

butter was made on his farm. Feed milking cows nothing but sweet, wholesome food. Never allow them to drink water you would not drink yourself. Milk with clean hands; strain as soon as possible after milking; strain into plain tin cans twenty inches deep, and eight inches in diameter. In autumn and winter, dilute the milk by adding one-quarter part water at from 125° Fahr. to 130° Fahr. Stripper milk should be diluted half-and-half. Enough water at 125° or 130° Fahr. should be added to the milk to raise it to 98° Fahr. Cool it down to 40° Fahr. In summer the cream will be to the top in twelve hours, in winter it will require twenty-four, or perhaps thirty-six hours.

The cream should be taken off with a tin cup. Keep the cream below 55° Fahr. until you have enough cream to make a churning; twelve hours before you have enough cream to make a churning, take half a gallon of cream, ripen it, and mix with the cream you intend to churn; in twenty-four hours it will be ready to churn. Strain the cream into the churn. (He used a No. 5 Daisy churn, and finds it suits the purpose the best of any kind of a churn that he has tried.) If butter color is required this is the time to add it. If your customers prefer to have it colored, color it for them. He commenced to use color as soon as the grass is frozen in autumn, and continue to use it until the grass comes in spring.

There can be no fast rule laid down for the temperature at which to churn. That depends, to a certain extent, on the temperature of the room in which you churn, the time of year, and the feed the cows are receiving. In summer he churned at from 58° to 60°, and in winter at from 62° to 64°. Churning should be done in from thirty to thirty-five minutes. The time to quit churning is when the particles of butter are a little smaller than flaxseed, put two pails of water into the churn (the water should be at 55° degrees in summer, and 60° in winter), turn a few rounds, draw off the buttermilk, put in another two pails of water, with two teaspoonfuls of salt in it; turn the churn at the rate of 100 revolutions per minute to break up the butter, so as to allow the buttermilk to escape. Drain off the water, and put one pail of water with two teaspoonfuls of salt in it, turn the churn a few minutes; draw off the pickle. By this time the granules of butter will be as fine or finer than hay seed. At this stage the salt should be added. Use best dairy salt at the rate of one ounce to the pound of butter. Sift the salt into the churn through a fine hair sieve. Turn the churn half round a few times to allow the salt to mix with the butter. Then revolve the churn until the butter is formed into rolls.

Lift the butter into a wooden bowl with a wooden ladle. The hand should never be allowed to touch the butter. Allow the butter to remain in the bowl for eight hours; cut it down through with a wooden ladle. If white specks appear in the butter, they should be worked out with pressure. If no white specks appear it is ready to pack. Pack in whatever kind of packages your customers like best. We put up our butter in one-half pound prints, and lap it in parchment paper, with our name on the paper, and ship it in boxes which hold thirty pounds. These boxes are filled up with trays like egg boxes. We get 25 cents per pound the year round for all we can make.

Secretary Wheaton on the Whey Question.

SIR,—It was not because I wished to defend Instructor Millar that I replied, in your May 15th issue, to Mr. Meldrum's criticism, but because our good friend, in his short note, had advocated a practice in cheese factory operations which, in itself, is pernicious and a hindrance in many factories to the making of first-class cheese. Mr. Millar is quite capable of defending himself, whether it be regarding his methods of inspecting milk and giving instruction in cheese-making, or in replying to any criticism of his statements in the public press.

The proper disposal of whey at cheese factories is an important question, and we are pleased to hear the views of our friend even if they do not coincide with our own. However, notwithstanding what Mr. Meldrum has said in his two letters on the subject, we are as strongly convinced as ever that some other method should be adopted than returning the sour whey to the patrons in the milk cans.

