

Indian Head Tree Nursery.

A visit to Indian Head Experimental Farm by a representative of this paper, on April 16th, found Geo. Lang, of the Forestry Department, busily engaged preparing parcels of trees to be sent out to applicants in different parts of the country. This year no less than 180 farmers, and others throughout the Northwest Territories, will plant 286,750 trees, including 113,000 maples, 95,000 cottonwood, 46,000 ash, 18,000 Russian poplar, 16,700 elm, and about 10,800 willow. Mr. Lang has made a start toward growing spruce, pine and other evergreens from seed, and results so far are very gratifying. It must, of course, be understood that in a country like this, where conditions are so vastly different from those of any other, that considerable investigation work must be done before the best methods can be obtained.

The tree nursery at Indian Head covers fifteen acres, is well kept, and in an excellent state of cultivation. The future benefits this country will derive from trees which are planted now cannot fail to be very great, and although in many districts there is not the interest being taken in this work which it deserves, yet, taking the country in general, there is a vast awakening during recent years.

How Plants Feed.

Although a great deal has been said about preparing the soil so that plants can make rapid growth, it is seldom that any light is thrown upon the way in which they feed upon the different elements in air and soil.

Take a wheat plant for example, and carefully wash all the soil slowly from its roots without breaking any, and we find very minute, hair-like, white rootlets. Near the end of these the plant exudes, or discharges, an acid similar in character to citric acid, which has the power of dissolving, to a certain extent, mineral plant food, such as sulphates, phosphates, nitrates, chlorides, potash, lime, magnesia, iron, etc. These salts, when dissolved, enter the plant by the absorbent surfaces of the younger rootlets, and pass up through the active portions of the stem to the leaves and new-forming buds.

In the leaves and some portions of the stems there are minute breathing pores, into which air freely enters and is there decomposed, the carbon being retained while the oxygen is thrown back into the air. This decomposition takes place during sunny days, for light and warmth are both required for the preparation of the new mixture, which the plant must have ere it can grow.

The carbon which the plant has received from the air, along with the soluble salts which the tiny rootlets absorbed from the soil and sent circulating in the form of sap, co-operate in the chlorophyll-cells of the leaf, forming carbohydrates, much of which is in the form of glucose or soluble starch. The same food elements, with a larger proportion of some compound of nitrogen, frequently in the form of salts of nitric acid (nitrates), combine in forming albuminoids. Alkaloids, pectose, acids, etc., are also formed for the growth of the plant by different proportions of the same food-elements. This mixture is now, through a sort of chemical preparation which took place in the leaves, in perfect condition to form leaf and fiber tissue, and that portion of it which is not required for adding more leaf surface, descends, diffusing assimilated nourishment, thus building up every active organ of the plant. As leaf surface is increased more cells are formed, and nature's perfect, minute laboratories are busy fulfilling the divine method of preparing food for man and beast.

Plants have, within certain limits, the power of selecting their food; that is, the rootlets of a plant can decompose a salt of two or more ingredients, and take one part for the building up of its tissue, rejecting the rest.

Part of the plant's food, as we have noted, comes from the atmosphere, and part from the soil. The atmospheric part man cannot change, but the soil, with its great variableness, is in a large measure under man's control, so that in the hands of the farmer largely rests the returns for his labors. It should ever be remembered that the full water supply required by the plant must come from the soil, and that all the food which the plant gets from the soil is drawn in the form of a liquid. This should teach the great necessity of preparing a seed-bed in the most approved manner for conserving soil moisture.

The Strawberry Patch.

When strawberries have been covered during the winter, unless the covering is very thin, it is not well to leave the covering on too long as the leaves will be white and tender and liable to injury when it is removed. If the patch is clean of grass and weeds, the covering may be raked between the rows, where it will help to hold the moisture and keep the fruit clean. It will prevent the berries from being sanded during heavy rain-storms. There is no fruit to which moisture is so essential as the strawberry. It will suffer more from the lack of it than any other, and one of the chief problems in strawberry culture is the supply of moisture. Where irrigation is impossible, a good thick mulch between the rows is the next best thing. Most growers now aim at producing only one crop, claiming that it is easier to plant new rows than to clean the old ones, and in most cases this is true. But where the rows have not become too thick the first year, and are pretty clean, a very good second crop may be grown; but the life of the plant is short, and those that remain after the first fruiting, by the time they come to the second year the root has become a black bulb with only a few yellow fibres attached. In this condition they need a quick acting stimulant. Nitrate of soda is the best thing to use for this purpose. It has given wonderful results on old berry patches, applied at the rate of 300 lbs. per acre in the spring. It should be applied directly on the rows. It should be pulverized finely, and may be mixed with ashes to distribute it evenly.

