

Invasive Ant Threat



INFORMATION SHEET Number 17 • *Paratrechina bourbonica*

Risk: Medium

Paratrechina bourbonica (Forel)

Taxonomic Category

Family:	Formicidae
Subfamily:	Formicinae
Tribe:	Plagiolepidini
Genus:	<i>Paratrechina</i>
Species:	<i>bourbonica</i>

Common name(s): robust crazy ant (Deyrup et al. 2000), flesh-eating ant (www27), kebuka-ameiro-ari (Japanese, for subspecies *amia*) (www1)

Original name: *Prenolepis nodifera* r. *bourbonica* Forel

Synonyms or changes in combination or taxonomy: *Prenolepis bourbonica* r. *bengalensis* Forel, *Prenolepis bourbonica* r. *hawaiensis* Forel, *Prenolepis* (*Nylanderia*) *bourbonica* subsp. *skottsbergi* Wheeler, *Prenolepis bengalensis* Forel, *Prenolepis bourbonica* Forel, *Prenolepis bourbonica* var. *bengalensis* Emery

Subspecies: nominal plus *Paratrechina* (*Nylanderia*) *bourbonica* var. *amia* Forel, *Paratrechina* (*Nylanderia*) *bourbonica* var. *farquharensis* Forel, *Paratrechina* (*Nylanderia*) *bourbonica* subsp. *ngasiyana* Forel

General Description (worker)

***Paratrechina* generic diagnosis:** *Paratrechina* can be distinguished from other genera in subfamily Formicinae by the following combination of characteristics: Total length 1.5–3.5 mm. Mandible with 5 or 6 teeth. Antenna 12-segmented; scape frequently surpassing posterior border of head by 4 or 5 times the maximum diameter of the scape or more; funiculus without a club; funicular segments longer than broad; terminal segment at least twice as long as any other segment. Eye usually well developed and about one-fifth or more as long as the head. Dorsal surface of head and mesosoma usually with coarse, bristle-like hairs that are often dark brown or black and are arranged in pairs (www13).

Species level identification: Identification to species is difficult.

Identification of *P. bourbonica*

Size: monomorphic, relatively small. Total length 2.5–3.2 mm.

Colour: body uniform dark brown to blackish brown; legs dark brown except for femora and tibiae, which are lighter brown.

Surface sculpture: head punctate, other surfaces strongly shining though this obscured by pubescence.

General description: antenna 12-segmented, without a club; scape not more than 1.5x as long as head including closed mandibles. Each funicular segment as long as wide or longer than wide. Eyes moderately large. Head broad; mandibles each with 6 teeth. Clypeus without longitudinal carinae. Alitrunk slightly longer than head length; pronotal dorsum convex in profile; mesonotal dorsum almost straight; metanotal groove deeply incised. Propodeum without spines, posterodorsal

border a low rounded angle. One node (petiole) present, somewhat hidden by the anterior surface of the gaster. Head and gaster with abundant dark, erect hairs: pronotal dorsum with two pairs of long erect hairs and three pairs of shorter hairs; mesonotal dorsum with three pairs; none on propodeum. Hind femora and tibiae with erect or suberect hairs. Stinger lacking; acidopore present.

Distinction from P. vaga: Wilson and Taylor (1967) provide almost the only key available that distinguishes these two species, using the following characters:

vaga: head width of most workers 0.45 to 0.62 mm; body usually light to medium reddish brown.

bourbonica: head width of most workers 0.65 to 0.72 mm; body usually darker brown brown.

Sources: Trager 1984; www13

Formal description: Trager 1984

Behavioural and Biological Characteristics

Feeding and foraging

P. bourbonica is active day and night and omnivorous (Deyrup et al. 2000; www4). They eat seeds, collect honeydew from sap-sucking insects, and workers aggressively attack and eat small insects and injured or dead larger insects (Trager 1984; www2). The prey is carried or dragged to the nest in pieces. *P. bourbonica* recruits workers >5 m to rich food sources but is unable to defend them from *Solenopsis invicta* (Trager 1984). Workers are usually seen in large numbers running erratically, so distinct trails are difficult to discriminate (www2). *P. bourbonica* move rapidly, and are very successful in rapid prey location (Whitcomb et al. 1982). They are active at low levels throughout the night in summer, but more active in mornings in autumn (especially after rains) (Whitcomb et al. 1982).

