were allowed to remain for protective purposes. The results after fifteen years are almost incredible. All the larches left have made a complete recovery from the canker, and the shade-bearers, conspicuous in the order named above, are quickly overhauling their originally planted associates. In my opinion, however, the moist conditions prevailing and unusual richness of the surface-soil greatly favoured the measures adopted, and it would not be reasonable to anticipate success to such an extent on exposed hillsides or in the more arid localities. The inspection, however, disclosed the respective merits of certain shade-enduring trees, and certainly paves the way for further researches in our New Zealand plantations. Under the shade of the larch standards *Tsuga Mertensiana* was showing to greater advantage; but this tree not possessing the economic value of the Douglas fir (whose excellent shade-enduring capabilities are proved at Novar), the latter tree for general underplanting should be given precedence. Arrangements will be immediately made to procure for trial purposes a small supply of *T. Mertensiana* seed, and reports be submitted from time to time of the results accruing.

At the Earl of Seafield's estate the results of a most interesting and promising experiment is now being watched. Beneath old oak stands—at thirty-five trees to the acre—Douglas fir has been introduced at 4 ft. to 5 ft. apart; but the difficulty attached to the removal of the "heady" oaks without causing damage to the young firs—ranging from 15 ft. to 20 ft. in height—appears to be the only objectional phase connected with the undertaking.

Throughout the greater part of Scotland the rigid climatic conditions forbids the pure planting of the Douglas fir, and underplanting with the species has been generally resorted to in the more successful plantations. Under the canopy formed by oak standards *Fagus sylvatica* were seen thriving, and these trees, particularly in the moist fertile flats, grow rapidly and attain large dimensions in admixture with any of the light demanders.

Thinning.

Much diversity of opinion exists on this very important question—thinning of plantations—and delegates were not at all unanimous in their utterances as to the time or method that should be employed to bring about the maximum of success. It was generally resolved upon, however, that in the interests of (1) girth-development, (2) correction of individual irregularities, (3) maintenance of a healthy state, thinning is absolutely essential, and it is by far a wiser policy to even curtail the extent of planting and devote the amount necessary in assisting nature by the judicious removal of suppressed, ill-formed, and superfluous trees than allow nature to produce (even allowing for the predominance of the stronger trees) perhaps double the number of poles irrespective of their commercial value. Bearing in mind the attitude that is taken by prominent Dominion arboriculturists in reference to the abandonment of thinning in our State plantations, early in the tour I ventured to impart full information regarding our planting-distances, development of trees, wages question, &c., to various specialists, and thereby opened a field for profitable discussion, which was continued from time to time as instances of correct and faulty practices came under our notice.

Pruning is, however, almost superfluous in a well-planted forest, and fortunately so, as with the ever-increasing density the impossibility of detecting malformed individual trees is evident. Much depends upon the purpose for which timber is required, and a method of thinning any plantation suitable for the ultimate production of timber of big girth cannot rationally be applied when, for instance, big supplies of telegraph-poles are aimed at.

Instances were noticed, where plantations of injudicious mixtures or where wide planting had been undertaken, in which all attempts to regulate the development of timber had failed, and generally underplanting had finally been resorted to. One valuable point which impressed me was the greater uniformity of plantations growing on poorer soils and the more sustained struggle for supremacy by individual intolerant trees. This fact also required to be given earnest consideration in formulating a thinning scheme. Then, again, the treatment of plantations of light-demanding trees must not be precisely similar to that where the tolerant varieties constitute the main portion.

It should, then, be our ambition in New Zealand to plant as far apart as possible (consistent with modern sylvicultural practices) so that subsequent labour in thinning will not be unduly heavy. The exact period at which the first thinning of, say, larch plantations might be undertaken with greatest success depends upon the progress of trees, general uniformity and amount of individual suppression. In Tapanui district, for instance, I see no necessity to interfere with the trees (apart from removing decayed laterals from trees on, say, six fringing lines as a precaution against fire) before the twentieth year, and in Central Otago, where development is slower, before the twenty-fifth year. On the other hand, there is a likelihood of our Hanmer Springs plantations requiring first attention as early as the eighteenth year after planting. At each plantation small areas should remain untouched, and nature allowed to work out the problem of profitable timber-producing begun by artificial methods.

The expenditure usually incurred in the initial thinning operations makes the financial soundness of the afforestation proposition indeed speculative, particularly where the rate of wages is high. Judging by the amount of labour devoted to this phase in portions of the British Isles, I would estimate that an outlay of between £3 and £5 per acre would be required to effect the first thinning; but it is only reasonable to assume that a fair return from such outlay would accrue in most localities by disposal of the larger "sticks" for fuel.

Disposal of Thinnings.

The importance of making provision for the profitable disposal of thinnings, or at least some monetary return from the labour directed, cannot be overlooked, and we are faced here (particularly