

period required for the treatment of the top. Any of these treatments can be secured by the use of the round or long flat tanks such as are shown in Figs. 2 and 3.

Particular care is necessary to prevent creosote spilling over on to open fires, with consequent loss of posts and equipment.

CARE OF TIMBER AFTER TREATMENT.

Treated timber requires careful handling so that the treated envelope of wood remains unbroken. Exposure of any untreated wood, either by cutting or by accident, should be remedied by applying several coats of hot preservative. If posts are not used immediately after treatment they should be piled well off the ground—in close piles if completely treated, but in open piles if only the butt has been preserved.

In setting the posts the heavily treated butt portion should extend at least 6 in. and if possible 12 in. above the ground.

EXTRA LIFE DUE TO TREATMENT.

Unfortunately, there are few authoritative records available regarding the relative durability of treated and untreated fence-posts in New Zealand. The New Zealand Railways creosoted a large number of rimu and white-pine sleepers over twenty years ago, and many of them lasted for as long as fourteen years, the chief cause of removal being mechanical failure rather than decay. Bradley (5) has also treated *Pinus radiata* with good results. Weiss (7), one of the recognized American authorities on the subject of wood-preservation, has estimated the life of treated and untreated posts as follows: Untreated, five years; brush-treated creosote, nine years; dipped creosote, eleven years; impregnated with creosote, twenty-one years. The records of the German Post and Telegraph Department over a period of fifty years show that creosoted pine poles have an average life of 20.6 years.

COST AND VALUE OF TREATMENT.

The chief item of cost in the treatment of fencing-posts is the preservative. The average range of prices in the main New Zealand centres for the principal preservatives purchased in bulk is as follows, the lower values referring to locally made products, the upper to imported materials: Creosote, 1s. 6d. to 3s. per gallon; carbolineum, 2s. 6d. to 5s. 6d. per gallon; low-temperature creosote, 1s. 6d. to 7s. 6d. per gallon. Freight charges to the farm make the cost somewhat higher.

The cost of applying the preservative is difficult to estimate, as opportunities of using labour already employed, cost of fuel, &c., all require consideration. Operating under the most exacting conditions as regards the allocation of costs, it is not likely that they will amount to more than 3d. per post.

The amount of creosote absorbed varies with the species and the treatment. Table 3 has been prepared to show the volume of preservative absorbed by various-sized posts, adopting a minimum penetration of 1 in., and a minimum absorption for pines, larch, &c., of 20 lb. per cubic foot of treated wood for the butt portion and of