Image: David Smith, ArborCarbon, Melbourne, Australia.

Pine branch with masses of white wax produced by giant pine scale.

Giant pine scale

Giant pine scale *Marchalina hellenica* (Gennadius) is a large sap-sucking scale insect (Hemiptera: Marchalinidae). This pest is not present in New Zealand. Help us keep giant pine scale from establishing here by learning what to look for.

Image: David Smith, ArborCarbon, Melbourne, Australia.

*Giant pine scale (*Marchalina hellenica*) and white wax masses.*

Giant pine scale is a threat to New Zealand's forestry industry, as its main hosts are species of pine. Infested trees may suffer dehydration, defoliation and branch dieback, with heavy infestations sometimes causing tree death. Giant pine scale weakens trees, making them vulnerable to attack from other pests, and negatively affects wood growth. Giant pine scale is native to the eastern Mediterranean region and has been introduced to parts of Turkey, Greece, Italy and Australia.

Giant pine scale was first reported in two Australian states in late 2014. A successful eradication programme was undertaken in South Australia, but eradication was not pursued in Victoria, where some areas remain infested. Insecticides are of limited efficacy against giant pine scale and at present the only effective and permanent control option is to remove affected trees.

Symptoms to look for

- Masses of dense white cotton wool-like wax exudate in bark furrows of the tree, most often on the trunk but sometimes on branches or exposed roots. The wax persists long after the insects have gone, leaving a tell-tale sign that they have been present.
- Bright yellow adults or eggs amongst the white wax – adults are very large, measuring up to 5 mm wide and 19 mm in length.
- Nymphs are a smaller, mobile version of the adult and may be seen crawling over the bark of the tree.

Hosts

European host records include species of pine, spruce and true fir. In Australia giant pine scale has been recorded from *Pinus radiata* (radiata pine), *Pinus halepensis* (Aleppo pine) and *Pinus pinea* (stone pine), as well as *Picea pungens* (blue spruce).

Scale life cycle

Giant pine scale has one generation per year. Each adult female scale can produce up to 400 eggs. These hatch between spring-early summer, with the nymphs developing over the following months, becoming adults for winter.

Giant pine scale spreads naturally by nymphs crawling from their initial host tree to other nearby trees, meaning infestations are usually localised. However giant pine scale can be spread long distances when nymphs crawl onto material, such as firewood, mulch or equipment which is then transported away from the infested site.

Identification and testing

Giant pine scale is very distinctive in appearance. Identification can be confirmed by slide-mounting adult female specimens and looking microscopically at certain characters. All life stages can be identified using molecular sequencing techniques.

As required by the Biosecurity Act (1993), if you encounter any insects or tree damage which you suspect could be giant pine scale, call the Biosecurity New Zealand Pest and Disease hotline – 0800 80 99 66. The Ministry for Primary Industries will coordinate how best to proceed with sampling and identification.

Image: David Smith, ArborCarbon, Melbourne, Australia.

Pine trunk with masses of white wax produced by giant pine scale.

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