

4. AFFORESTATION AND FOREST-EXTENSION.

The details of State planting are given in the following table :—

*Summary of Operations on State Plantations during the Year ended 31st March, 1921.*

Forest Plantation.	Number of Trees planted.	New Area planted.	Total Area planted in Trees, 1896-1921.
	No.	Acres.	Acres.
Whakarewarewa .. .. .	6,170	17	7,983·34
Waiotapu .. .. .	589,480	333	7,539·65
Kaingaroa West .. .. .	599,870	502	501·84
Kaingaroa Plains .. .. .	417,995	210	6,844·28
Puhipuhi .. .. .	155,664	..	1,200·00
Conical Hills .. .. .	10,000	..	3,533·50
Pukerau .. .. .	28,000	..	573·00
Dusky Hill .. .. .	9,600	..	745·75
Greenvale .. .. .	426,425	179	1,132·00
Gimmerburn .. .. .	..	..	88·00
Naseby .. .. .	181,600	86·25	1,908·75
Hanmer Springs .. .. .	28,650	..	2,906·50
Balmoral .. .. .	424,500	54	1,046·00
Totals .. .. .	2,877,954	1,381·25	38,461·62

Analysis indicates that the acreage of plantations established this year is the lowest since 1903, whilst the number of trees set out was 833,000 less than in the previous year. 2,900,000 trees were set out—36 per cent. for replacement and 64 per cent. to new ground. The large proportion to replacement was necessary owing to the neglect and disorganization of the war and immediate post-war conditions, such as largely increased plant and material costs, and the unsatisfactory conditions in the labour-market during the year. A general reorganization of the afforestation operations was made late in the year, and the programme developed for the incoming year already promises most satisfactory and efficient results.

The year 1920 marks the withdrawal of prison labour from State tree-planting activities. A lasting monument of achievement has been established by the prison tree-planters in the wonderful forest plantations of the Rotorua region and those of the South Island.

*Tree-planting by Farmers, and Sales of Trees.*

Over 456,000 seedling trees of the quick-growing *Pinus radiata* and eucalypts, and 240 lb. of tree-seeds, were disposed of during the year to farmers and soldier settlers. The call for the hardy, virile tree stock grown in the Forest Service nurseries greatly exceeded the demand, while the total delivery to farmers was greater than that of the previous year by 60 per cent. Many hundred inquiries as to tree-planting problems have been received, and substantial advice and assistance has been given to prospective planters throughout the Dominion. The Dominion Nurserymen's Association has inaugurated an educational tree-planting campaign, and during the year have co-operated very closely with the service by the private supplying and distribution of suitable planting stock for farm wind-breaks, shelter-belts, and wood-lots.

CHAPTER IV.—RESEARCH AND EXPERIENCE.

FOREST ECONOMICS.

Exploitation and distribution of the products of the forest are complementary to the growing and production of timber crops. In other words, the sawmiller is as necessary to the forester as the forester is to the sawmiller. Recognizing this fundamental truth, an early beginning was made last year in a study of the economics of the timber industry "from the tree to the consumer." It is essential that these two interests work very closely together, and it is for that reason that a greatly increased attention will be paid to the developments of the industry. A preliminary study was made of the wood-pulp and paper situation, and the possibility of establishing a paper industry in this country. This study is being carried forward this year. Some assistance was rendered to the Dominion Newspaper Proprietors' Association in exposing to them the probable sources of pulp-wood supply and the available water-powers. When capital becomes more available a further effort will be made to induce the establishment of a pulp and paper manufactory using our indigenous wood-supplies.

Numerous inquiries regarding other specialized uses of various timbers indicate that the local markets show preference for the New Zealand manufactures where available rather than for the imported article. The work of advising on such inquiries is, however, hampered by the lack of information regarding the physical and mechanical properties of practically all the New-Zealand-grown timbers. This state of affairs, coupled with the length of time required to obtain a report on such matters as wood-pulping, stresses the necessity of establishing a forest-products laboratory to conduct such research.