Invasive Ant Threat

INFORMATION SHEET Number 4 • *Crematogaster* spp. Risk: Medium

Crematogaster spp.

Taxonomic Catergoy

Family:	Formicidae:
Subfamily:	Myrmicinae:
Tribe:	Crematogastrini
Genus:	*Crematogaster*

Common name(s): acrobat ant, shiriage-ari-zoku (Japan)

Original Name: *Crematogaster* Lund

Synonyms or changes in combination or taxonomy: *Acrocoelia* Mayr, *Tranopeltoides* Wheeler. *Cremastogaster* Mayr is an incorrect subsequent spelling of *Crematogaster* Lund repeated by many authors.

General Description (worker)

Identification

Size: workers are monomorphic or exhibit continuous size polymorphism, but there is no distinct major worker caste.

General description: this is a distinctive and easily recognized genus. Mandibles with four or five teeth. Antenna 11-segmented (with the exception of one lineage of Asian and African species, in which there are 10 segments); enlarged apically (club of 2–4 segments). Propodeum usually armed with a pair of dorsal spines. Petiole low and rounded and lacks a node on its upper surface. When the gaster is elevated the petiole fits flush against the propodeum. Postpetiole attached to the anterior dorsal surface of the first gastral segment. In profile, dorsum of gaster flat, feebly convex or concave. This contrasts to the strongly convex ventral surface. In dorsal view, the gaster is heart-shaped.

The high species diversity and lack of accepted higher level taxonomic structure means the taxonomy of this genus is confused, and there are no formally recognised species groups and species revisions.

Sources: www13; www38; www41

Behavioural and Biological Characteristics

Feeding and foraging

Generalized and omnivorous foragers, rarely predators of active prey (www41). They readily tend Homoptera, and species vary in the degree of reliance on Homoptera (www41). They are regularly encountered and often present in large numbers (www8). Workers are moderately aggressive and will attack when disturbed (www8). They display a defensive/offensive behaviour in which workers wave their gasters in the air, exuding a droplet of venom onto the spatulate sting (Buren 1959, in www41), and are avoided by most other ants (www8).

Colony characteristics

Most species are monogynous; a few are polygynous (www41). Workers are capable of ovary development and egg laying, but in the colony such activities is suppressed by the queen (Tschinkel 2002). Most species, especially those with large polydomous colonies, are aggressive and territorial (www41). Nests are found in a range of sites including in soil with or without coverings, in cracks in rocks, and arboreally in trunks and twigs (www8). Nests can contain many thousands of workers (est. 80 000 in *C. ashmeadi* – Tschinkel 2002), and may blanket forest canopies, but most are more moderately sized, and some small enough to be contained within a single dead twig (www8; www41). Large colonies are usually polydomous and can consist of several nests a few metres apart (www8; www41). The entrances of these separate nests can sometimes be connected by well-worn trails several centimetres deep (www8). Some ground nesting species will form small satellite nests under bark on trees to protect and guard the Hemoptera from which they collect honeydew (www8). Many species can make carton from masticated plant fibers, most use relatively small amounts to form partitions inside the nest or to restrict the opening of a nest in dead wood (www41). Newly mated queens of *C. ashmeadi* found colonies in abandoned galleries of wood-boring insects and rely on these insects to expand the colony as the ant does little if any excavation of its own (Tschinkel 2002).

Dispersal

Typically by mating flights in summer and founding of colonies by individual queens (Smith 1965; Tschinkel 2002; www41).

Habitats occupied

Most species are tropical, where they form dominant elements of the arboreal fauna having a major role in shaping the invertebrate community (www41). In Central America a few species nest in leaf litter, and these are usually yellow, nocturnal, and rarely encountered (www41). Major *Crematogaster* lineages in the Asian and African tropics are specialized plant ants, and at least one or two species are plant ants in the Amazonian region (www41). In Australia the members of the genus frequent all habitats, including mangroves (www4).

Some species groups have crossed the frost line, radiating in temperate zones, where they more often nest in the ground and beneath stones (www41).

Global Distribution (See map)

Native to

The 806 described species and subspecies (with an additional 2 species known from fossil records) are widespread, found in the Neotropical, Nearctic, south Palaearctic, Ethiopian, Malagasy and Oriental Regions (www4). They are widespread in the Australasian Region except New Zealand and Polynesia (www4).

Introduced to

Only a single species is recorded established outside its native range – *C. agnita*, found on West Summerland Key in Florida (Deyrup et al. 2000).

History of spread

C. agnita was first found in 1995 in Florida, but has not been sample there (Deyrup et al. 2000).

Interception history at NZ border

There have been 6 interceptions at the New Zealand border including a nest in a container from China found during the MAF container review survey. The other interceptions were workers originating from Australia (3) and the Philippines (2) in a range of freight.

