

the fans during the off period appears to be desirable if severe conditions engendered by the radiation from the heated walls is to be avoided; the use of lower temperature schedules will also eliminate to a large degree this possible danger.

89. *Wood-preservation*.—Commercial treating companies have been urged to use locally-produced creosote wherever possible and restrict the use of pentachlorophenol and other imported chemicals to applications where a clean treatment is necessary. The results of laboratory examinations of other chemicals studied in conjunction with such Service records as are available have not revealed substitutes which can be recommended in place of the chlorinated phenol group of preservatives.

Likewise, owing to the non-availability of the best of the sapstain-preventive chemicals as a result of war restrictions, as much as possible of the departmental output of exotic softwoods is being kiln dried in order that dermatitis trouble with the use of the poorer chemicals may be reduced to an absolute minimum.

Owing to staff limitations, little progress has been made with the preparation of painted panels for exposure on the paint-test fence maintained at Wallaceville in collaboration with the inter-departmental Paint Committee. The exposure of panels to test will, however, be completed in the near future.

90. *Chemical Utilization of Wood*.—With so much war publicity given to the plastic industry, it is necessary to re-emphasize that the sawlog is by far the major product of the world's forest resources. Even including the large amount of wood employed for papermaking, the total quantity used for chemical utilization by destructive and solvent distillation, by hydrolysis, by pulping, by synthetic-fibre manufacture, by the production of plasticized woods, &c., is only about one-tenth of that used for mechanical purposes such as the production of round and hewn products, sawn timber, &c. An officer of the Department visited Australia during the year for the purpose of examining the latest developments in respect to plasticized wood, and opportunities for local application are being carefully examined.

Following the fundamental studies into the practical problems of pulp and paper manufacture from locally-grown exotics, seasonal variations in resin content were studied, the ether-soluble determinations showing a rise during spring months, falling away again in November.

Of minor problems studied, the most interesting was the development of a wooden stopper as a substitute for rubber corks for water-bottles. Of the various woods tried—insignis pine, North American white-pine, pukatea, and New Zealand white-pine—the first gave best results after softening by a boiling treatment in caustic soda, followed by immersion in glycerine and paraffin. Wide-ringed low-density wood proved to be the most suitable.

91. *Charcoal and Gas-producers*.—Charcoal-burning has continued at Rotorua, but owing to the easing of the petrol position has ceased at other centres. The demand for charcoal has remained small but steady, the cheaper Waikato "char" still being available in sufficient quantity to meet gas-producer requirements. During the year 164 tons were produced; sales amounted to 107 tons, with stocks at the end of the period standing at 65 tons.

Investigations are continuing into the use of motor-vehicle gas-producers using wood blocks or sawdust in place of "char," charcoal, or coal.

CHAPTER XI.—MISCELLANEOUS

92. *Legislation*.—No amendments to the Forests Act, 1921–22, were enacted during the year, but section 9 of the Reserves and other Lands Disposal Act, 1942, cancelled the reservation for the purpose of a public domain over Section 2, Block II, Waitahu Survey District (5 acres 0 roods 10 perches), Nelson Land District, and reserved the land as provisional State forest.

Sawmill Registration Regulations 1942 (Serial number 1942/330).—These regulations, which were required for the dual purpose of timber-control and post-war planning, came into force on 31st December, 1942, and require the owner of every operating sawmill to apply for registration within six weeks from that date; commencing in 1944, application for registration must thereafter be made not later than the 17th March in each year. Any sawmill commencing operations after the passing of the regulation is required to apply for registration within seven days from the date of commencement. (At the close of the year 413 mills had been registered.)

93. *Finance*.—A summary showing receipts and payments from State Forests Account for the past year, together with comparative figures for the previous three years, is presented in Appendix VI. Complete departmental accounts appear in parliamentary paper B.-1 [Pt. IV].

Expenditure increased by approximately £10,000, due mainly to land purchases in preparation for rehabilitation schemes, and to expenditure on the production of round timber from the exotic forests for all types for defence works. A moderate increase, which, however, is recoverable, has occurred in general management charges, due to additional timber-control duties undertaken by specially appointed staff. All other items of expenditure have been reduced.

Revenue increased by over £90,000, due almost entirely to the heavy demand for round timber for air-raid shelters and defence works generally, and to the rapid advance in sales from the Waipa Box-factory. Only at the conclusion of hostilities will it be possible to disclose fully the unprecedented extent to which the war effort has been assisted by the supply of timber from State forests and the manner in which the country's early exotic-forest policy has been vindicated.