

meal ration were added. The man said it was wonderful how this food stimulated the milk flow, and, besides, the hay seemed to have almost twice the feeding value. Where food is scarce and dear it is certainly worth trying.

If the stable is well lighted and ventilated, I do not see much need of letting the cows out in the cold and wind of winter. Occasionally, on a sunny, warm day, it is a change for them, but the more exposed to cold the cows are, the more feed it takes to keep up the animal heat. The piercing winds cannot but shock the nervous system, and very materially check the secretion of milk.

I have written this for the person who keeps but a few cows, and feels no special interest in their welfare or the tidy profit they might bring in, if only given a chance. I have the greatest faith in dairying, and believe it to be one of the most profitable branches of agriculture. To see that dairying pays when gone into as a business, one has but to take a trip through such Ontario counties as Oxford and Perth, Leeds and Hastings. The beautiful farm homes, luxuriant with every comfort, are proof positive that the industry is assuredly all right when properly managed.

COW-TESTING ASSOCIATION WAKED DAIRYMEN UP.

Editor "The Farmer's Advocate":

I take much pleasure in giving you my experience in the cow-testing association, in hope that it may be of benefit to someone. I belong to the North Oxford Association, situated three miles north of Ingersoll. It started three years ago, with a membership of about 16. It started out very promising the first year, but it has dwindled down to three this year. I think that all are glad it was started, as it has created a great interest in this district. People are getting rid of their poorest cows and buying pure-bred sires (principally Holstein) to head their herds, and buying the best cows they can get. There has been a wonderful change set on foot, I believe, by the cow-testing association. Personally, it has helped me considerably; it tells one some hard facts. There are very few people who realize the difference in their cows. For instance, last year I had a number of two-year-old heifers, one of which gave 10,000 pounds milk, another gave 6,000 pounds, in the season. Now, I did not think there was such a difference; and I know of others who have had a similar experience. I would like to see it continued; if it does not, I shall certainly continue weighing three days a month; it does not take long, and you get to know your cows, as well as the milkers, as there is many a good cow spoiled by poor milking. I think it should be highly appreciated by patrons of creameries, and where they pay by percent, fat, as the richer the milk, with a fair amount, the more the money. Our factory pays by the pound. I think that is why it has not prospered as it should here. People are after the cow that fills the pail, regardless of quality. Wishing your paper every success.

Oxford Co., Ont.

J. E. SANDICH.

INTEREST IN COW QUESTION STIMULATED.

Editor "The Farmer's Advocate":

I belong to the Spring Creek Cow-testing Association, started in January, 1907. It has 11 members, with the prospect of more for next year. I consider the advantages well worth the trouble, as it takes but a short time to weigh and mark each cow's milk. Then, I know which ones are paying their board, and which are not. I do not think one could tell any other way. The movement is not as popular as it ought to be. I should like to see it continued. It has stimulated an interest in the cow question with me, and I will sell the inferior cows. J. C. FULLICK.

Oxford Co., Ont.

The very general inclination among farmers to spend their money only upon necessities and articles that are essential to progress, both financial and mental, is a sign of sound judgment. In times of easy money and easier speculative schemes, necessities are often neglected for fads and trifles, and attention to mental necessities is often entirely neglected. As a sound investment for sane men at a time when the exercise of judgment and business sense counts for more than chance and luck, the annual subscription to "The Farmer's Advocate" is most important.

Reporting from Bristol, Eng., to the Department of Trade and Commerce, W. A. Mackinnon states that, out of a total of 1,662,517 hundred weight of cheese imported into Great Britain, Canada supplied 1,034,341 hundredweight; New Zealand sent 245,998 hundredweight, The Netherlands 207,692 and the United States 88,848.

POULTRY.

BUILDING AND EQUIPMENT FOR A TWO-THOUSAND-BIRD PLANT.

A would-be poultryman, living in Saskatchewan, submits the following questions to "The Farmer's Advocate and Home Journal," of Winnipeg:

As I am going into the poultry business, I would be greatly obliged if you would kindly answer me the following questions through the columns of your valuable paper: What would it cost to erect a building 300 feet long and 20 feet wide? What height should such a building be? I estimate that the building will accommodate 1,000 birds, having each 200 birds partitioned off with poultry netting, so as to prevent crowding. House (no floor) to be built of best quality shiplap, \$30 per thousand feet, and covered all over outside with some good roofing paper. What size of run would be required, divided in the same manner as interior? Give rough estimate of the grain that would be required for one year, fed two-thirds wheat and one-third oats. Give list of things required for a 2,000-bird plant—incubators, brooders, and size suitable to use. What size of incubator house?

A WOULD-BE POULTRYMAN.

Saskatchewan.

These questions were submitted to A. W. Foley, Poultry Superintendent, Edmonton, Alta., who replies as follows: With reference to the cost of a poultry house 300 by 20 feet, I would think it decidedly unwise to give such a plan of house any consideration, from the fact that a poultry house 20 feet wide is not practical. The essential consideration in constructing a poultry house is to so arrange it as to allow the rays of sunshine to penetrate, if possible, to the roosts and drop-boards which are located at the rear of the pens. I take it that your correspondent proposes going into the poultry business in a practical way for commercial purposes, combining convenience and the most satisfactory conditions for the birds. For a purpose of this kind, I would recommend a practical and economical poultry-house, one recognized by poultrymen in general under the name of "the single style of poultry house." This style can be constructed as cheaply as any, and has all the essentials of a first-class poultry house. The general specifications of this style of house are 8 feet studding at the front, 4 feet 6 inches studding at the rear, the width of the house 12 feet. The pen partitions are usually placed 12 feet apart, each pen having a capacity of from 25 to 30 birds. The partitions are solid board to the roof, where the roosts and drop-boards are located, with 2 feet of board at the bottom, and 4 or 5 feet wire above for the balance of the partition. The doorways in the partitions are placed 2 feet from the front of the pen.

