

birds had all the skim-milk they wanted besides pulped mangels. Grit, oyster shell and pure water were before the birds all the time. The grain was buried in cut straw and it was worth all the trouble we were to in looking after the flock to see the hens make that straw fly. Wheat was charged up at \$1.75 per bushel, corn \$2.15 per hundredweight, and oats, 70 cents per bushel. We balanced the eggs we used in the house against the milk and mangels. At the end of the seven months the 105 hens were just \$125 ahead of their feed bill, besides, we have 125 chicks, with four hens to come off yet, so we are very well pleased with our little flock. Farmers should not do away with their hens but just give them a little extra care when feed is high priced. If there is anything that will make a little easy money out of dear feed, it is well-bred and well-fed White Leghorns, with the present price of eggs.

Huron Co., Ont.

C. CAMPBELL.

### Closed and Open Runs Connected With the Brooder.

On the average farm the incubator is placed in the basement, or in a room in the dwelling house, and satisfactory hatches are brought off. When poultry are kept on a commercial scale a special building to accommodate the incubators becomes essential. Likewise, when hundreds of chicks are raised the ordinary coops, serviceable for housing a few clutches, must be substituted by a specially constructed brooder house. The accompanying illustrations show the type of brooder house and incubator cellar used by H. K. Revell, of Goderich. The incubator cellar, partially under ground, is 11 by 40 feet, with the laying pen above. The front of the pen is practically all glass and cotton. The latter is hinged at the top and the sashes for glass are made to slide. The brooder house is 17 by 90 feet, divided into twenty-seven separate pens, each accommodating around sixty chicks. Heat is supplied by a hot-water system. In front of each brooder is a run, under cover, 3 by 10 feet, with removable partitions. In front of the covered runs are yards 9 by 60 feet. Under this system the chicks can exercise either in the open or under cover. With changing weather conditions this works admirably. These buildings are adapted to commercial poultry raising.

Where the brooder is used on the farm a covered and open run could be easily arranged. It will give the chicks an opportunity to scratch in the soil, which will aid in producing strong, sturdy birds. If the outdoor run is planted to oats early in the spring, a supply of green feed will be furnished with little trouble. It will not take much poultry wire to enclose a yard of suitable size. If cats, hawks or crows endeavor to carry away the young chicks, a yard could be covered with wire to avoid loss from these sources.

## HORTICULTURE.

### Fruit Crop Prospects in Niagara District.

During the latter part of last week a representative of this paper visited the Niagara District with the object of ascertaining what the actual conditions were regarding crop prospects. The country was covered more or less thoroughly from Hamilton to the Niagara River, and while there were slight local differences in respect to the promise of the different fruits, the whole community uniformly showed the result of too much rain and the backwardness of the season. The rain gauge at the Horticultural Experiment Station at Vineland showed that 5.4 inches of water fell between May 20 and June 14. This part of the rainy spell was ushered in with a fall of 1.06 inches on May 20, to be followed by intermittent showers which, while no exceptional quantity of water fell, kept the ground wet and cold. On the night of June 13-14 another eight-tenths of an inch fell and left the water standing in the orchards and the fields. These conditions have been as disconcerting to the fruit grower as to the average farmer, for it makes cultivation difficult and spraying less effective.

Speaking in a very general way there will be few apples in the Niagara District this season. It is not an area which produces this fruit in large quantities at the best, but this year the crop is lighter than usual. We at once think of peaches when that sunny Peninsula is mentioned, particularly the narrow strip between the Escarpment and Lake Ontario. There is now a good promise of a fair crop. In some localities and in some orchards of the various local districts there should be a full crop, but this is not general, and those best acquainted with the industry look for a yield that will make them step lively when the harvesting season is on, yet not sufficiently heavy to be termed a good or a full crop.

The Japanese varieties of plums, such as Burbank, Shiro, Red June, etc., are not setting any too well, but the domestic kinds, such as Bradshaw, Reine Claude, Grand Duke, etc., blossomed well and are setting full. Of course, there is still the possibility of a drop but that is not looked for, and the prospects are good.