Colony characteristics

Nests are usually in soil and colonies require high humidity (Trager 1984; Deyrup et al. 2000). They are transitory and ants may be seen relocating, carrying brood from one nest site to another (www9). Nests can produce alates at any time of the year and may have multiple-winged males and queens (Wilson & Taylor 1967; Trager 1984).

Dispersal

Nuptial flights have been observed (Trager 1984), but the primary method of dispersal not confirmed (Passera 1994). After mating, females are apparently attracted to areas of high reflectivity such as walkways, buildings and bodies of water (Trager 1984).

Habitats occupied

P. bourbonica are commonly found in urban areas and other anthropogenically disturbed sites, such as rubbish piles, rotten wood, orchards and tree buttresses, grass areas, inside houses (Wilson & Taylor 1967; Whitcomb et al. 1982; Wojcik 1994; Deyrup et al. 2000; www9). On Samoa, *P. bourbonica* prefer more disturbed habitat than either *P. vaga* or *P. minutata* (Wilson & Taylor 1967).

In Hawaii, *P. bourbonica* are widespread and common (Reimer 1994; Wetterer 1998b), tolerate a range of environmental conditions, and are often collected in disturbed montane habitats (1000–1200 m). They are occasionally found in montane, mesic conditions (120–250 cm annual rainfall) up to 1800 m (Reimer 1994). However, they are more commonly found at lower tropical elevations in dry or wet environments. *P. bourbonica* occur in some natural habitats in its introduced range, such as mangrove islands off Florida keys, along intermittently flooded trails in Everglades National Park



and in lakeside marshes (Trager 1984). All of these areas have in common frequent flooding and clumping vegetation, part of which normally remains above the high water mark, and an absence of other terrestrial ants of similar habits (Trager 1984). In Hawaii, *P. bourbonica* are found in low-growing vegetation and in undisturbed forest (but only within 200 m of a road) (Wetterer 1998a). Throughout the Pacific, *P. bourbonica* are found under the bark of coconut palms, on tree trunks in rainforest, and on the seashore (Wilson & Taylor 1967)

Global distribution (See map)

P. bourbonica is a widespread tropical tramp species (Trager 1984). Probably originating from the old world tropics (Asia) (Wilson & Taylor 1967; Deyrup et al. 2000), the species has been spread by commerce throughout the Indian and Pacific Oceans and the new world tropics (Wilson & Taylor 1967). Most records are from the introduced range and tropical areas, but there are several records from temperate areas associated with heated buildings (e.g. Montreal – www55; Missouri – www24) that may be temporary populations.

History of spread

The species rapidly colonises disturbed sites (Trager 1984). Among the *Paratrechina* it is second only to *P. longicornis* in the frequency with which it is transported from place to place with plant materials (Trager 1984). For example, the ants in the Missouri tropical conservatories arrived with nursery stock from Florida (www24).

Interception history at NZ border

Total of 10 interceptions, the first in October 1997 (9 in Auckland, all of them from Pacific islands, 4 of them on fresh produce with air passengers). Only 1 queen (and no nests) has been intercepted in cargo arriving in Auckland.

There have also been 56 interceptions (including 7 separate queens) of unidentified *Paratrechina* species, some of which may well be *P. bourbonica* and 39 interception records for *P. vago*, some of which may have been misidentified *P. bourbonica* individuals.

Justification for Inclusion as a Threat

Paratrechina bourbonica is widespread tramp species that has frequently been intercepted at the New Zealand border. Northern New Zealand may be climatically suitable for establishment. An incursion of this species could easily be missed due to its morphological similarity to *Paratrechina* species already established. It is occasionally a minor nuisance in outdoor eating areas, can be abundant in gardens, and occasionally enters houses, but rarely in great numbers (Deyrup et al. 2000).

