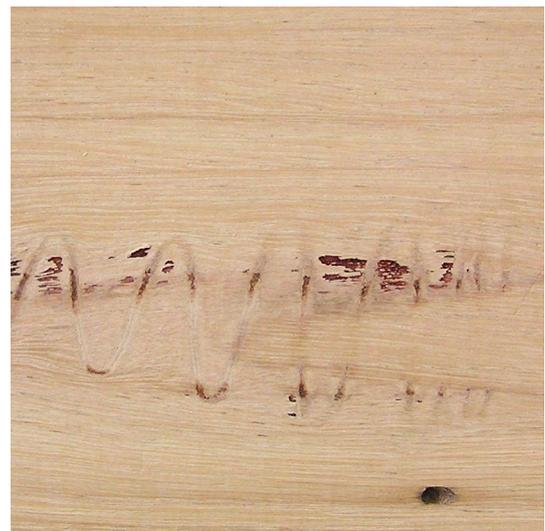


Introduction

Each year as we pass through spring into summer the insect world comes alive and from time to time we see evidence of this in our timber floors. As temperatures increase so does the activity and attacks from some borers. As such it is important for us to be able to know the signs and also know what to do if we come across this. This information sheet covers the most common borers that attack susceptible hardwoods (broad leaf trees), with an emphasis on the lyctus borer.

Borer's activity in hardwoods

Firstly, we will consider borers in hardwoods and with this it is important to realise that most borers attack the living tree which has high levels of moisture. These borers will generally not attack timber floor boards that have been kiln dried and therefore once dry there is no concern regarding ongoing activity. Often we may see the evidence of these borers in our finished floors as the grading rules for hardwood flooring do permit past evidence of borer activity. The grading rules limit the hole size and number of holes that can be present. Higher feature grades permit larger and a greater number of holes or traces, being markings across the board surface. Hence, in our floor, you may see some small holes but often these are filled with coating and are not obvious. Some discolouration can also be associated with the holes from some borers and is permitted in medium and higher feature grade material. One of the most dominant insect traces that we see in flooring is from the 'squibbly' borer that leaves a zigzag scribble like trace across the board. Refer to the first photo showing not only such a trace but also at the bottom of the photo a hole from another borer and with darker discolouration in the hole. The second photo shows small pinhole borer and a greater degree of discolouration that can occur. These markings often blend in with darker coloured gum veins that are often prevalent in many higher feature grade floors. It is important to realise that borers have preference for different tree types and therefore borer markings differ between tree species.



Scribbly borer mark



Pinhole bore with associated discolouration

From this it should be evident that there are many borers that do not need to concern us regarding any ongoing activity in a floor, but one that we do need to be concerned with is the Lyctus borer. The Lyctus borer can infest dry hardwood floorboards but also realise that not all timber species are affected. The likes of Blackbutt, Brush Box, Rose Gum, Grey Ironbark and Stringybark are not susceptible. But other common species such as Spotted Gum, Tasmanian Oak, Victorian Ash, Sydney Blue Gum, Jarrah and Tallowwood are susceptible. Lyctus attack is not confined to Australian species with the likes of American and European oak and Kwila also being susceptible.

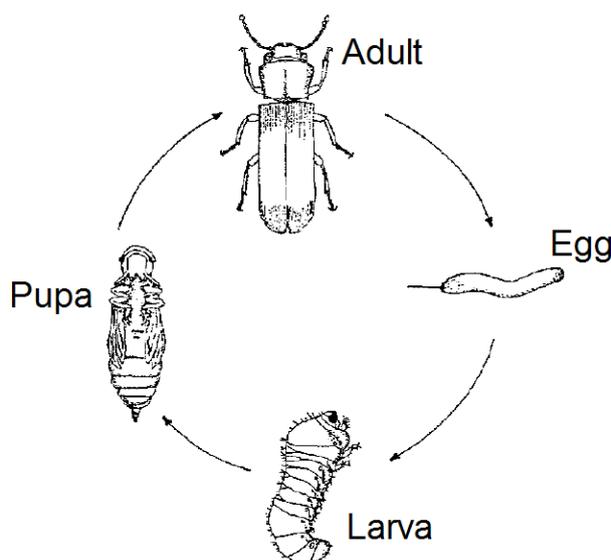
Lyctus attacks the outer sapwood of the tree that is often lighter coloured and therefore if we do not have any sapwood in our boards, in susceptible species, then the flooring will not be prone to attack. The sapwood contains starch which the larvae feed on and it can be from two months up to a year before the mature beetle excavates a hole to the board surface and flies away. It is at this time in late spring and summer that we become aware of lyctus living in the floor. The oval hole, quite small, at up to 2mm in diameter will have no dark staining in hole as with other common borers and what we also observe is a small pile of fine white powder.



Powder from the adult emergent hole

Now although the larvae lives in the sapwood it may emerge through the heartwood also. It could also be that a batten beneath the floor is infected and the beetle will emerge through the floor board above. The photo shows a stair riser with two past emergent holes and a fresh hole with the pile of powder beneath. Adults that emerge fly and if uncoated dry susceptible sapwood is found then they can reinfest. It is important to realise that we are also not aware of coated furniture in a dwelling being reinfested although it is possible that some furniture may have been infected when manufactured. The life cycle and shape of the beetle is shown in the diagram. Activity is not reported to go beyond five years from tree felling, and ceases when the available edible material, starch in the sapwood, is depleted or inactive.

Often in timber floors the sapwood is only a small proportion of the board, although in Spotted Gum the sapwood band is wider. Attack from Lyctus in flooring is not that common as it is generally recognised that susceptible timber species will have their sapwood treated at manufacture to prevent attack. Low level treatment is all that is necessary and in the past has included boron treatments. Note that the flooring manufacturing standard AS 2796 – Timber – Hardwood – Sawn and milled products states that compliance to the standard requires susceptible sapwood to be treated.



Source: Past Qld DAFF Information Sheet

As indicated above, not all flooring is from Australian species and at present there are higher levels of oak flooring entering the country. Flooring

that is prefinished as with engineered flooring is unlikely to be attacked. However, solid T&G flooring may not be treated overseas and can be susceptible to attack.

So what can be done if we have a lyctus problem? Firstly, it should be recognised that flooring in Australia should not contain lyctus susceptible sapwood and for this reason it often up to the manufacturer or importer to become involved and resolve concerns. Concerning control measures, they may differ depending on the level of sapwood present and whether the floor is exposed beneath, where adult beetles can fly in to reinfest.

Although sapwood may only show as a small part of the board, the lower surface may contain larger quantities. The photo shows minimal sapwood on a second storey Oak floor laid on battens and the inset showing lyctus emergent holes through heartwood. There was lyctus activity in this floor for over two years.

State forestry departments often have information on corrective measures and indicate that where sapwood in a floor is minimal and boards not exposed to external conditions beneath, then a combination of treatment (oil based insecticide) and time can often solve minor occurrences. In such instances, after 2 or at times 3 seasons, there is generally no more activity with this approach. In other instances it may be necessary to undertake some board replacement particularly as lyctus can disintegrate the sapwood affecting the integrity of the board. However, with floors, we are not aware of any instances in more recent times where attack has been to the degree where a floor has needed to be replaced.



Lyctus in an Oak floor showing some lighter coloured sapwood at board edges.