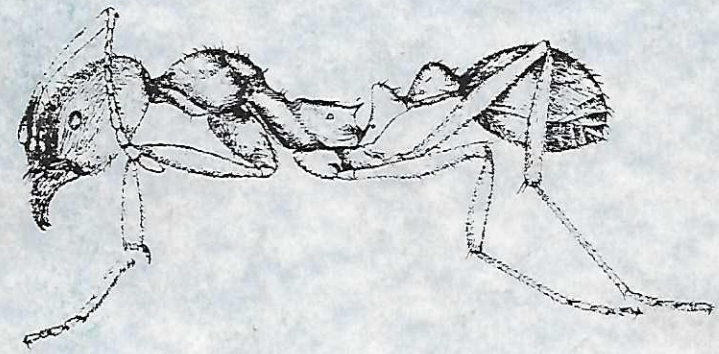
ANTS

in the

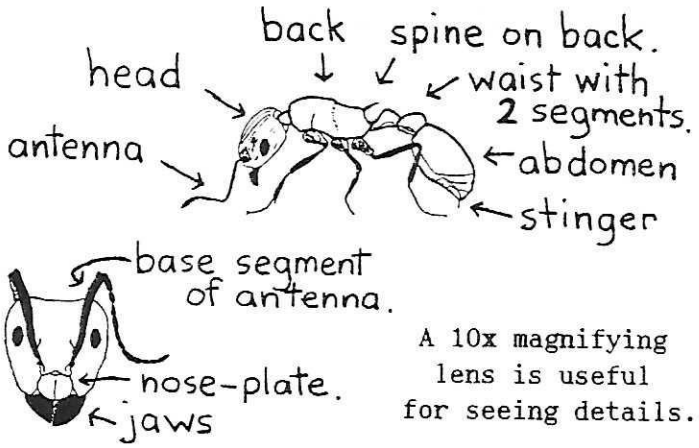
CARIBOO-CHILCOTIN



"Ants are everywhere, but only occasionally noticed. They run much of the terrestrial world as the premier soil turner, channelers of energy, dominatrices of the insect fauna ..... They employ the most complex forms of chemical communication of any animals and their social organization provides an illuminating contrast to that of human beings ..... In most terrestrial habitats ants are among the leading predators of other insects and small invertebrates."

Hölldobler & Wilson, 1990.

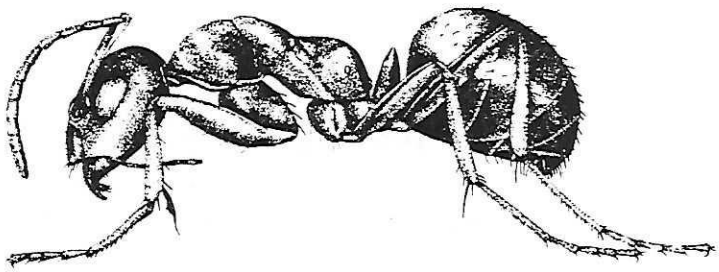
Ants are classified as a single family, the Formicidae, within the order Hymenoptera, which also includes the bees and wasps.



A 10x magnifying lens is useful for seeing details.

Ants have three castes: queens, males, and workers. A queen starts off with wings; after her mating flight in late summer she sheds them. Queens are similar to workers, only bigger, with a large back and plump abdomen. Males have wings, are usually smaller than the workers, and only live a very short time. Workers are the most common ants in a nest. They are all females, but don't lay eggs and never have wings. The queen lays many tiny eggs which hatch into larvae. These are fed by the workers until they become pupae. Later, soft pale ants emerge. After a few days these new workers look like all their sisters in the nest. These workers carry out all the work of a colony, such as finding food, carrying it back to the nest, and protecting the nest. All ants have a well-developed sense of smell and touch located in the antennae. They produce phermones (chemical substances) which are of vital significance in ordering the workings of the entire colony.

