

## Shoot-borer

### Description

Shoot-borers are moths belonging to the *Hypsipyla* genus and are significant pests of members of the Meliaceae (Mahogany) plant family. Attack from the native Cedar tip moth (*Hypsipyla robusta*) has effectively prevented the commercial growth of Australian red cedar (*Toona ciliata*) in Australia.

Plantings of related African mahogany (*Khaya senegalensis*) in northern Australia have remained relatively free of damage despite heavy attack from *Hypsipyla* shoot-borers in its native African range. Previously, it was considered that the same species is present in both Australia and Africa. However recent work has shown there are three African species, none of which are *H. robusta*, explaining the lack of damage in Australia to date. However, it is important to be aware of the biosecurity risks from exotic *Hypsipyla* spp., as well as the risks of local *H. robusta* populations 'host switching' to feed on African mahogany.

The adult moth has brown forewings with a faint zigzag pattern and buff hindwings with a darker margin. Male and female moths are similar in appearance though the female is generally larger (30–35 mm wingspan). Moths are nocturnal and rarely seen during daylight hours.

Eggs are oval and white when first laid, developing distinct red and white banding within 24 hours.

Larvae are reddish-brown in colour initially, turning blue just prior to pupation. Larvae feed within the plant tissue and are concealed for most of their development time. Larvae pupate within cocoons spun in the stem tunnels of young trees, beneath the bark on mature trees, or amongst the leaf litter around the tree base.

### Primary hosts

Larvae feed on members of the Meliaceae (Mahogany) plant family. This includes native species such as the Australian red cedar (*T. ciliata*) and mangroves in the *Xylocarpus* genus. African mahoganys (*Khaya* spp.) can also be affected.

### Symptoms

Larvae feed in growing tips, resulting in shoot death and loss of apical dominance. Continued damage leads to a stunted, multi-branched tree. Larvae move frequently



Adult female Cedar tip moth



Last instar larva of Cedar tip moth in feeding tunnel



Early instar feeding in growing tip of African mahogany (*Khaya senegalensis*)



in the early instars, initiating feeding at several locations resulting in droplets of sap and wilting of the tip. Older larvae often move down the tree to burrow into older, lignified tissue and can girdle and kill branches or the main stem. Larvae in Nigeria will also feed in the fruits of African mahogany (*K. senegalensis*).

### What it can be confused with

Early damage causing wilting of growing tips could be confused with a number of generalist sap sucking Hemiptera, including Fruit spotting bug (*Amblypelta nitida*) and Crusader bug (*Mictis profana*). More advanced tunnelling in shoots is quite distinctive. Any unusual moths or larvae should be reported and investigated further.

### Plant part affected

Larvae feed on shoots and fruits of their hosts.

### Age of plant

Trees of any age can be attacked, ranging from young seedlings to mature trees.

### Time of year pest is most likely to be seen

Larvae of this pest are active and likely to be seen from August–September until April–May when cooler and/or drier conditions limit the availability of young shoots.

### Further information

Griffiths MW (2001) The biology and ecology of Hypsipyla shoot borers. In *Proceedings of an International Workshop on Hypsipyla shoot borers in the Meliaceae*, Kandy, Sri Lanka 20–23 August 1996. Hauxwell C and Floyd RB (eds). Australian Centre for International Agricultural Research, Canberra pp 74–80. Available from [aciargov.au/files/node/2239/pr97chapter3.pdf](http://aciargov.au/files/node/2239/pr97chapter3.pdf).



Frass and webbing associated with shoot boring in Lagos mahogany (*Khaya ivorensis*)



Old shoot damage showing frass and tip death in African mahogany (*Khaya senegalensis*)

**If you see anything unusual, call the Exotic Plant Pest Hotline**

**EXOTIC PLANT PEST HOTLINE  
1800 084 881**

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