Observatree
monitoring tree health

www.observatree.org.uk

‘Non-priority pest or disease information notes’ are an occasional series of information sheets that highlight a new pest or disease that you might see when out carrying out routine surveys as part of your role as an Observatree volunteer. These are not a priority but any reports will be of interest to the Forest Research entomology and pathology teams.

Curreya pithyophila and Scots pine (_Pinus sylvestris_)

In late 2022, reports were received of canker and dieback symptoms on Scots pine (*Pinus sylvestris*) at various locations across Scotland. Investigations are still at an early stage, but a common factor observed at all sites is the presence of a previously rare stroma-forming fungus *Curreya pithyophila* (syn. *Cucurbidothis pithyophila*) infesting shoots and branches of Scots pine in an apparently symbiotic association with the adelgid species, *Pineus pini.* The fungus colonises the outer bark of Scots pine, frequently encircling young branches at shoot junctions (Figs. 1, 2) but appears itself to remain superficial. Encased beneath the fungal stroma are colonies of *P. pini* nymphs (Fig. 3) which feed on the phloem causing necrosis of host tissues (Fig. 4), in some cases to the cambium.

Affected Scots pine also exhibits abundant older, blackened shoot and branch cankers (Fig. 5) from which the fungal pathogen *Crumenulopsis sororia* and various endophyte species have been isolated. The primary cause of these cankers may be *P. pini* in association with *C. pithyophila*, with feeding sites subsequently colonised by canker-causing pathogens. Some Scots pines show high levels of infestation (Fig. 6) and weak or suppressed trees can exhibit severe dieback (Fig. 7), but the most common symptom is crown thinning and dieback of shoots and branches in the lower crown (Fig. 8). *Curreya pithyophila* and its association with adelgids has been described occasionally from the UK, continental Europe and north America on various conifer species since the 1800s, yet it remains obscure in the literature. We are working to understand the possible reasons for this current, widespread infestation on Scots pine in Scotland.

For more information see [Understanding a new health threat to Caledonian Scots pine (Pinus sylvestris) | Plant Health Centre]

Observatree is a citizen science project led by Forest Research, in collaboration with key organisations

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Figure 1: Black stroma of *C. pithyophila* encircling branches of Scots pine. The adelgid nymphs are encased between the fungal stroma and inner bark *(David Haines, Assynt).*

Figure 2: Embedded within the stroma are many black spherical fungal fruiting bodies which can be seen with a hand lens *(stroma on branches taken by David Haines, Assynt, close up of fruiting bodies in stroma by Jo Taylor, RBGE).*

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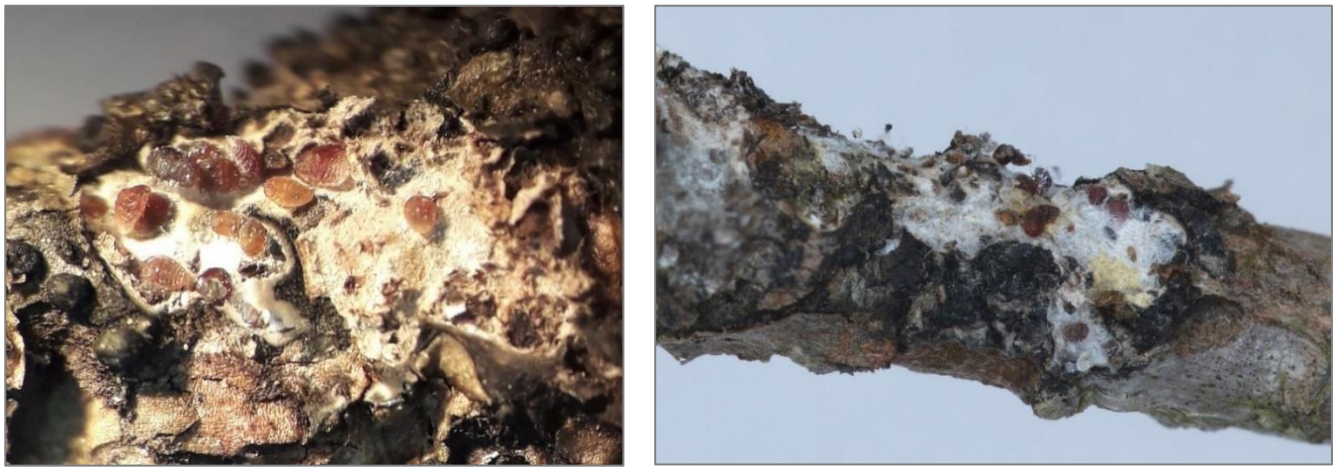