Mr. Meldrum does not seem to be at all wells posted as to the management of the whey business where it is fed at the factories. He takes it for granted that every "Tom, Dick and Harry" brings his hogs and calves and turns them loose around the factory to get their fill as the "gray liquid" emerges from the whey spout. Such is not the practice, at least in the western part of Ontario. The whey is usually sold to the highest bidder, who agrees to feed the whey at a stipulated distance from the factory, or draw the whey away in tanks to be fed on some impoverished farm. The manufacturer sometimes takes the whey, and thereby lessens the cost of making to the patrons. If the patron draws his own milk, returning the whey in the milk cans will not have as injurious an effect, as it can be taken out of the cans upon reaching home. But, as is the case with nearly all our factories, regular milk-drawers are employed on given routes to haul milk to the factory. Under these conditions, where the milk cans are not returned till later

in the day, the whey is hardly ever dumped out of the cans till noon, or, very frequently, till evening, just before milking time. When this sour whey has remained in the can so long it is almost impossible to clean the can and get it in a condition to put pure milk in without tainting it. Under the "route" system, Mr. Meldrum's suggestion to take the whey home in old cans or barrels is obviously impracticable.

We agree heartily with what Mr. Meldrum says in reference to too many small or one-horse factories. The cost of production decreases almost in proportion to the increase in the amount of cheese made in any factory. Hence the fallacy of dairymen in many localities desiring two or three small factories where one large factory would cover the ground. A large factory will always get its cheese manufactured at a lower price, and can dispose of its product to better advantage, than a small one.

J. W. WHEATON.

POULTRY.

The Poultryman's Worst Enemy.

BY JOHN J. LENTON.

As this is the season for these pests, and as more fowls die, either directly or indirectly, from the effects of lice, we feel it a necessity to urge all who keep poultry to keep them and their house free from the poultryman's worst enemy.

The lice that swarm in countless numbers on the perches and woodwork of a neglected poultry-house must be destroyed. Several methods have been recommended, one of which is to wet every part with water, by using a syringe, and then dust with dry wood ashes, relying on the potash to destroy the vermin. But this method is not perfect, for although the water may penetrate to every part of the interior of the building, there is a liability that the ashes may not, and then some small squads of lice would be left—enough for seed. It requires but few, especially in warm weather, to populate the building again. Another method is to use coal oil, putting it on with a brush; also, a weak solution of carbolic acid has the same effect, viz., killing the lice it comes in contact with. It will be obvious that every part of the woodwork that is infested must be touched. The cheapest, most effectual, and the most pleasant remedy we have ever used is the long-tried one—*whitewash*. A thorough application kills every louse. But there must be no half-way work about it. The lime must be splashed into every crack and crevice. The material is so cheap that it may be used bountifully, and it does not need an artist to put it on, only a careful person, faithful in his work. After the work is done, there is a sweetness and cleanliness about the place that seems worth all the trouble, leaving the killing of the vermin out of the question.

There are also, besides the poultry-house vermin, the larger parasites that infest the bodies of the fowls, sticking to them closer than a brother, and remaining on till death separates them. Nature provides ways and means to partly mitigate the evil, if fowls are not restrained. When the small vermin of the house becomes unbearable, the birds can move to other quarters, and evade their tormentors, and the dust-bath furnishes the means of destroying the lice on the bodies of the fowls, which they are not backward in using. It is cruelty to shut fowls up in close quarters, and not provide them with a dust bath. This seems to be the only natural method to which they resort to clear themselves. The fact is patent that the abundance of vermin is produced by the restraint which man imposes. If the fowls are confined in limited space, no dust-bath provided, and no chance to change roosts, they are completely at the mercy of both kinds of vermin.

But it is, nevertheless, true that fowls do get lousy, and their owners find it out by getting a few or many of the vermin on themselves as they visit the quarters of their much-abused birds to get eggs. Then it is that they realize that something must be done. We have given the best methods for those found clinging to the interior of the building. It remains to mention the means that have been made effectual in destroying the lice found on the bodies of adult fowls, and on the heads of young chickens. We enumerate sulphur, carbolic acid, kerosene, grease, and Persian insect powder. The latter is a vegetable preparation. Careless or ignorant persons, using carbolic acid or grease, are liable, while destroying the lice, to injure or kill the patients. If the heads of the young chicks are infested with lice, only a little coal oil on the tip of a feather is to be used. If it gets into the eyes or mouth it may prove fatal. Grease kills lice by closing the small apertures through which they breathe. But this remedy makes them look unsightly, and it is not to be recommended.

GARDEN AND ORCHARD.

Summer Work in the Orchard.