The local diversity of ants is substantial, with a total of 11 genera encompassing many species. Brief descriptions are given for each of the 11 genera. When looking for ants it is helpful to know where different genera forage and where their nests are found. Often one can distinguish between genera by watching their habits.

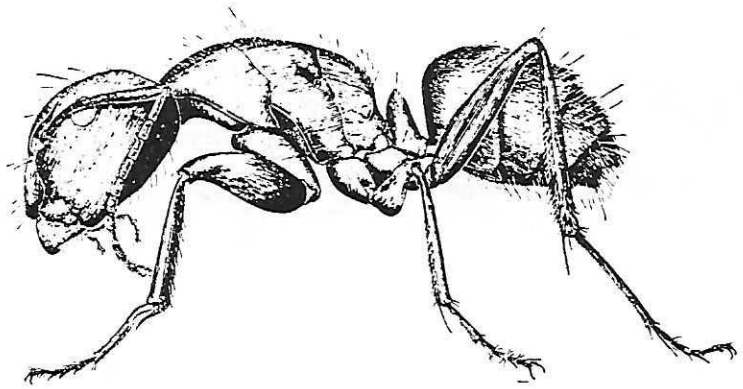


Formica Ants (Formica spp.)

Description:
- many species.
- body all black; or with a reddish head; or a red head and back; or small and light brown.
- waist has 1 large segment.
- back forms 2 humps
- abdomen is rounded.
- aggressive; bites readily and releases a strong smell (formic acid) in defense.
- no stinger.
- workers are usually medium to large; (4 to 8 mm long).

Some species of formica ants build large mounds made of bits of grass, twigs, and soil for a nest. This "thatching" works well to shed rain or melting snow. Very few plants grow nearby, and the workers remove or kill any shady plants which try to do so. On a sunny day in early spring, even though there is still snow, the top of a nest might be bare and covered in moving ants, warmed by solar energy. Unless disturbed by a bear, skunk or human, a colony's nest gradually becomes ever larger over 20 or more years. Formica ants often forage in trees and shrubs. They frequently tend aphids, using the honey-dew the aphids produce as food for themselves and their larvae.

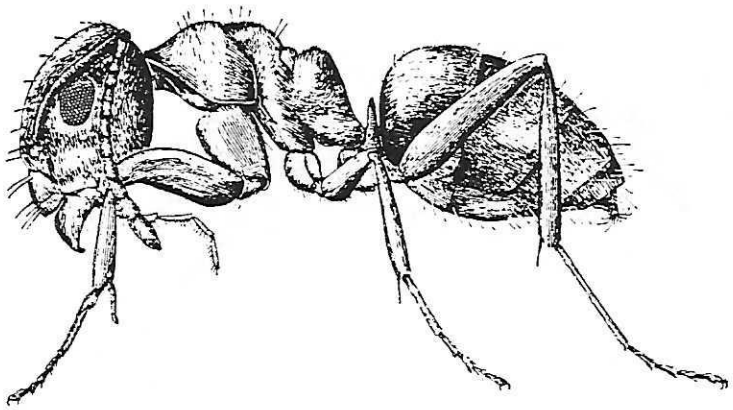
Many species of formica ants produce formic acid. It is used in defense to obtain food, or even against a shrub which is shading the nest. Getting a whiff of a few ants in a bottle is hard on your nose. When disturbed, angry formica ants swarm over their nest, sending up a cloud of strong acid, driving off most intruders.



Carpenter and Rounded-back Ants (*Camponotus* spp.)

Description:
- several species.
- body all black; or back and legs reddish; or legs and 1/2 of back reddish.
- waist has 1 short segment.
- back is evenly rounded (in side view).
- head is triangular (in side view)
- timid; runs and hides when disturbed.
- no stinger.
- workers are large to very large (6 to 13 mm long).

