Insect pest of forests. 1. Wood boring beetles

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Insect pest of forests. 1. Wood boring beetles

Cover Page Footnote
Illustrations in this series are from "Forest Insects of Australia," by W. W. Froggatt.
MANY different types of wood boring beetles are associated with timber and forest trees.

Some attack only dry seasoned wood, others prefer freshly felled logs, and others again choose the standing trees.

One of the best known of our wood boring beetles is the so-called bardee. This white legless grub is the immature stage of a long thin beetle known as a cerambycid or longicorn beetle. There are many different species of these insects, but they are all characterised by the very long feelers or antennae, which may be much longer than the entire body.

Although the different species of longicorns (Cerambycidae) vary in their host preferences and show some diversity in their method of attack, the life cycle follows the same general pattern.

The eggs are laid on the bark, and the tiny spindle shaped grubs bore down to the sap wood. Here they feed and tunnel about in all directions producing a network of scroll-like markings packed tight with a mass of saw-dust-like frass. This type of damage can be seen on almost any dead limb lying in the bush. When fully fed, the grubs bore several inches straight into the solid wood and pupate. When the adult beetle is ready to emerge, it can usually push its way to the surface because the bark of the affected limb is dry and peeling.

Although often found in dead and dying trees, it is very doubtful whether bardees are the actual cause of death. Healthy trees are able to withstand a reasonable amount of insect attack, while sickly trees seem to be particularly attractive to wood borers. It follows then that in most cases, heavy borer infestations are of secondary importance as far as tree decline is concerned.
Insect attack may often hasten death and may perhaps tip the scale where the tree is just struggling along, but a less obvious trouble may have started the decline years before.

Another beetle sometimes found in native and orchard trees is the Jesuit beetle or auger beetle (*Bostrichopsis jesuita*). The bore holes made by these insects are slightly smaller than the diameter of a pencil and the dark coloured beetles are almost three quarters of an inch long.

The term Jesuit beetle refers to the fact that the tapering head of the insect points downwards and is completely protected above by a cowl or hood formed by the thorax.

Half dead fruit trees, and particularly citrus trees, are sometimes infested with auger beetles and in consequence they are then blamed for the decline of the tree. However, they will not attack healthy wood and the activity of auger beetles merely indicates the presence of some less obvious but more fundamental trouble.

Beetles which are of minor importance as timber pests, but which sometimes cause consternation to householders are the jewel beetles.

The grub stage of the jewel beetle is very similar to the common bardee, but has a disproportionately large head. These feed in various types of timber, some of which are suitable for cabinet making. As a result, it sometimes happens that after 10 to 15 years use a neat hole the size of a lead pencil may appear in the sideboard or a bright coloured beetle may crawl from a desk drawer. This does not mean, however, that the furniture or the house is in imminent danger of disintegration. In such instances, the jewel beetle grubs were present in the timber at the time of felling and they have very slowly developed in the seasoned wood.

Under normal conditions of course, the life cycle would be much shorter, but under special circumstances beetles have been known to emerge from furniture 40 years after its manufacture.

**CONTROL**

Control of borers in trees is an exceedingly difficult problem, as it is not usually practicable to apply chemical treatments to large trees.

Where possible, infested limbs should be cut off and burnt to prevent the development of insects which they may contain, and the cut ends of the limbs should be treated with some suitable dressing to prevent cracking and the introductions of fungi.

Where slight infestation only has occurred, it is sometimes possible to destroy borers by killing the individual larvae, either by the introduction of a pliable wire into the bore hole or by fumigating the individual tunnels with carbon-bisulphide or even petrol. A small quantity of liquid may be introduced with an oil can or funnel and the entrance should be plugged with moist earth or putty to prevent the escape of gas.

Spray treatments cannot be recommended with confidence for the control of borers in growing trees but several chemicals including dieldrin, lindane and chlordane have given protection to freshly cut logs. It is therefore suggested that
where protection from borers is urgently needed, the bark and main branches of the trees be thoroughly sprayed with $\frac{1}{3}$ per cent. dieldrin (one part of 25 per cent. dieldrin concentrate to 50 parts of water). This would be best applied in the early spring before the adult insects have commenced to lay eggs and could be repeated once or twice at monthly intervals.

Various preparations have been used in America as paints for tree trunks and limbs and two which may be useful under special conditions are detailed hereunder.

- Copper sulphate ... $1\frac{1}{2}$ lb.
- Lime (quick lime) ... 1 lb.
- Water ... 2 gal.

To prepare this paint, the copper sulphate is dissolved in approximately half the amount of water; the lime is broken down with the remainder of the water, and is then poured into the bluestone solution, and mixed to form the paint. Bluestone should always be dissolved in a wooden, earthenware or copper container. Iron and galvanised iron vessels should not be used.

A tree-borer repellent which has been recommended in America for control of a buprestid beetle attacking apple trees is as follows:

- Soft soap ... 25 lb.
- Water ... $1\frac{1}{2}$ gal.
- Flaked naphthalene ... $12\frac{1}{2}$ lb.
- Flour ... 1 lb.

To prepare this mixture the soap is first placed in the water for several days and allowed to soften. It is then placed in a double boiler and heated to a temperature of 180° F. The flour is then stirred in, the naphthalene added, and the mixture again brought up to 180° F., at which temperature the naphthalene will have melted. The mixture is then cooled as quickly as possible and stirred occasionally.

For use, the mixture is warmed sufficiently to produce a consistency of heavy cream, and is then applied with a brush to the trunks and main limbs of the trees. It may be stored in air-tight containers.

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