

retained for up to three months after cutting; and that the rate of seasoning down to the fibre saturation point varied only slightly with the month of cutting. Rate of seasoning below the fibre saturation point was, of course, dependent on the season of the year, and climatic conditions generally. Over a whole year very few posts reached an average moisture content below 20 per cent., the general average varying between 20 per cent. and 25 per cent.

88. *Painting of Wood.*—A number of basic principles affecting painting of wood are not generally understood, and this is one of the factors responsible for early failures of paint coats so abundantly evident to-day. (The others, involving paint formulation and method of application, will not be discussed here.) Insistence upon the following procedure is advocated:—

- (a) Drying of weatherboarding to at least 16 per cent. moisture content and thereafter ensuring that it be kept dry until the priming coat is applied.
- (b) Skilled brush application of a good priming coat to both face and back and edges of the dry weatherboarding. The water-repellent properties of a coat applied to all surfaces will retard water absorption and the cupping likely to result from an unprimed back where the weatherboarding is exposed to wetting.
- (c) As the water-repellent properties of a single priming coat are not sufficient to withstand prolonged exposure prior to application of undercoat and finishing coat, the period lapsing between priming and the undercoat application should be limited, preferably to two weeks or less. (It is obvious that the moisture content of the wood will be an unknown factor when the undercoat is applied if the priming coat has been long exposed to weathering. In addition to the possibility of peeling of the coat due to high moisture content, the undercoat is in effect asked to fulfil a function for which by composition it is unsuited.)

Inspections of panels on the Wallaceville paint-test fence erected by the Forest Service show that useful results will be available during the next twelve months on the different priming treatments applied to insignis-pine weatherboarding. Analysis of the present condition shows that white lead and combined white lead and red lead primers of standard type with standard undercoat and finishing coat are standing up very well. Incidentally, it is noted that the exposed lower edge of the face of bevel-backed weatherboarding should be chamfered, especially where varnish-base primers are to be employed. The sharp edge of boards in the test panels is a starting point for failure by flaking of the paint film.

The kiln-drying of insignis pine is recommended, as there is apparently less trouble with subsequent bleeding of resins. Further progress in the United States of America with sealers for knots in timber similar to insignis pine may result in the shellac knotting being replaced by a more effective sealer. The shellac type, however, applied over the primer, is still recommended for local use.

Small-scale tests were made to determine whether pre-treatment of rimu and heart rimu, by dipping in recommended pentachlorophenol concentrations, in kerosene, and dieselate, was detrimental to subsequent painting. Absorption by weight by both rimu and heart rimu was substantially greater in dieselate dips than in kerosene. Paint coats were applied satisfactorily to kerosene-dipped boards after three and a half days' drying, but even after seven days' drying of dieselate-dipped boards some blotchiness was apparent in the finishing coat.

The Inter-departmental Paint Committee and its district committees have been active during the year. Arrangements for the erection of additional paint-test fences at Auckland and Christchurch should give a balanced picture of paint behaviour as affected by climate.

89. *Plywood Manufacture.*—Woods from the Solomon Islands, and to a less degree from Samoa and Fiji, have been the subject of a special investigation. Interest is attached to those decorative woods which are present in substantial quantities and are a potential source of supply for high-class veneers. The supply of five logs from Guadalcanal to a