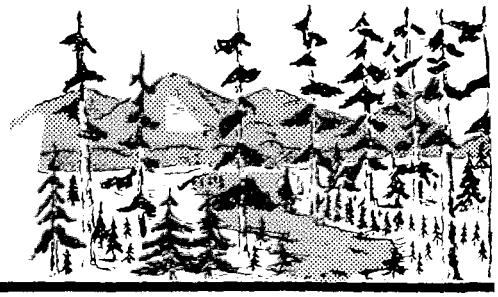
Timber Talks



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HOW MUCH SPRUCE SEED NEXT YEAR?

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Renewal of our forest resources, naturally or artificially, is dependent on the supply of seed. Concomitant with this requirement, the seed must be available at a propitious time. Morphological characteristics of the buds, that predict future abundance of seed and are recognizeable at a date well in advance of the time the crop matures, would facilitate planning for its collection, aid in the organization of tree nursery programs and give guidance when site preparation should be undertaken. Included amongst our commercially important trees that have bountiful seed crops at irregular and unpredictable intervals are white and black spruce. Close examination of selected trees in the Prince George area revealed features of the buds that aid in forecasting abundance of seed of these species.

The outermost scales of both vegetative and reproductive buds of white spruce are thick and green. Reproductive buds are usually terminal or sub-terminal, and by mid-September at least 1/4" long and 1/8" wide and ovate to obovate. Terminal vegetative buds are usually 1/8" x 1/8" in size and dome-shaped. Female reproductive buds are most abundant in the upper crown and male buds in the mid-crown of the tree. Although male buds are broadest at their center and female buds broadest at the base and more pointed in shape, their differentation is sometimes difficult without dissection.

Vegetative buds of black spruce are less than 1/8" in width and length and dome-shaped and male reproductive buds slightly smaller and globular. Although female reproductive buds are slightly longer than vegetative buds, it is difficult to distinquish between them unless they are dissected. Preliminary investigations, however, have indicated that a large number of female buds usually occur concurrently with an abundance of male buds.

Recognition of reproduction buds of white and black spruce is possible in the fall before the cones mature. A limited number of such buds at that time would indicate a negligible seed crop the following year. Reliable prediction of a bountiful crop requires periodic re-examinations. An abundant supply of reproductive buds at an early date may be seriously reduced by adverse weather conditions, insects or disease, before the seeds attain maturity.

The described morphological characteristics of buds permit prediction of the cone crop on an individual tree. Reliable prediction for a forest stand requires that an objective method be used to relate number of reproductive buds in a sample to the quantity of viable seed the stand will produce.

REPORT: Cone Crops of White and Black Spruce are Predictable. S. Eis, Forest Research Laboratory, Victoria, B. C.