

# ANTS



## INTRODUCTION

Ants belong to order of insects known as Hymenoptera, which includes some of the most highly evolved insects. They have a caste system by which nest building, nursing of the young and foraging for food is undertaken by workers (sterile females), reproduction is performed by fertile females (queens) and males are responsible for the fertilization of the queens.

The nests of ants are usually located in shallow soil, hollow spaces in walls or cavity walls, under paving stones, concrete slabs and foundations of buildings.

New ant colonies are usually produced by a mating flight: males and females fly from the nest and mate in the air or on the ground. After mating females form a brood chamber and begin laying eggs. Workers of the first brood forage and feed the queen, expand the nest, and care for the next brood. The founding queen continues to lay eggs and remains in the nest.

When the colony reaches a certain size the queen lays eggs that develop into reproductive females and males.

There are about 10,000 different species of ants known in the world today. There are currently about 35 confirmed species from 23 genera in New Zealand. Of these, only 10 are native species, 9 of which are found only (endemic) in New Zealand. The endemic species are generally widespread geographically, mainly in forested habitats.

**The most common species we know in the urban environment as pests are:**

- Argentine Ant ( see separate sheet)
- Big Headed Ant/Brown House Ant/Coastal Brown Ant
- Black House Ant
- Darwin's Ant
- Pavement Ant
- Pharaoh Ant
- Southern Ant
- Tiny Brown Ant
- White Footed Ant

It must be pointed out that because of differing cultural and social sensitivities in some domestic homes, ants are usually only regarded as a nuisance, while others are deeply disturbed as there is a natural revulsion at finding insects in food.

Ants cause a problem in commerce and industries as they can contaminate foods, spread diseases, (e.g. *Staphylococcus and Candida*) and result in a loss of goodwill and prestige. Food containing ants has to be discarded to prevent contaminated food from being sold or served to the public.

Manufacturers, restaurants, bakeries, hotels, canteens and warehouses handle numerous foods and products that are highly attractive to ants. As contamination of foods or products can be particularly damaging to reputable companies, effective measures must be implemented to eradicate and control infestations located on the premises. Ants in products supplied to leading retailers may cause production to be stopped resulting in financial loss.

Ant nests are usually formed in the soil under stones, concrete paths, walls etc. In late summer and sometimes at other times of the year, swarms of winged male and female ants emerge to mate and disperse. Ants commonly feed on sweet sugary foods, but certain species will feed on fat and meat products.

The following is detail on the most common ants in New Zealand

---

### WHITE-FOOTED ANT

*Technomyrmex jocosus*



Found throughout New Zealand but more prevalent in warmer areas and become well established, both outdoors and indoors

Named for its pale yellowish to white tarsi, or feet

Workers are the same size, 1/8" (3 mm) long with black to brownish black bodies and pale yellow to white legs, an unevenly rounded profile, 12-segmented antennae and no stinger

Large colonies have multiple queens; 50% of the colony are reproductives that mate and lay fertile eggs and the remaining individuals lay eggs that serve as the colony's food source. Forages in trails, mostly at night in cooler temperatures; invades structures in search of sweet liquids and water.

Difficult to control (baits typically not effective as not transferred between workers, so large quantities needed to control nests). Can reach very high densities in buildings and are difficult to control (baits typically not effective as not transferred between workers, so large quantities needed to control nests). Workers frequently forage indoors and form trails indoors or outdoors

---

## **BIGHEADED ANT/BROWN HOUSE ANT/COASTAL BROWN ANT**

*Pheidole megacephala* / *Pheidole rugosula*

**Common name(s)** Big-headed ant. Also known as brown house-ant, coastal brown-ant, lion ant, African Big-headed ant



Workers are different sizes and major workers have exceptionally large heads; are 1.5 – 6 mm long, yellowish to dark reddish brown in color and have 12-segmented antennae with a three-segmented club

Occasionally invades structures and nests under slabs, but usually nests in soil around structures

Can sting and emit a foul odor when alarmed

Length 3.5 mm; head massive with the rear (occipital) margin deeply impressed in the middle; rugae (wrinkles in the cuticle) extending about half way from the clypeus to the rear margin of the head; propodeal spines (paired) longer than diameter of propodeal spiracle; colour light brown.

Most of New Zealand is probably too cold for this species to realise its full pest potential, but the far north could support populations if it is transported there. Large populations have also been reported on the Kermadecs .

It currently appears to be restricted to coastal suburbs of Auckland, although it is likely that coastal areas north of Auckland would also be suitable.

Can be abundant around urban areas causing a nuisance. Workers are attracted to pet food left out and windfall fruit. It has been sampled in native habitats but its impacts are unknown.

---

**PAVEMENT (FORCEPS) ANT/  
FLAT-BACKED TYRANT ANTS**

*Iridomyrmex sp.*

Found in some areas of the North Island; named because nests are commonly located in pavement cracks

Length about 2 mm; antennae 12-segmented; mandibles with 7 teeth; the single petiolar node is in the form of a narrow, vertical scale; colour uniformly brown, apart from the gaster, which is darker.



