MINISTRY OF AGRICULTURE
COOK ISLANDS

Bug of the week

The emerald cockroach wasp or jewel wasp (*Ampulex compressa*) is a solitary wasp known for its extraordinary manipulative behavior of cockroaches used as hosts for its larvae. It is mostly found in the tropical regions of Africa, South Asia, Southeast Asia, and the Pacific islands. The 22mm long wasps have a metallic blue-green body and are more abundant in the warm seasons of the year. Female wasps of this species sting cockroaches (specifically *Periplaneta americana*, *Periplaneta australasiae*, or *Nauphoeta rhombifolia*) delivering chemicals that paralyze the front legs of its victim and also controls the escape reflex of the victims.

The wasp then chews off half of each of the incapacitated roach's antennae, after which it feeds on hemolymph (insect blood) that slowly bleeds from antennae. The wasp, which is too small to carry the roach, then leads the victim to the wasp's burrow by pulling one of the roach's antennae in a similar fashion to a dog leash. When in the burrow, the wasp lays one or two white eggs, roughly 2 mm long, between the roach's legs. The female wasp then exits and closes the burrow entrance using debris.

The wasp eggs hatch after about 3 day and larvae feeds for 4–5 days on the roaches' hemolymph from the leg and then chews its way into its abdomen and proceeds to live as an endoparasitoid (living internally). The larvae will finally consume the roach's internal organs, finally killing its host, and will pupate forming a chocolate-coloured, thick, spindle-shaped cocoon. The fully grown wasp will eventually emerge to begin its adult life. Female wasps mate only once and can successfully parasitize several dozen roaches over their life time of a few months. Fortunately this is only one of several parasitic wasps in the Cook Islands that regulates cockroach numbers in our buildings.