

sanitary, but five minutes each morning will do the former, and a 50c. can of disinfectant will keep both the incubator and the brooder in a perfectly healthy condition for a season, if used according to directions. A POULTRY FANCIER.
Carleton Co., Ont.

[Note.—Other poultry-raisers' experience with artificial incubation and brooding is solicited for publication in these columns.—Editor.]

More Poultry Profits.

Editor "The Farmer's Advocate":

The many letters that have appeared in your valuable paper regarding winter eggs are very opportune, seeing this is the time to get the chicks hatched for next winter's layers. In the first place, what constitutes the poultryman's winter? I think all will agree when I say that from October until March is the hardest time of the year to produce eggs. It seems, to me, then, that the non-layer in these months has a big handicap to overcome, especially when she has to start in at 25-cent eggs, compared with from 45 to 50-cent eggs, the average price of hen fruit this winter.

Our experience has been that pullets make the best winter layers, but they must be matured before the cold weather sets in. This is one of the chief reasons why so many fail to produce winter eggs. The chicks must be properly fed from the time they are hatched. The cockerels should be sold at the broiler stage, when the most profit is to be made out of them. The pullets then get the full benefit of all the feed.

Housing and feeding are two essentials to winter-egg production. I believe that poultrymen are going to the extreme regarding curtain-front houses. There is no doubt a cold, well-ventilated house is preferable to a stuffy, warm one, but I believe a well-ventilated house in which it did not freeze would give the best results. We all know that horses and cattle take less feed in a warm stable than in a cold one. Why should not this rule apply to chickens, and surely, at the present price, feed is a consideration. The style of houses used on "The Farmer's Advocate" farm—Weldwood—appears to me to be a good one, with the exception of the straw loft; I would be afraid of this being a harbor for the poultryman's worst enemy, namely, hen lice.

Regarding feeding, I don't think hens need as much "fussing" as some imagine. We scatter mixed grain in the litter morning and night, and feed a mash at noon (not sloppy) composed of equal parts of corn, barley and oat chop, and a few handfuls of meat meal added. Hens should have access to grit and oyster-shell at all times, and a liberal supply of green food when possible. I find that hens work more diligently in litter spread thinly, and cleaned out once a week, than if it was spread deeper and left a longer period. We can readily understand how filthy the litter must become, comparing it with dropping boards. Probably some of the poultry diseases are started in this way.

We kept 160 hens and pullets throughout January and February. They laid a total of 1,147 eggs in January, and 1,444 eggs in February. Eggs sold in the two months, \$95; cost for feed, \$35; profit, \$60.

The results were not as good as I anticipated, still they show that there is a good profit in winter eggs. J. J. BERTRAM.
Wentworth Co., Ont.

A Profitable Flock.

Editor "The Farmer's Advocate":

I am very much interested in poultry and winter-laying fowl. From 57 Plymouth Rock hens I received, in the month of February, 69½ dozen eggs, getting from 28 to 38 cents per dozen for them. I feed them wheat or oats and barley mixed, and one hot mash per day, and plenty of milk to drink. I keep grit and oyster-shells before them all the time.

A SUBSCRIBER'S MOTHER.

Queen's Co., P. E. I.

GARDEN & ORCHARD.

Haldimand County Fruit Growers Organise.

Editor "The Farmer's Advocate":

That the County of Haldimand is awake to the fact that more fruit of a much higher quality can be produced from its orchards, is evidenced by the fact that those interested have organized an association, to be known as the "Haldimand Fruit-growers' Association."

A public meeting in the interest of fruit-growers was held in Brudenville, on March 20th. There was a splendid representation from many parts of the county, showing the keen interest manifested by the many farmers engaged in the growing of fruit throughout the county.

Haldimand, being situated along the shore of

Lake Erie, is especially adapted to the growing of a superior quality of apples. Firmness of texture, high coloring and a good flavor, can be surpassed nowhere else in Ontario. This high standard of quality can doubtless be traced to the soil upon which the apples are grown being largely composed of moderately heavy clay, rolling, and well drained. There are many acres of fine orchard throughout the county, now being neglected, which only need the up-to-date methods of culture in order to make them produce a crop that will become one of the best-paying branches of farm work. It is through co-operation that these ill-cared-for orchards can be changed into veritable gold mines. Farmers learn more by seeing than hearing, so, when a man under the instructions of the Association is caring for his orchard and netting large returns, his neighbors very soon follow the same principles.

Thirty-six members have already been secured, which makes a splendid beginning, and, with careful management such an organization will mean great things for the county.

Haldimand Co., Ont. CHAS. F. HOWARD.

Propping Fruit Trees.

Now that winter spraying and pruning are in full swing, the live question of tree-propping comes up for fresh discussion. Many and varied ways are used to achieve the end desired, namely, to protect against breaking the overloaded branches.

When we come to the discussion of this subject, there is one statement at the outset that may be made that has good sound judgment back of it, one which many orchardists support, and which clears away part of the argument of those favoring tree-propping. It is this: Trees that have been pruned each year as heavily as they should have been up to the time they come into bearing should seldom need to be propped. This looks like a sweeping statement; nevertheless, it is true. Where thinning of the growing fruit is not practiced, it will seem ridiculous. But every orchardist should thin out his crop and keep the fruit well back on the limbs to guard against wind bruises. He should thin to get even and market sized fruit. It is easier and quicker to thin out one thousand apples in June than to pick and market an extra one thousand undersized specimens in September or October. A better price will be obtained for fruit from trees that have had the fruit thinned and have been pruned back so that they can only carry an average crop. A tree that is pruned back so that its crop may be thinned out to an average size without wasting much time, under ordinary conditions, will give a fair crop each season, and not be termed a "shy bearer."

