

Timber Flumes

THAT the v-shaped timber flume is a more efficient type than the box or square-sided form is one of the conclusions reached by the Department of Agriculture in a bulletin just issued on flumes and fluming. The V-shaped wooden flume requires less water and, on the average, less repairs than the other type, is better adapted to act as a slide on steep grades, and offers fewer chances for jams. Concerning a third type, the "sectional" metal flume, semi-circular in form, the prediction is made that it will come into wide use. Such a flume is strong and light, and can be quickly taken apart and transported from one place to another to be set up again.

When building flumes a good plan, says the department, is to erect a small sawmill at or near the upper end of the flume location to saw out the lumber needed for construction. Such material can be floated down the flume as fast as the latter is built and used for further extension.

For handling railroad cross-ties, cants, poles, cordwood and the like, a flume with the sides of the V 30 inches in height is large enough. For handling logs, piling, long timber or brailed sawed lumber a height of from 40 to 60 inches is recommended. The best angle for the V is put at 90 degrees.

Proposed flume lines ought to be surveyed as carefully as a line for a logging railroad, to ensure evenness of grade. Grades should be kept below 15 per cent wherever possible, and the best results are obtained with grades between 2 and 10 per cent.

Abrupt curvatures in a flume should be avoided, for they are likely to cause jams. Curves should rarely be permitted to exceed 20 degrees. It may be necessary to blast out rocks and boulders, or projecting points of bluffs, or to trestle, or even tunnel, to eliminate abrupt curves or maintain an even grade.

Telephones are recommended as adjuncts to the operation of a flume. By their use a serious break or jam can be reported immediately to the head of the flume to prevent further shipment of material. A telephone also makes it possible to notify the men at the upper end of the flume just what material to ship and when to ship it.

A flume recently built on Roehat Creek, near St. Joe, Idaho, is cited as a good example of modern V-shaped flume construction. This flume, which is unusually large and built to handle heavy logs and long timbers, is said to



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have cost approximately \$8,000 per mile for the five miles of its length, including the cost of constructing a wagon road and telephone equipment. Other flumes are cited costing from \$2,000 to \$7,500 a mile.

JUNIPER WOOD TO REPLACE CEDAR FOR PENCILS.

AFTER a long series of experiments, conducted with the co-operation of four large manufacturers, the Forest Service of the Department of Agriculture has reached the decision that juniper is the most available substitute for red cedar for use in pencil making. In pursuance of this, arrangements are now being made, by some of the largest companies, for lumber rights in the juniper lands in New Mexico and other places. The present output of pencils in this country amounts to 1,000,000 daily, while it requires 7,000,000 cubic feet of wood a year to allow for this production. The Forest Service and the manufacturers have been worried for some time over the lumber situation, as the supply of cedar is diminishing rapidly. Hard woods could be used but for the fact that few pencil users ever carry sharp knives.

SHADE TREES FOR THE FARM.

SHADE trees about a farm home add much to the beauty, comfort and sale value of the place. Better have a few cotton woods than no trees, but it is not necessary to depend on the cot-

tonwoods and the inferior Carolina poplar. Why not plant some of the slower growing but more permanent species and have the pleasure of watching them develop? Many trees from the following list are adapted to irrigated land up to 5000 feet elevation. A number of these planted about the buildings and along the drives, setting them in groups rather than in rows, will give character to the farm home and will overcome the cheerless aspect so common in some places.

American and cork elms, linden, burr oak and pin oak, soft maple, Norway maple, green ash, white ash, black ash, honey and black locusts, European white birch, Russian olive, mountain ash, black walnut, Rocky Mountain red cedar, Colorado blue spruce.

Nearly three million young trees are being set out this spring on the national forests of northern Idaho and Montana. On the St. Joe national forest in Idaho three thousand acres will be planted.

The State of Pennsylvania celebrates two arbor days each year—one for spring planting and one for the fall—in April and October respectively.

On the Deerlodge national forest in Montana one lookout station has the record of reporting accurately, by distance and direction, a fire that was sixty miles away.

Peach Tree Borer

REGARDING this pest of peach growers over the country, George M. List, of the Colorado Agricultural College, has the following to say:

"The larvae live between the bark and wood a little below the surface of the ground in a mass of gum and woody material. It is a soft whitish caterpillar with a reddish-brown head. The egg from which this hatches is laid on the trunk of the tree at or near the surface of the ground by a handsome day-flying moth. The larvae after hatching eat through into the inner bark and sapwood or trunk or large roots, upon which they feed, causing a gummy exudation. They feed in this way for about a year, often almost girdling a large root of the tree.

When the larvae are full grown they construct cocoons of the gummy exudation, their casting and silk, about an inch below the surface of the ground, where about three or four weeks later they change to moths. Although there is but one generation in a season, the moths are present most of the summer. The larvae reach maturity at different times, thus keeping up almost a constant supply of adults.

The most satisfactory method of control has been to go over the trees and dig out all the larvae once in the spring and again in early fall. Their presence is easily detected by the gummy exudation on the crown and large roots.



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