I am afraid, however, that one thickness of shiplap, and covering with roofing paper, would not be a sufficient protection. I would suggest that the inside of studding on the ends and rear walls be sided up with shiplap, and on the outside of the studding, throughout the building, shiplap, paper, and some suitable drop siding, be used. This I think, would make a much more satisfactory poultry house, particularly for securing of winter eggs, which should be an important factor.

The estimated cost of such a building I would place at from \$3.50 to \$5.00 per running foot, depending on the varying price of lumber and labor in the district where the building is to be constructed.

In running the birds in colonies of 200, as suggested, this style of house might be used by making it with partitions every 90 feet. In figuring accommodation for poultry, from 5 to 6 square feet of floor space should be allowed for each bird. I would, however, advise the dividing of the house, and not allowing more than 100 fowl to run in a colony, as I think better results would follow from this plan.

The runs in front of the house should extend for from 100 to 150 feet to the front, and should be fenced with 2-foot board at the bottom, and 4 or 5 foot netting above. The runs should be seeded to alfalfa clover or other succulent foods. The cost of feed per bird per year is usually estimated at from \$1.00 to \$1.25 per bird, depending on the varying cost of grain from season to season. I would not recommend wheat and oats alone as food rations, as grit, oyster shell, animal meat and other foods are necessary as a part of the rations, in order to secure satisfactory results.

To give a list of things required for a 2,000-bird plant is perhaps a large undertaking, and I think any person attempting to undertake poultry farming on such a large scale should have a pretty thorough knowledge of the necessities of a plant of this capacity, or the chances are that disaster and financial failure will follow.

To give a practical, up-to-date, commercial poultry plant of 2,000-bird capacity, one can safely estimate that the land, house, and general

equipment will cost in the neighborhood of from \$6 to \$7 per head. Too often the poultry business is disgraced by failures resulting in persons undertaking it with the idea that a few dollars is all that is necessary with which to go into it. It is an industry by itself, and, to be made a success of, requires capital and a thorough, practical knowledge of poultry-keeping. My advice to your correspondent, or any other person going into the poultry business without this practical knowledge, is to undertake it in a small way, and extend his business with increased experience.

GARDEN & ORCHARD.

CANKERS ON APPLE TREES.

Many Ontario apple-growers have complained that an unusually large number of branches are dying on their older apple trees, and not a few of the younger trees have been killed outright. The trouble has usually been attributed to sun-scald and oyster-shell scale. Investigations this autumn, however, have shown that the greater part of such damage can be traced to cankers, caused either by a fungous disease, known as black rot, or a bacterial disease, known as pear blight, fire blight, or twig blight. The black rot attacks also the leaves and fruit, causing the latter to rot. On the surface of the rotten fruit little black pustules or pimples, almost one-third the size of a pinhead, appear after a time. These pimples contain spores, which when set free are carried by the wind from tree to tree, and help spread the disease in the summer. Either kind of canker may cause diseased areas on the trunk and large branches, or at the main crotch. It is not easy to know in every case to which disease a canker is due.

A BLIGHT CANKER, however, often begins by attacking a water-sprout and running down into the trunk, crotch or main branch, and forming a large dead area there. This time of year such areas caused by blight are usually distinctly marked off from the healthy bark by a crack between the two, and by the diseased bark being darker brown in color than the healthy bark, and slightly shrunken. As a rule, the surface of blight cankers is fairly smooth, not rough, checked or blackened, and is free from pimples, except in old cankers, where other diseases have got in and caused these.

THE BLACK-ROT CANKER, on the other hand, is, as a rule, not distinctly marked off by a crack between it and the healthy bark. The central part, especially if more than a year old, is usually somewhat swollen, and the bark is rough, black and checked. On part of the smoother surface there will nearly always be found numerous little black pimples or pustules, about one-third the size of the head of a pin. These are the places where spores are produced that spread the disease in the spring of the year.

Both kinds of canker may live over from year to year, and continue to increase in size. This is especially true of black-rot canker, though it, as well as the other, may die out at the end of the first year. The diseased area may be small in either kind; or, again, it may include the whole of the trunk and part of the branches; or may run for several feet along a single branch. In old trees, only the branches are attacked.

REMEDIES.—Where a tree is too badly attacked to give any hope of its recovery, it should be cut down and burned as soon as possible, for otherwise the disease will spread from it, even though the tree itself is dead. In the same way dead or dying branches should be cut off and burned, either this fall or early next spring, taking particular pains to see that the cut is made several inches below any trace of the diseased area. All cuts thus made should be disinfected in the manner described below, and then painted. If this is done, the frost will not injure them. Wherever a healthy stub is left after cutting off the cankered part of a branch it can be cut afresh in the spring and grafted.

Where the cankered areas are not too large, especially on the trunk and crotches, they should be neatly cut out with a knife or some sharp instrument until the healthy bark is reached. The wounds thus made must be disinfected and painted with white lead (free from turpentine). The painting should be repeated next spring to make sure that no disease gets into the wounds. The best disinfectant to use is corrosive sublimate, of the strength of 1 part of this substance by weight to 1,000 parts of water. Any druggist will supply the substance and explain how to make it up. The material costs only a few cents. A wooden or glass vessel must be used instead of iron or tin, as the substance will corrode these. Corrosive sublimate is deadly poison when taken internally, so care must be taken not to allow anything to drink the liquid, and to wash thoroughly the vessel before using it for any other purpose. The best way to disinfect the wound with corrosive sublimate is simply to tie a little sponge or a small pad of cloth on the end of a stick and, after dipping it into the liquid, wash