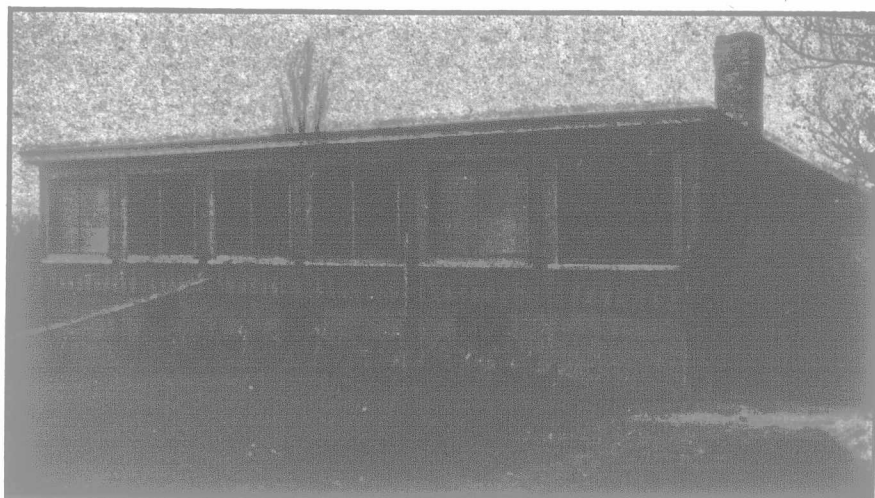
Sweet cherries of the Windsor type are fairly good, but black kinds are lighter. At Vineland and West, wet, cold weather existed when "Sweets" were in bloom, and they will probably suffer some in consequence. Sour cherries, the chief croppers of which are Early Richmond and Montmorency, blossomed heavily throughout the District and should be in fair supply.

As a general thing pears blossomed heavily, and at

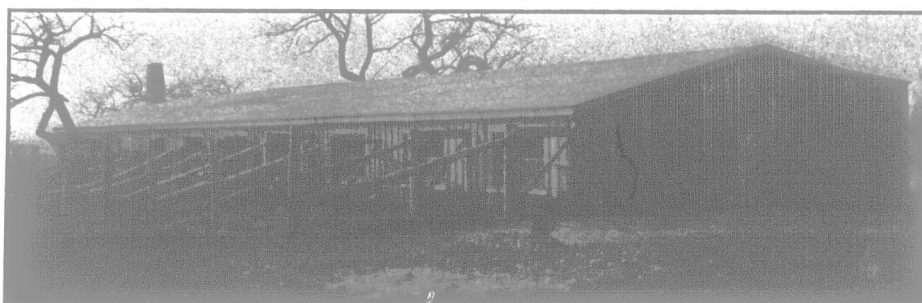
the latter part of last week the growers felt pretty confident of a good set, although it was too soon to be sure.

Strawberries cannot be a heavy crop in the Niagara District this year. Owing to the unfavorable season of 1916 the new plants did not runner sufficiently and the fields are patchy. What foliage there is never looked better and it will probably yield abundantly, but the acreage is small and the plantations are not capable of yielding large quantities. Raspberries, especially Cuthberts, winter-killed to some extent, and the crop will, no doubt, suffer some in consequence. The growers look for a light supply of small fruits.

Taking the local districts separately we found a few variations that must be considered in making an estimate for the whole Peninsula. At and around Queenston the peach crop should be heavy, but other fruits are light. In the St. Catharines District peaches are fair and so are domestic varieties of plums, but the "Japs" are not quite so good. In the orchard of Geo. Robertson, one of the largest sweet cherry producers of the Peninsula, the Windsor and kindred varieties were set full, but Black Tartarians, Black Eagles, etc., were not so promising. Sour kinds were setting full; other orchards, however, did not reveal the same uniform good promise. E. F. Palmer, Director of the Horticultural Experiment Station at Vineland interpreted the situation at Vineland and Jordan much as is written regarding the District as a whole. J. B. Fairbairn did not speak any too optimistically regarding the peach crop in respect to the Beamsville District, but he looks for a "fair crop."



Laying Pen and Incubator Cellar.



Brooder House.

At Grimsby the prevailing opinion runs somewhat as follows: Peaches, fair; sweet cherries, medium; sour cherries, good; plums, a good bloom; pears, Bartlets good but some other kinds not so good; apples, light; strawberries, very light; raspberries, fair. For the Winona and Fruitland Districts J. R. Hastings summed up the situation as follows: Peaches, very spotted—some orchards full of bloom but set few; pears, Bartlets and Duchesses, light; cherries, good, both sweet and sour; plums, good; strawberries, light; raspberries, very little winter-killing; currants, looking well.

Owing to the length of and backwardness of the season the growers are fairly well up to date with their work, and with the assistance of help of various kinds brought in from outside, no fear is entertained regarding the harvesting and shipping.

