

timbers and the extensive employment of kiln-drying schedules evolved by the Forest Service are outstanding achievements in the field of applied research. Most of the wartime research on timber utilization was confined to the development of containers for the packaging of munitions and foodstuffs.

The assignment of new staff and the centralization of research at the Rotorua Forest Experiment Station, set, as it is, in the midst of the enormous exotic resources of the Bay of Plenty and adjacent to the great indigenous forests of the Mamaku Plateau and of the Urewera country, should correct all previous deficiencies and usher in a new era of forestry research.

4. *Indigenous Forest Resource.*—Prior to the inception of the Forest Service, only wild guesses as to the extent of the Dominion's forest resources were available. The first physical stocktaking of the country's timber resources took place in 1923. It was done in the early days of the Department with a technique that is now outmoded and by a staff who were not sufficiently experienced in the types of problems involved. It made no attempt to differentiate between accessible and inaccessible forests and its results, therefore, were of little practical use. It suffered from a lack of accurate maps, and therefore reliable area figures could not be obtained; and it had the further and greater disadvantage that it was entirely without modern benefit of air photographs. By the nature of the methods employed it was quite impossible to assess the probable accuracy of the results, and this again detracted greatly from its value.

The 1923 inventory gave the estimated total volume of merchantable timber as 62,000,000,000 board feet. Subsequent attempts have been made to revise this figure, not by further organized field work, but by the collation of information obtained by forest officers during the course of their duties. Such revised estimates, for the accessible merchantable forest, vary from 16,000,000,000 board feet to 42,000,000,000 board feet. Even taking into account the facts that sawn-timber production since 1923 has totalled 6,000,000,000 board feet and that the original estimate included inaccessible as well as accessible forest, it is obvious that the 1923 figure failed to give an accurate picture of the country's forest estate. It is equally obvious that little reliance can be placed on the varying estimates provided by recent revisions, and that, in fact, even the approximate extent of the forest resource is still unknown.

The 1923 inventory concerned itself solely with the volume of standing timber and did not attempt any widespread botanical or ecological survey. Since then, much valuable information on the ecology of New Zealand's forests has been accumulated. The information, however, is fragmentary and is largely uncollated. It has not been systematically collected and it leaves large gaps in essential knowledge. Locally it has sometimes been adequate for the institution of experimental silvicultural work over restricted areas; nationally it is quite insufficient to form a basis for the sound management of indigenous forests.

There is an urgent need, therefore, for a comprehensive and scientific stocktaking, both to provide up-to-date information on the extent of existing timber-supplies and to amass the salient ecological facts upon which New Zealand's long-term indigenous forest policy must be based. The national forest survey is a major fact-finding project designed to meet this need. The means by which this project is being carried out have been evolved after a close study of forest survey methods in other countries and after a period of experimentation to determine the system best suited to New Zealand conditions. Using, as it does, the two techniques of aerial photograph interpretation and statistical analysis, the method chosen embraces the most recent developments in forest survey design. Every effort is being made to control all possible sources of error so that the results, which cannot possibly be completely accurate, will at least be of known and acceptable accuracy.

If successfully completed along the rather ambitious lines at present followed, the forest survey should provide the most important document in the history of New Zealand's timber-use economy for the next fifty years; of more lasting value, the