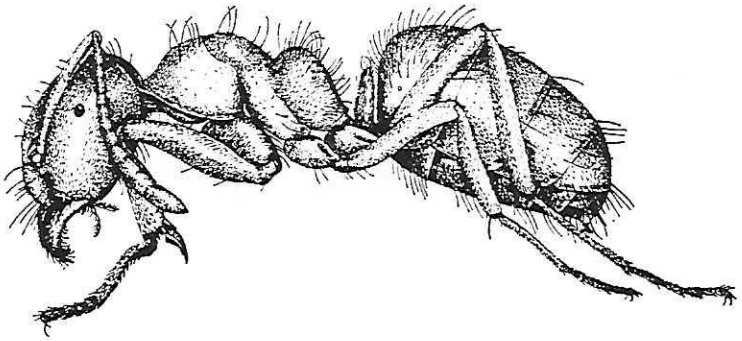
Carpenter ants do not feed on wood as do termites, but excavate their nests in dead wood. These ants are important in forest nutrient cycles, helping the decay of large logs and stumps lying on the forest floor. They do not build nests in sound, dry wood, as tunneling in soft wood is easier, and because humidity is needed in raising their brood. Discovering carpenter ants in your house means that they are looking for a suitable place to move to, or have found a timber that is damp from contact with the ground outside. As they build, workers carry each bit of sawdust to a tunnel opening, creating an ever-growing sawdust pile below. Another species of rounded-backed ant lives in sunny, dry places, building a nest in sandy soil under a stone. Most species of this genus tend aphids, using the honey-dew produced by the aphids as food for themselves and their larvae.



Field Ants (*Lasius* spp.)

Description:
- many species;
- body light brown, dark brown, or black.
- waist has 1 slim segment (in side view)
- shape of back is -- hump, hump, flat spot, hump (in side view)
- abdomen is plump.
- very timid; run in circles when scared.
- no stinger
- workers are small, or tiny (2 to 4 mm long).

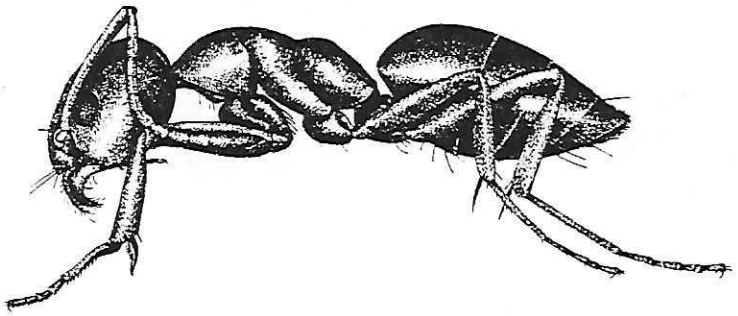
Field ants nest under stones or bark, in rotten logs along with other ants, or just in the soil, where it is not too dry. Some kinds build their tunnels under a grassy field. Others prefer living in sunny woodlands. Field ants spend much of the time underground, tending coccids and aphids (which they over-winter in their nest as eggs) on the roots of various plants. Often a colony has many doorways, every half metre or so. In this way the colony can occupy a large territory, and have its workers well spaced out. A worker emerges and searches only a short distance from home for nectar and live or dead insects. Each volcano-doorway is made of dirt the workers have hauled up to the surface. Ants are often much more important than earthworms in turning over the soil, especially where it is dry. A few kinds of field ants produce a sweet lemony smell when squashed, but much weaker than that made by soil ants.



Soil Ants (*Acanthomyops spp.*)

Description:
- several species
- body is bright yellow.
- waist has 1 very pointed segment.
- back has a dip 2/3 of the way along it.
- abdomen is plump (in top view).
- run about when scared.
- release a sweet lemony smell when squished or nest is disturbed.
- no stinger
- workers are small (3-4 mm long)

