

Australia, and finally to the user's machines for planing, &c. It has cut ship-loading time by one-third, unloading time by half, and port-to-user period by a half. According to numerous authorities it has set a new high standard for timber merchandising on the Australian markets. The savings which it makes possible will significantly strengthen the competitive power of New Zealand timber on the Commonwealth markets as both Scandinavian and North American timbers decrease in price.

29. In accordance with the Forests Act, 1949, revenue accounts and balance-sheets for all operating-plants are presented in Appendix XVIII. They have been presented in the narrative form as recommended by accountants societies throughout the English-speaking world. In addition, much valuable information is presented in Chapter VI, so that a very much more detailed account of operations is available than in the case of most commercial undertakings.

THE MURUPARA PROJECT

30. *General.*—Last year's report presented a twenty-four-year review of the history and development of the Department's proposals for the establishment of an integrated sawmill and pulp and paper plant at Murupara, on the Rangitaiki River, about 40 miles south-east of Rotorua. Since that review, final reports have been secured both on the sawmill and pulp and paper sections of the plant and on the logging proposals for the supply of sawlogs and pulp-wood. All confirm the essential economic soundness of the scheme. Meantime, currency revaluation has converted the project from a marginal profit-earner of the order of 6 per cent. after taxation to more like double that figure. The most important development of the year was the acceptance of the departmental recommendation that an industrial development of such magnitude necessitated both private management and direction, and with this object in view negotiations were initiated with representative British interests and are being continued. The essential features of the project are presented for public information.

31. *Raw Material.*—The raw material is to be supplied from the Murupara working circle, comprising of 284,000 acres of Kaingaroa State Forest. The annual potential sustained yield of the forest (in perpetuity) is 32,000,000 cubic feet against the project requirements of 28,000,000 cubic feet. The margin of 4,000,000 cubic feet has been provided to allow for contingencies due to insect and fungal attack and other possible losses. The forest resources are unique in that, unlike any other similar area in New Zealand, there is a diversity of species so that in the event of the insignis-pine resources being irretrievably damaged by insect or fungal attack alternative sources of supply for both sawlogs and pulp-wood will be available. Likewise they are safeguarded by the most efficient fire-fighting organization in the Dominion being inclusive of both aerial patrol and radio communications.

32. *Integration.*—Integration of a large-scale sawmill and pulp and paper plant is the basic foundation requirement of the Murupara scheme for financial success. It provides for common wood yard, steam and power plant and all engineering services for a combined sawmill, groundwood pulp-mill, sulphate pulp-mill, and newsprint and printing-paper mill. In the wood yard, tree-length logs will be cut to best advantage to feed all sections—straight top logs free of heartwood for the groundwood mill, large straight butt logs (many with heartwood) for the sawmill, and the remaining logs (crooked, and with heartwood) for the chemical pulp-mill. These three classes of raw material will be barked, and the bark, together with offcuts in trimming, &c., sent to the steam-plant as fuel. Each section of the integrated set-up takes the particular kinds of raw forest material most suited to its production and thereby secures these at a minimum price. Some operate on the waste of others, and all unusable material is employed as fuel. Yet by the sharing of common facilities, both capital and operating-costs per unit of product are so reduced that the forest-owner can realize a higher total value for his raw material.