Nests inside in walls, insulation and under floors and slabs near heat sources during winter.

Can invade kitchens where it shows a liking for "sweet and savory foods."

Ant rapidly and erratically moving on pavements and areas of bare ground in summer, when ants swarming out of the nest. Swarmer appear outside in January and February but can emerge anytime inside; workers bite only when provoked.

The vast majority of collections are from Auckland City and its surrounds(including offshore islands), where it has become a conspicuous member of the ant fauna. This species is also present in Northland, Coromandel, Waikato, Bay of Plenty, Hawke's Bay and Nelson City.

They are highly abundant and aggressive ants. Workers are commonly seen in New Zealand foraging on pavements and areas of bare ground, and entering and exiting their nests below.

Aucklanders often complain that, "its habit of nesting under paving stones displaces quite a large amount of sand, and eventually makes the stones uneven and dangerous." Small mounds of excavated soil or sand mark the location of nest entrances. Most species of the genus are general scavengers, and this species appears to be no exception - its habit of invading kitchens where it shows a liking for "sweet and savory foods." She also observes that workers have been known to bite humans on occasions.

In the field it can readily be distinguished from other ants in New Zealand because of its rapid gait (workers have long legs) and zigzag trailing over the substrate.

Likely of nuisance value as it is a highly visible, rapidly moving ant on pavements and areas of bare ground. In summer, ants swarming out of the nest may cause concern. Can enter buildings in search of food, but not as common an occurrence as with some other species. Bites people occasionally.

---

## PHARAOH ANT

*Monomorium pharaonis*

Found throughout NZ;  
named for mistaken belief  
that this ant was one of  
Egypt's plagues during the  
time of the pharaohs



Workers are the same size,  
1.5 mm long with a pale,  
yellowish to reddish body and darker abdomen, an unevenly rounded profile, stinger and 12-  
segmented antennae with a three-segmented club

Nests inside warm, humid areas near food and water sources; common in commercial buildings; of  
concern in hospitals where they will enter patient wounds, IV bottles and tubes; can carry more than  
a dozen pathogenic bacteria

Nests are difficult to find as they tend to be hidden in wall voids and behind baseboards

An aggressive scavenger with a generalist diet, forming conspicuous trails in buildings. Colonies with  
up to 300 000 workers with multiple queens. Colonies are unstructured and very mobile; workers,  
along with larvae, pupae, and even a few queens, may move to new locations if disturbed or if the  
colony becomes too large, or conditions become unsuitable . Queens live less than a year and  
workers are sterile.

Not found outside in temperate regions but survives in favourable microhabitats. Nests in household  
structures in any available cavity such as wall and cabinet voids, behind baseboards, behind  
refrigerator insulation, inside hollow curtain rods, or in the folds of sheets, clothes, or paper .  
Generally inhabits only the best heated buildings, such as hospitals and homes with children where  
elevated temperatures are maintained throughout winter .

Reported as a major domestic pest internationally for well over a century, principally for its ability to  
"get into things". Rarely stings, but appears in huge numbers in kitchens, frequently infests rooms in  
homes and hospitals . Gnaws through packaging of food and infests contents . Transports pathogenic  
microbes in hospitals and there have been attacks on eyelids of infants, causing cutaneous lesions on  
premature new-borns .

Reported as difficult to eradicate from buildings and survives most conventional household pest  
control treatment . The spraying of a colony only causes budding to occur so this species is  
controlled almost exclusively with various baits. Methoprene granular baits appear to be effective in  
controlling colonies .

---

## BLACK HOUSE ANT

*Hypoclinea glabra* , *Iridomyrmex glaber*

Length 2.0 to 2.5 mm; antennae 12-segmented; mandibles with 8 teeth and 1 or 2 denticles; petiolar scale rounded and forming an even arch dorsally; colour shiny black or brown.



Only a few details of the biology of this species are known. *O. glaber* is well adapted for living in open or semi-open habitats in this country, nesting under stones or in dry fallen logs. Often found in domestic gardens; occasionally workers enter houses. They form conspicuous files on tree trunks in their search for honeydew and small insects and may nest above ground, having often been seen trailing into holes in trees, fenceposts and flax flower stems .

Since its establishment, *O. glaber* has spread to most parts of the North Island and to urban Nelson. It has been found in both urban and rural areas. It seems to show a strong preference for exploiting the margin between forest and scrub, judging by the large number of samples of the ant recorded in this habitat.

Do not sting. In Australia, the genus is reported as "often foraging in houses where they show a preference for fluids and sweets". Not noted as a major house pest in New Zealand, although commonly collected in urban gardens and occasionally from houses. As it is an arboreal species it will likely occupy very different habitats from native ant species, none of which nest above the ground.

---

## SOUTHERN ANT

*Monomorium antarcticum*



*M. antarcticum* is by far New Zealand's most universal ant species, being found throughout the North and South Islands, on Stewart I., Three Kings Is, Chatham Is and offshore islands.

