

Forest and Timber Insects in New Zealand No. 18

Golden-haired Bark Beetle

Based on J. Bain (1977)

Insect: *Hylurgus ligniperda* (Fabricius) (Coleoptera: Scolytidae)

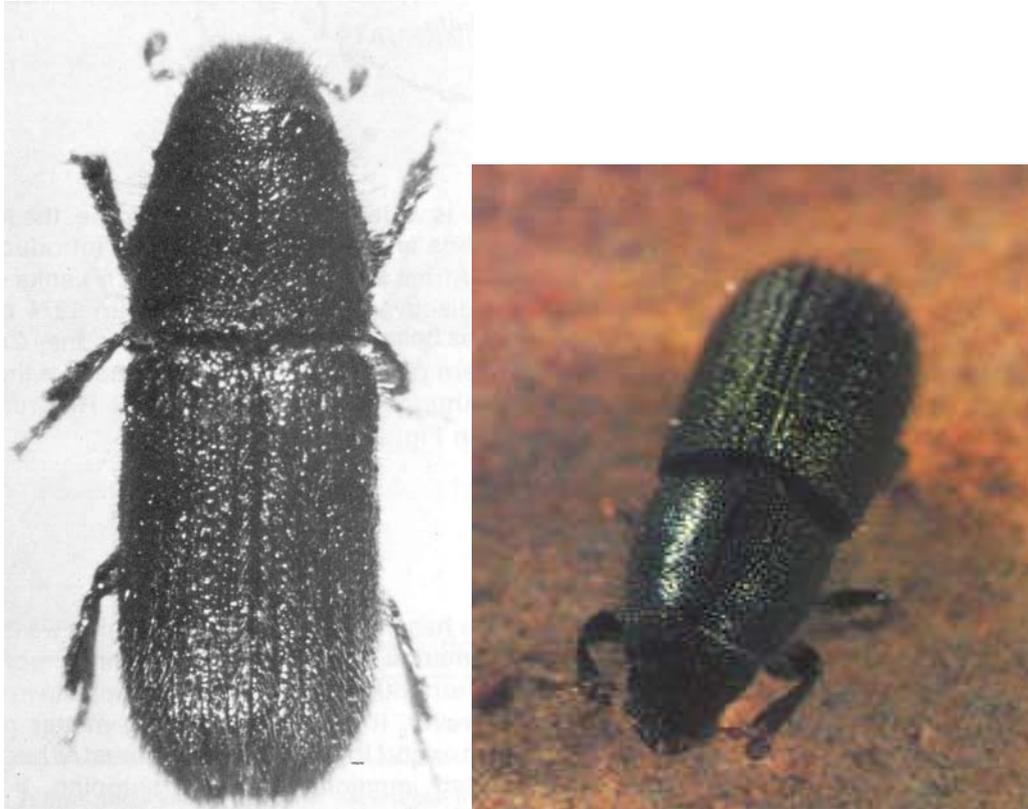


Fig. 1a & b - *Hylurgus ligniperda* adult.

Type of Damage

Hylurgus ligniperda breeds in the inner bark of recently felled logs (especially those in contact with the ground), in stumps, and in the roots and bases of dead trees. Neither adult nor larval tunnels engrave the sapwood except in very small-diameter material. Reddish frass (bore dust) is expelled from the adult tunnels and is found throughout the workings in the inner bark.

Hosts

This beetle is apparently restricted to *Pinus* (pine). In New Zealand it is found mainly in *Pinus radiata*.

Distribution

Hylurgus ligniperda is widely distributed in Europe, the Mediterranean area, and Atlantic islands and is established as an introduced species in Japan, parts of South Africa and South America, Sri Lanka, and southern Australia. It was first discovered in New Zealand in 1974 near Whitford, south of Auckland. It has been found in areas from Rodney County in North Auckland to the northern parts of the Waikato, in most of the Coromandel Peninsula, in the northern Bay of Plenty, and at Rotorua. The known distribution is shown in Fig. 2.



Fig. 2 - Dots show known places of occurrence of *Hylurgus ligniperda*.

Economic Importance

As yet *Hylurgus ligniperda* has been found only in logging wastes and in logs destined for the local market so it is of no economic importance, except perhaps for its association with a minor degree of sapstain in the outermost sapwood of logs. However, it is probably only a matter of time before *Hylurgus ligniperda* is found in export logs. infested logs must either be refused for export, or be fumigated immediately before shipping. If the beetle is attracted to green sawn timber, then packets intended for export will have to be either fumigated or kiln-sterilised.