Justification for Inclusion as a Threat

A widespread genus that can be a pest in the US where they nest in dead and decaying wood and can be found in buildings (Smith 1965; Klotz et al. 1995). Foragers can be a nuisance indoors and defend the colony aggressively by biting and releasing a foul odour (www42). They can kill newly hatched birds and short circuit telephone wires by removing insulation (Smith 1965). They can be ecologically dominant ants and may have economic importance, especially as several species are among the dozen or so dominant ants that influence much of the insect fauna of cocoa and other trees (www38; Tschinkel 2002). They are one of the most common groups of ants in Australia and are regularly encountered, often in large numbers (www4). There have been interceptions, including a nest, at the New Zealand border.

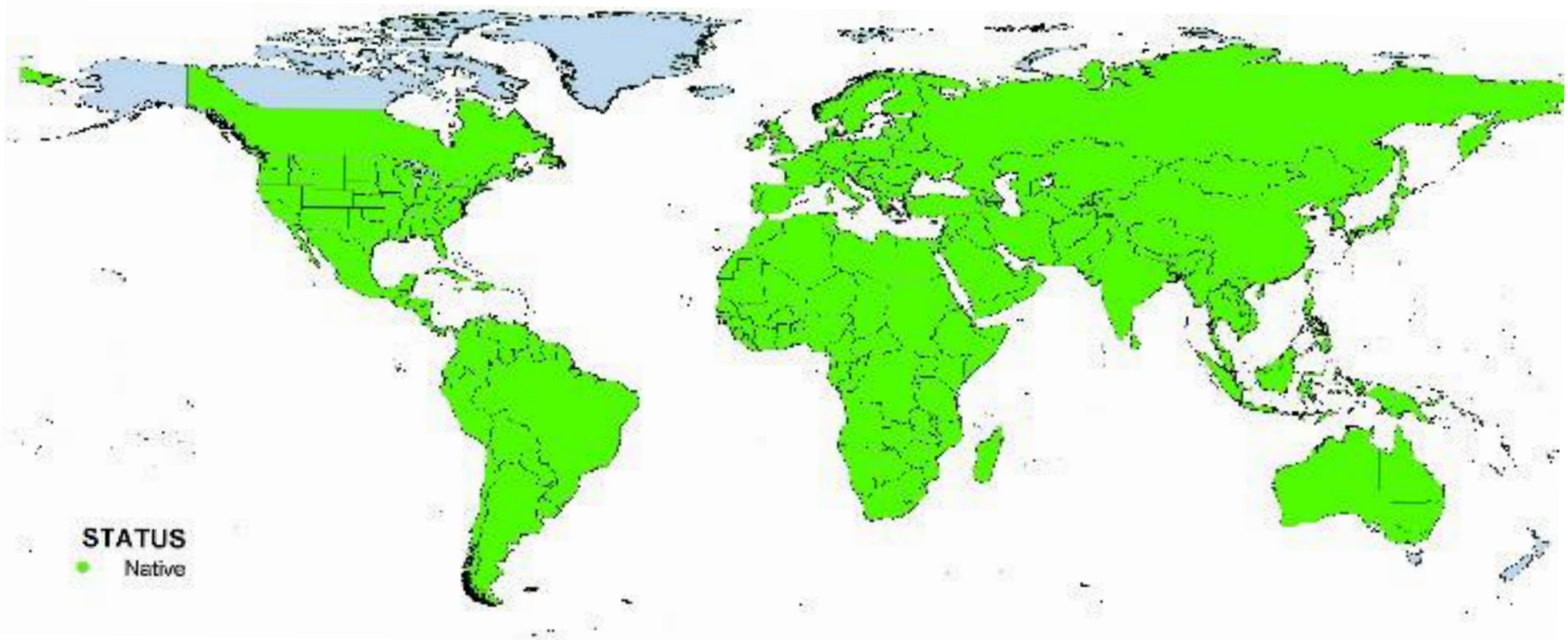
Mitigating factors

A distinctive ant – in contrast to most other ant species, the petiole is attached to the top of the abdomen and the ant can elevate the gaster above the body and point it forward – so likely to be detected early if established in New Zealand. Only a single introduction is known outside its native range, and that species not a pest (Deyrup et al. 2000). Absent from Tasmania in Australia, so may not like cold climates.

Control Technologies

They rapidly recruit to baits of sugar or protein (e.g., tuna, dead insects, catfood, termites) (Novotny et al. 1999; Tschinkel 2002; www41). In the US, management of this species in urban areas is principally through environment modification (e.g., replacing damaged wood, moving logs, stumps, leaves and grass clippings away from structures), and contact sprays if needed (www44).

Compiled by Richard Harris & Jo Berry



Global distribution of Crematogaster *spp.*