

## Biocontrol agent risk assessment: A surprise find ...

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A Better Border Biosecurity (B3)-funded project investigating the interactions between the self-introduced generalist hymenopteran parasitoid *Meteorus pulchricornis* and native parasitoids of lepidopteran larvae throughout Auckland involved three years of field work. The last field trip was to Te Hauturu-o-Toi (Little Barrier Island) in December 2016 to survey some of the least-modified native forest in the North Island. Forty *Cleora scriptaria* moth larvae were collected by hand from *Piper excelsum* (kawakawa) host plants into ziplock bags, with a small amount of leaf material to support feeding. They were transported to the laboratory and reared to fate in a temperature-controlled room. Of the 40 larvae collected, twelve were parasitised by *M. pulchricornis*. This is the first record of *M. pulchricornis* from Te Hauturu-o-Toi. In addition, nine larvae were parasitised by an undescribed parasitoid (*Casinaria* sp. 3). This new species may be endemic only to Te Hauturu-o-Toi, but it may have been out-competed on the more modified habitat of mainland Auckland, and found refuge in a more pristine environment. Further surveys of island and mainland parasitoid complexes would provide better baseline risk-assessment data prior to border invasions or importing biocontrol agents.

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## What's eating green vegetable bugs?

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Green vegetable bugs (GVB) are a pest of kiwifruit and other crops in New Zealand. Because of their similar size and polyphagous diet, they are also a reasonable proxy for the serious agricultural pest, brown marmorated stink bug (BMSB): studying GVB may give us some insights into BMSB prior to its arrival in New Zealand. Using security cameras to monitor GVB eggs, nymphs and adults, we aimed to identify species preying on GVB in a variety of habitats (kiwifruit orchards, vegetable crop field margins and home gardens in Auckland and Te Puke). GVB nymphs and adults were individually tethered using cotton thread glued to their dorsal surfaces, while egg batches were placed in the field on the substrate on which they were laid. We obtained 840 hours of video footage and recorded only 10 predation events. Predators included birds, ants, jumping spiders and harvestmen. When given no choice in the laboratory, we also found praying mantis, hunting and crab spiders would feed on GVB nymphs. Nothing was found to feed on GVB eggs. Although only a few taxa were identified feeding on GVB, most are common in modified habitats in New Zealand, and therefore may contribute to the suppression of GVB (and potentially BMSB) populations.