A Few Needs of the Dairy Business.

In a farewell letter to the American dairy press, Prof. J. W. Hart, who resigned his position as Superintendent of the Eastern Dairy School, Kingston, Ont., in 1903, to enter the Department of Dairy Husbandry, Urbana, Ill., which he now leaves to take up work in the San Paulo, Brazil, Experiment Station, offers these few reflections upon Illinois Dairy conditions. They are equally applicable in Canada.

"Every intelligent man or woman who has given the subject any study must recognize that the greatest cause of inferior dairy products which entails loss on the producer and injury to the consumer is filth in the milk, and that nine-tenths of this filth, with its attendant train of evils, could be kept out without any additional expense on the part of the producer. If the dairymen will only handle the milk with the same care that common decency demands with regard to other foods, the problem is solved, and they will be richly repaid, not only in pocket, but in the increased health and vigor of all who depend for a part of their sustenance upon dairy products in any form. Although the majority of dairymen want to do what is right, it is unfortunate that there are engaged in the dairy business a few who are no cleaner in their methods than they are compelled to be and who cannot be trusted. If nothing else can be done, the public health demands that they be retired on pension.

"Dairymen must, if they succeed, not only produce superior goods, but must practise modern business methods, and place their products upon the market in an attractive condition. It is possible, and always more satisfactory, to get better prices through increased consumption rather than by a reduction of the supply. There is no other business where the results of co-operation have been so far-reaching as in the dairy business, and the revival and extension of the co-operative spirit among dairymen would be of decided benefit to all. All this, and more, is possible if all the different agencies and individuals interested will work together with this one great object in view—improvement in the quality of dairy products."

The Milking Machine.

To the Editor "Farmer's Advocate":

Sir,—Replying to yours of the 20th, would say that in the month of February last I visited three farms in Little Falls, N. Y., where they are using a milking machine manufactured by D. H. Burrell & Co., of Little Falls. This machine is a modification of the "Lawrence-Kennedy" milking machine. The farmers are well pleased with the work of this machine, and, so far as I can see, I consider it quite practicable. It will milk from eight to ten cows at once, and on one farm one man was milking from thirty-two to thirty-six cows, night and morning, and doing this work in about an hour and a half. They say they are able to dispense with the help of one man since the introduction of the milking machine. We hope to have one of these machines installed in the dairy department of the College in the near future, although the manufacturers have not yet placed them on the market, but they hope to be able to do so in the very near future. We are also trying to get a Canadian firm to take up the manufacture of the machine in Canada. I have great faith in the future of the milking machine and its possibilities of lessening the labor in connection with the keeping of cows.

O. A. C. Dairy School. H. H. DEAN.

Do Your Cows Pay?

1. What is your favorite breed or grade of dairy cows? Give reasons.
2. Do you make the milk into butter on the farm, send to a cheese, butter or condensing-milk factory, sell whole milk or cream?
3. If possible, send us figures telling what cash returns per cow you received last year from the milk of your herd?
4. Can you show the profit derived per cow during the year, by deducting cost of feeding and care?
5. Do you keep a record of what your cows produce in pounds of milk, and do you test it for butter-fat? What is your system, and what are its advantages?
6. What is the best plan to get a profitable dairy cow?

[Concise answers to the above questions can be put in a few hundred words, and we request our dairy readers to send their replies in by the earliest mail convenient. In case you are not in a position to fully answer some of the questions, omit these and deal with the others.]

A Welcome Visitor.

Enclosed find $1.50 for our renewal for the "Farmer's Advocate and Home Magazine." We highly appreciate the worth of the paper. It is a welcome visitor to our home.

Middlesex, Ont. HOWARD GARDNER.

Licensing with a Vengeance.

In Victoria, Australia, a bill has been drafted which provides for a thorough inspection of all creameries, cheese factories, milk, stores and farms where milk is produced, so that "any person offering for sale or selling milk, cream, butter or cheese without a license, or offering for sale the milk or cream of any other person without a license, and any company or person engaging in manufacture, mixing, packing or storing of butter or cheese for sale without a license, shall be guilty of an offence, and be liable to a penalty not exceeding $25."

