Workplan 6. (2005-06)

BEHAVIOUR OF *CLEOBORA MELLYI* AFTER FIELD RELEASE: EFFECTS OF PREY AVAILABILITY AND HOST PLANT

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Aim

To record the behavioural response of *Cleobora mellyi* following release onto either acacia or eucalypt trees and in the presence or absence of psyllids.

Background

The original plans for this project suggested field assessment of predation by *C. mellyi* might be possible, following mass releases of adult ladybirds. However the rearing programme has been less successful than hoped and there were no field releases in 2004-05. Field release methods must maximise the likelihood that released individuals will stay together and form a reproducing population, particularly if only relatively small numbers of *C. mellyi* are available. This study will closely observe the behaviour of small groups of *C. mellyi* under different conditions, in order to assess the most favourable type of release environment.

Release sites

- The release site chosen for this experiment needs to have both acacia and eucalypt trees in the vicinity, with foliage close enough to the ground to permit initial observation of released ladybirds.
- Releases should be timed to coincide with the presence of psyllid populations on both acacia and eucalypt.
- Potential release sites would be Pirongia (contact Ian Nicholas, probably nearest site to Rotorua) or Dean Satchell's property in Kerikeri. Other correspondence relating to possible sites is collated in the Cleobora folder.

Release Methods

- Collect 20 adult *C. mellyi*. Try to ensure the sex ratio is about 50:50.
- Transport these adults to the chosen release site early in the morning. Releases should take place before 10am preferably, 11am at the latest, in reasonable weather. Avoid releasing when temperatures have warmed up – this makes the ladybirds more active and likely to disperse rapidly.
- Divide the ladybirds into groups of 5. One group will be released into each of the following environments: acacia foliage without psyllids, acacia foliage with psyllids, eucalypt foliage without psyllids, eucalypt foliage with psyllids. Release each group onto a different tree.
- For each group, place the five adults directly onto suitable foliage. Observe the group of ladybirds for up to 15 minutes or until none are within sight, whichever comes first. Record the fate of each ladybird: flown out of sight, walked out of sight, settled within sight but not feeding, feeding within sight. If any of the ladybirds do start to feed, try to identify what they are feeding on (psyllids or something else).
- Repeat this procedure for each group (maximum of one hour observation).
- If there are enough ladybirds and psyllids are plentiful, release another 20 adults on a different day.