

GIMMERBURN PLANTATION RESERVE.

(Area, 425 acres; altitude, 1,200 ft.; commenced operations, 1903.)

There has been little or no work carried on at this station during the year, except the work of keeping down rabbits and cutting the Californian thistles. The fire-breaks were ploughed as usual, and in some places were widened. The Californian thistle is not so rank this year, owing to the presence of couch-grass and trefoil. These two plants have a very detrimental effect on the growth of the thistle, and where the clover and couch are strong almost choke it. The stacks of oaten sheaf on the land are to be cut into chaff, and the cost borne by the associated nursery. The trees have made very satisfactory progress this season, and from the nursery, a distance of about thirteen miles, the planted area is now visible. The unplanted portion of the land has been let for grazing purposes during the pleasure of the Department.

The expenditure for the year is £18 16s., and to date £2,629 17s. 5d.

A. W. ROBERTS,
Nurseryman in Charge.

HANMER SPRINGS NURSERY, CANTERBURY.

(Area, 40 acres; altitude, 1,225 ft.; established, 1902.)

Rain fell on 132 days during the year, the total precipitation being 37.96 in. The highest shade temperature (91°) was registered on the 28th January, and the lowest (20°) on the 28th May and 8th August. Frosts were recorded on 106 nights during the year, being nearly one-fourth greater in number than in the previous year. Though rain fell on four more days than in the previous year, still there were 7.86 in. less over the whole year. Nearly 7 in. of rain fell during February and March, but the effects have been largely neutralized by a succession of dry nor'-westers. Nevertheless, weather-conditions generally have been favourable for all nursery operations, and both seedlings and lined-out stocks are in a healthy condition.

Seedling Trees.—As the fertility of the area used for seed-sowing operations for the last six years has been greatly reduced by the constant cropping, it was decided to utilize a new area which had been under clover for the previous five years. In accordance with this decision, preparations for the proper cultivation were taken in hand early in the year, the final crop of clover being ploughed in and the ground allowed to fallow for the winter months. Immediately prior to the commencement of seed-sowing operations the ground was consistently worked to bring it to as fine a tilth as possible. The seed-sowing was taken in hand on the 20th October, the work being carried out under favourable soil and weather conditions. The results obtained were highly satisfactory, the various varieties germinating well on the whole, with the exception of *Pinus Lambertiana*, which was a total failure. Remarks on the success of the various varieties may be found on perusal of the table appended. For the first time since the inception of the nursery the growing of trees for distribution among settlers was undertaken. Twelve pounds of seed was sown, resulting in a crop of 138,000 sturdy plants, the varieties being *P. ponderosa*, *P. radiata*, *P. maritima*, and *Pseudotsuga taxifolia*. For experimental purposes a trial sowing of 2 lb. of *Pinus radiata* was made in single drills in the ordinary lining-out ground, the results pointing to the advisability of further experiments on a larger scale. For the first time for some years past there was a total absence of the grub pest, or of any signs of disease, the whole crop presenting a fine healthy appearance. The two-year-old seedlings, comprising the varieties *Pinus ponderosa* and Douglas fir, have made satisfactory progress. The estimated number of yearlings in stock is 2,460,330. The expenditure in the preparation of the ground, purchase of seeds, sowing, and subsequent labour in connection with the raising of the crop was £243 12s. 2d.

Transplanted Trees.—Lining-out operations were commenced on the 1st August and were completed on the 8th October, a total of 1,700,300 trees being dealt with, the results being satisfactory. *Larix europaea* were, however, severely damaged by late frosts, fully 50 per cent. of the leaders being destroyed, which will greatly reduce the output for plantation purposes. The Japanese larch did not appear to suffer to the same extent as the foregoing variety, the trees having made good headway, and the majority should be fit for transfer during the coming winter. Of the other varieties lined out during the season, *Pinus radiata*, *P. austriaca*, and *P. ponderosa* may be mentioned as having made excellent headway, the remaining varieties also making very fair growth. Of the three-year-old trees it may be said that the growth is not quite up to that of previous years. The plants, however, are sturdy and well rooted, and should give satisfactory results when transferred to their permanent places on the plantation. The estimated output of trees for the coming season is about 1,000,000. The total number of trees in stock on the 31st March was 4,139,597. The total number of trees raised since the initiation of the nursery is 12,747,662. Trees to the number of 928,735 were transferred to plantations and Domain Boards during the year, details of which are shown on the appended table.

General.—For the purpose of restoring the fertility of the soil in the old seed-bed ground the area was sown with rye-grass and red clover, together with a suitable application of manure, and will remain under this crop for two or three years, the crop to be eventually ploughed in for manurial purposes. With the exception of about one acre all vacant areas were put down in oats in the early spring; and, after harvesting, the stubble was ploughed in, and should act beneficially on the soil, and tend to form humus, a constituent that is greatly lacking in the soil on this nursery. A small area of wheat was grown for the purpose of supplying thatch for stacks and straw for packing.

For the purpose of supplying horse-feed about 50 acres was sown in oats during the year—30 acres autumn sown and 20 acres spring sown, the latter proving the better crop. The whole was harvested in good condition, resulting in four good stacks, containing approximately 40 tons of sheaves. The hay-crop was saved in good condition, and will give an ample supply for the season. The carrot-crop promises well, but more rain will be required to make the crop a good one. About 20 acres of the horse-paddock was sown down in suitable pasture seeds during the early spring, and, notwithstanding