Invasive Ant Threat

INFORMATION SHEET Number 20 • *Paratrechina longicornis* Risk: High

Paratrechina longicornis (Latreille)

Taxonomic Category

Family:	Formicidae
Subfamily:	Formicinae
Tribe:	Plagiolepidini
Genus:	*Paratrechina*
Species:	*longicornis*

Common name(s): crazy ant (Smith 1965), long-horned ant, hairy ant (Neumann 1993), higenaga-ameiro-ari (www1), slender crazy ant (Deyrup et al. 2000).

Original name: *Formica longicornis* Latreille

Synonyms or changes in combination or taxonomy: *Paratrechina currens* Motschoulsky, *Formica gracilescens* Nylander, *Formica vagans* Jerdon, *Prenolepis longicornis* (Latreille)

Current subspecies: nominal plus *Paratrechina longicornis* var. *hagemanni* Forel

General Description

Identification

Size: monomorphic, worker total length 2.3–3 mm.

Colour: head, thorax, petiole, and gaster dark brown to blackish; the body often has faint bluish iridescence.

Surface sculpture: head and body mostly with inconspicuous sculpture; appearing smooth and shining.

General description: antennae and legs extraordinarily long. Antenna slender, 12-segmented, without a club; scape at least 1.5x as long as head including closed mandibles. Eyes large, maximum diameter 0.3 times head length; elliptical, strongly convex; placed close to the posterior border of the head. Head elongate; mandibles narrow, each with 5 teeth. Clypeus without longitudinal carinae. Alitrunk slender, dorsum almost straight from anterior portion of pronotum to propodeal dorsum. Metanotal groove slightly incised. Propodeum without spines, posterodorsal border rounded; propodeal spiracles distinct. One node (petiole) present, wedge-shaped, with a broad base, and inclined forward. Dorsal surface of head, alitrunk and gaster with long, coarse, suberect to erect grayish or whitish setae. Propodeum without erect hairs. Hind femora and tibiae bearing suberect hairs with length almost equal to the width of the femora. Stinger lacking; acidopore present.

Sources: www1

Formal description: Creighton, 1950

This species is morphologically distinctive and is one of the few *Paratrechina* species that is not consistently misidentified in collections (Trager 1984).

Behavioural and Biological Characteristics

Feeding and foraging

Foragers are opportunists (Andersen 1992). They feed on live and dead insects, honeydew, fruits, and many household foods (Smith 1965). Honeydew is obtained by tending plant lice, mealy bugs and scales (Smith 1965; Farnsworth 1993). These ants are especially fond of sweet food sources (Smith 1965). Foragers will also collect seeds (Smith 1965). Large prey items, as large as a lizard, are carried by a highly concerted group action (Trager 1984). They appear to show a strong preference for protein during the summer months, when they will refuse honey or sugar baits (Trager 1984). They are able to forage in the intertidal zone and "surf" if caught by a wave (Jaffe 1993). Workers are very fast moving, darting about in a jerky, haphazard fashion as if lacking a sense of direction (Smith 1965). They commonly form wide but thinly populous trails up to 0·5 m wide over walls and floors (Collingwood et al. 1997). They can forage long distances, with foragers being recorded 25m from their nest (Jaffe 1993). They are very quick to discover food (Lee 2002) but are often displaced when behaviorally dominant ants recruit to food (Banks & Williams 1989). In tropical locations they forage continuously (Meier 1994).