Garcia de Viedma (1964) reports that in Spain pines up to 15 cm in diameter may be ringbarked and killed when, during the winter, groups of 30-40 adult *Hylurgus ligniperda* make communal galleries in the larger roots and the root collar. Damage of this sort has not been reported elsewhere, either overseas or New Zealand

Description

The beetles (Fig. 1a, b) are about 6 mm long and 2 mm wide. They are black, except for the antennae and the terminal segments of the legs which are reddish-brown. Most of the surface bears yellowish hairs, which are particularly obvious on the posterior slope of the elytra (wing cases) and on the front of the head. *Hylurgus ligniperda* is found in the same situations as

Hylastes ater and, being superficially similar in appearance, may be confused with it. *Hylurgus ligniperda* is larger and hairier than *Hylastes ater*, which is only 4-5 mm long and 1.4 mm wide, and these characteristics conveniently distinguish the two species. Both *Hylastes ater* and *Hylurgus ligniperda* may be confused with *Pachycotes peregrinus*. This latter is about the same length as *H. ater* but is more humped in profile and the pronotum appears dull, not shining as in *Hylastes ater* and *Hylurgus ligniperda*. All three beetles are shown in Fig. 3.

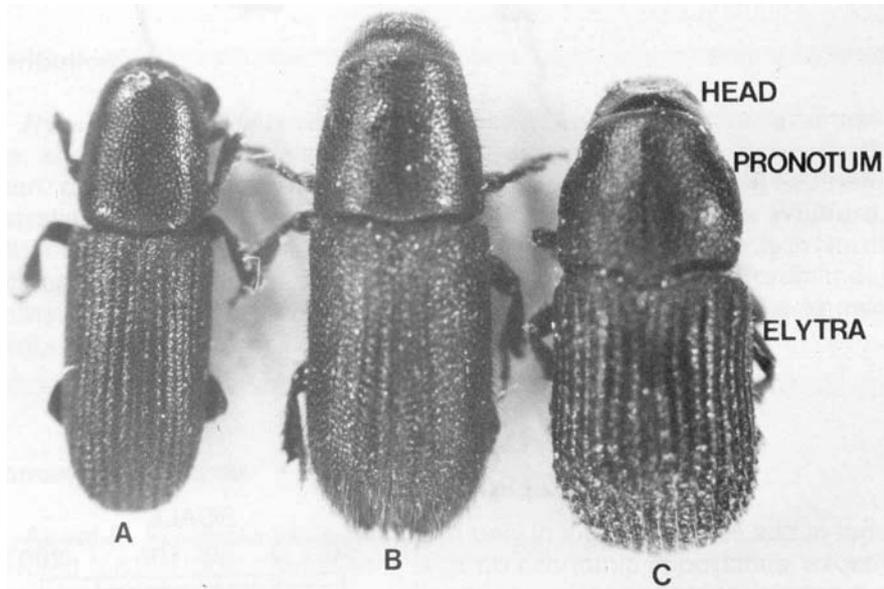


Fig. 3 - Three beetles which may be mistaken for each other: (A) *Hylastes ater*, (B) *Hylurgus ligniperda*, (C) *Pachycotes peregrinus*. Note differences in shape of rear edges of pronotum.

The fully grown larvae are white, slightly C-shaped, legless grubs with yellowish-brown head capsules. Those of *Hylurgus ligniperda* are about 7-8 mm long and 2 mm wide. They are larger than *Hylastes ater* larvae and have two, almost circular, dark protruberances on the front of the head above the jaws (Fig. 4). Smaller larvae are similar, except that the body wall is more transparent, and the reddish contents of the gut, are visible. The protruberances on the front of the head can be seen, with the aid of a hand lens, in larvae that are about half-grown.

