



No. 232, January 2013 ISSN 1175-9755

## BIOLOGICAL CONTROL OF *URABA LUGENS*

Toni Withers imported 240 pupae of *Cotesia urabae*, a parasitoid of the gum leaf skeletoniser (*Uraba lugens*), from Hobart in December. *Cotesia urabae* was released in Auckland in 2011 after being imported into containment several years earlier. It established there but more were required to restart a laboratory colony for mass rearing for further releases and for additional experimental work under the Better Border Biosecurity project on improving host specificity testing methods. This is a joint study involving Scion and University of Auckland PhD student Gonzalo Avila. Gonzalo worked in Rotorua over the Christmas break and assisted with the mass rearing of the imported material. This was successful and in late January the Ministry for Primary Industries issued approval for their release from containment. The releases were made in Auckland by Gonzalo.

*Uraba lugens* was first found in New Zealand in 1992 at Mount Maunganui. It has now been recorded from Northland, Auckland, Coromandel, Waikato, Bay of Plenty, Hawke's Bay and Nelson. It is particularly abundant in Auckland and at some sites its damage is very noticeable. This is why the releases of *C. urabae* were made in Auckland.

Toni Withers



*Cotesia urabae* on *Uraba lugens*

## BARCODING MYRTACEAE

The Forest Protection team has secured funding from the Ministry for Primary Industries (MPI) to develop a DNA barcoding platform for plant species in the family Myrtaceae. This project aims to strengthen MPI's preparedness capability in responding to myrtle rust caused by *Puccinia psidii*. Myrtle rust is not recorded in New Zealand at present, but since 2010 it has had devastating effects on myrtaceous species in south-eastern Australia (see Forest Health News 211, December 2010). There are more than 500 species of Myrtaceae in New Zealand and many are difficult to identify in the absence of diagnostic characters such as flowers or fruits. A DNA barcode library will enable quick and definitive identification of Myrtaceae host plants during a myrtle rust response in New Zealand. This project will harness the broad expertise within the group ranging from plant taxonomists to molecular biologists and will be built upon the extensive collection of cultivated Myrtaceae in the National Forestry Herbarium here at Scion.

Matt Buys



*Cotesia* attacking *Uraba* larvae

## BIOLOGICAL CONTROL OF *PAROPSIS CHARYBDIS*

Toni Withers, with technical assistance from Hannah Fluitsma (Southwood Export) and Dean Satchell (Farm Forestry Association), were in Tasmania for most of December undertaking the field and lab work component of this year's Sustainable Farming Fund project on potential biological control agents for *Paropsis charybdis*. A *P. charybdis* colony set up by University of Tasmania collaborators Vin Patel and Geoff Allen was successfully maintained and the parasitoid *Eadya paropsidis* recollected and three different laboratory behavioural screening tests undertaken. Unfortunately the female parasitoids showed a significantly lower preference for attacking *P. charybdis* than they did towards their normal host *Paropsisterna agricola*. This does not bode well for the biological control project. This will be disappointing to eucalypt growers, particularly those from Southland, who have given significant funding for the project. Four replicates of a sentinel larval trial were also carried out in Tasmania and may reveal a previously unknown natural enemy.

Toni Withers



*Eadya* attacking paropsine larva

## DEVELOPMENT OF A HIGH-THROUGHPUT TECHNIQUE TO DIFFERENTIATE *BOTRYOSPHAERIA* SPECIES

Members of the family or group of fungi known as the Botryosphaeriaceae occur on a wide range of hosts and ecological habits and can cause diebacks, cankers, sap stain, witches brooms and leaf blights, or they can be endophytes. They are frequently described as weak or opportunistic pathogens that cause disease in stressed hosts, but evidence is accumulating that certain strains are primary pathogens. Diseases caused by *Botryosphaeria* are common in gymnosperms and *Sphaeropsis sapinea*, which belongs in the same group, is the cause of diplodia leader dieback, crown wilt and whorl canker in pines. Molecular tools have been developed for identification of *Botryosphaeria* spp., and for characterising populations. However, these methods are slow and laborious and are not suitable for high-throughput diagnostics which require a reasonably fast identification. *Botryosphaeria* species are notoriously difficult to identify morphologically and sporulation can take a very long time. Molecular identification can be also be complicated within various groups.

Rebecca McDougal, a molecular pathologist at Scion, is currently developing a real-time PCR high resolution melting analysis (HRMA) method that can be used for differentiation of a group of species of *Botryosphaeria* that are often encountered on samples sent to the Forest Health Reference Laboratory through the High Risk Site Surveillance and Forest Surveillance programmes. This method will enable species to be identified quickly and with high-throughput capability for large sample numbers. Collaboration with Dr Hayley Ridgway at Lincoln University will enable validation with an additional culture collection that contains specimens not found in the Scion Forest Research culture collection.

Rebecca McDougal

## NOTE FROM THE EDITOR

The editor wishes to remind readers that short notes on topical issues concerning forest health are welcomed. This includes discussion of other points of view on any topic appearing in this newsletter.