RED SQUIRREL DAMAGE AND LARCH GENETICS[1]

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The red squirrel of the Northeast belongs to a strictly North American genus -- Tamiasciurus -- which differs both morphologically and ecologically from the numerous species of the more widespread genus Sciurus. The common red squirrel of Europe --S ciurus vulgaris -- is akin to our grey squirrel, S. carolinensis, and differs sharply from the American red squirrel in structure, in temperament and in habits.

Characteristically, the American red squirrel is a denizen of the northern coniferous forest. Its food habits are closely related to its environment, the staples of the winter diet being the buds and seeds of conifers. Its cutting and storing of cones in autumn, against the time of winter scarcity, is well known -- and the practicing forester in the Northeast is almost entirely dependent upon "squirrel-cut" cones for his seed supply. In the red squirrel of Europe, this cut-and-store habit is only weakly developed -- and so our Continental friends tend not to include this creature in their seed-collecting plans.

The noisy, agile and industrious red squirrel, who spends so many late summer and early autumn days cutting cones, is a welcome addition to the ranks of our forest workers. We are especially grateful when the cones come from some magnificent forest-grown tree whose lowest live limbs are fifty feet from the ground! Were it not for the squirrel, we could hardly afford to gather such choice seed!

But when, in late winter, even the stored food supply begins to run out, the squirrels resort to other foods. It is then that they become something of a nuisance, cutting conifer twigs in order to eat the buds in the relative safety of some snowbank and its

Figure 1.--What the squirrels did to some European larch.

The 1962 node was stripped almost clean of buds; tips of the branches below were heavily cut.

[1] Mr. C. H. Frommer presented a number of Mr. Cook's colored slides illustrating selective squirrel damage on larch during the picture session following the NEFTIC banquet.

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associated escape holes, mile they often cut twig-tips iron Norway spruce and Scots pine, the clipping is most detrimental to larch.
equally -- and that is what should interest the tree-breeder!

At Cooxrox Forest, in eastern New York, we have an extensive collection of larches, both species and hybrids,, as well as an abundance of red-squirrels, Both have been under close observation for thirty years and more. Consistently, the yellow-twigged European larches -- Larix decidua -- are heavily cut, especially if they be near some favorite home base, such as a scrubby apple tree or a patch of evergreens. Often, such larches are reduced to mere pikepoles, the twigs and branch-tips being cut off, with consequent reduction in the next season's foliage. All this can seriously effect diameter growth. I suspect -- and it is no more than a suspicion -- that the Sudeten race may be a trifle less susceptible to damage than the races from Austria and the Dolomite Alps.

Figure 1 shows what the squirrels did to some European larch of the Cranston strain, which is probably of Scottish origin, Conversely, the red-twigged Japanese larch -- L. is practically immune to twig-cutting, and so is the brown-twigged Dahurian, L. elini, Among the Dunkeld hybrids, L. x eurolepis -- and Cooxrox has everything from known F-1 to putative F4 -- those that resemble European in having light-colored twigs are severely cut, while those that look like Japanese are untouched, Color, per se, probably has nothing to do with feeding by squirrels, but is probably linked to taste, which renders some buds unpalatable.

In breeding better larches for use in the Northeastern United States, resistance to twig-clipping by the red squirrel should be one of the criteria for selection, lest we find ourselves growing squirrel food instead of timber.