Colony characteristics

Colonies are polygyne (Passera 1994). Mallis (1982, cited it Thomson 1990) stated nests contain up to 2000 workers and 40 queens. Reproductives are produced throughout the year in warm climates but are more restricted (~5 months) in cooler climates (Gainsville, Florida - Trager 1984). Workers are probably sterile (Passera 1994). Colonies occur in temporary nests (Andersen 2000), are highly mobile and will move if disturbed (Trager 1984). These ants can nest in a variety of locations from dry to moist environments (www5). They show a tolerance for nesting sites with relatively low humidity such as gaps in walls, thatching, and dry litter (Trager 1984). Outdoors, nests are primarily on the ground, often in wood, trash, and in mulch, but occasionally aborally in tree holes, and leaf axils (Trager 1984; Way et al. 1989). Indoors, nests are often in wall voids and under stored items (Smith 1965; www5). Colonies and individuals from a same location appear to show low aggression, but behave aggressively towards individuals from distant sites (Lim et al. 2003). Queens do not appear to be responsible for this lack of intraspecific aggression; rather colony odors obtained through their diet influence their behaviour (Lim et al. 2003).

Dispersal

There are two methods of dispersal that, combined, have aided in the spread of *P. longicornis* at local, regional, national and international scales – budding and human mediated dispersal. Probably of most significance is human-mediated dispersal. Natural dispersal is primarily by budding. Neither queens nor males appear fly (Trager 1984). It is a rapid coloniser, often the first species to arrive in a newly disturbed area (Lee 2002).

Habitats occupied

The crazy ant is highly adaptable, and can live in both very dry and rather moist habitats. It is usually associated with disturbance. This includes disturbed natural environments (beaches - Jaffe 1993; Dry Tortugas – Wetterer and O'Hara 2002; geothermal areas – Wetterer 1998a), urban environments (Anderson 2000; Lee 2002; www5), farms (Collingwood et al. 1997), and even on ships (Weber 1940). However, it is also present in some native vegetation in the tropics, such as in conservation areas on offshore islands of Samoa (K. Abbott personal observation). In cold climates, the ants nest in centrally heated apartments and other buildings such as glasshouses and airport terminals (e.g., Freitag et al. 2000; Naumann 1994).

Found nesting in sand in India (Jaffe 1993) and at high tide the nests were underwater but probably protected from flooding by air trapped in their galleries.

Global Distribution (See map)

Native to

Probably originates from old world tropics (Wilson & Taylor 1967) – Africa or more likely oriental origin (Smith 1965).

Introduced to

It is one of the most common tramp ants in the tropics and subtropics, and has probably achieved one of the widest distributions of all the tramp ants. It has also established in temperate regions where it is found in greenhouses and heating buildings.

History of spread

A common tramp species that is frequently intercepted and has been spread with trade for well over a century. In some locations it may not establish permanently but frequently reinvade, as Trager (1984) suggests is the case in California.

Interception history at NZ border

Commonly intercepted on containers, timber, fresh produce, cut flowers and personal effects. Nests of this species have been intercepted and recently (2001–03) several incursions have been detected in Auckland and Tauranga at the ports and a devanning (container unloading) site. Attempts to eradicate the incursions are underway.

Justification for Inclusion as a Threat

This species is frequently intercepted at the New Zealand border, and nests have been detected post border. The ant is a common tramp internationally that often invades houses and heated buildings in tropical and temperate areas (Creighton 1950; Lee 2002). It is a relatively conspicuous species. It can transport pathogenic microbes in hospitals (Fowler et al. 1993), and, at least in artificial environments, is capable of displacing other ants (Wetterer 1999b) and probably other invertebrates. Difficult to control with current commercially available baits (Lee 2002).

Mitigating factors

Despite its widespread occurrence as an urban pest there is no documented evidence of presence in high densities or detrimental impacts in native systems in invaded countries. Likely have limited impact in urban areas compared to *Linepithema humile*. Climate shows low similarity to New Zealand outside of urban areas, which will likely reduce the magnitude of any detrimental impacts should it establish.

