

investment of capital. Improved forest conditions in Nebraska would mean cheaper fuel, a beneficial influence on local climate, with a consequent increase in the value of land.—Press Bulletin No. 13 United States Department of Agriculture, Washington, D. C., April 6, 1901.

**ARBOR DAY—TREE PLANTING.**

Both the timely proclamation of Gov. Deitrich and the approach of Nebraska Arbor day, remind to "plant trees." Many persons, doubtless, who desire trees, fail to plant, laboring under the false impression that the process is intricate: that scientists have a patent right on tree-planting. Facts are to the direct reverse. Any child large enough to yield a spade can plant a tree, and should be taught to do it, with reasons given for the act. To beautify our own surroundings, and return interest at least for what nature has so bountifully bestowed.

Only care in digging a tree, care in planting, and after care are required to insure success. Avoid mutilating roots when digging. Dig a spade-wide trench around the tree, distance in proportion to the size of tree to be removed; from two feet to six, thus retaining all roots and soil possible. This, where trees are not shipped from a distance. In any event, see that all mutilated roots are pruned with a sharp, keen knife, giving a clean cut on the under side of roots. When trees are shipped, and without attached soil, more care should be exercised in examining and pruning to insure healthy wood, quick healing and new growth of rootlets.

In digging hole and providing a new and permanent home for the tree, let it be from one to two feet larger and deeper than the actual space required for roots. Throw surface soil on one side of the hole, and subsoil on the other. Fill up the hole with surface soil to let the trees be about two inches deeper than it originally grew. Place the tree in position, and fill in about the roots with surface soil, being particular to have soil closely filled in about the roots. Let roots have as near the same position as they grew naturally. Don't be afraid of soil "dirt." Get down on the knees and with the bare hands and fingers, see well to placing soil about roots as indicated. This is an all important factor in planting.

When roots are well covered with surface soil, throw in the subsoil, filling hole to within four inches of surface of the ground. Fill up the hole with at least a two gallon bucket of water, churn the tree up and down. This will cause the puddle of soil and water to settle well about all the roots. When the soil has taken up the water, fill the hole up two inches above the surface with subsoil. Let stand for an hour, and then press soil firmly about the roots with the feet, leaving a slight depression, saucer shape, in circumference, near as possible, to that of the hole, dug for the tree. Let topmost soil be loose to prevent surface baking. If the season of planting be dry, or becomes so afterward, mulch liberally over the roots of

the tree. Possibly, but rarely, if exceeding drouth occurs, it might be well to pour water through the mulch to reach the roots. As a rule, however, this is not necessary. The thorough wetting of roots, top dressing with blanket, or loose soil and mulch, ought to serve the purpose. Too much surface moisture, either natural rain fall or artificial application of water, tends to induce an upward growth of roots, when a downward tendency should be encouraged.

All newly planted trees should be pruned. In pruning tops, give preponderance to roots, as they have first duty to perform—to again identify themselves with the soil. Do not be discouraged if leaves do not appear at once after planting. Roots in instances, are tardy in their work. If the tree is healthy, leaves will appear in due time. In pruning tops of trees, all limbs cut, size and over of little finger, should be painted with some substance, to prevent evaporation and induce rapid healing of the wound. Common paint will answer, or gum shellac dissolved in alcohol, with consistence of common paint, put on with a brush.

In pruning tops of trees, let one object be future shape and symmetry: "Just as the twig is bent the tree's inclined," is the old and true couplet.

What is here said of tree planting, is applicable alike to forest, fruit and evergreen trees. More care, however, should be exercised in handling evergreens than in deciduous trees. Robert Douglas, the veteran evergreen grower and planter, once said: "Never let the roots of an evergreen see the sun." He should have added: "Nor feel the wind." What is known as "sap" in a deciduous tree, is resin in an evergreen, and once congealed can never be restored. Hence, extreme care in handling roots of evergreens. In fact, the least possible exposure of roots of any tree, to the wind or the sun, the better. A tree is to be planted but once in a life time. Let it be well done. A well planted tree never forgets the hand that planted it.

Care of trees after planting is important. Other than mulch, see that the ground is kept clear of weeds and grass. If loosened by swaying winds, straighten up and pack soil over roots—not too much about the body of tree.

Brownville, Neb. ROB. W. FURNAS.

**TREE GROWING SOIL.**

[From the New York Weekly Times, March 19th, 1873.]

The following analysis of the common prairie soil of Nebraska has been sent to us, with a request to publish. It is by Prof. Goessmann, of the Massachusetts College of Agriculture at Amherst, an authority of high standing. Mr. Morton, President of the State Board of Agriculture, states that it is a fair average sample of the soil, extending over the greater portion of the state of Nebraska. It is peculiarly rich in organic matter and in potash, which sufficiently show its value, and account for the great grain crops, grown in the states where it exists:

Statement Concerning an Examination of

a Sample of Soil sent by J. Sterling Morton, Vice-President of the State Board of Agriculture of the State of Nebraska.

The soil was of a grayish-dark color, and of a light, pulverent, uniform texture—the largest pieces severally reaching 1-16th to 1-20th of an inch in diameter. Mixed with water it did not form a compact stiff mass, but permitted, in a desirable degree, its percolation. The abundance of rootlets which had grown through it in every direction, demonstrated plainly its favorable, mechanical condition for plant growth. The general physical properties of the soil corresponded with the characteristics of a sandy loam. As one of its peculiar features, may be mentioned the presence of a small percentage of minute, rounded pieces of magnetic iron ore, which causes, mainly, the large percentage of sesquioxide of iron in my subsequent analytical statement.

The soil lost, when kept over dry, chloride of calcium, 1-6 per cent of moisture; it absorbed in an air saturated with moisture, at 56° Fahrenheit temperature, 5.04 per cent of moisture; when dried at 212° Fahrenheit, it lost 4.05 per cent of moisture; being calcined, it lost 13.08 per cent of its weight, consisting mainly of water and organic matter.

One thousand parts of the soil, treated with 2,000 parts water produced a solution which left at 212° to 220° Fahrenheit, a residue, equal to 1.184 parts, which consisted of 0.414 parts of ash constituents, and of 0.770 parts of organic and volatile matter.

One thousand parts of the soil, being treated with hydrochloric acid of 1.12 specific gravity, produced a solution which contained:

	Parts.
Potassa.....	2.2259
Soda.....	0.2647
Lime.....	6.4288
Magnesia.....	2.7237
Sesquioxide of iron, with traces of oxide manganese.....	44.8332
Alumina.....	1.4375
Phosphoric acid.....	0.6660
Sulphuric acid.....	0.5290
Sillicic acid.....	0.5792

Quantitative analytical determinations of nitric acid, ammonia and organic matter, (humus,) have not been carried out. These substances ought to be determined in a fresh sample of soil; exposure to air for any length of time, changes their quantity, and, in case of organic matter, also their quality. Besides, the omission of these tests does not affect the main object for which the present investigation has been instituted, namely, to obtain some definite idea, concerning the general character of the soil in question, and its qualification for agricultural purposes. From the foregoing analytical statements, it will be noticed that the latent resources of plant food in that soil are of more than a usual good average proportion in a sandy loam. The peculiar adaptation of the latter kind of soil for the economical production of most of our prominent farm crops, and for the cultivation of fruits in general, are well recognized.

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