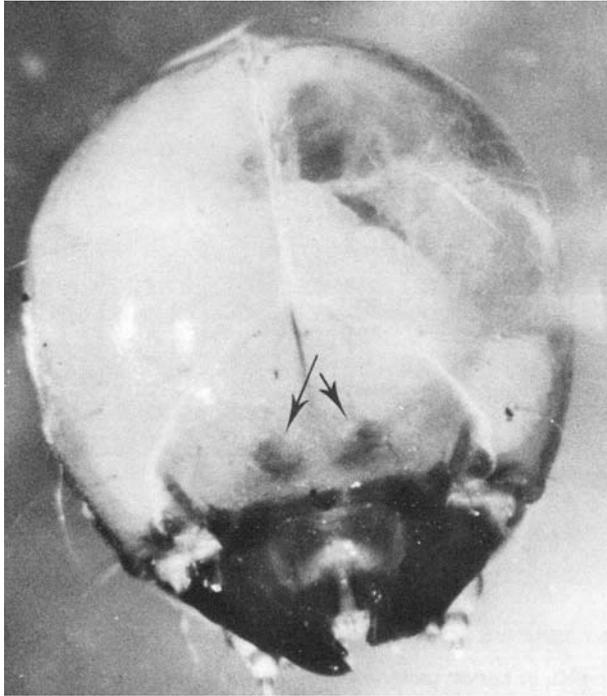


Fig. 4 - Front view of head of *Hylurgus ligniperda* larva. Note the two dark protruberances above the jaws.

Life History and Habits

The life history in New Zealand has not yet been studied in detail but the following observations were made at Woodhill and Tairua State Forests over the summer of 1974-75.

The brood gallery, which is initiated by the female, consists of a short entry tunnel leading to an oblique nuptial chamber in the innermost bark. From this nuptial chamber the female constructs along egg-gallery, usually parallel with the grain. The egg-gallery can be up to 1m long and is not always straight (Fig. 5); it often meanders and sometimes doubles back on itself. The female is invariably found at the end of the tunnel and the male is usually found a short distance from the nuptial chamber and may assist in gallery construction by pushing out frass. Males have been observed to make short feeding tunnels branching off from the nuptial chamber or the egg-gallery. Sometimes two males have been found in the galleries, and nearly always this was before the eggs had hatched.

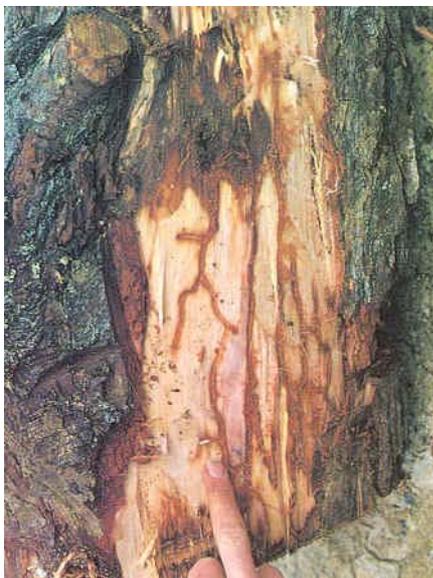


Fig. 6 - Larval galleries of *Hylurgus ligniperda* in radiata pine.

The eggs are laid in notches cut in the walls of the egg-gallery and covered with frass. They are laid over a period of at least 6 weeks and periods of egg-laying are interspersed with periods of feeding. Eggs are laid along approximately 100-200 mm of egg-gallery, the female will then extend the gallery for about another 200 mm and lay more eggs, and so on. As a result, the larvae tend to be found in groups - mature or nearly mature larvae near the nuptial chamber, then groups of successively smaller, even-sized larvae at intervals along the tunnel, and finally eggs just behind the female which may still be extending the gallery. The average number of eggs laid per female has not been determined. Eggs laid over the summer months hatch in about 2 weeks. The larval galleries are initially at right angles to the egg-gallery but they soon become random so that they make no distinctive pattern. There are apparently four larval stages and when the larvae are fully grown they pupate at the end of their tunnels. The pupal stages lasts somewhat less than 2 weeks. During the summer months, development from initiation of brood galleries to the first appearance of teneral (newly-formed) adults takes 10-11 weeks.

Control

Larval competition for food is probably the most important factor in limiting numbers. No parasites or predators have been recorded in New Zealand.

Green sawn timber intended for export may be protected by the addition of an insecticide to the antisapstain bath or spray. Infestations in export logs may be minimised by:

- (1) Rapid turnover of log stockpiles in the forest;
- (2) Selection of unshaded skid sites;
- (3) Stacking of logs on skids rather than on the ground.

References

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Browne, F.G. 1968: *Pests and Diseases of Forest Plantation Trees. An Annotated List of the Principal Species Occurring in the British Commonwealth*. Clarendon Press, Oxford.

Garcia de Viedma, M. 1964: *Hylurgus ligniperda* F., plaga de las repoblaciones de pino: sintomas de suataque. *Boletin del Servicio de plagasj'orestales 7*: 61-63 [*Review of Applied Entomology (A) 54*: 128-129].

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