But there are trees which have not received this amount of care, and the question of the props advisable for use forces itself upon us. Many schemes are advocated that are valueless, many that are really good, but have some disadvantages, many that are of as big a hindrance as they are assistance, and a number that are really efficient.

Perhaps it may be easier to look at these in groups, and for that end they may be divided into three, namely:

Systems that use the tree's own branches to support the bearing limbs.

Systems that necessitate the use of permanent supports.

Systems that use movable supports.

The first group of systems has of late received much commendation, but is really one of the poorest. Theoretically, it looks like the finest idea that could be supported, and many who use it still advocate its adoption.

In these systems, the basis is tying the ends of branches taken from opposite sides of the trees, or tying, twisting or connecting in some way branches so that they form a ring around the tree and under the bearing branches. By these systems the prop is permanent. It grows with the tree (?) and once a tree has been prepared in this way it needs no further attention.

Now, against this system there are three very strong and reasonable arguments. If the branches are tied, then many branches are broken in tying them. Anyone who has ever tried to knot apple wood back six inches from the tip of the limb knows this difficulty. Limbs that are snatched live but a short time, as a rule, and then trouble starts in many cases, because, if these limbs do not reach any size, which is seldom the case, they often carry back to the branches from which they are taken any disease that may have caused their death. The tying weakens them, leaving them open to the attacks of disease. The other two arguments are branches attached to the trunk, are also exposed to twisting, which are also below, and will not present themselves there.

In the second system, we frequently raise a corker in the sap flow. This is especially so, since, as the limbs grow, they tighten, and when they tend to break is hindered in its work, and leaves it a part of its surface exposed to the

ly. It stands to reason that there will be a tendency toward a short life. It is inevitable that these branches will throw out shoots or suckers, and these must be pruned off, hence breaking for a time the bark surface where they sprung from, and in some instances the surface is permanently broken, checking sap flow. Then, too, these branches are shut off from a normal leaf service which all branches need, and they must be a good size to be of any value as props. The lack of leaf service puts them in a way of stunted growth. The twisting of these branches makes it necessary that they receive special attention when spraying, as they are the breeding places of many insect pests, and a constant menace as a harbor for tree disease germs. At pruning times, or when thinning and picking the fruit, these cross-growing branches are constantly in the way, and a great hindrance in getting about through the branches. This in itself is no small item.

In systems that use permanent supports, there are two most commonly used here: The screw-eye and movable cross-wire system. The screw-eye system is managed by taking a quantity of screw-eyes along when pruning, and screwing them into the branches at suitable intervals. As the tree grows, these eyes become firmly embedded in the tree, and, by stringing wires from one eye to another, the branches can be securely supported, and the wires removed after the crop is picked, should it seem necessary.

In the cross-wire system the same principal is used as in the screw-eye, only there are no eyes used, the wires being fastened to wide pieces of leather wrapped about the branches, and the position of the wires changed each season, as the weight of the fruit may suggest. Generally, the straps may be left right on the tree, and in the same place, for two or three seasons.

In systems that use movable supports, the center-prop method is perhaps the best, and has worked here with splendid success. A strong piece of 2 x 4 is stuck about 8 inches in the ground, but a short distance from the tree trunk, say 5 inches. The heaviest loaded branches are then attached to it by wire, using a strong strip of cloth or leather to tie the wire to the branch, and passing the wire over the top of the 2 x 4, the tip of which should be about three feet above the heavy-loaded branches. If care is used in attaching the first two branches on opposite sides of the tree, so that when they are tied the prop is away from the trunk about four inches, then there is no danger of scalding. This plan also has the advantage of steadying the tree considerably during heavy winds, thus lessening the number of windfalls. It works better on trees pruned open than on those pruned to a cone, though it gives good results in both.

The old way of propping up with poles, etc., is rather crude, and unless the prop is attached to the branch, is likely to drop when a wind is on, allowing the weight of the fruit to come suddenly on the branch, and the branch breaks. If it is a branch high up on the tree, it may take a few lower branches with it in its fall; so that, unless it is carefully handled, it is liable to work as much harm as good.

B. C.

WALTER M. WRIGHT.

Disease in Potatoes from Europe.

Owing to the shortage of the potato crop this year, dealers in and growers of potatoes find it necessary to import large supplies for table and seed purposes from Great Britain, Ireland and other European countries. Bulletin 63, issued by the Dominion Experimental Farm, Ottawa, explains how Potato Canker has found its way across the Atlantic into Newfoundland with potatoes imported from Europe.

Potato Canker is a disease at present unknown in Canada. It is one of the most serious diseases known, affecting not only the farm lands on which potatoes are grown, but the disease is also directly injurious to the health of the consumer of affected potatoes. Boiling does not destroy the injurious properties. The disease is characterized by nonular excrecences which may often be larger than the tuber itself. These cankers affect the eyes of the potato, and are very small in the early stages. Any tubers found with smaller or larger outgrowths rising from where the eyes are situated should under no condition be used for seed or table purposes. The introduction and establishment of this disease would seriously compromise one of the most important agricultural industries of Canada, viz., potato-growing. Farmers and consumers should be exceedingly careful in using potatoes that may have been imported from Great Britain or the Continent of Europe. Suspect-looking tubers should be destroyed by fire, and not be thrown on the ground, or the disease, if present, will establish itself permanently in the soil.

A booklet has been issued in detail the character of the disease, and is available to any farmer or grower for the same.

H. T. GUSSEW,
Dominion Botanist.