

88. *The Painting of Wood.*—The Inter-Departmental Paint Committee has been actively engaged in seeking solutions to long-standing painting problems and in standardizing methods for judging the quality of paint coats. The panels erected by the Forest Service on its test fence at Wallaceville are beginning to show slight deterioration of the paint coat due partly to rain-spotting occurring soon after application of the top coat; minute checks and “crowsfoot” are present in a few panels, and chalking is also commencing. It is as yet too early to make comparisons according to types of priming coats applied. Two of the specific features affecting painting of insignis pine—growth rings on flat-sawn boards and resin pockets—are beginning to show through in occasional boards.

One approach to the problem of priming totara is suggested by the crystals which are readily apparent on the surface of the dry timber; with the high temperatures used for kiln drying totara this crystalline material volatilizes and is redeposited on the cooler surfaces around the kiln doors. Some of these deposits are being collected for experimental work by the Paint Committee.

89. *Plywood Manufacture.*—A technical officer of the Forest Service was maintained for some months at one of the new plywood-factories in order to study the utility of the indigenous species for rotary veneer and plywood production, the objective being to formulate practicable log grading rules for peeling material. Measurements of cubic content, recording of all visible defects, misshape, taper, spiral grain, &c., and re-examination after cross-cutting into bolts have been necessary in this study which has now covered 71 logs and 247 peeler bolts obtained therefrom. Species studied included rimu (27 logs), matai (25), tawa (10), miro (5), and taraire (2).

The incidence of defects upon the conversion of logs into rotary peeled veneers is an important subsidiary study from which useful figures are being obtained. Inherent losses due to taper, core, &c., alone have been found to amount to 20 per cent., and the study is being continued in order to determine manufacturing losses and how these can most readily be minimized. Of the 247 peeler bolts examined for grading, 146 bolts have been used in the conversion study. In the case of hardwood bolts, especially tawa and taraire, the losses in conversion are unduly high on account of excessive “shake” development; log end coatings capable of retaining their integrity in the preparatory hot-water-vat treatment are required.

In drying little trouble is experienced with matai and tawa, but rimu veneers require more adequate control of drying conditions than is provided in most veneer driers. Moisture-content control in veneers prior to assembly has been shown to be much more essential in resin-glue bonding than with casein-gluing. It may be accepted as axiomatic that close technical supervision of glue-mixing, glue-spreading, and pressing schedules, coupled with regular tests for shear strength of the finished plywood, is essential to maintenance of quality, but no less important is the necessity for waste reduction in veneer production and usage. Wastage occurs as the result both of protracted storage of peeler logs without the protection of end-coatings, and of incorrect preparatory hot-water treatment of peeler bolts as well as through wasteful peeling of veneers and subsequent carelessness in both handling and clipping. Technical control of drying and conditioning prior to assembly are equally vital to waste reduction, but the most significant conclusion is that the basic cause of high wastage is the generally poor quality of peeler logs, and it is a tribute to the technique of departmental log grading that every purchaser of peelers from Forest Service logging operations reports them to be par excellence, so much so that one manufacturer reported that if his factory could secure its whole supply in comparable quality logs, costs could be so reduced as to allow of a substantial reduction in selling-prices for its finished products.

90. *Pulp and Paper Production.*—The development of the pulp and paper industry in New Zealand on sound lines was brought a stage nearer as a result of the report which was presented by the Government's technical adviser from England. The recommendations contained in the report have been the subject of close scrutiny by the Organization for National Development. The logical step which should next be taken is a full mill-scale demonstration in co-operation with consumer interests of the manufacture from New-Zealand-grown wood of sufficient supplies of paper as will demonstrate its high utility value.

A suggestion was advanced in last year's report to improve the dimensional stability and general utility of locally manufactured structural insulating board by incorporation in a composite asbestos-cement layered product. A possibility more recently put forward is that the same objective may be achieved by means of a resin impregnation of the surface of the insulating board, and further investigations are being made along these lines.

91. *Charcoal Production.*—With the general improvement in the war situation throughout the year, no necessity arose for any further charcoal burning. A stock of 30 tons remains, total sales for the year being 32 tons.

CHAPTER XI.—MISCELLANEOUS

92. *Legislation.*—No amendments to the Forests Act, 1921-22, were enacted during the year, and no amendments were made to the regulations under the Act.

93. *Finance.*—Appendix VI of this report summarizes the receipts into and payments out of the State Forests Account during the year ended 31st March, 1945, together with those of the three previous years. The complete accounts are set out in parliamentary paper B.—1 (Pt. IV).

Revenue for the year was £460,800 (£445,303). Revenue from log sales, £54,716 (£73,317), shows a marked reduction as the result both of floods interfering with rimu-logging operations and of much decreased kauri fellings for war purposes, but substantial increases in rimu-log sales are anticipated in the immediate future. Revenue from utilization projects, £207,448 (£171,407), shows, in round figures, an increase of £36,000, against which, however, must be offset an increased expenditure of £21,000.

Expenditure under all headings stands at £748,874 (£557,257). While the additional expenditure is due largely to purchases and replacements of vehicles and heavy equipment and to significant increases in salaries and wages rates, part of it is accounted for by increased land purchases and by preliminary expenses on new areas for development during the post-war rehabilitation period.