

# Invasive Ant Threat



INFORMATION SHEET Number 25 • *Solenopsis molesta*

Risk: Medium

## *Solenopsis molesta* (Say)

### Taxonomic Category

Family:	Formicidae
Subfamily:	Myrmicinae
Tribe:	Solenopsidini
Genus:	<i>Solenopsis</i>
Species:	<i>molesta</i>

**Common name(s):** thief ant, grease ant, sugar ant, little yellow ant

**Original name:** *Myrmica molesta* Say

**Synonyms or changes in combination or taxonomy:** *Solenopsis debilis* Mayr, *Myrmica (Tetramorium) exigua* Buckley, *Myrmica minuta* Say

**Current subspecies:** nominal plus *Solenopsis molesta* var. *validiuscula* Emery

### General Description

*Solenopsis generic diagnosis:* Small to medium-sized ants, total length of workers around 1–9 mm. Worker caste monomorphic or polymorphic. Antennae 10-segmented, including a 2-segmented club. Eyes small to medium in size. Mandibles with 4 or 5 teeth. Clypeus with a pair of longitudinal carinae that diverge anteriorly and run to margin where they often project as a pair of teeth or denticles. Anterior clypeal border with one median seta present, clearly differentiated and conspicuous. Rear face of propodeum more or less rounded, never with teeth, spines or thin flanges. Two nodes (petiole and postpetiole) present. Stinger extruded in most alcohol-collected specimens. Most species pale yellow to reddish brown (a few species dark brown to black) and predominantly smooth and shining usually with sparse, long hairs.

*Distinction from other genera:* Workers of *Solenopsis* are most often confused with workers of *Oligomyrmex*. They can be separated by the single central hair on the front margin of the clypeus (paired hairs are present in *Oligomyrmex*) and the rounded rear face of the propodeum (spines, teeth or flanges are present in *Oligomyrmex*). *Solenopsis* may also be confused with smaller species of *Monomorium*. In this case, the distinctly 2-segmented club will allow the identification of *Solenopsis*.

#### *Identification of Solenopsis molesta worker*

**Size:** not polymorphic although some minor size variation with colonies. Total length 1.3–1.8 mm.

**Colour:** head brown, body yellowish or light brown to reddish or dark brown.

**Surface sculpture:** body mostly smooth and shiny. Dorsal surface of the head with sparse, setae-bearing punctures, these mostly absent from the medial area.

**General description:** antennal club large; scape reaching more than half distance between eye and posterior border of

head. Eyes small, flat, oval, with 4 to 6 ommatidia or less. Mandibles each with 4 teeth; 3 strong teeth at apex and one smaller on inner margin. Longitudinal carinae on clypeus projecting from anterior margin as a pair of teeth. Head subquadrate, slightly longer than wide; with a distinct groove at occiput. Propodeum on same level as alitrunk, short, gradually rounded. Petiole longer, higher but narrower than postpetiole. Top of head with setae-bearing punctures and erect setae; alitrunk and petiole sparsely pubescent. Gaster oval with first segment longer than half total length. Sting large.

Sources: Hayes 1920, Smith 1965

Formal description: Hayes 1920

## Behavioural and Biological Characteristics

### *Feeding and foraging*

The name “thief ants” refers to the habit of nesting in or very near the nests of other ants, which they rob of food and brood (Smith 1965). Workers are light avoiding and have an underground foraging habit. This species is almost omnivorous: they feed on seeds and plant fluids, ripe fruit, tend plant lice, mealy bugs and scale insects, and take other insects (Hayes 1920, Smith 1965). In houses, they feed on meats, breads, sweets, ripened fruits, animal fats, vegetable oils, nuts and dairy products (Smith 1965). Their extremely small size allows them to get inside many packages. May bite or sting people in bed at night (Smith 1965), with their sting “like the puncture of a very fine needle” (www40).

### *Colony characteristics*

Colonies may contain many hundreds to a few thousand individuals (Smith 1965) and one or many queens (Hayes 1920). Colonies can be founded by single queen; queens have also been observed carrying a worker attached to their bodies (Smith 1965). Colonies may move due to unfavourable conditions but are not generally highly mobile, with the nest consisting of a series of tunnels in soil with an expanded brood chamber (Hayes 1920). Nests are usually under stones, and occasionally in the open with small crater openings.

### *Dispersal*

Nuptial flights occur in summer and mating occurs in the air (Smith 1965; Mackay & Mackay 2002). There is a report of this species nesting in ships (Wheeler 1910, in Hayes 1920). Their small size and habit of nesting in buildings means that human assisted dispersal is also likely to be an important dispersal mechanism, although the ant has not dispersed yet widely from its native range.

### *Habitats occupied*

Nests in houses and has also been found in Blue Ridge Mountains, USA at altitudes of 1000 – 1680 m (Smith 1965).

## Global Distribution (See map)

### *Native to*

North America. Smith 1965 states “a native species which ranges through the eastern and central United States from southern Canada to the Gulf Coast”.

Wheeler & Wheeler 1986 states range as “Canada, the lower 48 states, and northern Mexico”.

### *Introduced to*

Present in Malaysia where it is found indoors (Na & Lee 2001).

### *History of spread*

Penang, Malaysia is the only record from outside the native range. Although present in mainland USA, it has not been transferred to Hawaii (www46).

### *Interception history at NZ border*

There have been no interceptions of this species at the New Zealand border. There have been several unidentified *Solenopsis* intercepted, 2 of which originate from the US. One of these interceptions was a nest in wooden crates of plate glass from New Orleans in 1970, the other workers in timber.

## **Justification for Inclusion as a Threat**

*Solenopsis molesta* occurs across a wide climatic range in North America. It is a pest of horticulture and in urban areas (Hayes 1920; Smith 1965). It feeds on a large variety of household foods and their small size allows them to get inside food packages that other larger ants cannot enter. Introduced outside native range (Malaysia) where they nest indoors and are considered a pest (Na & Lee 2001; Lee 2002). Due to their small size their arrival in New Zealand could go unnoticed.

### *Mitigating factors*

Not known in Southern hemisphere. Not intercepted at New Zealand border. Malaysia only recorded establishment outside native range.

## **Control Technologies**

These ants prefer food with high protein content, so baits with a peanut butter base are attractive (www8).

Fipronil spray (0.06%) used as a barrier treatment was effective for up to eight weeks against house invading ants including *S. molesta* (Scharf et al. 2004).

*Compiled by Richard Harris & Jo Berry*

