

BIOSECURITY INSPECTOR REPORTS *PAROPSISTERNA VARIICOLLIS* IN HAWKE'S BAY

Biosecurity inspector Brent Rogan from SPS Biosecurity carried out an inspection of a farm eucalypt shelterbelt running adjacent to Esk Forest in Hawke's Bay (while undertaking a NZ Forest Owners Association survey) on 8 March 2016. A number of insects were observed on the trees, including a beetle that looked very different to other paropsines established in New Zealand. Later the same day, more adults, an egg raft, and larvae were found in an adjacent stand (Photo 1). Stephanie Sopow (Scion) quickly identified the insect as belonging to genus *Paropsisterna*, tentatively *P. variicollis* (Photo 2). At this point, the Ministry for Primary Industries (MPI) was notified that it was a 'new to New Zealand' beetle. The next day, beetle taxonomist Chris Reid of the Australian Museum confirmed the new species as *Paropsisterna variicollis*, a *Eucalyptus* leaf beetle from Australia.



Photo 1. *Paropsisterna variicollis* larvae found in a shelterbelt adjacent to Esk Forest, Hawke's Bay. Photo: Brent Rogan, SPS Biosecurity.

The site and other eucalypts in the area were investigated by Brent Rogan, Amin Pathan (MPI incursion investigator) and Dave Voice (MPI entomologist) on 11 March. They located two other sites within a relatively short distance of the initial find, but it is worth mentioning that other plantings between these appeared to be beetle free. The vast majority of eucalypts in the area are shelterbelts, regeneration or individual trees (including amenity plantings).



Photo 2. Adult *Paropsisterna variicollis* and eggs.

An SPS Biosecurity team carried out a delimitation survey over the next few weeks. Locations in some farm plantings were found where the population was much higher and corresponding damage was significantly worse than elsewhere in the area. SPS made contact with land owners during this process and some weeks later one grower reported an infestation at Te Mata Peak, 47 km away from the initial find. This was confirmed to be *P. variicollis* by SPS Biosecurity and MPI. Overall, surveys determined that the beetle appears to be confined to an area from Te Pohue and Waiokau Village in the north through to Te Mata Peak, spilling over into a stand in the Tukituki valley, in the south.

Of concern to the surveyors was the fact that larvae (and to a lesser extent adults) were still being found and active in mid to late April when the other two established paropsines (*Paropsis charybdis* and *Trachymela sloanei*) were mostly in diapause. Hawke's Bay was experiencing a particularly warm autumn.

Given the geography of the area around the current known locations, and the very strong northerly winds experienced in March and April, it seems plausible that adult beetles were being spread long distances by the wind. This is the first incursion being managed under the Government Industry Agreement between MPI and the NZ Forest Owners Association.

Based on an article by BJ Rogan (SPS Biosecurity)

MYRTLE RUST AND THE FOREST INDUSTRY

Myrtle rust, caused by the microscopic fungus *Puccinia psidii*, has been discussed in earlier issues of Forest Health News (211, 212, 238 and 255). Although native to tropical South America, it has dispersed globally on plants in the family Myrtaceae. One strain has reached a number of Asian and Pacific countries during the past decade and is now sitting on New Zealand's doorstep. The NZ Forest Owners Association have asked the Forest Protection Group (Scion) to examine what an introduction of this disease might mean for forestry.

Rust fungi disperse readily by airborne urediniospores and there is a history of new rusts arriving in New Zealand from across the Tasman within one or two years of their detection in Australia. Myrtle rust is not yet known in New Zealand, even though it has been present in Australia for at least six years, but it may still arrive here in this manner. Alternatively, the pathogen may be carried to New Zealand by human means on infected plants or as spore deposits on transported goods. Experience overseas indicates that, once established, it is likely to spread rapidly. There are a large number of potential hosts in New Zealand and the climate is suitable over much of the country.



Yellow urediniospore myrtle rust pustules on a ramarama cultivar in Australia. Photo: Biosecurity Tasmania, Dept. Primary Industries, Parks, Water and Environment.

Is the risk of introduction being successfully mitigated and are we prepared? The Ministry for Primary Industries (MPI) has introduced tighter restrictions for imported myrtaceous plants, and has been updating the country's DNA sequencing capability in collaboration with Scion for quick identification of the pathogen. Scion has also created a DNA sequence library of myrtaceous species to assist with host identification. MPI maintains a free

phone "hot line" (0800 80 99 66) for immediate reporting of suspected pest incursions. It also runs a High Risk Site Surveillance (HRSS) programme aimed at detecting new plant pests or pathogens such as *P. psidii*. Nevertheless, there is still a chance that an initial detection might be too late to attempt eradication, as *P. psidii* is likely to spread rapidly, especially if it invades during spring or summer.

We do not know what will happen if myrtle rust reaches New Zealand, but there could be significant ecological and commercial impacts. Myrtaceous plants are found throughout the country in native vegetation, parks, gardens and rural settings. Potentially vulnerable industries include retail nurseries and producers of feijoa fruit, tea tree oil, cut flowers and manuka honey. In contrast, forestry is unlikely to be seriously affected. Plantations in New Zealand are composed largely of conifers, and eucalypts make up only 1.4% of the estate. In Australia eucalypts are affected mainly at the juvenile stage with, at most, a low incidence of malformation, though there has been greater impact in Brazil when clonal stock has turned out to be susceptible. However, in the event of an incursion, advice on disease management will be sought by owners of eucalypt plantations. The Forest Protection Group is maintaining a hands-on awareness of myrtle rust and professional staff have studied the disease in Australia.

The myrtle rust issue must be addressed in a concerted way and not in isolation. Should *P. psidii* be discovered, it is of particular importance that there be a detailed and tested incursion plan already in place to describe the procedures to be followed. This plan would clearly outline in advance the separate responsibilities of the various commercial and non-commercial stakeholders, allocate agreed costs, and include criteria for a decision on whether or not to attempt eradication. With our present knowledge, and in broad terms only, eradication should be attempted if *P. psidii* is confined to a small, accessible area, especially during autumn or early winter when urediniospores are absent or infrequent. However, if it is found to be widely dispersed, with an abundance of urediniospores, especially during spring or summer, eradication will not be possible and the disease should instead be managed to minimise its impact. Nevertheless, it is paramount that an interim eradication attempt should begin as soon as *P. psidii* is detected, without waiting for the eventual final judgment that may need to be temporarily delayed until the necessary information is obtained through surveys and by other means.

Ian Hood and Peter Scott (Scion)