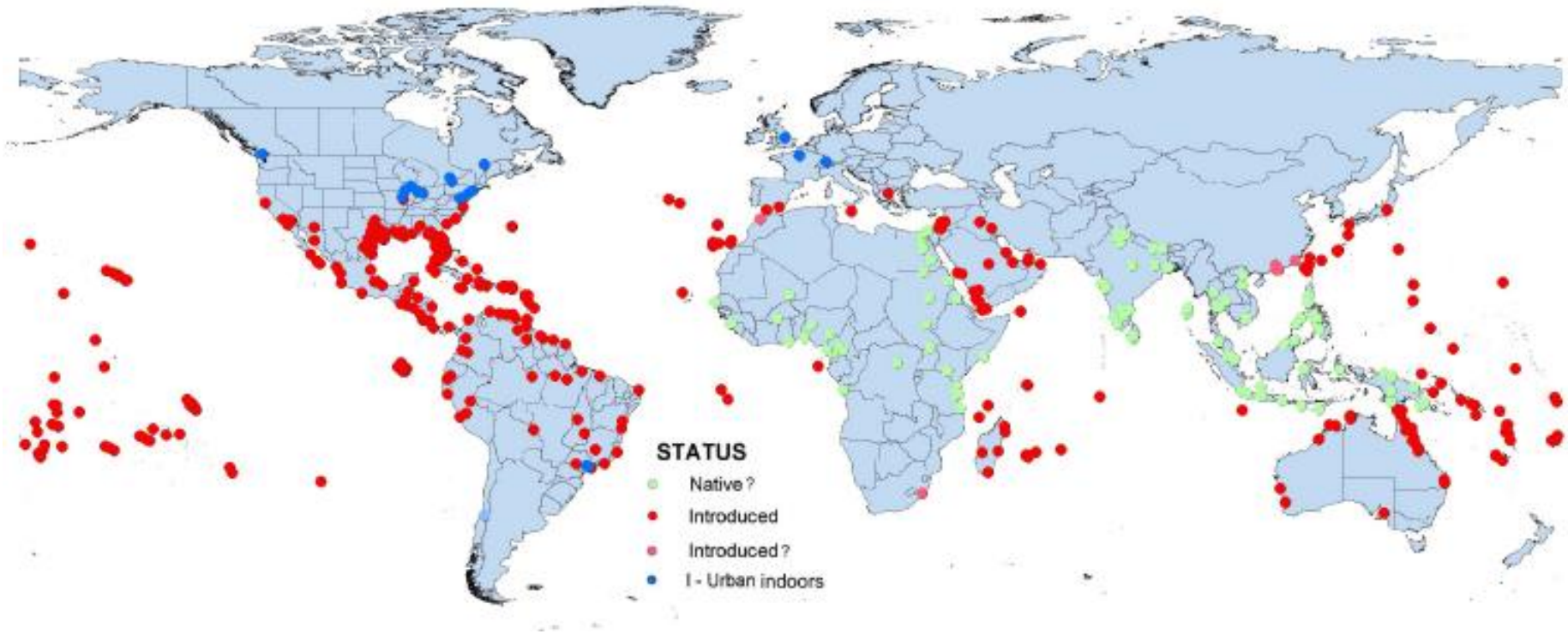
Control Technologies

There are many reports of this ant being difficult to control and commercially available baits showing limited effectiveness (Hedges 1996a; Hedges 1996b; Mampe 1997; Summerlin et al. 1998; Lee 2002; www64). It often nests some distance away from its foraging area, and nests can be in cracks in concrete or around wharf piles making nests often difficult to locate and control.

Observations during incursions in New Zealand have revealed that *P. longicornis* recruits well to Xstinguish® (T. Ashcroft, pers. comm.). However, no formal testing of bait attractiveness has been carried out and no testing of the efficacy of this bait against *P. longicornis* has been undertaken. Exterm-An-Ant® (8% Boric acid + 5.6% sodium borate) has also been used against *P. longicornis* in New Zealand and although attractive to foragers (V. van Dyk pers. comm.) its ability to kill

queens within the nest is unknown. Trials to compare the attractiveness of Xstinguish® and Exterm-An-Ant® with other potential options for management of *P. longicornis* are being conducted in Western Australia for MAF (M. Stanley pers. comm.).

Compiled by Richard Harris & Jo Berry



Global distribution of Paratrechina longicornis *(Latreille)*