Research as Aid to Forest Production

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In statistical studies of growth, we fell representative sample trees in a given stand and by methods of forest mensuration determine the rate of growth in the stand for a variable length of time reaching into the past, or we lay off permanent sample plots which are measured at intervals throughout the life of the stand.

A plot of mixed white pine and birch at the Petawawa Forest Experiment Station. The plot has been thinned and the trees marked so that their subsequent growth may be determined. The piles of thinnings were removed and utilized.

In these cases, we aim for the same results by short time studies that we do by long time studies. Although short time studies are of great value in securing useful information, it is only through the establishment of permanent sample plots, continued for a long term of years that accurate basic data on forest production can be acquired. In short, the scientific basis for timber production rests in the intensive study of representative areas of our diverse types of forest often extended over a long period of time. The sample plot method must be used in studying the yield of seed, in studying germination and survival in the field and nursery, in studying growth and yield, in studying succession or the evolution of forest vegetation on a given site, and in observing and recording every change in the stand whether it be in the surface vegetation, in the shrubs, or in the trees themselves.

Where Should Research in Forest Production Rest?

A large forest land owner was in my office a few days ago who wants to establish sustained yield on his property. He is willing to expend a large sum of money in the enterprise as soon as he can see that economic results will justify the expense incurred. He wants to know how he is to attain reproduction, what growth and yield will follow as a consequence of present outlay, when and how should cleanings and thinnings be made and what financial advantage will result therefrom. He has put these questions to foresters, but they cannot tell him because there is no definite body of dependable data based on research which applies to his particular problems.

The problems of forest production are too large to be left to the individual for his solution. They must be solved by the public for the benefit of all. Research in forest production demands permanent organizations supported by the public. These permanent organizations must have staffs of thoroughly trained efficient investigators attached to forest research stations. We find these stations now in nearly every country where forest production is recognized as a matter of national concern. In recent years they have been established in the United States and I am told that Canada looks forward toward their establishment on this side of the line.

The splendid work done in Austria, Switzerland, Germany and India are but examples of the great good and the impetus to better forestry that flows from well organized productive work of this nature. The efforts of foresters in these and other countries working at or through forest research stations have given the old world a body of information based on research which lies at the very heart of their siliviculture practice.

As I see it, the greatest need in forestry on this side of the water today is adequate well organized research in forest production. Even the forest research that we have overemphasizes the problems of utilization and almost ignores the great far-reaching basic problems of reproduction, growth and yield which must be solved before we can hope for sustained yield and silvicultural betterment. Silviculture is the weakest link in American forestry today and it ought to be the strongest.

The forest land owner wants to know what he ought to do and what he can do in his forest in order to attain sustained yield without financial loss. He wants to know how to get the fullest use out of his property consistent with profitable use. He wants to know if a certain procedure will result in profit or loss, or will give him a fully stocked stand of young timber. He wants to know if three dollars per acre spent in cleanings is a profitable use of his money. Are we foresters of the western world with our woeful lack of specific knowledge derived from research and experimentation bold enough to answer? If we do, we are as likely to be wrong as right. If we are to give reliable silvicultural information, we must have reliable silvicultural conclusions drawn from painstaking and trustworthy research.

The importance of research in timber production is appreciated much more in Europe than in America. This is shown in the preponderance of sil-

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