Ranch (JN), Lethbridge (A), Medicine Hat (A), Mattheis Ranch (A), Suffield Military Base (PMAE), Onefour Station (A), Writing on Stone Provincial Park (A); SSK: Clearwater Lake (BCDU), Delisle (BCDU), Grasslands National Park (R)(PMAE), Great Sand Hills (A), Prelate (BCDU).
**Biological Notes:** Small (length 2.0–3.0 mm), monomorphic, gray to light brown ants. Colonies are often polygynous (Klotz *et al.* 2008). This species has been known to invade houses in search of food (Klotz *et al.* 2008). Found in a wide range of habitats, has a wide range of nesting habits and is opportunistic in its food exploitation; it will farm Sternorrhyncha (Newton *et al.* 2011), hunt other invertebrates, will exploit plant secretions, and fruit (Wheeler and Wheeler 1963; Wheeler and Wheeler 1986). When crushed, they smell of rotten coconut (Klotz *et al.* 2008).

*Temnorhax ambiguus* (Emery)
**Distribution:** Most of North America (Wheeler and Wheeler 1963)
**Grassland Sites:** AB: Dinosaur Provincial Park (A), Kinsella Ranch (JN); SSK: Grasslands National Park (R)(PMAE).
**Biological Notes:** Small (length 2.0 mm), monomorphic, yellowish-brown ants. Often found in shaded areas (Wheeler and Wheeler 1963). In Dinosaur Provincial Park, this species is often found in Plains Cottonwood (*Populus* sp.) woodlands. Nests in the soil, with colonies extending into hollow stems of plants (Ellison *et al.* 2012).
**Temnothorax rugatulus** (Emery)

**Distribution:** Western North America: southern Alberta south to New Mexico (Wheeler and Wheeler 1986).

**Grassland Sites:** AB: Mattheis Ranch (A), Kinsella Ranch (JN); SSK: Grasslands National Park (R)(PMAE).

**Biological Notes:** Small (length 2.0 mm), monomorphic, brown ants. Often nests under stones. In its northern range this species is found in open grasslands but in more southern habitats is also found in woodland areas (Mackay and Mackay 2002). Colonies are often polygynous (Mackay and Mackay 2002).

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**References**


