PROBLEMS NEEDING STUDY IN GROWING MORE PRODUCTIVE TREES FOR PULPWOOD*

B. L. Berklund 1/

TREE BREEDING AND IMPROVEMENT

Both paper makers and foresters have in mind a dream tree which has all possible desirable qualities including long fiber, dense wood, fast growth, etc. However, most field foresters do not have the facilities or time to get into tree breeding very seriously. I shall, therefore, limit my remarks to some practical genetic improvements that we can make in normal forestry operations.

1/ Forester, Woodlands Department, Nekoosa-Edwards Paper Company.

Today we are approaching the height of an intense planting period participated in by all types of ownerships. At this point people in the pulpwood field can help themselves by a more serious attitude to the matter of seed source. There is difficulty to control seed source and most often it must be obtained where available. However, we foresters have probably taken the course of least resistance in the matter when there is sufficient evidence to indicate need of definite policies on seed collecting.

The same can be applied to grading of nursery stock. We sometimes lose sight of our goal in our stress for millions of trees and number of acres planted.

Those companies who own their nurseries have a wonderful opportunity to practice quality control, particularly where nursery production and reforestation are under the same control. Most foresters and nurserymen in the forestry field are cognizant of today's basic genetics and tomorrow's future forests, and are taking steps to that end. For those who are not doing their best in this respect, plans should be made to incorporate the basic knowledge of genetics, striving for quality as well as volume production.

GENETICS AND CUTTING PRACTICES

Now, let us consider the matter of genetics and cutting practices. There are many healthy signs indicating the sincerity among forest owners to practice good forestry. However, in our zeal to try new methods and ideas we may lessen our caution and reach too energetically to promising short cuts.

Over the past 25 years, American investigators have done much good applicable forestry research and more is now in progress which will give valuable results. It has been said that if all our forest land received good forestry practice, production of forest products could be tripled or quadrupled. It should be safe to say then that if we applied all that we know about forestry today the quantity of wood produced could be doubled. It follows then that our big job today is to sell application of forestry research first to our foresters, then to our operators©

Economic reasons in one form or another are usually cited as to why certain forestry practices are not done. Economics should be the yardstick in any practical forestry enterprise. It isn't always easy, however, to project today's economics 20 to 50 years hence. What might seem good economics today may prove to be false economy.

If one considers what a plantation with ideal spacing can do as compared to wild land varying all the way from unstocked to over-stocked stands, I don't mean to be overly optimistic by saying the "sky is the limit." For sake of classification, let us call planting the ABC end of forestry and hybridization the XYZ end. In between we have what I would call the

"meat" of good forestry, and it is in the D-to-W spread where practicing foresters can be of influence by taking the reins.

Today, it sometimes costs up to $40.00 per acre to plant. On such difficult planting chances, theoretically, it means that one might spend an amount approaching $40.00 per acre to insure regeneration by proper harvesting methods. Without getting involved in the interest factor of financing, it means that stumpage might be considerably reduced on intermediate cuts preparatory to the final cut if that is what is required to get regeneration. It wouldn't be infeasible to consider giving away the stumpage in intermediate TSI cutting.

Today, several Wisconsin mills are buying wood in Montana, Colorado, Wyoming, and Canada at very high freight rates. Let us suppose that we can some day reduce average freight cost from $10.00 per cord to $5.00 per cord by getting more local wood. On a mature local stand with 20 cords per acre, we theoretically have $100.00 per acre to play with. It would appear a wise investment to spend considerably more of this saved freight than is now spent, in such a way as to assure regeneration. Here again it must be recognized that the interest factor would reduce the actual value of the freight saving. I, of course, am not advocating that we should spent the $40.00 or the $100.00 on every acre of land, but I am advocating a review of our thinking on harvesting policies. Money put into forestry work is an investment, but that spent on freight is not.

In the foregoing there are, to be sure, many economic aspects not touched upon, but the point I wish to leave is that if we don't incur some of these expenses now they will come up in the future and may turn out to be more costly.

Most foresters will agree that using a diameter limit of cutting tolerant species is better than nothing, but it is basically wrong for intolerant, even-aged species. Yet I could quote sale agreements or contracts from both public and private forestry agencies which specify diameter limit cutting for jack pine and aspen stands.

The long-range effect, particularly in jack pine areas where cones open, is bound to be a net genetic deterioration of future stands. How much this will be I cannot answer. Is one foot per generation plausible or even somewhat conservative? In areas of serotinous-coned mature jack pine, why is there a diameter limit at all?

Why do these practices persist? Is it the economics of (a) high marking costs, and (b) lack of profit in an operation by producers, or is it a casual indifference by foresters as long as they can continue to fill today's quota of wood? If it is economics, we should perhaps reconsider the figures on high regeneration costs and amounts spent for freight. If it is primarily indifference, then we should face the job of selling complete forestry to production foresters and their producers.

Certainly we might look more critically over the Jurisdiction we have as foresters, with an ear bent to the long—term genetic considerations as well as to the short—term present—day economics.