INSECT PESTS OF FORESTS

(3) The Tuart Bud Weevil and The Gregarious Gall Weevil

By C. F. H. JENKINS, M.A., Government Entomologist

THE group of beetles commonly known as weevils contains some of the most troublesome of all insect pests. The best known is probably the wheat weevil, but many other forms attack stored products and growing plants.

The tuart bud weevil *(Haplonyx tibialis)* is a native insect which, as the name implies, is associated almost entirely with the tuart (*Eucalyptus gomphocephalus*). Because of its small size and retiring habits the insect is rarely seen, but its presence can be easily detected by the carpet of twigs and buds around infested trees.

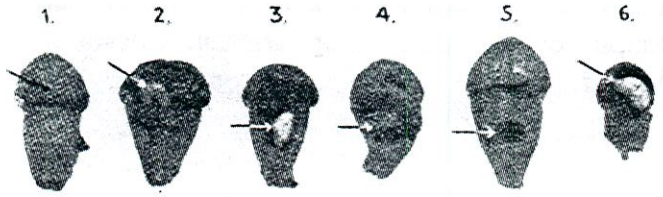
The adult female, which is somewhat larger than her mate, is brownish with some light marks on the back. It is about a quarter of an inch long and carries the mouth parts at the end of a prominent rostrum or snout. The front legs are much larger than the other legs and are especially adapted for giving the insect a firm grip on the twigs carrying flower buds.

The weevils are most active during the spring and summer, but in most districts all stages can be found during the year.

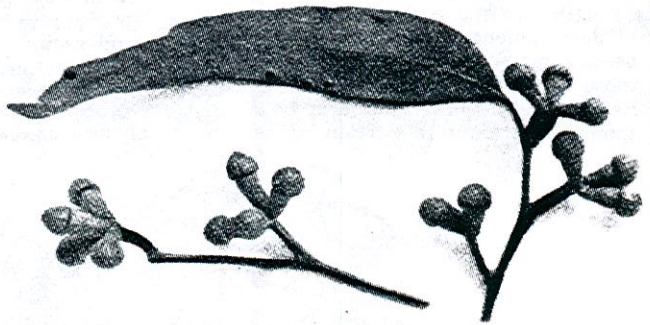
1.—Various stages of the weevil larva.
2.—Pupa.
3.—Male and female weevils.
—After Clarke.

Life Cycle

The life history of the insect is interesting and illustrates the close association between the beetle and the host plant. The female chews a hole into the cap of the unopened flower bud and deposits a small elongated white egg. This hatches in about 10 days into a small, white legless grub which feeds mainly near the top of the bud. After about three or four months, when the grub is nearly full grown, it works down to the base of the bud and pupates. The pupal stage lasts about a month and then the adult weevil cuts its way from the base of the now empty flower bud.



1.—Hole made in capsule of bud for egg laying.
2.—Typical larva in the flower bud.
3.—Pupal stage.
4.—Adult weevil before emerging.
5.—Hole cut in base of flower bud by escaping weevil.
6.—Cocoon of wasp parasite in the bud.
—After Clarke.



Clusters of flower buds cut off by the weevil
—After Clarke.

Although the eggs are deposited while the buds are still growing on the tree, the beetle either chews the clusters off or ringbarks them soon after laying, so that they fall to the ground. Unfortunately, the weevils often cut off many more buds than are actually used in egg-laying and so the overall blossoming may be seriously affected.

The incidence of bud weevil damage varies considerably from season to season, but when insects are prevalent the seed and honey yield from tuarts may be greatly reduced.

The gregarious gall weevil *(Strongylorrhinus ochraceus)* is another beetle which is rarely seen, but the swellings or galls formed by these insects are common. The tree mainly attacked is the flood gum (*E. rudis*), and the galls may vary from a few inches to almost a foot long with a diameter of 3 or 4 inches.

The adult beetle is about half an inch long and is brownish in general colour with a rusty tinge on the legs and thorax. The beetles fly in the early spring and the female with her long snout bores into the bark of suitable trees to make ready for egg laying. The bore holes are suitably spaced right around the branch and as the developing grubs penetrate the sapwood the tissues swell and produce the characteristic galls. If the galls are sliced open the yellowish legless grubs will be seen in their individual cells looking very much like bee grubs in a comb.

