

recognized standard of dressed poultry and eggs; to keep the producers in touch with those buyers who put a premium on quality; to do everything possible to promote goodfellowship among poultrymen, and to advance and dignify the poultry industry. As an aid in keeping in touch with the market, a circular will be sent to each member every month.

Time Required for Fertilization.

How long should a cockerel run with hens before their eggs are ready or fit to hatch?
Nipissing District, Ont. J. G. M.

Ans.—In Bulletin No. 54, by Gilbert & Fortier, Central Experimental Farm, Ottawa, the statement is made that experiments conducted during the spring of 1905 showed that in each case eggs laid forty hours after mating were perfectly fertilized, and the chickens hatched from such eggs were always as strong as those from eggs laid a long time after the first mating.

GARDEN & ORCHARD

Spraying Solutions for Apples.

The quality of fruit belonging to the members of Norfolk Fruit-growers' Association last season was the marvel of lovers of good apples at the Horticultural Exhibition last fall. Jas. E. Johnson, the energetic manager of the organization, claims that systematic and thorough spraying had much to do with the superior quality of the product. This year the members are instructed to spray as follows:

First spraying when buds begin to swell, with 20 pounds blue vitriol, 70 pounds lime, 200 gallons water.

Second spraying just before buds break open, and third spraying just as soon as blossoms fall, with 16 pounds blue vitriol, 12 ounces Paris green, 12 ounces white arsenic, 2½ pounds sal soda, 70 pounds lime, 200 gallons water.

Fourth Spraying.—If troubled with tussock moth, when the young begin to feed upon the new wood, same as second and third spraying, except use 12 pounds blue vitriol, instead of 16 pounds, to 200 gallons water.

Always use 10 pounds water to the gallon; also, use granular blue vitriol, as it dissolves easier.

Always prepare the arsenic by boiling 12 ounces arsenic with 2½ pounds sal soda in 2 gallons of water for 45 minutes. If you have a kettle large enough, you can make up a stock solution. Keep this kettle away from the stock, as it is poison.

For making 200 gallons for second spraying, put 16 pounds vitriol in a hopper with burlap bottom, which place over the hole in your tank; pump or pour 150 gallons of water on this vitriol, straining in the tank. Then slake 70 pounds good lime (none air-slaked) in 50 gallons of water, and strain through a hopper with a wire bottom into the 150 gallons already in the tank. Then add of your boiled arsenic solution an amount equivalent to 12 ounces white arsenic and 2½ pounds sal soda. Then add 12 ounces Paris green, by dissolving in a small pail of water. Each time, in adding lime, arsenic and Paris green, agitate thoroughly. Now you are ready for the orchard, and keep well agitated and a good pressure. Always clean out lime box with water every time after using.

Always pump some clean water through your pump, nozzles, etc., every night when in use, and keep tank well cleaned out.

Is Ontario Too Poor to Experiment in Fruits?

W. E. Williams, of Middlesex Co., Ont., writes under recent date: "Some short time ago I wrote you an article, 'The Farmer's Small-fruit Garden.' In it I referred to the Ontario Experimental Union, and the annual distribution of small fruits to its members. Not having received the list of horticultural material this spring, I wrote to Prof. H. L. Hutt, asking for it. The accompanying paragraphs, quoted from Prof. Hutt's reply, will explain the facts:"

"We have been obliged this year to discontinue the general distribution of fruits for co-operative testing. We are at present confining the work to distribution of flower and vegetable seeds to school children, for the purpose of introducing school gardens throughout the Province.

"I had intended to write you regarding this, as I noticed in your letter to 'The Farmer's Advocate' that you had drawn attention to our regular distribution, and we had quite a number of applications because of it. We were sorry, indeed, to have to discontinue this work, but found that we could not meet the demand made upon us with the limited funds at our disposal."

Procuring Trees for Planting.

Editor "The Farmer's Advocate":

Planting trees is generally greatly neglected on the majority of Ontario farms. It is almost impossible to beautify our homes and make them attractive without trees and shrubs. Many excuses are offered—no time—don't know where to plant—cannot afford to buy from the nurseries. These excuses are all easily overcome by those taking an interest in planting.

In the hot days in June the stock will prove to you that they enjoy the shade of a tree that perhaps the pioneers have planted or protected when cleaning the land. There are many places they may be planted where they will be both beautiful and beneficial, such as along fences, on waste land, on hillsides that are too steep for cultivating. For reforesting for stock protection or wind-breaks, or waste land and hillsides, the trees may be obtained from the Forestry Department of the Ontario Agricultural College, Guelph, the only cost being the express to your nearest railway station, which is only a trifle. These trees are sent out in first-class condition. For shade and ornamental purposes, the majority of farmers can get their supply for digging. Just go to the wood-lot and get our native trees, such as maple (hard and soft), ash, elm, basswood and butternut; and evergreens, such as cedar and spruce. These cost practically nothing but the time spent in getting them, and in a very short period they prove that time was well and profitably spent.

Deciduous trees, such as mentioned above, may be planted along the road in the fence line, and it is surprising how quickly they grow to the required size and strength to string wire fence on. First nail a picket of soft wood to the tree, then staple wire to this. Such a fence will greatly improve the appearance and increase the value of the farm. They may also be planted along lanes and fences between fields in the fence row, where they will protect the stock from the burning rays of the midsummer sun. There is evidently little danger of planting too many. However, it is possible to get them too thick around the dwelling. When such is the case, it causes dampness and unhealthy surroundings. Do not shut out the sunlight. It is a wise policy not to plant too thick, for once a tree is well established, it requires a stout heart to destroy it.

