

are better on the average than others, and the best we can do is to find them out and follow them.

Not having tried several plans that are adopted by many, I will not attempt to describe them, but confine myself to that known as *cellar wintering*, the method I follow, and which I believe has given the best results. The time to commence to winter is in the summer, just after the honey season is over. At that time there should be a reasonable certainty that all colonies have queens. If the bees are lively in their actions, carrying in more or less pollen, it would be better to let them alone, as damage might be done by opening hives at this particular time, in causing robbing, or perhaps killing a queen. But if the bees are dead and listless, it would be better to look for eggs in the centre of the brood nest. If none are found, exchange one of their combs for one having eggs from the best queen in the apiary. The operations should be done very rapidly, or else under a tent to prevent robbing.

The next thing, early in September, should be to ascertain if all have sufficient food to carry them through the winter. I decide this generally by weighing. If there is not enough, a syrup made from the best granulated sugar should be fed, so that each colony will have 25 lbs. of food at the time they are put in the cellar about the middle of November, or when it is thought fine days on which they might fly, are over.

When I say that cellar wintering has proved the most successful, I do not mean any kind of a cellar. I know a man that last fall put his bees in a cellar under a new house, in which no one lived through the winter, and they all died. In fact there is more risk in an unsuitable cellar than on the summer stands. My own is under my dwelling house, and is in a dry, porous soil, with a concrete floor. A stone wall separates it from a cellar in which a heater is used for heating the upper rooms. In this stone wall is an opening at the bottom and another at the top, to admit of a circulation of air from the department containing the heater. These openings may be closed if the heat in the bee cellar requires it. The doors into this cellar are, one from the outside, where the bees are carried in and out, and is protected by triple doors, one at the top of the stairs and two at the bottom. Another between the bee-cellar and the heater-cellar, with double doors. There is also a stove pipe in connection with a chimney, the end reaching within three inches of the floor to carry off cold air, if required. The bees are corded up in this about the time above mentioned, with simply the cotton cloth on top, and the entrance fully open. I prefer the back end of the hive a little higher than the front, to facilitate the carrying out of dead bees. A thermometer is kept about the centre between top and bottom. My object is to keep the temperature about 45° through the first half of winter, and gradually running up to 50° in the latter half, keeping as free from sudden changes as possible. If the weather is very cold and the thermometer dropping, I utilize the heat from the heater department through the openings before mentioned. By this means I have been able the last two winters (the only time I have used this cellar), to bring out my bees in excellent condition, brood and young bees being very common when set out in April.

I before stated that wintering commenced in the summer, so I believe it ends there. Many experience the most severe losses in the spring by what is called *spring dwindling*. It would be hard to say how many circumstances combine to cause this, but the chief undoubtedly are, impaired health by cold and dampness combined (dampness itself will not injure if the temperature is kept high), unfavorable weather, unwholesome food, and want of sufficient protection. When several of those causes work together, death is almost sure to result; and even if it does not, if the colony is left in a weak condition, no profit can be expected, as many have experienced the present year. Fortunately several of those causes of trouble are largely under the bee-keeper's control. Cellars can be made where the bees will be dry and warm. They can be protected in the spring much better than they generally are.

It should be understood that bees need heat to hatch, just as well as chickens. If the colony is not very strong, and the weather is unfavorable, it cannot produce heat sufficient to allow breeding to go on fast enough to supply young bees to take the place of the old, that are dying off very fast: the result is death.

To prevent this dwindling it is generally recommended to close the entrance blocks very close, and

that is all right so far, but there is a more important point than the entrance, and that is the *top* of the hive. It is a well-known natural law, that hot air tends to rise. Now, if there is the least opening above the cluster, the hot air leaks out, and of course its place is supplied at the entrance. It does not matter how small that entrance is; if it is open at all heat cannot be maintained in the hive, and breeding cannot go on. After the honey season is over the bees will hermetically seal the top of their house to prevent the escape of hot air. But some bee-keepers, through ignorance, destroy all this by tearing up the cloth cover late in the fall, when the damage cannot be remedied. Under such circumstances need any one wonder why bees die.

If a colony is weak in the spring it should be opened up and put on as few combs as the bees can cover; but that contraction of space will be of no value if the hot air can escape from the cluster.

In conclusion, I would say that those who think it will not pay to put things in the very best shape, who cannot afford to give the necessary attention to the many little things daily occurring, had better not keep bees.

F. MALCOLM.

Innerkip, August 14, 1885.