Life Cycle.

The life cycle may take several months and for a considerable period the grubs seem to take little food, for once the woody cell has been properly formed there is no sign of further tunnelling. The pupal period may occupy several weeks, but finally the adult beetles develop and make their way to freedom by chewing and pushing out the gum-like plugs which block the opening of each cell.

The incidence of the gall weevil varies considerably from season to season, and some trees seem to be more susceptible than others. Control is difficult, because even if effective spray treatments could be recommended, their application poses many practical difficulties. The infestation usually takes place on lateral branches and so sometimes it is possible to cut off and burn affected limbs to prevent further development of the weevils. However, such a drastic control as this is worse than the complaint.

Because both the bud weevil and the gall weevil are native insects the possibility of introducing outside parasites to control them offers little prospect of success. Some wasps are known to attack both pests, but unfortunately the degree of parasitisation is seldom heavy.

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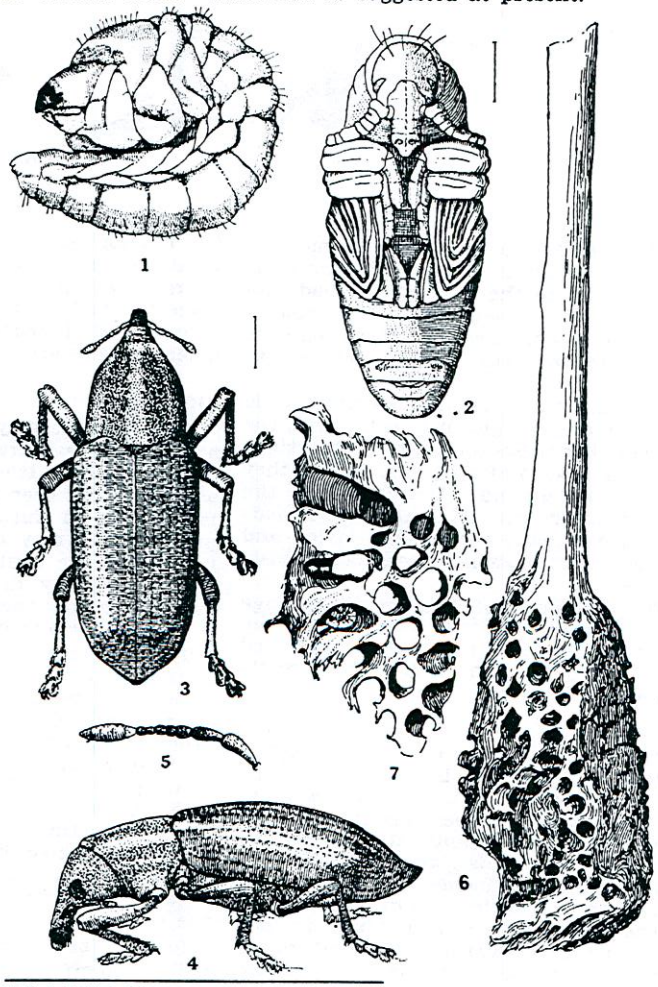
Damage

There has been no detailed information to show whether bud weevil and gall weevil damage has increased in recent years, although many people believe that it has. It is possible that as conditions changed with clearing and general agricultural development remnant trees may have become more susceptible to damage than those in the original forest. This is supported by the general decline of both flood gums and tuarts in certain areas.

The contributing factors may be:

- A reduction in the number of natural enemies, including insect parasites and insectivorous birds and mammals.
- Variations in the water table.
- Changes in the plant association and ground flora.

Unfortunately these factors are much too complex to be subjected to simple tests and no practical measures for improvement can be suggested at present.



LIFE HISTORY OF THE GREGARIOUS GALL WEEVIL

1.—Larva.
2.—Pupa.
3.—Dorsal view of the adult beetle.
4.—Lateral view of the adult beetle.
5.—Antenna of the beetle.
6.—Galled stem of a sapling.
7.—Section of a galled stem showing the structure.

—After Froggett.

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