

Invasive Ant Threat



INFORMATION SHEET Number 32 • *Tapinoma melanocephalum*

Risk: High

Tapinoma melanocephalum (Fabricius 1793)

Taxonomic Category

Family:	Formicidae
Subfamily:	Dolichoderinae
Tribe:	Dolichoderini
Genus:	<i>Tapinoma</i>
Species:	<i>melanocephalum</i>



Common name(s): ghost ant, tramp ant, black-headed ant, tiny yellow house ant, black-headed ant, tiny yellow house ant, house infesting ant (Harada 1990), awate-konuka-ari (Japan) (www39), albaricoque (Puerto Rico) (Smith 1965), hormiga bottegaría (Cuba) (Smith 1965).

Original name: *Formica melanocephala* Fabricius

Synonyms or changes in combination or taxonomy: *Myrmica pellucida* Smith, *Formica nana* Jerdon, *Formica familiaris* Smith, *Tapinoma (Micromyrma) melanocephalum* var. *australis* Santschi, *Tapinoma (Micromyrma) melanocephalum* var. *australe* Santschi

Current subspecies: nominal plus *Tapinoma melanocephalum* var. *coronatum* Forel, *Tapinoma melanocephalum* var. *malesianum* Forel

General Description

Identification

Size: monomorphic. Total length c. 1.5 mm, ranging between 1.3 and 1.9 mm.

Colour: distinctively bicoloured: head (including antennae, except for first 2 segments) and sides of alitrunk blackish-brown; dorsal alitrunk (except propodeum) and legs pale yellow. Gaster mostly pale, sometimes with brown patches.

Surface sculpture: head and body mostly with fine sculpture, appearing slightly dull.

General description: antennae 12-segmented. First antennal segment (scape) long, surpassing the posterior border of head. Eyes large, with 9–10 ommatidia in the longest row. Mandibles each with 3 large teeth and about 7 small denticles, and with the surface containing the teeth and the surface near the clypeus rounding gradually into one another (basal angle absent). Clypeus without longitudinal carinae, anterior margin slightly concave. Alitrunk in profile almost smoothly convex, with slight metanotal depression. Propodeum without spines, the upper surface shorter than the rear surface. One rudimentary node (petiole) present, which lacks a distinct forward face and is partially or completely concealed (viewed from above) by forward projection of the first segment of the gaster. Gaster with 4 segments on its upper surface. Dense fine pubescence all over, erect setae on clypeus and gastral apex only. Stinger absent.

***Tapinoma* / *Technomyrmex* separation:** in *Tapinoma*, there are 4 segments on the upper surface of the gaster, while in *Technomyrmex* the gaster has 5 segments on its upper surface (although the fifth may be small and retracted in some specimens). In addition, *Technomyrmex* workers are generally larger than *Tapinoma* workers and are black rather than brown.

Sources: Passera 1994; www1; www4

Behavioural and Biological Characteristics

Feeding and foraging

T. melanocephalum foragers are opportunists (Andersen & Reichel 1994). Workers have the habit of running rapidly and erratically and omit an odour like rotten coconuts (Smith 1965). Sometimes they can be found trailing, where movement is more slow and deliberate, and on close inspection some trailing workers can often be seen carrying brood (www2). They forage on many household foods, especially sweet foods, and in hot climates and glasshouses tend honeydew-excreting insects. Also feed on dead and live insects (Smith 1965) and root scales (Smith 1936 cited in Fowler et al. 1990). Foragers locate and recruit to food rapidly (Lee 2002), and recruit in numbers - Clark et al. (1982) frequently recorded 33-64 foragers at small baits - but are likely displaced when dominate ants recruit to food in larger numbers (e.g., *Wasmannia auropunctata* - Clark et al. 1982). Clark et al. (1982) found that *T. melanocephalum* was frequently the only ant present on sugar water baits but the species most often replaced - suggesting a rapid utilisation foraging strategy.

Colony characteristics

T. melanocephalum have polygynous, unicolonial, colonies that can build up large numbers (Smith 1965), with individual nests containing 100 -1000 individuals (Harada 1990). Generally, the colonies occupy local sites that are too small or unstable to support entire large colonies (www2) and nests readily exchange workers along odour trails. There does not appear to be any fighting between members of different colonies or nests, at least when they originate from the same area (Bustos & Cherix 1998; www2). They often occupy temporary habitats (plant stems, clumps of dried grass, debris, under potted plants) and readily migrate if disturbed or conditions become unfavourable (Passera 1994; Appel et al. 2004). Queens have a very short lifespan of only a few weeks (Harada 1990 quoted in Passera 1994 [but information in Harada 1990 refers to *T. sessile*]).

Dispersal

T. melanocephalum spreads from focal colonies by colony budding (Smith 1965; Bustos & Cherix 1998). Queens walk on foot accompanied by workers to a new nesting site. This method of dispersal aids spread of this species over relatively short distances and ensures that they become dispersed throughout suitable habitat. In addition dispersal is human assisted. In urban environments colonies may occupy, and be transported on, a huge variety of household goods e.g., laptops (MAF interception), potted plants (www2), luggage (Appel et al. 2004), cut flowers (Appel et al. 2004), instrument case lining (Harada 1990), piles of clothing (Harada 1990), and probably a wide variety of other goods. The main requirement for successful transfer is that the goods end up in a suitable heated environment.

Habitats occupied

T. melanocephalum appears highly flexible in the habitats occupied, providing there is some form of disturbance allowing it to establish ahead of more dominant species. It frequently nests in unstable and temporary habitats such as plant stems, clumps of dry grass, or other debris (Passera 1994). It nests at ground level and arboreally. In temperate regions it is only associated with greenhouses and heated buildings (Smith 1965; Francoeur 1977).