Gooseberries and Currants.

The pruning and care of the gooseberry and currant is practically the same. The best soil for both is a strong clay loam. The spring pruning consists in cutting out some of the oldest wood. The wood should not be allowed to remain more than three years without renewal, as it becomes weak, and the fruit borne on this old wood will be small and poor in quality. If the new wood that is to be left for renewal has made a rank growth, it should be shortened in to promote the development of fruit spurs. The best fruit is borne near the base of the one-year-old shoots, and on short one-year-old spurs from the older wood. Seven or eight main stems are enough for each bush, and these should be frequently renewed; superfluous young shoots should be cut away.

The gooseberry will require more work in pruning than the currant. Being a more vigorous grower, it produces more young shoots. Cultivation should be shallow, as the roots are near the surface; frequent stirring of the soil with a scuffer to keep it cool and moist. It is a very good plan to mulch the whole patch, putting it on thick enough to hold the moisture and smother grass and weeds. This will give better results probably in most cases than cultivation, as cultivation is in most cases neglected. The currant is one of the most wholesome fruits, and can be used in a variety of ways. It excels all fruits for making jelly, and nothing can be more toothsome than a currant pie. In canning it retains its flavor better than any other fruit. It can be combined with other fruits that lack in

sprightliness, and the combination is pleasant to the taste. It also makes a delicious wine. The juice of the black currant is said to have medicinal properties useful in fevers, etc. The white grape when well ripened is a fine dessert fruit, and no garden should be without a few currant bushes. The gooseberry is in favor with many for pies, but its usefulness does not extend much beyond this. They are very little used for canning purposes. As a culinary fruit they come very far behind the currant.

Spring Work in Small Fruits.

The small fruit plantation will require attention at this time. The raspberries and blackberries should have the old dead canes removed. Some do this in the fall, and perhaps it is easier to find time for this work late in the fall than in spring.

But one very good reason for leaving them is that the thicker the canes are the better they will hold the snow, which is a great protection to them, especially in the colder sections, where the new canes are often severely killed back. In fact, in northern sections, it is advisable to have the plantation where the snow will pretty nearly cover it. Some of the canes will be broken when the snow melts, but the damage is more than made up in the protection of the bearing wood. The life of a berry cane is two years; fruits the second year and then dies. These old canes must be cut out and burnt. A pair of pruning shears is about the handiest tool for this purpose, and does very well for raspberry canes; but for the blackberries, on account of the thorns, a handy tool is made with a small curved blade, like a brush hook, and attached to a handle about four feet long. A blacksmith can make the blade out of an old file, and weld it to a piece of



AFTER THE BUNT.

Two coyotes, a wolf-hound and a cowboy, on the Orangeville Ranch, thirty miles north-west of Medicine Hat, Assa.

Or it may be dissolved in water and applied with a watering can. If applied in this way, just before rain, it will quickly reach the roots. Where strawberries are grown in matted rows, the rows should not be more than 14 inches in width. Far better results will be got than with wide spreading rows. They must be kept narrow.

How to Water Plants.

Watering is an exacting labor, and yet half of it is usually unnecessary. The reasons why it is unnecessary are two: the soil is so shallowly prepared that the roots do not strike deep enough: we waste the moisture by allowing the soil to become hard, thereby setting up capillary connection with the atmosphere and letting the water escape. See how moist the soil is in spring. Mulch it so that the moisture will not evaporate. Mulch it with a garden rake, by keeping the soil loose and dry on top. This loose, dry soil is the mulch. There will be the moisture underneath. Save water rather than add it. Then when you do have to water the plants, go at it as if you meant it. Wet the soil clear through. Wet it at dusk or in cloudy weather. Before the hot sun strikes it renew your mulch, or supply a mulch of fine litter. More plants are spoiled by sprinkling than by drouth. Bear in mind that watering is only a special practice: the general practice is to so fit and maintain the ground that the plants will not need watering.—[Country Life in America.]

3-8 iron of the right length, turning a loop on the end for a hand hold. After the old canes have been removed, a dressing of hardwood ashes may be applied at the rate of a half bushel to a rod of row in length. This treatment is specially indicated where the soil is sandy or sandy loam, as these soils are likely to be deficient in potash. The rows should then be cleaned of all grass and weeds, and in doing this the ashes will become well mixed with soil. If the tips of the canes