DEPARTMENT OF FORESTRY · CANADA ·

Timber Talks

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INSECTS DESTROY SEED

No. 20

In British Columbia, considerable quantities of grand fir seed are destroyed by midges, chalcids and maggots. All the larvae of these insects are grub-like in appearance, the midges being orange coloured and the chalcids and maggots white. The loss may be from feeding that either destroys the seed or deprives it of nutrients causing abortion, or from fusion of the seed to the cone scales. Detection of an infestation and the resultant damage can only be accomplished by slicing cones that are nearing maturity.

Midges are gnat-like insects and three species are common. The scale or cone resin midge lives and feeds on the inner surface of the cone scale and over-winters in the litter. Gall-forming and seed midges are sometimes referred to collectively as fir seed gall midges, but they are distinct species. The former lives within a gall on the cone scale, usually adjacent to a seed, and causes fusion between the seed and scale. The latter feeds and develops entirely within the seed.

There are two species of chalcids that destroy grand fir seed. Eggs from both are oviposited within the seed where the insects develop until they emerge as adults. The adults are small wasps, one being black with orange and yellow markings that emerges between mid-May and mid-June and the other brownish yellow with dark markings that emerges about two weeks later.

The fir cone maggots also destroy seeds. The adult fly lays its eggs on the inner surface of the cone scale and the newly hatched larvae crawl down the scales and enter the seed for feeding. During the later stages of development, the larvae become predacious and feed on other insects that have infested the cone, rather than on seeds.

Chalcids are the most important of these pests and greatest loss of seed is attributed to them. Effective and practical methods to reduce the loss from these insects has not yet been developed.

REPORT: Cone Insects of Grand Fir, Abies Grandis (Douglas) Lindley, in British Columbia. A. F. Hedlin, Forest Research Laboratory, Victoria, B. C.