For evergreens, cedar or spruce make beautiful hedges or ornamental trees, which may be pruned almost any desired shape or design. It is not advisable for the average farmer to go too extensively into hedges and ornamental trees, as they require considerable attention. It is better to have just what can be given proper treatment. This will present a much more pleasing appearance than twice as many given the same amount of time. Of course, if any specials are desired, they may be obtained at the nurseries.

SELECTION AND PLANTING.

It is not wise, when selecting trees of any description, to take them from high, dry land, as they are liable to have one large taproot and only a few small fibrous feeders. This causes them to be very difficult to start. In lower land they are much easier to lift without injury, and the trees contain numerous hair-like rootlets. Do not, in any case, allow the roots to be exposed to the action of the sun and wind, for, once they are dried out, their chances of life are lessened. Throw an old sack over them and keep it wet. Do not select too large a tree, if you wish to be successful. A little patience is all that is required. Always prune back top, to counteract or balance injury done to the roots in lifting. Trees cut to a uniform height present a much more finished appearance when placed.

There are places where certain species of trees do not appear to thrive. For instance, suppose a row of maples are set out, a few are almost certain to die. The next year they may be replaced, with no better results. If, however, you are anxious to have the whole row of the same variety, it may be necessary to dig a large hole and fill it with earth from some other place. If you do not wish to go to this trouble, try some other variety. In all cases dig the hole large enough to receive the roots, without crowding or bending out of their proper position. It is well, also, to set the tree as it formerly stood. Make a slight mark on a certain side, and set tree facing same direction.

The planting of evergreens is similar to that of deciduous trees, excepting for hedges, when it is necessary to set them in a trench, being careful to get the fine earth in around the roots. Keep them cultivated or mulched with strawy manure for a year or two. They may be trimmed spring or fall, care being taken, especially in cedars, not to clip to the bare wood, as they throw out no fresh shoots, and never again fill up if once clipped too close. Any shape desired may be attained by trimming, but where heavy snow prevails, it is not wise to make flat tops on hedges, as the snow may damage them to a certain extent. They will resist the snow better if rounded or peaked on top.

Planting may be done any time when the tree

is in its dormant state. However, the best results are obtained by spring-planting, before growth begins.

Trees and shrubs are unlike other farm improvements. A dwelling or outbuilding may be erected and made to look its best in one season. Not so with trees, if we are to have them surround our homes in the future. We should get busy, and make a start now. It may not appear to some to be worth while, but it is a certainty that in a few years they will enhance the value of the property, to say nothing of other benefits derived. Once they are started, they require very little attention.

I have some seven hundred Scotch pine and Norway spruce which I got from the O. A. C. They are doing well. All the care they receive is protection from stock. J. R. PHILP.
Grey Co., Ont.

Improving Old Orchards.

Neglected apple orchards on farms in all parts of Eastern Canada produce no income other than an occasional small crop of fruit of uncertain quality. Past achievements show that at least those that are on congenial soil, and not too old, can be made to yield sufficient returns to make them important items in the farm economy. All that is required is a small investment and judicious work.

Results worth studying have been derived by S. B. Hartman, of Calhoun County, Michigan. A bulletin just issued shows the work done and the cash returns for each of the past five years.

Three orchards, comprising a total of 52 trees, of such varieties as Stark, Northern Spy, King, Russet, Ben Davis, Baldwin, Rhode Island Greening, Maiden's Blush, Jonathan, Tolman Sweet, Fameuse (Snow), Bellflower, Red Astrachan, and Yellow Transparent, were taken in charge in 1904. Mr. Hartman had these orchards to look after in conjunction with ordinary farm work. The first year, no special work was done, but it was a good apple year, and the fruit was picked and marketed with care. Augmented prices for selected fruit in boxes led him to prepare for having high-grade fruit in future. In 1905 a spray pump was purchased. One orchard was pruned, and sprayed four times. The other two were not properly pruned, and sprayed only twice. The pruning averaged about 25 cents per tree, and for spraying the total cost for labor and material was \$15. This was an off year for apples. Returns were small, but the trees showed more vigor. Pruning and spraying were continued in 1906, the former costing \$10.75, and the latter \$36.82. For the following two years special care was continued. The receipts and expenses for the five years, from the 52 trees (covering 1.6 acres) were:

Year.	Receipts.	Expenses.	Net profit.
1904	\$126.37	\$ 19.34	\$107.03
1905	46.23	32.26	13.97
1906	404.74	179.10	225.64
1907	89.25	74.74	14.51
1908	700.74	226.43	474.31

For five years

Receipts for five consecutive years	\$1,367.33
Expenses for five consecutive years.....	531.87
Average net profit per year for five consecutive years	167.09
Average net profit per acre per year.....	104.43

In the five years there have been three good crops, while in the other years not much more than expenses were realized. But the fact that even in these "small" years the orchards were given thorough sprayings and other care, has made the "big" years possible.

In discussing whether or not the general farmer can afford to care for the trees now on his farm, Mr. Hartman says:

The orchards have been handled in connection with general farming operations and small fruits, with the additional disadvantage of two of them being four miles from home. The size is about the same as the average orchard in many farming sections, and about the same difficulties are presented, including the unavoidable use of the orchard for stock, the presence of San Jose scale, and the previous neglect.

In addition to returning a cash profit that averaged \$167.09 for the past five years, they have furnished fruit for several families, and considerable food for stock. During this time, the trees have been brought from a state of neglect to fairly good condition. The work has been done without encouragement from and against the advice of relatives and friends, and without the investment of a cent of capital not secured from the trees themselves. Neither has any farm nor small-fruit crop been neglected on account of the apple orchard.

It seems reasonable to suppose that any farmer who has the willingness to care for his orchard, and will follow a few plain directions, can do as well or better. It will be difficult for many farmers to name a crop that will give a greater net income for a series of years, and at