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Bark Beetles

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Bark Beetles (Fig. 1) are a destructive group of small, black or reddish, cylindrical insects found associated with western coniferous forests. The adults bore through bark and make tunnels between the bark and wood. Two types of tunnels are made (Fig. 2), egg galleries made by the parent beetles and larval tunnels formed by the young. Holes and fine boring dust are external evidence of beetle attack. The inner layer of attacked trees shows the destructive tunnels.

Fig. 1. Bark Beetle, Order Coleopter a ¼". By K. Grey.

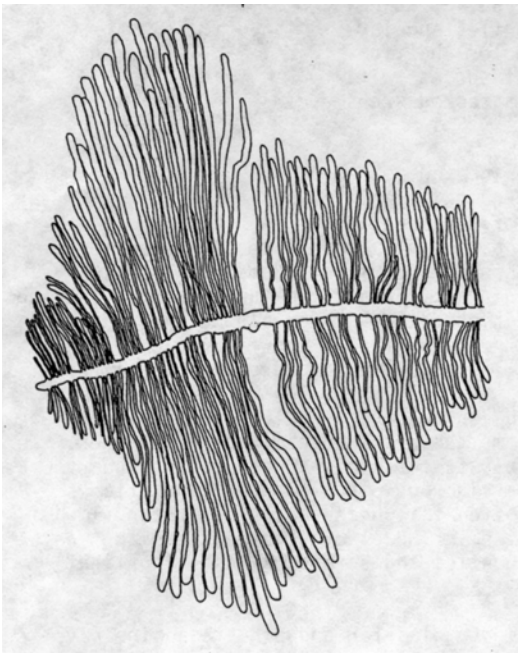
Adult beetles emerge in the spring and search out new host trees. Weakened trees quickly fall victim to attack, but some species of bark beetles infest apparently healthy trees, "apparently", because beetles seem to be more perceptive of subtle tree weakness than humans. Some bark beetle infestations are normally present in practically all mature forests, causing a small annual loss of timber. Under conditions favorable to the insects, severe epidemics develop. Such outbreaks may be of short duration or continue for several years, destroying large volumes of merchantable timber.

If bark beetle attacks are to be successful, the insects must be present in sufficient numbers to overcome the resistance of the host trees. Dead and dying trees offer little resistance and are chosen by secondary species not capable of coping with a vigorous pitch flow. Light attacks by primary species on living trees often fail because copious pitch flow drives out the attackers or drowns them. The oleoresins in the pitch are known to be repellent and toxic to beetles and so aid in resisting light attacks.

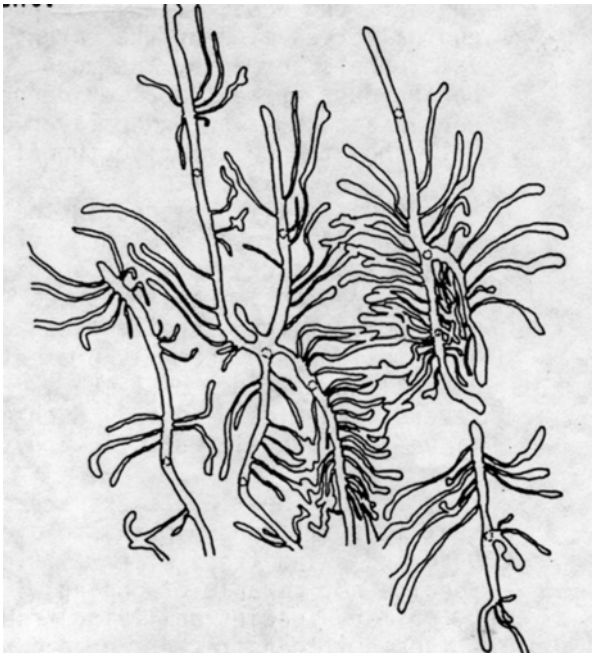
Extreme bark beetle epidemics in Douglas fir and ponderosa pine have followed such forest disasters as fires or storms. Environmental stresses such as prolonged drought or sudden extremes of temperature may weaken trees, oftentimes cumulative in nature.

Trees in urban or suburban areas often react to stress in the same way, even in a more pronounced way than in a forest. Also, they are much more visible and valuable for aesthetics, landscaping, or shade purposes. Bark beetle attacked trees rarely survive. To be effective, chemical insecticide must be applied prior to adult beetle flight and re-applied through the flight period in order to maintain a toxic protective film over the entire bark surface. This is an impossible task in the forest and nearly so in the homeowner environment. The loss of persistent insecticides via cancellation further complicates matters. Protection then would be difficult, expensive, and does not address the basic problem that the attacked tress are likely unthrifty for other reasons. The bark beetle attack is the final blow.

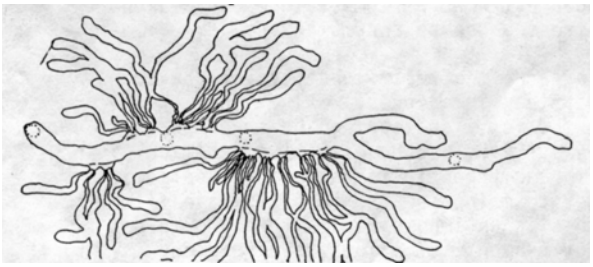
Facing a beetle attack, removing the affected tree serves as the best alternative, however difficult it may be to accept the loss. Replant a species that is hardy and suited to the local environment that will satisfy the requirements imposed upon it. This will differ with site and individual preferences. Compromises may be in order. When we see native trees damaged at periodic intervals, it is easy to predict the fate of exotic tree species planted outside of their original element.



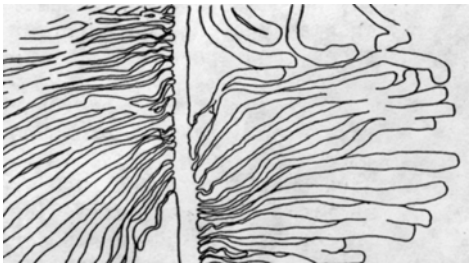
Gallery pattern of the fir engraver.



Gallery pattern of the pine engraver.



Gallery pattern of the spruce beetle. with larval galleries radiating outward



Gallery pattern of the Douglas fir beetle from the egg gallery in fan shapes.

Fig. 2. Larval galleries of several species of bark beetles. These are found under the bark.