Figure 3: The black fungal stroma has been peeled away revealing *Pineus pini* nymphs encased below the stroma and feeding on the host tissues (*left, Sarah Green, FR, and right, David Haines, Assynt*)

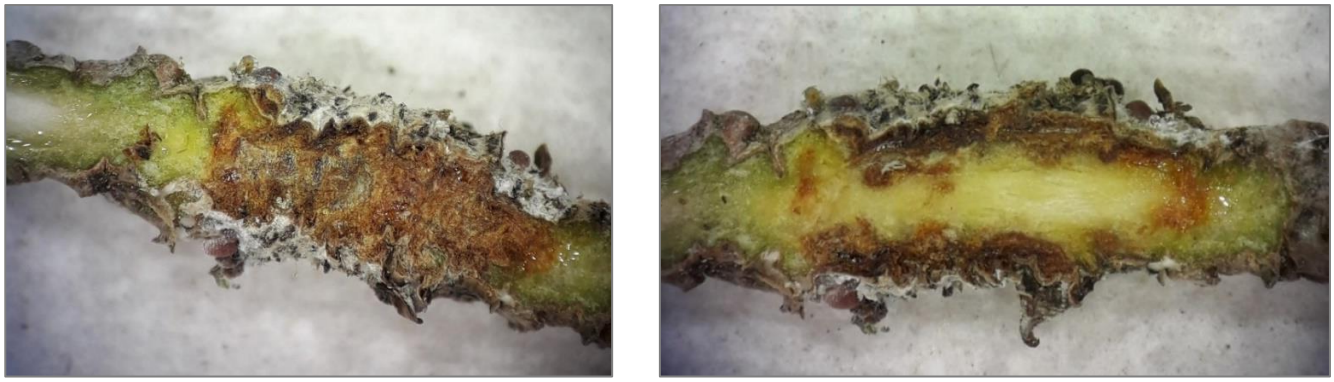

Figure 4: A fresh infestation of *C. pithyophila*/*P. pini* on a young shoot of Scots pine. The fungal stroma has been peeled off with nymphs visible among the white waxy deposits. The shoot has been sectioned to show death of host tissues resulting from *P. pini* feeding. Where the cambium is killed a canker will likely develop (*Sarah Green, Forest Research*).

Figure 5: Affected trees commonly exhibit abundant older, blackened cankers on shoots and branches which may have been initiated by *P. pini* feeding. Note that once the phloem has been killed the adelgids die or move on and the fungal stroma falls away, with the infestation site subsequently colonised by other fungi *(left, Mick Biddle, Forest Research, middle, David Haines, Assynt, and right, Sarah Green, Forest Research).*

Figure 6: Some Scots pine trees are heavily colonised by *C. pithyophila*/*P. pini* on multiple branches *(Ewan Purser, Scottish Forestry).*

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Figure 7: Weak or suppressed Scots pine infested with *C. pithyophila/P. pini* can show severe dieback symptoms where shoots and branches are killed *(left, David Haines, Assynt, and right, Sarah Green, Forest Research)*

Figure 8: Affected Scots pine with thin crowns and shoot and branch dieback particularly in the lower crown *(Sarah Green, Forest Research, David Haines, Assynt, and Ewan Purser, Scottish Forestry)*

Reporting

Please report possible sightings via TreeAlert.

Thank you in advance for your ongoing commitment to the health of our trees.

Forest Research, October 2024

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