

EXTENSION OF PLANTATIONS.

Contrary to expectations, the output of trees from nurseries exceeded that of the previous year by 70,000. Some 3,122,680 trees (as detailed in Schedule V) were used in extending the plantations in Canterbury and Otago, in addition to a distribution of 69,169 trees to public bodies. By increasing the total area to 5,955 acres some 15,239,400 trees have been used. From the tree-planting period onward, as the supremacy of the stronger specimens is asserted throughout our young forests, the difficulty in arriving at a reliable estimate of the number actually living becomes more intense, and in presenting any required computations of this nature approximate figures only can be given.

An output of about 3,250,000 trees is expected during the ensuing season, and this total at present fully taxes the resources of the contributing nurseries. The exposed nature of all planting-out ground acquired prohibits the satisfactory use of small trees direct from the seed-beds. We are thus deterred from adhering to the more economical system adopted in other favoured localities, where lining out seedlings is not indispensable, and where the almost continuous tree-cropping over the same area is not compulsory.

In conducting plantation-work some £7,873 8s. 5d. was expended. Of this amount, £2,339 4s. 6d. was allocated to the annually increasing "general upkeep" item, whilst the working-average costs connected with "planting operations" compare very favourably with past records.

ECONOMY IN MAINTAINING EFFICIENT FIRE-BREAKS.

The initiation of certain projected reforms in our fire-preventive measures calls for a few special remarks on the subject. Unfair comments are occasionally aimed at the designs of the Department in promoting reasonable security from the fire danger; but usually these critics, on being interrogated, are quite unable to supplement our protective work with practical suggestions, and, further, frequently utter surprise on being informed of the volume of labour already devoted to this important branch of afforestation. The yearly increasing cultivation-work attached to the fire-lines induced the Department to look about for a worthy substitute for horse-work; and during the current season a limited number of sheep will be permitted to graze over certain enclosed fire-breaks, in the hope of keeping all vegetation closely cropped. The policy of allowing sheep to wander over any youthful plantation cannot be recommended, as the excessive trampling and consequent interference with the gradually forming humus has undoubtedly a detrimental effect upon the root-system of trees, particularly in moist situations. With the development of the forest, however, and the subsequent decay of herbage caused by intense shade, sheep would not be so attracted beneath the trees, and the whole reserve could then be advantageously used for pasturage. Some thirty-eight miles of fire-breaks, averaging 50 ft. in width, were kept free from inflammable growth, although at several stations the importance of this labour was discounted by the prolonged wet weather experienced during the summer period.

Recognition of the danger arising from the general use of wax matches on plantations during warm weather urged the advisability of impressing upon employees the desire of the Department to discontinue their usage whilst on duty, and it is pleasing to refer to the ready compliance with instructions shown by all concerned.

DIVISIONAL PLANS AND ANNUAL RECORDS.

The preservation of complete divisional plans of each plantation is being steadily kept in view. Already full particulars of each area are available; but the wisdom of refraining from producing such unfinished plans in the annual report will be apparent. In the meantime each year's planting is pegged off and numbered, and when the area being afforested in each district is completed all information supported by explanatory plans will be submitted. An unexpected volume of clerical work is inseparable from the rearrangement of statistics available, but after our past records have been audited and placed on a reliable basis information and any future references required may be supplied without hesitation.

IMPROVED APPLIANCES.

Each year we aim at further modernizing methods by introducing appliances specially adapted for our tree-raising work. Such devices often originate from and are constructed by employees possessing an inventive turn of mind. The Department fully appreciates these individual efforts, whether wholly successful or not, and are pleased at any time not only to experiment with suggested working-contrivances, but to freely discuss any new ideas advanced.

Under this heading brief mention might also be made of the recently imported Rohrwieser hole-borer, which has been given a fair trial at Conical Hills Plantation. The machine could not advantageously displace our spade and grubber pitting systems over the argillaceous tussocky surfaces so prevalent throughout areas now being afforested. From an economical point of view, also, no advantage could be gained by the use of the borer, as in preparing 750 holes daily a sturdy employee was kept fully occupied. The merits of the machine appear to have been overestimated in certain reviews, for, whilst a measure of success is attainable over areas where the surface soil is light, and coarse vegetation does not exist, it cannot be recommended for extensive use at the present stage. The trials, however, have been by no means exhaustive, and perhaps the appliance will be more favoured where next experimented with.

FREE AND PRISON LABOUR.

In connection with the casual tree-planting labour, the Department has been singularly fortunate in securing the services of reliable workers, who have taken more than the usual interest in the work this year. It has been necessary to employ an average number of 43·2 men in carrying on operations. Effective assistance was again given by prison labour at Hanmer Springs, where the camp has been of late greatly strengthened numerically. Each prisoner is credited with having performed work to the