Global Distribution (See map)

Native to

Old World tropics (Deyrup et al. 2000) but it has spread so widely that is unclear if its native range is Asia or Africa (Wilson & Taylor 1967).

Introduced to

This prominent tramp species is widely distributed in the tropical and subtropical zones of the world. It also is recorded from a number of locations in temperate areas where it survives (either temporarily or permanently) in heated buildings (e.g., Germany – Steinbrink 1987; Canada – Francoeur 1977; Finland - Sorvari 2002).

History of spread

T. melanocephalum is a common tramp species frequently intercepted and spread with trade for well over a century. It was first recorded in Florida in 1930 and is now common from south Florida North to Volusia County (about Lat 29.2) (Deyrup et al. 2000). The ant was first reported in Texas in 1994, probably in a tropical rainforest exhibit in Galveston (Cook et al. 1994). It probably arrived on a shipment of plants from Florida (Cook et al. 1994) and no further records have been reported confirming its spread to other counties. It has been found in several other locations in North America in association with heated buildings, the earliest record found from Virginia in 1933 (www55).

Interception history at NZ border

Very commonly intercepted at the border (> 80 times) on a range of commodities from fresh produce to electronic equipment with the Pacific (75%), particularly Fiji and Tonga, being the predominant origin of interceptions. A nest has been found at the Ports of Auckland.

Justification for Inclusion as a Threat

This species has a widespread distribution (including Australia and the Pacific) and is commonly intercepted at the New Zealand border. Incursions have occurred here in the past. It is an urban pest capable of infesting buildings in large numbers (Lee 2002) and has established in temperate locations (Francoeur 1977). It is capable of transporting pathogenic microbes in hospitals (Fowler et al. 1993). Some people suffer a slight, red irritation of the skin following contact with this ant (Collingwood et al. 1997).

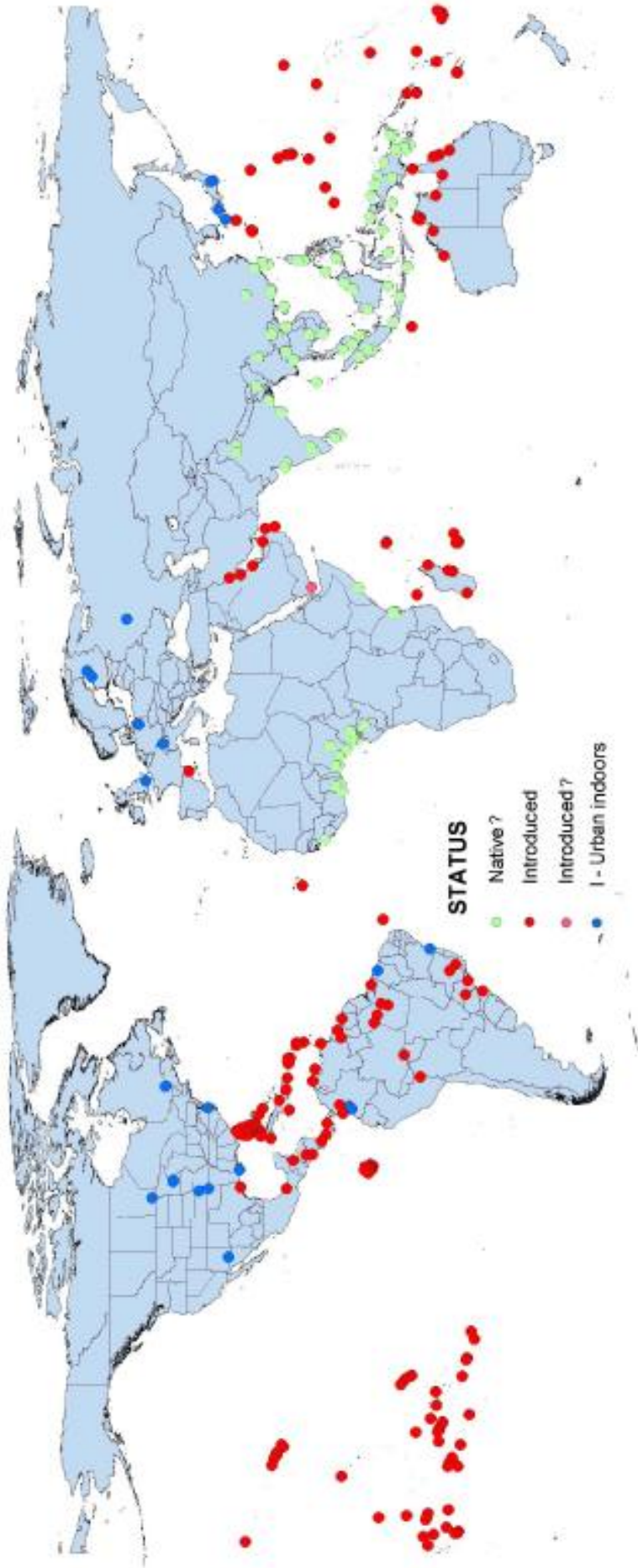
Mitigation factors

Unlikely to be a pest outside of urban areas.

Control Technologies

Foragers will take baits but it can be difficult getting effective control (Lee 2002). Fipronil in sugar syrup is highly effective in the laboratory (Ulloa-Chacon & Jaramillo 2003). There are no documented reports of eradication of populations of this species (Stanley 2004).

Compiled by Richard Harris & Jo Berry



Global distribution of *Tapinoma melanocephalum* (Fabricius 1793)