Polymorphic, length 3 - 5 mm; antennae 12-segmented; mandibles usually 5-toothed; metanotal groove distinct or feebly impressed; smooth and shiny without sharp spines on the propodeum; some antarcticum populations have blunt spines on the propodeum; body colour variable (but uniform within a colony) — orange, yellowish brown, dark brown, black; in all colour forms, apart from black, the antennae and legs are a different shade from the body.

This species is a generalist, preying on small insects, scavenging and “milking” homopterans. Small seeds may be harvested, suggesting a possible impact on the establishment of pasture grasses. Workers forage haphazardly rather than following specific routes, which is in line with the apparent absence of trail pheromones (Blum 1966). Nests can be small or highly populous with thousands of workers; construction can be complex with galleries at different levels, particularly in soil under stones. Nests also occur in and under rotting logs. Habitats exploited include native forests and grasslands, pastures and household gardens.

Commonly sampled in pitfall traps and litter and moss extractions and workers are attracted to a wide variety of baits.

Common in urban environments. Can be a minor nuisance due to their attraction to a variety of foods, but do not forage indoors. They have a strong bite.

---

## DARWIN'S ANT

### *Doleromyrma darwiniana*



This species was first recorded as nesting here in 1959, from Penrose, Auckland. The nest was destroyed by Department of Agriculture officials. A probably separate establishment in Christchurch was first reported in 1979 and it has since been located at several localities in the Christchurch-Lyttelton area.

Apart from some spreading northward in the Auckland area, this species still tends to remain associated very closely with towns or cities with ports, strongly suggesting separate port invasions in some cases. Thus it has been recorded in Whangarei, Mt Maunganui, Gisborne, Napier, Blenheim, Nelson and Lyttelton.

Length about 2 mm; colour of head dark brown, rest of the body and legs light brown. Refer also to the generic features above. Similar in appearance to Argentine ants (*L. humile*) but workers are easily separated in the field as they give off a strong odour when crushed (little or no odour for Argentine ants)

They occur most commonly in dry forested areas, including coastal scrub or heath, where they nest in soil, under rocks or rotten logs, or occasionally in abandoned nests of other ants. Nests usually contain several hundred workers which disperse quickly into protected areas when disturbed." They are occasionally found in houses in both Australia and New Zealand. Specimens of *D. darwiniana* in this country have been collected mainly in urban locations, industrial and residential (domestic gardens, for example).

Appear to spread predominantly by budding and can build up large densities. Commonly found nesting in situations such as potted plants, probably facilitating their spread around New Zealand.

Not capable of stinging but will occasionally enter houses in large numbers foraging for sweet foods. Attains large densities in urban gardens becoming a nuisance and may displace other invertebrates. Tends aphids and mealy bugs and may also spread disease.

---

## Tiny Brown Ant

*Monomorium antipodum*



*M antipodum* shows an arc of distribution, beginning in the far north and extending through the east of the North Island to Wellington and Nelson provinces; a clear southern limit is indicated. There is an isolated record from New Plymouth in Taranaki.

Length about 1.6 mm; antennae 11-segmented with a 3-segmented club; mandibles 4-toothed; metanotal groove deeply impressed; colour of body reddish-brown, antennae yellow, tibiae and femora brown.

This species is small and non-aggressive. Similar sized species in Australia are generalist scavengers. It has been observed feeding on dead insects and dried Argentine ant baits long after other ants have stopped foraging, supporting its likely scavenger status. It is often sampled in coastal vegetation or in forest margins, but there are very few collection records from forest, unlike many of our other native ants. Also, unlike other native ants, this species frequently enters buildings. This may indicate that the species is a disturbance specialist.

It is attracted to protein and sugar baits, and caught in pitfall traps.

It is commonly encountered in buildings in some parts of the country and will turn up in bathrooms and kitchens. Trails can be seen to dead insects on window sills and occasionally it will infest sugar bowls and other food. It is a species about which householders commonly ask for advice on control.

## **CONTROL**

Control can involve baiting, repellent sprays and dusting.

The correct method of ant control is to locate the full extent of the infestation and to track the trails all the way back to the source, and locate the nests before treatment.

The outside areas of entry will be treated with a residual pesticide to a height of 1 metre up the wall and 2 metres out from the wall. If numerous entry points are located the entire perimeter of the building will require treatment, as will the nesting areas. Recently baiting has also proved successful in controlling ant populations.

As can be realised by the nest locations, it is virtually impossible to completely eradicate an ant problem.

Because of the breeding habits of these pests, we recommend that all affected areas be treated by one or more of the above methods where appropriate.

Eliminate food sources and entry points into buildings

### **Non-chemical control**

- Clean up food scraps, spilt sugar and fat in food preparation & mess areas.
- Keep sugary foods in containers with tight fitting lids.
- Keep outdoor rubbish areas free of food scraps.
- Seal cracks around foundations, drains etc.
- Tip hot water over ant trails and into cracks in paths from which they emerge (dilutes their chemical trail).

### **Chemical Control**

- Apply a contact insecticide around areas where ants are a nuisance and around entry points, particularly around drains, doorways, steps and foundations.
- Apply a slow-acting bait at sites where ants feed. (This will be taken back to the nest where it will kill most of the ants). This may take 2 – 3 weeks to gain control.