Pine Pure or Pine in Mixture

A Plea to Those Who Would Grow White Pine Forests to Copy Nature and to Beware of Breaking Her Laws

BY A. C. CLINE

THOUSANDS of acres of pure white pine have been planted in the East and thousands more are being planted. Because white pine is the best east-coast conifer, almost everyone says:

"Let us have lots of it; let us plant it anywhere we can find room—in pure stands. The more, the better!"

But white pine never grew "naturally" in pure stands, except on sandy soil, and it seems quite certain that it was never intended to be grown that way.

Human attempts to improve upon Nature by favoring growth is practically at a standstill. And yet the planting of pure pine goes on, and more and more money has to be charged against the white-pine weevil, the Pine weevil, the white-pine blister rust, heart rots, and other "ailments." Even were it economically possible to eradicate all of these enemies, the fact would still remain that pure, even-aged stands of white pine, on the heavy soils, do not come up to our expectations. Owing to the uniform height of the trees, crown friction often starts to develop when the stand is not over fifty years old, and gradually so reduces the size of the crowns that growth is practically nil. Furthermore, the lack of a mixture of hardwoods and heavy-foliaged softwoods, such as hemlock, certainly reacts unfavorably upon the productiveness of the soil, as well as upon the quality of the pine.

In contrast to the general unhealthiness and poor quality of white pine grown in pure stands is its health and high quality when grown in proper mixtures. In the old-growth forest on rich soil white pine grew singly or in small groups in mixture with numerous other species, both hardwoods and softwoods. Its early struggle with

WHAT OFTEN HAPPENS IN A PURE, EVEN-AGED WHITE-PINE STAND

The camera which snapped this picture was pointed upwards into the crowns of the trees. Note how friction has worn the crowns down to mere wisps. The crooked stems are caused by the white-pine weevil. These trees are less than seventy years old, yet they have been in a stagnant condition for at least a decade.
its neighbors served to prune it of its dead branches, thus
improving its quality, while the whole rank and file of
mixed growth insured its long, healthy life and final domi-
nance in the stand. When once it had overtopped its as-
sociates, its crown expanded, its growth was accelerated,
layer upon layer of clear wood was laid on, and it retained
its health and vigor for a century or two.

But it is not necessary to allow white pine to grow for
two or three centuries in a mixed stand in order to secure
many of the advantages of the mixture. Recent studies
made at the Harvard Forest have shown that natural
forces may be so directed and speeded up by silvicultural
treatments as to justify the growth of pine in mixed
stands on rotations of well under one hundred years, and
such mixtures give promise at least of alleviating many
of the "ailments" of the pure pine stand, as well as affor-
ding the distinct advantage of not having "all the eggs in
one basket." Furthermore, pine-hardwood mixtures lend
themselves to a lengthening of the rotation, without dan-
ger of stagnation, thus making possible the production of
large, high quality timber.

A REMNANT OF OLD-GROWTH MIXED FOREST
White pine, on the heavy soils, grows "naturally" as single
trees or in small groups within mixed woods composed of a
great variety of species, both hardwoods and softwoods.

WHAT HAPPENS IN A MIXED STAND
Note the clear, straight stem of a pine which has grown up
with hardwoods. This pine has outgrown all of its neighbors,
and, with its crown completely exposed to the elements, it will
remain healthy and vigorous for a century or more, putting on
layer upon layer of clear wood of highest quality.

Admittedly, there are good arguments in favor of
planting pure white pine in the case of private industries
which are almost wholly dependent upon it. On the
other hand, it is highly desirable in the case of public
forests, where due regard should be had for stability,

permanency, and a safe public investment, to favor the
establishment of stands which are well adapted to the en-
vironment—stands which will remain healthy and produc-
tive over long periods. Moreover, if the public does not
take up the production of high quality, large dimension
white pine, such as can be grown only in mixtures, it is
doubtful if we shall ever have any.

By far the safest and surest motto for one to follow is—"Copy Nature and hasten her work," and any program
of forest establishment which is not in accordance with
Nature's laws is bound, in the long run, to fail.

Recreation Conference Proceedings Published

THE COMPLETE proceedings of the National
Conference on Outdoor Recreation, held in Wash-
ington, at the call of the President, May 22-24,
have been published as Senate Document No. 151, 88th
Congress. In it will be found the details of the first in-
stance in which the moral, spiritual, and economic values
of outdoor recreation have received formal recognition by
the head of a great nation.