THREE ROCKS -- FOR BETTER PLANTING SURVIVAL

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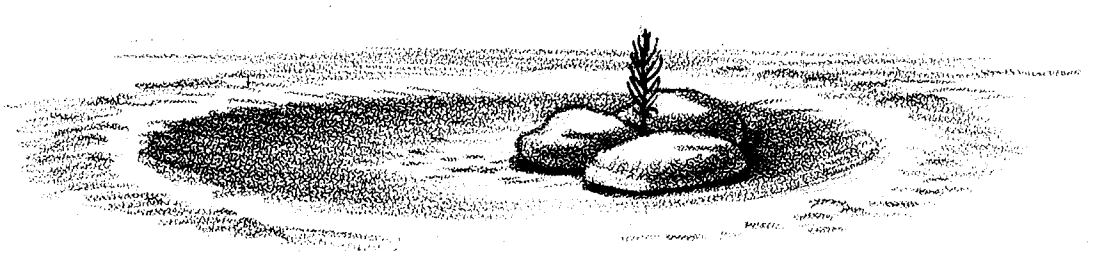
When I was in Spain a year ago I saw thousands and thousands of hectares of new pine plantation with 80 to 90 percent survival in regions receiving an average annual precipitation of only 12 to 16 inches. Most of the precipitation came during the nongrowing season, with the summers long, completely dry, and scorching hot. Yet the Spanish foresters were achieving this survival without supplemental watering after planting.

How? Several things were combining to account for this, but one of them is so simple and cheap to do and so easy for American tree planters to adopt that I commend it to the attention of all who are planting on rock strewn sites.

The last act the Spanish tree planting laborer does is to place the three largest rocks that come readily to hand around and as close to the newly planted tree as possible. This simple act, I am sure, contributes a lot to the amazing survival of the plantations that I saw.



In the illustration the area has been scalped and dished to further catch and conserve moisture

Figure 1. - Newly planted trees with three stones placed to conserve moisture.

These rocks accomplish several things.

1. They reduce loss of soil moisture by surface evaporation. Give this a moment's thought -- the soil under a freshly turned stone in a field or forest is always moist, or at least less dried out than the surrounding barren or grassy surface, even during a drought. The rock has conserved the moisture that was in the soil. A tree with its roots under the rocks would benefit from that moisture which would otherwise have been uselessly lost by evaporation prior to the tree's needing it.

2. They create a permanently cultivated area around the tree. Obviously no weeds will grow under the rocks, hence there will be no competing vegetation at the tree to use soil moisture that will be needed by the tree.

3. The rocks reflect heat that would otherwise be absorbed by the soil. This again reduces the rate of moisture loss.

4. The rocks protect the tree from total destruction by browsing of deer, rabbits, and cattle. They may save enough of the stem to sustain life until the following year when a new bud can develop to start the tree on a new bid for life.

5. The rocks may reduce or prevent frost heaving.

6. Depending upon their thickness, the rocks shade the base of the tree and reduce to at least a little extent the deleterious effect of sun and wind.

7. The rocks act as a support for weak-stemmed trees.

8. The rocks serve as a marker of the spot in which a tree was planted, hence will simplify survival examinations.

The Spaniards place the rocks as close to the stem as they can -- actually touching it if possible. The growing tree apparently has no difficulty in pushing the rocks away as it increases in diameter. And I saw no evidence of stem damage due to heat absorbed by the rocks from a fierce summer sun.

The question might be asked as to why the use of three rocks instead of two or four or five. Actually the number "three" has no magical significance -- the basic idea is to pave as large an area closely adjacent to the tree as is practical with a minimum of added labor. A ring of three rocks can be placed more continuously and closer to the stem than can two or four rocks of that size. Four or more rocks in a ring will often leave an uncovered island in their center in which weeds will prosper from the moisture stored under the rocks.

Another question that might be asked is this -- that if covering a small area with three rocks is good would not covering a larger area be even better? Would it not be desirable to pave a large diameter area around the tree with numerous rocks or cover it with a sheet of tarpaper, pliofilm, or foil? Perhaps so, perhaps not, but at any rate it would certainly cost more than the simple placement of 3 rocks in a few seconds of time. Whether or not the added benefit of more rocks or an impervious sheet would justify the additional cost is a matter for local determination for each planting site. The advantage of using only the three largest rocks handy to the laborer at the tree is that this is something readily done at minimum added cost, and without added problems of procurement, transportation to the site, or burdening the laborer with additional objects to carry.

This is a simple thing to do when rocks are readily available. It won't cost much. Why not try it sometime ?