### Pruning the Apple Tree for Fruit.

EDITOR "THE FARMER'S ADVOCATE":

I wish to give you some of my experience in respect to the effect of pruning on the succeeding crop of fruit. I once heard a farmer say that he never pruned or sprayed his orchard and did not believe it necessary, but this theory is now exploded by all practical fruit growers. Four years ago in the fall of 1913, the Ilderton Fruit Grower's Association decided to have an orchard pruned as a demonstration, and on application to the Fruit Branch at Toronto, men were sent to select the trees and do the work. In one orchard twenty-five McIntosh Red trees were pruned, while in an older orchard twenty-five trees including Spys, Kings, Russets, Greenings and Baldwins were worked on. Many of the members of the Fruit Growers' Association were present at the demonstration and the lessons have borne much fruit in the years that have followed. The expert's method of heading back was entirely new to the fruit growers and some went so far as to say that it would kill the

trees. His system also of thoroughly thinning out each branch was new to the farmers, whose practice was to trim the trees, that is, to cut off so many of the lower branches each year and gradually bring the tree higher up; while the system followed by the expert aimed to lower the trees, give the fruit light and air, and make it possible to reach every part of the tree with spray. Another object was to greatly lessen the labor of picking the fruit.

Now for the result. The two rows of McIntosh Reds, although in bearing for several years and fairly well sprayed, had, previous to this, only borne one marketable crop of fruit, this variety being notably subject to scab. In the fall of 1914 there was a full crop, nearly all of which graded No. 1. These trees received four thorough sprayings, under the supervision of I. B. Whale, then District Representative for Middlesex. The two rows in the old orchard also showed splendid results which lasted until last year, although they got no more attention except the cutting of the water sprouts once. Last year's crop on nearly all our orchards only graded No. 3. The Spys on the pruned trees were nearly all No. 1's, while those on the unpruned trees were scarcely marketable.

After giving the system three years' trial we are pruning all the trees we can get done. We are often asked when is the proper time to prune. We started this year in March and have been at it since whenever we could get the time. As there will be no crop of apples to speak of this season, we intend to prune until the end of June, if we do not finish sooner. June is

the best month in which to head back large trees. The wound heals quickly at this time, but all large cuts should be covered with a coat of paint consisting of raw oil and lead. Never use a paint containing turpentine or any other drier.

In pruning, the fine-toothed saw is really all that is necessary, but one can do the work much more quickly with the improved pruner. Two hand clippers, one eight feet and the other ten feet long, are useful. The ten-foot clipper is for the man to work with while standing on the ground, and the one six to eight feet for use in the tree. The narrow-blade saw in an iron frame is a good tool, and the hand clippers make the thinning out an easy job. As we will not have much of a crop of apples this season, owing we think to the very dry, hot weather during the growing season last year, coupled with the exceptionally large crop of the past season, we would advise all fruit growers to prepare the fruit trees for a big crop next year. The fruit buds for next year's crop must be formed during this growing season and we should prepare for a bumper harvest in 1918.

E. CAVERHILL.

Middlesex Co., Ont.

## THE APIARY.

### Bee Demonstrations.

There is an army of about ten thousand bee-keepers with an average of thirty-five colonies endeavoring to increase production of honey in Ontario this year. Their work is influenced to a considerable extent by weather conditions. The bees secure nectar and pollen from the flowers and the season influences the flora to a considerable extent. Showery, spring weather brings on the clover from which the bulk of high-quality honey is obtained. Anything which retards the clover crop is looked upon with disfavor by bee men. While some people object to bees on account of their antagonistic actions, these busy workers aid in no small way to increase the production of fruit, clover seed, etc. It is necessary that there be fertilization of the blossoms, and the bees materially aid in this. During cold, cloudy weather bees remain in their hives and if fruit is in bloom during a period of dull days it results in a comparatively small crop, unless there are two or three days when the tree is in full bloom that will permit of the bees working. While the bee-keepers' revenue gatherers do not hesitate at encroaching on the neighbor's land in search of nectar, they do an immense amount of good to certain crops. There is yet much to learn about the handling of bees in order to secure the maximum returns, consequently the Provincial Apiarist Morley Pettit, of Guelph, has arranged for seventy-five demonstrations this year in order to give as large a number as possible of bee-keepers an opportunity of learning the latest developments in their business, which will enable them to increase the average production per colony. It is reported that bees are doing well for this season of the year. Colonies coming out of winter quarters