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I make a specialty of cement walks and work. Have been constructing same in Alliance more than one year, and invite the most rigid inspection of my work. Use only the best of materials and make prices as low as can be done with honest work. Have had many years experience in cement construction in various cities. Remember poor cement work is dear at the cheapest price and when you have had to replace it is money thrown away.

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Extra Fine Shoe Repairing PROMPTLY DONE

All Work Strictly First-Class

M. D. Nichols

BOX BUTTE AVENUE

1st door north of Herald office

A. D. NEW

AUCTIONEER

ELLSWORTH, NEBR.

Col. New has had 25 years' experience and is one of the most successful auctioneers in the northwest.

Dates made at this office.

LLOYD C. THOMAS

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Public Stenographer in Office
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PLUMBING, HEATING, FITTING, etc., attended to now before the rush of work begins. We are thoroughly posted in our business and an order from you will promptly put all our knowledge and skill at your service. The cost will not be great.

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MARSLAND, NEBR.

Making Money On the Farm

XVI.—Orchard Management

By C. V. GREGORY,
Author of "Home Course in Modern Agriculture"
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FOR a few years after the young orchard is set out it will do better if it is cultivated. During these first few years, before the trees come into bearing, it is neither necessary nor desirable to let the land lie idle. Some cultivated crop can be grown between the rows of trees, thus utilizing the land and giving the orchard the needed cultivation. Corn is not a very good crop for this purpose, since it grows too rank, shading the young trees and depriving them of their share of the moisture supply. Potatoes are one of the best crops that can be grown in a young orchard. Squashes and cabbages also fit in well. It is often convenient to have the vegetable garden in the orchard during the first few years. Small fruit can also be profitably grown as a filler crop. Where bush fruits are used, however, they must be cut out as soon as the orchard comes into bearing. Whatever crop is grown it should not

be allowed to become too tall or to bear fruit. If it does, the fruit will be small and the tree will not produce well the next year. It is better to remove the crop entirely than to let it grow and bear fruit.

The most effective means of securing large crops of fruit is spraying. Fruit trees of all kinds are subject to many injurious insects and diseases, which if left to themselves will materially lessen the yields. There are two kinds of insects—biting and sucking. The former can be combated by means of poisons sprayed upon the leaves. The sucking insects, of which plant lice are the most common examples, cannot be killed in this way, since they drill into the plant and suck the juices. The most effective remedy for them is some insecticide which will kill by contact, like kerosene emulsion.

This is made by dissolving half a pound of soap in a gallon of boiling water, adding two gallons of kerosene and churning the mixture violently until the oil is thoroughly mixed with the soapsuds. This is diluted with nine times as much water before using. It may be applied with a spray pump whenever the lice are troublesome and is a very effective remedy.

The biting insects are by far the most troublesome in the orchard. Of these the codling moth probably does the most damage. It is the larvae hatched from the eggs of the codling moth that cause wormy apples. The tent caterpillar and canker worm attack the leaves, sometimes stripping the tree bare. There is no better remedy for these insects than paris green dissolved in water at the rate of one pound to 100 gallons. Three pounds of freshly slaked lime should be added to prevent injury to the foliage. Paris green can also be used for the plum curculio and for the other insects which attack the plum and cherry. The foliage of these trees is more tender than that of the apple, however, and for that reason some less severe insecticide, such as arsenate of lead dissolved at the rate of three pounds to fifty gallons of water, is better.

Spraying For Fungous Diseases.

The most troublesome fungous diseases are apple scab, plum, pear and cherry leaf spot and peach leaf curl.

The most efficient fungicide is bordeaux mixture. This is made by dissolving four pounds of copper sulphate and four pounds of lime in fifty gallons of water. The object of a fungicide is not to cure diseases, but to prevent them. These fungous diseases spread by means of spores, which are carried from leaf to leaf by the wind. When they alight on a leaf, especially if the surface is a little moist, they grow and produce another center of disease. If the leaf is covered with a thin coating of the copper sulphate mixture the spores are killed before they start to grow. Since fungicides are preventives rather than cures it is important that they be applied early. In order to save time paris green may be added to the bordeaux mixture at the rate of four ounces to fifty gallons or arsenate of lead at the rate of two pounds to fifty gallons and one spraying made effective for both insects and diseases.

If you have many fruit trees it will pay to send to the experiment station for a spraying calendar, which will

give full directions concerning time and manner of spraying.

As the trees come into bearing the growth of a cultivated crop between the rows should be discontinued. Some cultivation, however, will still be necessary if the best results are to be secured.

One of the best means to give this is by plowing and preparing the soil in the spring and then sowing clover or some legume as a catch crop. This will supply the soil with nitrogen and humus and keep it in good physical condition. Calves, sheep or hogs may be turned into the orchard in the fall to eat the clover, or it may be plowed under the next spring.

The trees will be so large by this time that it will be impossible to cultivate close to them, nor is this necessary, since the feeding roots are farther out in the spaces between the rows. The space close around the trees may be seeded to blue grass or some other perennial.

As the orchard gets older it may be left in clover for two or three years at a time. An occasional plowing and reseeding will be necessary to renew the clover and to prevent the orchard from becoming sod bound. If used as a hog pasture the hogs will keep the soil loosened up sufficiently, at the same time adding considerable fertility.

In such a case all the treatment that is necessary is an occasional reseeding. If well fed the hogs will do no damage to the apple trees. On the other hand, they will do a great

deal of good by eating wormy fruit and thus destroying the worms.

Where it is not convenient to allow hogs or sheep in the orchard an occasional load of well rotted stable manure will be beneficial. Do not pile this around the trees, but scatter it evenly over the ground. Wood ashes are a good substitute for manure, but can seldom be obtained in sufficient amounts to be used to advantage.

If the orchard is properly attended to from the start little pruning will be necessary. It is much better to place off a twig occasionally than to cut off a branch as big as your arm a few years later. It takes but a little time to go over the orchard in the spring and clip off such twigs as do not seem to be needed. The object should be to produce an even, spreading, somewhat open head. If it ever does become necessary to remove large branches they should be cut close to the trunk and the wounds painted with white lead. It is better to do this severe pruning in the winter before the sap begins to run.

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