Mitigating factors

Rarely enters houses in great numbers (Deyrup et al. 2000). Likely to be restricted to human-modified habitats and have few environmental consequences.

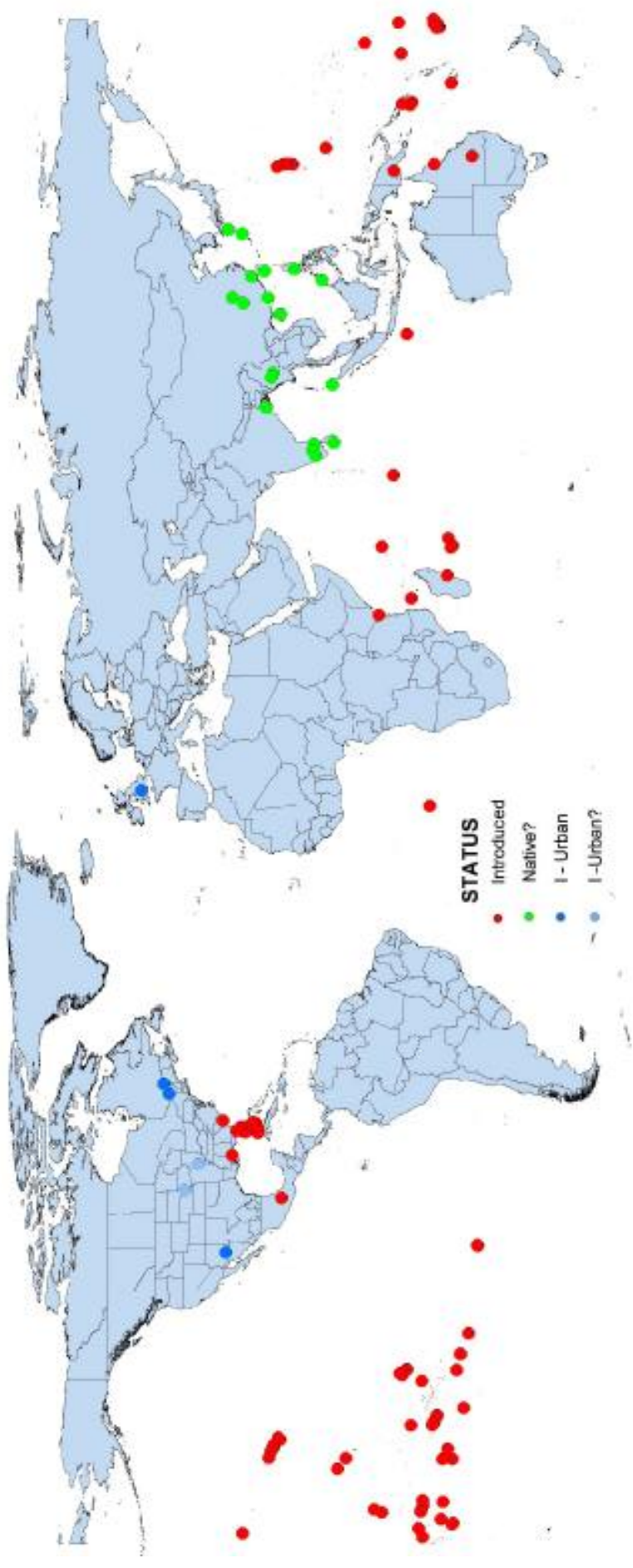
Control Technologies

Little is known about control for this species. *P. bourbonica* workers often forage long distances, so nests may be difficult to find for control (www9). Peanut butter baits have been used in Hawaii to collect this species (www28).



Compiled by Margaret Stanley, Jo Berry, & Richard Harris





Global distribution of *Paratrechina bourbonica* (Forel)