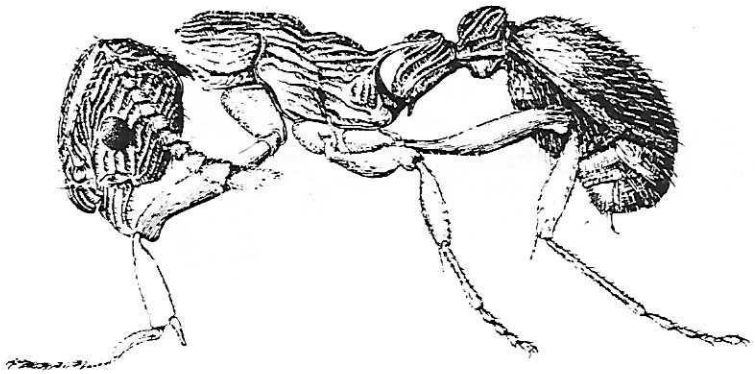
Soil ants are very similar in size and shape to field ants, but can be distinguished by their shiny yellow colour and strong citronella odour. Soil ants live underground, and so have very tiny eyes (narrower than the end of an antenna). They usually build a nest under a stone on a dry, sandy hillside. Tunnels run underground from the nest to various plants nearby, where the workers farm root aphids and coccids on the roots of these plants. The root aphids and coccids are protected by the soil ant workers, and in turn the bugs secrete honeydew for the ants to eat. In late summer, a mature nest produces 100's of winged queens and males (usually at different times). The workers then build a doorway to above-ground, and the winged ants leave on mating flights. The fertilized queens overwinter and start a new colony by entering a field ant nest in the spring.



Slender-waisted Ant (*Tapinoma sessile*)

Description:
- only one species found in this region.
- body is narrow and black.
- waist has 1 slender segment.
- abdomen overlaps waist and hides it.
- abdomen is pointed.
- back has a dip 2/3 the way along it.
- swarm out of nest when disturbed.
- when annoyed, ants produce a sticky droplet which smells like rotten coconuts.
- no stinger.
- worker is tiny (2-3 mm long).

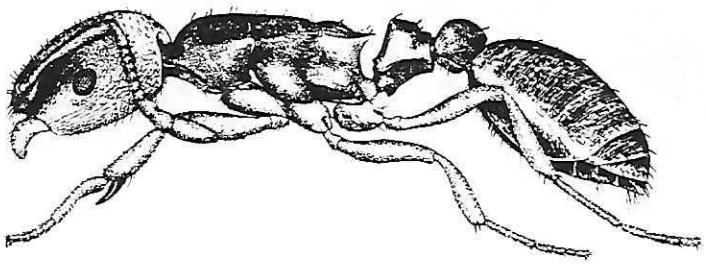
Slender-waisted ants are tiny, dark, and quick-moving. A colony has up to several thousand members. Every few weeks, if another place seems better, or if a nest is even slightly disturbed, they carry their brood and queen to a new nest sight. Most often these ants live in soil just under stones, but they will use any kind of cavity, such as under a board, a crack in a sidewalk, in a clump of dry grass, or in a pile of garbage. Small enemies, especially other ants, are kept at bay by a strong, rotten coconut smell. These tiny ants forage in files, searching for insects, nectar, or anything sweet. Picnics and kitchens often have just what they are looking for.



Spiny-backed Ants (*Myrmica spp.*)

Description:
- many species.
- various body parts are dark reddish, orange, or bluish.
- waist has 2 segments.
- 1st waist segment has a neck and then a peak.
- back has a slight hump, a wide groove, a flat area, then a pair of sharp spines.
- abdomen is shiny.
- timid; runs and hides when roof is lifted off nest.
- workers have stingers.
- workers are small (3-4 mm long).

