

Review

Forest Research in New Zealand 1962

Forest Research Institute, New Zealand Forest Service.

THE professional staff of the Forest Research Institute totals fifty-three, including a Director of Research. That such a wide field can be covered by so few, even with the help of a large number of temporary "female computers", is a cause for admiration. One gets the impression, however, that too much has been attempted with limited resources, particularly in silviculture, and that they are now confronted with the unenviable choice of doing a little on a lot, or a lot on a little. This predicament is not, however, peculiar to research in New Zealand.

Forest research in New Zealand has begun to enjoy the patronage of private industry which proposes to contribute funds to the Research Institute to finance specific research projects. The report embraces research in silviculture, forest tree improvement, forest pathology, forest management, protection forestry and forest products. A brief description of developments in some of those branches may be of interest.

In silviculture the emphasis is on economics. The wide disparity in the thinning and pruning regimes being practised is a matter of concern. Although locality and site factors justify some variation, it is felt that the fluctuations in thinning schedules from year to year can hardly be justified. The case for more research in this field is considered to be of the utmost importance, particularly research on the effects of green pruning, on the mutual interactions of green pruning and thinning, on yield predictions for thinned stands and on the economics of alternative regimes carried through to the final processed product. The supply of high-grade timber from indigenous forests is rapidly approaching exhaustion and future supplies must come from exotic species, particularly *P. radiata*. An investigation of a stand which had received delayed thinning and pruning revealed that the pruning had been too late to give a high proportion of veneer quality timber. Although the better logs indicated the potential of *P. radiata* for supplying good veneers, it was clear from the study that if pruning is to effect the maximum grade enhancement, the branches must be removed while they are still green and small, without seriously reducing increment and without encouraging the development of large whorls above the pruned portion.

Yield tables for thinned stands have high priority in the research programme, although tables for unthinned stands have been in existence for some time. A study by Professor Spurr of Michigan University, during his period in New Zealand on a Fulbright scholarship, may help to simplify yield prediction. Working with Douglas fir, Spurr concluded that gross basal area and volume increments for thinned and unthinned stands were remarkably even over the range of thinning intensities applied.

In forest tree improvement there is a shift in emphasis from provenance trials to tree selection and breeding. In this connection it is thought that it may be desirable to pay more attention to factors related to specific end uses.

A significant correlation was found between seed size and altitude of seed source for indigenous origins of European larch, while a significant negative correlation was established between altitude and height of plants. Possibly this feature of seed size might be applied as an aid to provenance identification of *P. contorta*. *P. contorta* is used extensively for protection forestry and in New Zealand, also, there is "vocal and uninformed criticism" "(sometimes by people who should know better)" of the use of *P. contorta* on the grounds that it is a species with a high weed potential. While it is agreed that certain provenances of *P. contorta* do appear to have a weed potential on certain soils, it has been found to be the most promising species used so far in counter-erosion afforestation at high altitudes, just as it is second to none on our old red sandstone podsols and climatic peats.

The thesis that management and research are complementary is emphasized. "Assessment data are not much use without management, and management is on dubious foundations without reliable data on growth rates and increment." In New Zealand the complaint is of overconfidence by management in pilot research reports rather than a reluctance to accept the results of research. There have been instances, particularly in silviculture, where management, having accepted an interim result in pilot research, has gone well beyond it in practice. While it is thought that too much of this enthusiasm should not be encouraged, it is, no doubt, a measure of the confidence and trust with which management regards the Forest Research Institute.