STANDARDISATION OF SAMPLE PLOT PROCEDURE.

In view of the patent need for an extensive series of investigations into forest yields in New Zealand, and in view of the obvious desirability of a uniform system of measurement and compilation, an informal conference was held during the current year to discuss a standardisation of procedure in such work. Advantage was taken of the annual meeting of the Institute of Foresters in Christchurch on 4th May, the conference being held immediately following the meeting. Those present were:—Mr. C. M. Smith, Convener and Chairman, and Miss M. Sutherland, of the State Forest Service, Mr. Owen Jones of Perpetual Forests Ltd., and Messrs. Foweraker and Hutchinson of the School of Forestry.

The Chairman explained that the decisions of the conference were not official, nor in any way binding on the different interests represented; but as the members of the conference were likely in each case to direct investigational work for their respective interests, their joint decisions would be helpful to themselves, and if followed closely, would give strictly comparable results from all investigations.

Decisions arrived at were as follows:—

1. The objective of the sample plot work to be dealt with by the conference would be the study of volume increment with a view to compilation of yield tables. It was decided to limit the discussion to exotics, chiefly Pinus radiata, in pure stands.

2. The yield tables arrived at should be regional with not more than three site qualities in each region.

   NOTE.—No attempt was made to decide how many regions there should be in New Zealand. The suggestion of 3-site tables for the whole of New Zealand was rejected owing to the wide range of latitude covered by the country. The Perpetual Forests and School of Forestry activities are both restricted in locality, and co-ordination of regional tables can be done at a later date.

3. Plots should always be rectangular, and not less than \( \frac{1}{4} \) acre in area.

   NOTE.—It was also agreed, though not embodied in a decision, that the plots should be not less than 1 chain in lesser dimension.

4. The nearest edge of plots shall be at least one chain distant from any margin of stand, and plots shall be insulated by at least \( \frac{1}{2} \) chain of “surround,” i.e., a belt all round the plot, identical with the plot in all factors of site, stocking, treatment, etc.
5. D.B.H. shall be taken as 4' 6" from the ground, measuring from the higher side on sloping ground.

Note.—Australia, Canada, India, and U.S.A. all take D.B.H. as 4' 6" from ground. Great Britain and South Africa take it as 4' 3" from ground, while Europe generally uses 1 m. 30 cm. or 4' 3" from ground. All the work so far done in New Zealand by both the State Forest Service and the School of Forestry has been on the 4' 6" standard.

6. Measurements on felled trees shall be taken at 10 feet intervals, this to apply also to sections cut for stem analyses unless interfering with the utilisation of the tree. Measurements will be recorded for 1', 4' 6", 10' from ground, and thence onwards 20', 30', etc. from ground.

7. Merchantable volume shall be calculated as that portion from 1 foot above ground to a diameter of 6" outside bark, and measurement of height to this point shall be made accordingly.

Note.—A subsequent suggestion from the chairman is that as utilisation to a 4'' top may be possible, the height to a diameter of 4" outside bark should also be recorded, so that calculation of merchantable volume to that dimension may subsequently be made.

8. The units of measurement shall be:—Diameters to be recorded in inches and tenths to the nearest tenth. Heights to be recorded in feet to the following standards:—Felled trees, to the nearest half-foot; sample trees measured standing, to nearest half-foot, other standing trees, to nearest foot.

9. Instruments to be used need not be standardised by the conference.

10. Methods of marking may vary, but it is desirable to have each tree definitely identifiable subsequently, and a plot chart shall be part of the record of each sample plot.

11. No abnormally stocked areas shall be measured for yield table purposes.

12. Plots need not be replicated in each compartment, but only a qualified forester shall lay out and measure plots.

13. No yield table shall be based on fewer than 15 plots in each site class. (This to apply only to Sites 1 and 2 meantime.)

14. Periods between remeasurement not to exceed five years.

15. All trees on each plot shall be measured, irrespective of their type.

These decisions embodied the discussion so far as it was finalised. It was decided that subsequent meetings would be necessary to deal with tree classifications, and with forms of recording and compiling data.

While these matters might well be gone into at some length, it seems to the Editor that one further point should be agreed
upon at once, this being the minimum D.B.H. to be measured for volume. (See decision 15.) The School of Forestry in all its plots has commenced the tallying of D.B.H. at 4"—this means that all trees 3-6" D.B.H. and over are tallied for D.B.H. Trees below this dimension are not tallied for volume, though they are included in stocking and mortality counts.

This standard is therefore suggested to the other two parties to the conference.

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THE AIR-DRYING OF TIMBER.

Concluded.

(H. Z. Collier.)

A summary of an investigation into certain aspects of the air-drying of timber appeared in last year’s issue of Te Kura Ngahere. At that time, the study was incomplete in one project, namely, the time taken to reach equilibrium in Christchurch. This experiment was carried on until September of this year, and the final results are now given below.

The stack used for the tests was a box stack 20 feet long, 6 feet wide and 14 feet 6 inches high, of mixed lengths, but square both ends. Foundations were concrete piers giving nearly 18 inches clearance above clean well drained ground. A two foot alley separated adjacent stacks. Boards were spaced about 3 inches apart, and arranged in vertical tiers. Fillets were 2" x 1" at the two ends and 1" x 1" in the interior, spaced 4 feet apart and well aligned. A roof of a single layer of old boards was wired on to the stack.

Into this stack were inserted 8 test samples of 10" x 1" rimu 4 feet long, five pieces being heart and three sap. The ends were smeared with vaseline to prevent end-drying. The samples were placed—one piece of heart low down on south-west outer edge, another near the top on north-east outer edge, and three pairs of one each heart and sap placed in the centre of the stack, one near the ground, one half way up and the other near the top. The pieces were withdrawn at fortnightly intervals, weighed, measured for shrinkage in width, and replaced. Moisture contents were calculated from test disks cut from the end prior to the initial insertion, but this proved very faulty, and all M.C’s had to be recalculated at the finish from sections cut from the centre of the samples.

The stack was built on 25th July, 1931, and taken down on 7th September, 1932, when the experiment was concluded. The