

An occurrence of two exotic ant (Formicidae) species in British Columbia

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ABSTRACT

Specimens of two exotic ant species, *Wasmannia auropunctata* Roger and *Paratrechina longicornis* Emery were found in an indoor tropical rainforest exhibit in Vancouver. Both species have spread far from their historical ranges to become established in tropical and subtropical areas around the world, and are occasionally found in greenhouses and other protected areas in temperate regions.

Key words: ants, exotic, habitat, indoor, British Columbia

DISCUSSION

Several species of tropical ants, because of the small size of the workers, polyphagous eating habits, and their ability to nest in a variety of situations, have become associated with human activities in regions far beyond their original ranges. Their ability to nest and feed within buildings allows them to live in much colder climates than would ordinarily be expected, and often causes them to be pests. They are sometimes called tramp species because of their tendency to hitch rides to new locations and to feed on spilled or unprotected human food. In January, 1994, specimens of two such ant species, *Wasmannia auropunctata* Roger (Myrmicinae) and *Paratrechina longicornis* Emery (Formicinae), were collected from within the tropical rainforest exhibit at the Vancouver Aquarium.

W. auropunctata, commonly called the little fire ant, is an aggressive, neotropical species. It is sensitive to cold temperatures and has become established in Mexico, south Florida (Spencer 1941) and California (Smith 1979), as well as other sub-tropical and tropical areas around the world. It is not a close relative of the imported red fire ant, *Solenopsis invicta* Buren, another neotropical species which has become a pest through much of the southern United States.

W. auropunctata workers are small, 1.5–2 mm long, and yellow. Members of the genus can be identified by 11-segmented antennae (terminating in a 3-segmented club), 2 obvious spines protruding from the propodeum (posterior end of the alitrunk), and frontal carinae (raised ridges on the frons) that extend posteriorly past the eyes so as to form the lateral boundaries of grooves (scrobes) into which the first segments of the antennae can be folded. There are five mandibular teeth, and the large head is much broader than the thorax (Hölldobler and Wilson 1990; Ulloa-Chacon and Cherix 1990).

Little fire ants do not construct their own nests but use sheltered locations including rotten wood, covered soil, and plant cavities. The nests are diffuse and inconspicuous and often aggregate to form large, polygyne nests. Workers are polyphagous and opportunistic feeders that prefer to collect honeydew from aphids, hunt a wide variety of prey, or collect plant material. They are attracted to fatty and oily household foods, and dirty and sweaty clothing, but not sweets. Workers have a sometimes-painful sting but generally sting only when trapped between the body and clothing or some object. They have been a pest in citrus orchards, where they sting pickers, and have been reported to drive out less aggressive ant species and to cause an imbalance in phytophagous insect communities in a number of crops by defending honeydew-producing insects from predators and parasites (Thompson 1990; Ulloa-Chacon and Cherix 1990).

At the Vancouver Aquarium, large numbers of little fire ants were found throughout the Graham Amazon exhibit, where they formed numerous foraging trails along the edges of walls and floors, along the undersides of walkways, and up the trunks of plants. In the larger foraging trails, I observed up to 60 individuals passing a given point in both directions, each minute. The ants were found tending scale insects, and were most apparent on those plants (e.g., Amazon lily, *Eucharis*) that hosted scales. Up to several hundred of the tiny ants could be found, together with the scales, on the undersides of individual lily leaves. Nests were apparently contained within cracks in large

cement "rocks" contained within the display, and in walls separating the display from various fish tanks. The nests were not examined.

W. auropunctata is occasionally found in greenhouses far from its endemic and naturalized ranges. As early as 1907, it was well established at Kew Gardens in London (Ulloa-Chacon and Cherix 1990), and Ayre (1977) reported it from Assiniboine Park, Winnipeg, MB, where it was the most numerous of several ant species in the greenhouse area of the tropical house. It is likely that it was introduced to the display at the Aquarium in plant material, associated soil, or both. The hot and humid conditions within the tropical display have recreated the ideal habitat for this species, but it is unlikely that it could become locally established elsewhere, except in such greenhouse environments. Although little fire ants do occasionally sting Aquarium staff, they are not a problem for visitors, and probably go unnoticed because of their small size.

Paratrechina longicornis workers are monomorphic, brown-black with bluish reflections, and approximately 2.5 mm long. There is a single reduced segment (petiole) between the alitrunk and the gaster, and it is somewhat rounded, rather than scale-shaped as in all the native British Columbia species of the subfamily Formicinae. The antennae and legs are unusually long, and there are long, spiny hairs on the gaster and running in 2 rows down the alitrunk. Workers have no sting and do not bite. They are rapid runners, and sometimes show jerky, erratic movements (Thompson 1990).

These ants may have originated in the Orient, although in North America they are now abundant in Florida and the Gulf States (Trager 1984). In more temperate areas they seek refuge indoors to survive cold winters (Smith 1965); they are commonly found indoors in New York city (Creighton 1950). Nests of another member of this genus, *P. fulva* Mayr, have been found in the tropical house at Assiniboine Park, Winnipeg, MB (Ayre 1977). *P. longicornis* will nest in trash, plant cavities, rotten wood, soil, or small crevices, and seek food throughout a building. They tend honeydew producers, and will also eat other insects, seeds, meats, greases, and sweets (Smith 1965). Colonies may contain up to 2,000 workers and 40 queens.

Only two *P. longicornis* foragers were found within the tropical display at the aquarium. The relative lack of abundance is not surprising in the face of the aggressive nature and large numbers of *W. auropunctata* in that area. It is possible that *P. longicornis* nests were located elsewhere in the aquarium complex, and only a small number of workers were foraging in the tropical display. The presence of this species represents little or no problem at the aquarium because of its lack of sting or bite, and small numbers.

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