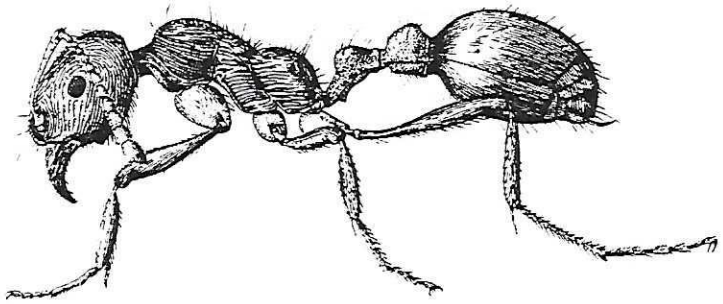
In a wet meadow, boulders, sticks, dung, or a fallen fence post often forms a roof for a spiny-backed ant colony. A nest is made of tiny rooms and tunnels, up to 10 cm deep in the soil. Each nest usually has a few hundred workers which tend the young, moving them to different rooms depending on how warm and damp parts of the nest are. Since nests are often located in marshy areas near lakeshores or streams, spring flooding sometimes finds a colony marooned on a small grassy mound, or even rafting along with their brood on the branch which formed their roof. Some kinds of spiny-backed ants live in open forest or grassland areas, building a nest in a soft, rotten log, or just underground with a small volcano marking the doorway. These slow-moving ants forage for dead insects, plant juices, or honeydew from aphids and other small insects living underground.



Straight-backed Ants (*Leptothorax spp.*)

Description:
- several species.
- body is various shades of yellow or red, to almost black.
- 1st waist segment has a small bump below and a hump above.
- waist has 2 segments.
- back is almost flat and ends in a pair of sharp spines
- abdomen is long.
- body is long and slender (in top view).
- timid; quickly disappear down tunnels.
- workers have stingers.
- workers are small (2 to 4 mm long).

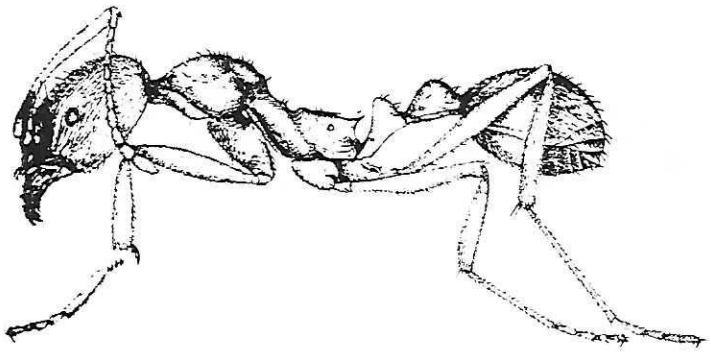
Straight-backed ants build small colonies in openings they find under bark, in rotten wood, or underground. They often share a home with another ant, using the other ants' tunnels, but building and defending their own passages off to the side. This sharing even includes food, as the straight-backed ants are able to steal honeydew from the incoming workers. Many kinds of ants are aphid farmers; they protect a cluster of aphids from enemies such as ladybugs. By stroking their "milk-cows", the ants receive a droplet from each aphid. This sweet syrup, or honeydew, is a by-product of the juice the aphid sucks out of the plant it is living on.



Road Ant (Manica invida)

Description;
- only one species in the region
- body is orange.
- waist has 2 segments.
- back has no spines.
- abdomen is shiny.
- legs are long and skinny.
- body is long and narrow (in top view).
- bites and stings to defend nest.
- workers have stingers.
- workers are medium-sized (4 to 6 mm long).

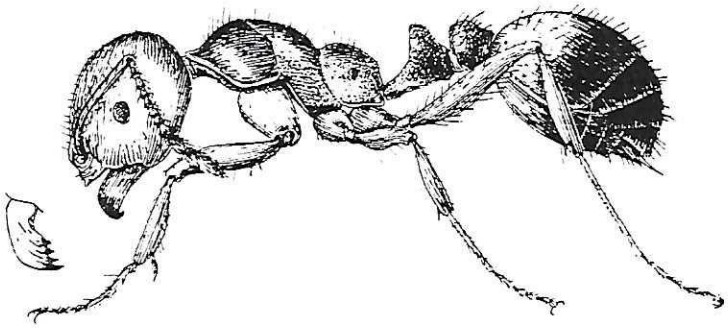
Road ants live along roadsides, and in other sunny, dry areas where the soil is hard packed. They excavate long tunnels underground, bringing soil out bit by bit in their jaws. Soon the dirt particles pile up, shaping each doorway like a volcano. The first sunny day after a rainfall, road ants are busy fixing up their quarters, and the volcano which was washed away is gradually rebuilt. Each colony, with a few hundred workers, may have a string of interconnecting nests with a number of doorways. A road ant that is bothered near its nest will immediately sting you, leaving a red welt and a quite noticeable stinging pain which lasts for a few minutes. Road ants prey on insects; they also seem to specialize in preying on other ant genera by staging underground raids on their nests. Many kinds of ants feed on insects, so much so, that ants are often more important than spiders in controlling insect populations.
The distribution of this introduced road ant is spreading in B. C.