BY ELLIS F. AUGUSTINE, LAMBTON CO.

The fruit-grower will find but little time for work in the orchard during these busy days, yet there is much that may be done, which, if neglected, will necessitate a large amount of extra future work, and result in a severe set-back to the thrift and vigor of the trees. New suckers, which start very freely after spring pruning, may now be quickly rubbed off by hand; while if left till fall or the following spring it will require much time and labor to remove them with a knife or saw; and, if now attended to, there will be much less liability of others starting out the next spring.

There is no better time for forming young apple-tree heads into desirable shape than during the summer months. New shoots which are growing in a wrong direction should at once be cut out, and also any limb which intersects, or may in future crowd another; taking care to always keep the centre of the tree well open. This work may now all be done with a pocket-knife or small pruning clippers. In fact, no other instruments for pruning need be used upon a young tree for many years, if the work is always attended to when first needed.

All black knots should be cut out and burned when first discovered, as it is very easy to keep an orchard free from these if attended to in time; while if allowed to gain a foothold they are very difficult, and sometimes impossible, to effectually eradicate. If found upon the body or main branches of a young tree, an efficient remedy is to carefully cut off the diseased wood and apply a little kerosene to the wound. Great care, however, should be taken that none of the liquid comes in contact with the healthy parts, or the tree will be destroyed as well as the disease.

Be on the watch constantly for the first signs of the tent-caterpillar, which is easily destroyed in its first stages, when it is clustered in the web from which it derives its name; but if allowed to spread over the branches much time will be required for its extermination. And when a tree has been defoliated by its ravages it is a great drain upon its vigor, and check to its growth, to be compelled to renew its foliage so late in the season, when there is a scarcity of sap in the body of the tree. How little attention is given to the destruction of this pest by the general farmer is evidenced by the defoliated appearance of at least twenty per cent. of all apple trees during the months of August and September. Now, let every reader of the *Advocate* decide that during this season his orchard shall have every care and opportunity for its fullest development, and not present the neglected and unsightly appearance which so many orchards do.

Tomatoes and Their Enemies.

This plant, which is becoming such an economic food product, is attacked by a number of diseases commonly known as rot of the fruit and blight of the leaves. The form of rot caused by the fungus *Macrosporium solani* is, perhaps, most troublesome. While some varieties are more subject to the attack of this disease than others, it seems most likely to appear upon plants that have been subjected to some kind of check, and for this reason it is perhaps most prevalent in hot, dry summers, when all vegetation has to struggle for an existence.

The disease shows at the point attacked as a greenish-brown spot, which gradually enlarges and may involve a greater part of the fruit. The diseased portions seem to sink below the surface of the surrounding healthy parts, and the cuticle may turn yellow and finally white. If the disease is not checked green spores develop and distribute the trouble.

By the use of Bordeaux mixture soon after the fruit has set, repeating at the end of two or three weeks, followed by copper sulphate solution if necessary (1 lb. to 500 gallons of water), the crop can be grown with but little danger from the rot. The frequent use of the cultivator fortifies the plants to withstand obstructions of whatever sort.

The large green worms known as the *tomato sphinx* frequently annoy people, because of their great size and disgusting appearance. They are very hearty feeders, which soon devour the foliage of a good-sized plant if allowed to do so. They are perfectly harmless to handle, and as they are readily seen, they may be hand-picked and destroyed.

Anthracnose of the Bean.

Bean growers would do well to keep an open eye to their crop in order to successfully combat a fungus that may become very disastrous if neglected. At first "anthracnose" shows itself as reddish-brown spots, the centres of which soon become white, finally turning to a light brown. The spots enlarge, and, if sufficiently numerous, several of them will grow together and cover a large part of the surface of the pod or leaf. When once it gains a hold upon the pod it soon sinks below the surface, causing the beans themselves to shrivel up and thus destroy the crop. It is most common in low, damp sections, where it sometimes shows itself even in a dry season like the present.

The use of copper sulphate solution applied in the shape of a spray is an effective method of staying the disease. It should be used very weak, not stronger than one pound to 500 gallons of water. This strength will do no harm, and with fairly favorable conditions will keep the beans practically free from disease.