

**BARBARA COLFAXIANA SISKIYOUANA (KFT.),  
A PEST IN CONES OF ABIES GRANDIS.**

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*Barbara colfaxiana siskiyouana* (Kft.) is a member of the family Olethreutidae, of which a number are cone feeders. Keen (1958) reported it as being a pest on a number of species of *Abies* probably throughout the range of hosts. In recent years, it has caused considerable damage to cones of *Abies grandis* (grand fir) on southern Vancouver Island. Observations reported here were made in 1971, 1972 and 1973 on grand fir, and they generally agree with those made earlier by Keen for the western United States.

In 1973 eggs were observed during the period from April 13 to May 1 and larvae from May 8 to July 30. Larval head capsules, based on 346 measurements, ranged in width from 0.216 to 1.410 mm, slightly larger than those of *B. colfaxiana* in Douglas-fir cones (Hedlin 1960). Pupae were first observed on July 10 and were present in cones throughout the winter until April.

Adults emerge in April and oviposit on the bracts of young cones. Eggs were laid on bracts near the cone extremities; none were seen at the mid portion of the cone. At first the young larvae feed on the edges of the cone scales but later tunnel within

the scales towards the axis of the cone. By late June, they begin to feed on the seeds and scale tissue by tunneling spirally around the axis. Two or more larvae in the same cone construct parallel separate tunnels. During July, the larvae construct silken pitch-coated cocoons perpendicular to the cone axis. Pupation occurs with the anterior end toward the cone exterior. Infested cones remain on the tree over winter. Normally the moths emerge the following spring but some remain in prolonged diapause and emerge one or more years later.

Insect feeding causes the cone scales to die and turn brown; by the end of July, damage is readily apparent from the exterior of the cone. The feeding causes a heavy flow of pitch which fuses the cone scales and prevents the normal disintegration of cones in autumn. Of 185 cones collected at random from 3 trees, 27% were infested. Multiple infestations are common. Twenty cones collected in 1973 were infested by a total of 93 insects with an average of 4.65 (range 1 to 17) per cone. Cones infested by at least two insects suffered 100% seed loss. This suggests that seed collectors should avoid all cones obviously infested by this insect.

**References**

- Hedlin, A. F. 1960. On the life history of the Douglas-fir cone moth, *Barbara colfaxiana* (Kft.) (Lepidoptera: Olethreutidae), and one of its parasites *Glypta evetriae* Cush. (Hymenoptera: Ichneumonidae). Can. Ent. **92**: 826-834.
- Keen, F. P. 1958. Cone and seed insects of western forest trees. U.S.D.A. Tech. Bull. 1169. 168 pp.