

a preservative are toxicity and permanency, but these are not often possessed by the same material. For this reason, and on account of the rising costs of creosotes, increasing attention is being paid to the use of such mixtures as creosote and crude petroleum, and zinc chloride and crude petroleum.

PREPARATION OF WOOD FOR TREATMENT.

Except for pressure processes all timber should be thoroughly seasoned before treatment. Care must be exercised to prevent insect and fungal attack during this period. The primary objects of seasoning are to facilitate the penetration of the preservative and to prevent the exposure of untreated wood by checking and splitting after the timber has been treated. All framing—that is, cutting, notching, boring, &c.—of timbers should be done before treatment, otherwise subsequent framing will expose untreated wood, which will require further protection.

METHODS OF APPLYING PRESERVATIVES.

Impregnation under pressure is the most satisfactory method of treating wood with preservatives. Pressure plants are seldom available for farm use, but, where possible, should be used, as they give a more efficient and economical treatment.

The open-tank process is the most effective method of treatment for farm use. Although referred to as a non-pressure process, it uses atmospheric pressure to secure impregnation of the wood. The posts are heated for a certain period in a hot bath of the preservative maintained at a temperature of 180° to 200° F. This has the effect of partially expanding and driving out the air and moisture in the wood. On transferring the posts to a cold bath of the preservative maintained at a temperature of 90° to 100° F., or on allowing the hot bath to cool, the air and moisture in the wood contract and the atmospheric pressure forces the preservative into the timber. Except in the case of a few easily treated woods, there is little absorption of the preservative during the hot bath. The periods of immersion in the hot and cold baths vary with the species.

A few porous woods such as *Pinus radiata (insignis)* and *P. muricata* may be successfully impregnated by soaking in a bath of the preservative at ordinary air-temperatures, but the timber must be particularly well seasoned.

In the dipping process the wood is immersed for a period of from five to fifteen minutes in a hot bath of creosote maintained at a temperature of 180° to 200° F. For this treatment the timber requires to be not only thoroughly seasoned but also free of any surface moisture due to rain, dew, &c. Some porous woods are impregnated to a depth of 1 in. by the dipping process, but generally the penetration is small, although most checks and splits are well covered with the preservative.

A brush application of hot creosote or carbolineum is the simplest treatment available for the farmer. The treatment should be in the nature of a swabbing or mopping of the preservative over the wood, rather than a mere painting application. This tends to fill checks and splits which are otherwise unprotected. The presence of superficial