INDUSTRY'S PART IN FOREST TREE IMPROVEMENT RESEARCH IN THE LAKE STATES

by J. W. Maconl/

Forest tree improvement research in the Lake States so far has concentrated on basic or quasi-basic problems in an effort to accumulate a store of knowledge that may eventually be adapted to practical forest management. Because of the nature of the general program, the momentum of this work has been set by public and educational research organizations. But many of the projects could not have been developed to their present state of accomplishment without the cooperation of the Lake States forest industries.

Relatively little original work has been done by individual forest industries. Only two companies have projects that date back more than 2 or 3 years. However, industry has an important role in tree improvement research through its cooperative efforts with Lake States research institutions. Also through this cooperative work, industrial foresters have been exposed to the tree improvement science and scientists, and their curiosity has been aroused to the point where a number of them are beginning a few experiments of their own. Much of this work may be haphazard, but it does contribute to the background that industry will need before it can apply some of the products of forest tree improvement research.

Cooperation by industry in tree improvement research work has been in three general categories. The first of these consists of grants of money to support research. The Institute of Paper Chemistry's genetics program, which is supported by paper companies, is an example of this type of cooperation.

A second form of cooperative work involves the release of land or other facilities for use by the research institution. The work of the University of Minnesota in the D. M. Gunn Memorial Park illustrates this type of collaboration. The third form of cooperation consists of actually sharing the work. Some of the Lake States Forest Experiment Station's seed source studies are specimens of this kind of cooperation.

In actual application of tree improvement knowledge, industry has taken the lead in one field - the growing of forest planting stock from seed of presumably better-than-average genetic quality. The seven industrial forest nurseries in the Lake States produce about 7 million trees annually. All of these nurseries have a seed-quality program wherein at least

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1/ Forester, Consolidated Water Power and Paper Company. Mr. Macon represents the Lake States Council of Industrial Foresters on the Tree Improvement Committee.

part of their seed requirements are collected under direct company supervision from selected trees and stands.

Based on a September 1959 survey of members of the Lake States Council of Industrial Foresters, the following companies are engaged in some form of tree improvement research work:

Blandin Paper Company. --Through the Blandin Foundation the Blandin Paper Company has given money to the University of Minnesota to finance tree improvement work.

The University has established a Tree Improvement Arboretum on company land in the D. M. Gunn Memorial Park. Selected Populus and conifer trees and hybrids are planted here.

The company cooperated with the University in the establishment of a white spruce seed source planting in 1958.

It also collects as much seed as possible from selected trees or stands for its nursery.

Consolidated Water Power and Paper Co. --In 1950, 1951, and 1956 the company established plantings of white spruce transplants selected in the nursery for exceptionally fast height growth. The 1956 planting contains the tallest 700 transplants produced in the nursery that year. Control trees are included in the plantings.

They supervise the collection from selected trees or stands of most of the spruce seed used in the company nursery.

Diamond Match Division - Diamond-Gardner Corporation. --The company cooperates with the University of Minnesota on field testing aspen and paper birch hybrids and in studies of grafting superior aspen scions on natural aspen suckers in the field.

Owens-Illinois. --The company has experimented with gibberellic acid applications to aspen, red pine, and white spruce.

Kimberly-Clark Corporation. --The corporation helps support the genetics section of the Institute of Paper Chemistry.

They cooperate (1) with the Institute in the field testing of aspen diploids and triploids, (2) with the University of Wisconsin and Dow Chemical Company on hybrid aspen field testing, and (3) with the University of Minnesota on developing techniques for establishing seed orchards.

They supervise collection of seed for the company nursery from selected trees and stands. Seed lots are labelled and the stock is planted in the vicinity of the geographic origin of the seed.

Marathon .--This company supports the genetics section of the Institute of Paper Chemistry, and cooperates with the Institute in field testing aspen polyploids.

Minnesota and Ontario Paper Co. --They are developing techniques for the establishment of red pine, white pine, jack pine, white spruce, black spruce, and balsam fir seed orchards.

Mosinee Paper Mills Co. --This company is cooperating with the Lake States Forest Experiment Station in its study on racial variations of jack pine.

Nekoosa-Edwards Paper Co. --The company has established seed source studies of jack pine, red pine, black spruce, and white spruce from 1954 through 1958.

They are cooperating with the Lake States Forest Experiment Station on jack pine seed source studies.

They supervise the collection from selected trees and stands of much of the seed used in the company nursery.

Northwest Paper Co. --They supervise collection of much of the seed for the company nursery from selected trees and stands.

Rhinelander Paper Co.--This company supports the genetics section of the Institute of Paper Chemistry and cooperates with the Institute in field planting polyploid aspen and larch.

They cooperate with the University of Wisconsin on white pine blister rust resistance tests.

They supervise collection of much of the seed for the company nursery from selected trees and stands.