MATERIAL HANDLING COMES TO THE .NURSERY

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At shipping time, the all important movement at the tree nursery is the transportation of the trees from the field to the packing shed and, later, to the method of conveyance to the plantation area. Most modern nurseries handle millions of trees in a season, some up to a million trees or more per day. These trees make for considerable bulk, yet handling must be such as not to damage the trees through injury or drying out. In the first decade of the century, nursery planting stock was packed at the seedbeds into large willow baskets. These were transported by horse-drawn sled or wagon to the processing areas where the trees were further packed before being hauled away for planting. Somewhat later in the century these baskets were replaced by various sizes of wooden crates and, of course, motorized equipment replaced the horse-drawn vehicles. The wooden crates are still used as containers for moving and storing trees in nurseries. Round metal tubs are also frequently used to transport the trees. Most nurseries now use the paper roll in packing trees for distribution to the planting areas.

This report deals with rectangular metal crates which have been developed and used at the Lowville Nursery.[2] The crates measure 45 inches long, 18.5 inches high, and 22 inches wide. They are so constructed that they can be packed at the nursery bed area, they can be used at the packing sheds for temporary storage, and they can be filled for cold storage over winter. The crates are moved to the storage area by a low-slung trailer pulled by a tractor (fig. 1). This trailer has a bottom of rollers which facilitates

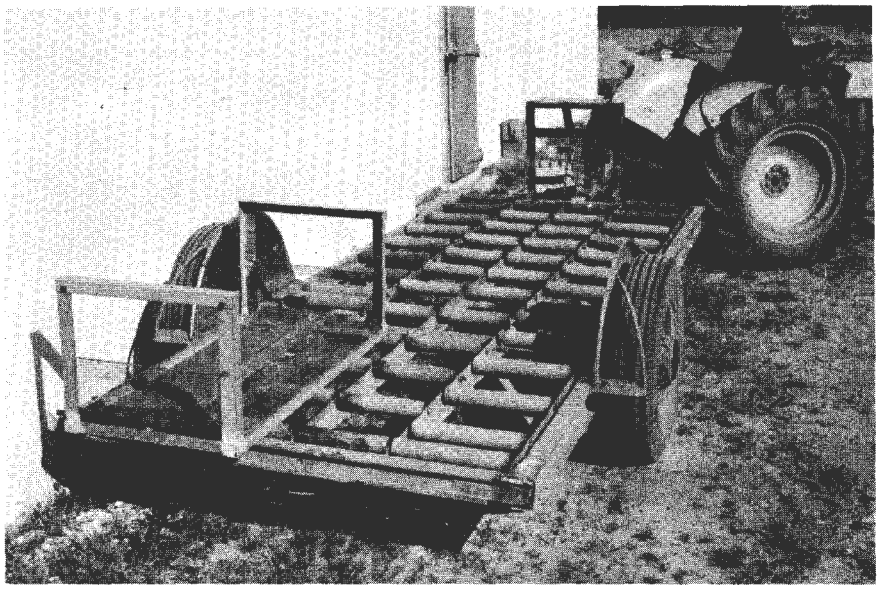

Figure 1.--Low-slung tree hauling trailer with one empty metal crate. The rollers on the trailer were adapted from old conveyors to make loading and unloading easier.

1 The writer is indebted to E. J. Eliason and Richard Abbey for suggestions and encouragement in developing this method of tree handling.

2 Mr. Evans was given a merit award in 1961 for this idea by the Award Committee *of* the New York State Civil Service Department. It was calculated that the saving *of* the steel crate system over the wooden crate method amounted to $4,849 annually at the Lowville Nursery.

unloading. The crates are handled in the storage area by a forklift, activated by storage battery.

The trees are lifted from the beds by machine, taken to the grading room and culled, counted, and tied in bunches. These are then packed into the steel crates with the roots end to end covered with moss. Trees lifted for overwinter storage remain in the crates which are stacked in the cold storage rooms. Trees for shipping within a short time are removed from the crates, rolled in paper in bundles of 500 or 1,000 trees, belt conveyed to the temporary storage area, and again put in metal crates. These crates are stacked and moved to temporary storage by forklift (fig. 2). Later, the forklift picks up the crates and moves them to the outgoing trucks where the bundles of trees are loaded (fig. 3). The trees held over winter in the cold storage rooms are brought from cold storage and prepared for shipping as above. The additional movement required is made easy by the combination of crate and lift. Thus, the use of the metal crate makes tree handling equal to any other material-handling procedure.

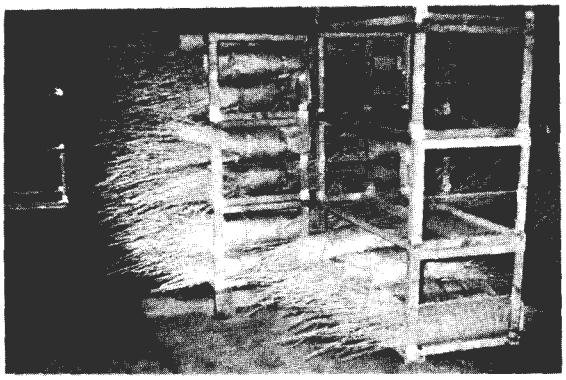

Figure 2.--Metal crates used for temporary storage of bundled larch after spring lifting.

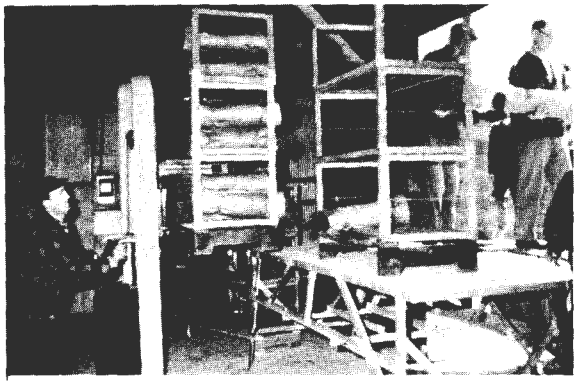

Figure 3.--Metal crates and a forklift are used in moving bundled trees from storage to outgoing trucks.