Hump-backed Ant (*Aphaenogaster occidentalis*)

Description:
- only one species in the region
- body is dark with a reddish tinge and reddish legs.
- waist has 2 segments.
- 1st waist segment has a long "neck".
- back humps way up, then flattens out and ends in a pair of short spines.
- abdomen is shiny.
- body is slender, with long legs (in top view).
- shy; soon disappear underground.
- workers have stingers.
- workers are medium-sized (4-5 mm long)

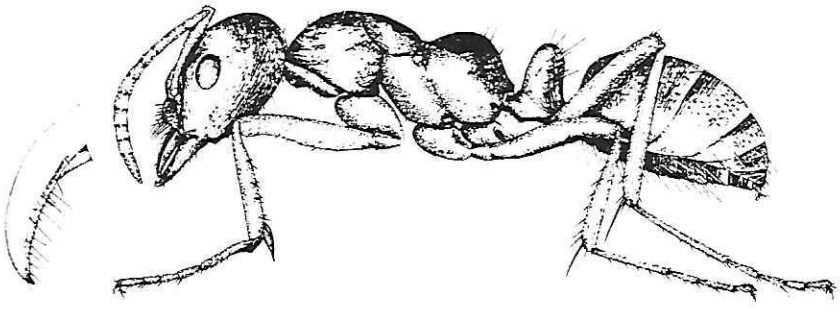
Hump-backed ants live in dry, loose soil on sunny hillsides. Nests are built under a stone or sometimes under a fallen log. A few of the tunnels may run through the log if it is very rotten, but most are constructed in the soil. Only a couple of workers are seen above ground at a time, as they forage alone looking for dead insects, spiders, centipedes or seeds. A worker returns to the nest with what bits it can carry; but if a large, dead caterpillar is found, the workers may take the larvae to where it is and let them feed on it there. Sweet liquid may be collected from insects which suck juices from sage roots. When the summer sun is too hot, these slow-moving ants go on their food collecting trips at night or in the early morning.



Thief Ant (*Solenopsis molesta*)

Description:
- only one species in BC
- body yellow, strongly shinning.
- waist has 2 segments
- antenna with 10 segments, the last 2 forming a distinct club
- size very tiny (2.5 mm)

This minute, yellowish ant has a habit of nesting in the walls of underground nests of larger ant species. It is called a thief ant because it robs food from these adjacent nests. This ant may also nest in exposed soil, under cover of stones, or in rotting wood. They feed on both dead and live insects. Workers are also known to tend plant lice, mealybugs, and scale insects for their honeydew. Several queens have been found in a single colony, which is unusual for ant colonies. This species has been found in our warm grassland areas.



Slave-maker Ant (*Polyergus breviceps*)

Description:
- only one species in BC
- body red.
- head and thorax dull.
- jaws sickle shaped.
- broad waist segment
- medium to large size

Slave-maker ants live in and under large earthen mounds. Large numbers of slave-maker ants form a column and carry out raids on nests of formica ants. They steal larvae which they carry back to their own nests for food. Any larvae not eaten are raised as slaves.

This information about local ants was compiled by
Gina and Anna Roberts for Scout Island Nature Centre
2004