### Horticultural.

THROUGH some unaccountable oversight our respected correspondent, B. Gott, of Arkona, was not credited, as was his due, with being the author of the interesting paper in last issue on "A Woman's Help in Horticulture."

For the CANADIAN LIVE-STOCK JOURNAL.

#### Has the Potato Disease Disappeared?

For several years past we have seen very little of the potato disease, and last year I was not aware that any of its effects were observable in this part of the country. Indeed it now seems that the dreadful scourge, which at one time threatened to annihilate the potato, has gradually disappeared.

It is now over forty years since it first made its appearance, and I am not aware that any scientist has yet been able to propound a satisfactory diagnosis of the disease, and although innumerable supposed remedies were recommended and applied, it is doubtful whether any one of them was ever generally accepted as being in any degree effectual.

Ever since the Colorado bug assumed such a destructive aspect, the attention of the agriculturist has been almost entirely withdrawn from the old mysterious disease, and diverted towards the more easily discerned, but not less destructive pest, the potato bug.

I have with many others long inclined to the belief that luxuriant growth of the potato, promoted by moist warm weather in July, favored the disease, consequently in such a season as this, we would be more likely to have a severe visitation of the old plague, and if it does not soon make its appearance we may reasonably flatter ourselves that it has taken its final departure.

I do not pretend to know whether the regular applications of "Paris green" and other arsenical poisons may have been the means of exterminating the disease, but I think it is quite probable that these applications may have had a beneficial effect, and quite possibly may be a complete remedy, so that after all it may be that the bug has inadvertently proved to us a blessing instead of a curse.

What do you think about it? D. NICOL.

It is rather a singular fact that for many years past we have not been visited with the potato disease to any very serious extent, and all the more so as our seasons of late in many sections have partaken of a

more than ordinarily moist character. Where the disease has appeared it has been somewhat sectional, so that it could not be looked upon in the true term as being a national visitation. The appearance of the vines this year is, however, ominous, and we entertain grave fears that the deadly work will show itself again. In many instances the vines have blighted, even in the case of late and robust varieties. If such is not the case, and we most profoundly desire that so it may be, we may pretty safely conclude that Mr. Nicol is correct in his surmise that the dreaded scourge "has taken its final departure."—Ed.

For the CANADIAN LIVE-STOCK JOURNAL.

#### Fruit Culture.

BY M. PETITT, WINONA.

(First Paper.)

#### THE DUTY OF GROWING FRUIT.

Fruit growing for market is comparatively a new industry in our Province. Fifty years ago the greater portion of it was a forest; our pioneers became grain growers through necessity; the children of this grain growing people have followed the footsteps of their fathers, consequently many of the farms of this fertile country are not only robbed of their fertility, but are almost destitute of fruit of any kind.

I have often heard intelligent and prosperous farmers acknowledge that they paid but little attention to fruit growing, as farm laborers were so exacting during the season of growth in their wages and in other ways, that they did not feel it prudent to engage in the work. I cannot but think that the true reason is that they do not properly estimate its value, nor do they properly appreciate its influence on the welfare and enjoyment of the family.

We never hear a farmer offer the above as an excuse for not growing wheat and other cereals. What we desire to grow we usually find a way to do it.

For what purpose does the farmer engage in his calling? Is it not for the purpose of providing a comfortable and healthful subsistence for himself and family? He desires that his children shall be well developed, healthful, happy, and sound in mind and body. Are the products of the fruit-field then of any less importance than those of the grain field?

Notice the time when fruits appear in the early part of the season, when the blood is thick and impure from the excessive use of carbons during the winter, when special aid is required to promote digestion. We are of the opinion that, if the farming community would cultivate and eat more early summer fruits and less salt pork, they would not be charged as they now frequently are with being chronic grumblers. We would hear less complaining about the drought, rust, rot, blight, mildew, and a thousand and one insect enemies and diseases.

We hold that every farmer owes it to himself and to his family to supply his table with all the desirable and wholesome luxuries which the farm under ordinary cultivation is capable of producing. Failing to do this he fails in the discharge of his whole duty, and cannot reasonably expect his children to grow up contented with their lot. Children brought up on a farm do not possess many privileges enjoyed by those brought up in the city, and should be provided by way of compensation with others, which the farm is capable of affording.

The children of the farmer visiting the city behold displayed most temptingly in the front of every fruiterer's shop almost every species of rich, ripe fruit. They know that these are grown on soil similar to that owned by their fathers, and if contin-