

Phoracantha recurva and *Phoracantha semipunctata*

Phoracantha recurva Newman, 1840

Order and Family: Coleoptera: Cerambycidae

Common names: eucalyptus longhorned borer; eucalyptus borer; longicorn beetle; yellow phoracantha borer; yellow longicorn beetle

Phoracantha semipunctata Fabricius, 1775

Order and Family: Coleoptera: Cerambycidae

Common names: eucalyptus longhorned borer; common eucalypt longhorn; common eucalypt longicorn; eucalypt longhorn; eucalyptus borer; longicorn beetle; blue gum borer; firewood beetle

Phoracantha recurva and *Phoracantha semipunctata* are both serious borer pests of eucalypts, particularly those planted outside their natural range. In their native Australia they are considered minor pests attacking damaged, stressed or newly felled trees but they have become established in many temperate and tropical regions worldwide where they have been known to kill even healthy trees.



Phoracantha recurva (L) and *Phoracantha semipunctata* (R)

DISTRIBUTION

Phoracantha recurva

Native: Asia and the Pacific: Australia

Introduced: Africa: Malawi, Morocco, South Africa, Tunisia (1999), Zambia

Asia and the Pacific: New Zealand, Papua New Guinea

Europe: Greece (one record), Spain (1998)

Latin America and the Caribbean: Argentina (1997), Brazil (2001), Chile (1997), Uruguay (1998)

North America: United States (1995)

Phoracantha semipunctata

Native: Australia

Introduced: Africa: Algeria (1972), Egypt (1950s), Libyan Arab Jamahiriya (1998), Morocco (1962), Tunisia (1962)

Europe: Canary Islands (1991), France (1984), Italy (around 1969), Netherlands (detected but believed eradicated), Portugal (1980), Spain (1980), Turkey (1959)

Latin America and the Caribbean: Brazil (1994)

Near East: Cyprus (around 1967), Israel (1940s), Lebanon (1950s)

North America: United States (California, 1980s)

IDENTIFICATION

Adult eucalyptus longhorned borers are approximately 14 to 30 mm long and have shiny, dark brown and yellow to cream-coloured areas on their wing covers (University of California, 2000). Antennae are as long as or longer than the body and the antennae of males have prominent spines.

Adults of both species are very similar to one another although there are differences in wing cover colour and hairs and spines on antennae (University of California, 2000). *Phoracantha semipunctata* has wing covers that are mostly dark brown with a zigzag line bisecting the cream-coloured area in the middle whereas the wing covers of *P. recurva* are mostly cream to yellowish in colour with dark brown areas primarily limited to the posterior end. Long, dense golden hairs can be found on the underside of each antenna segment on *Phoracantha recurva*; such hairs are either absent or sparse on *P. semipunctata*.

Mature larvae are cream-coloured, legless and may be more than an inch in length (University of California, 2000). Eggs are ovoid and pale yellow in colour.

HOSTS

Eucalyptus species

BIOLOGY

Female beetles are attracted to stressed trees or freshly cut wood where they lay eggs in groups under loose bark. The larvae tunnel under the bark and into the cambium layer and effectively ring bark the host trees. The larval feeding can rapidly kill the trees or cause significant damage to the timber of affected trees. Larvae take 2 to 6 months to develop depending on the moisture conditions in the logs. Pupation takes place in pupal chambers. Adults live for several weeks.

SYMPTOMS AND DAMAGE

Phoracantha species tend to attack damaged or stressed trees; vigorous, well-watered trees are rarely attacked though it does occur.

The presence of holes in the bark and stains or oozing liquid on limbs or trunks are common symptoms of longhorned borer attack (University of California, 2000). Foliage may also discolour and wilt, and limbs may dieback.

The feeding by larvae and resulting galleries created within host trees can girdle trees killing them. Such trees are characterized by a thin canopy with wilted or dry leaves and cracked bark packed with frass (University of California, 2000). Infested trees are often killed in a matter of a few weeks and resprouting may occur from the tree base.

DISPERSAL AND INTRODUCTION PATHWAYS

Adults are moderately long-lived and are strong fliers that are thus capable of naturally dispersing a fair distance. Dispersal over greater distances occurs through movement of nursery stock and freshly cut wood with high moisture content. Introduction into southern Africa is believed to have been through the importation of infested railway sleepers.

CONTROL MEASURES

The same management and control methods are applied to both *Phoracantha* species and are based on good cultural practices and biological control. Such practices involve reducing tree stress through irrigation and protection against injury, planting resistant or tolerant eucalypt species and avoiding activities that disrupt biological control (University of California, 2000).

Properly handling eucalyptus wood is also effective in controlling borer populations (University of California, 2000). Since moist wood is most suitable for ovipositing beetles, methods such as cutting and splitting wood to hasten the drying of the wood helps to reduce the length of time the wood can support beetle development. Bark can be removed from felled logs or the wood can be solarized by placing it in a sunny location for 10 to 12 weeks and covering it with ultraviolet-resistant plastic which prevents new beetles from attacking and resident beetles from emerging and spreading to standing hosts nearby. Infested eucalypt trees, branches and wood should be treated or destroyed by burying, burning or chipping.

Chemical insecticides are not considered suitable or effective for the management of eucalyptus longhorned borer populations.

Biological control with natural enemies is possibly the best solution to controlling longhorned borer populations. At low beetle population levels, natural enemies may be better able to keep populations in check and vigorous trees can survive a few attacks. Some examples of biological control agents for *Phoracantha* species include the Australian parasitic wasps *Avetianella longoi*, *Callibracon limbatus*, *Jarra maculipennis*, *J. phoracantha* and *Syngaster lepidus*, and *Helcostizus rufiscutum* from California (University of California, 2000). Felled trap trees with bark are used to deliver the natural enemies and to attract gravid females.