The farmer's license fee is made proportionate to the number of cows kept; and must, of a necessity, be very small for two or three cows, and it will certainly cost a good deal to collect it.

It remains to be seen whether this bill becomes a law or not, and if it does, how it may be practically enforced.—[Exchange.

GARDEN AND ORCHARD.

Fighting Fungi and Insects in Niagara District.

The grand final meeting of the week among the fruit-growers of the Niagara district was held at St. Catharines, and was attended with great enthusiasm. Hearty votes of thanks were given Mr. H. L. Brown, of Delaware, U. S.; Prof. Lochhead, of the Agricultural College, who had spoken on fungi and insects at the first three meetings; and to W. T. Macoun, of Ottawa, who had treated of these subjects at the last three meetings.

BLACK ROT OF THE GRAPE.

At St. Catharines Mr. Macoun confined his remarks to the diseases of the grape, especially to the black rot which has recently appeared in this district, and which most seriously threatens the grape industry of the whole Province. Mr. Macoun pointed out the importance of checking this disease at the outset, because when once established in our vineyards it is most difficult to eradicate.

The black rot is a fungus which feeds upon its plant host, spreading by means of microscopic spores, which are thrown off into the air. During winter these spores nest in old mummy grapes, old leaves, grape wood, etc., and are ready to germinate with the young growth of spring. The germination of these spores may be prevented by spraying very early in the season, so as to keep them from entering the texture of the leaf. Bordeaux is the remedy, and is effective if faithfully and persistently applied.

The first spraying may be made just before the flowers open. This is economical of time, because it covers the leaves and thus secures them from infection.

The second spraying should be made just as soon as the flowers fall and the young fruit is set; and then the operation should be repeated every ten days or so until August 1st. The object is to keep leaves and fruit so covered with Bordeaux that the spores can find no place of entrance. It is advisable to take out and burn all diseased bunches of grapes hanging on the vines at pruning time, and to burn all prunings.

THE BROWN ROT.

Mr. Macoun briefly touched upon the brown rot of the grape, which has so seriously defoliated the vineyards of the Niagara district, and which is the result of the downy mildew. It is so called because of the downy appearance presented by the under surface of the affected leaves, upon which the spores for its propagation are produced. The fruit affected by this turns a yellowish brown, and remains pulpy, without drying up, as in the case of the black rot. This fungus is also prevented by the Bordeaux.

THE POWDERY MILDEW.

This fungus has long been known in our vineyards. It coats the whole surface of the grape, and soon spoils the whole bunch. This is easily prevented by dusting the vines with dry powdered sulphur; but since the Bordeaux is destructive to the other fungi as well, it is the most desirable remedy for powdery mildew also.

POWER SPRAYERS.

Mr. Brown, in his final address at St. Catharines, favored the use of the power sprayer in the large orchard. The old hand pump is too laborious, too slow, and does not afford sufficient power to make a fine spray. We have got beyond the days of sprinkling trees; now we want to spray with a fog-like mist that will reach every part of the surface of the tree. In this way we can cover a larger surface at a time, and make one barrel of material go as far as two in the old way. To produce such a fog-like spray, a constant pressure of from 80 to 100 pounds per square inch is necessary, which is easily maintained with a power sprayer, while with the hand pump and only two nozzles one cannot average over fifty pounds pressure, and with four nozzles not over thirty or forty pounds. There are several excellent power sprayers in the market.

SELL FRUIT FOR CASH.

Mr. L. Woolverton addressed the growers at Beamsville on co-operation in the growing and sale of fruit. He advised the fruit-growers in each section to plant and top-graft enough of certain desirable varieties of apples or pears to make car lots of a kind for export. In home markets he condemned the present practice of selling on commission as ruinous to prices, and standing in the way of selling by contract.

Mr. Brown said that in Delaware the best market was the home cash market. The grower had done his part when he grew and packed good fruit and brought it to the railway station. In Delaware the cash buyers from the cities were on hand at every station; they soon found out where the best fruit was to be had, and were ready to pay the very highest price for such goods. Here in Canada growers are better situated than in Delaware; only a narrow fruit belt and a great market to the north, and the buyers should be encouraged to come to the grower and pay him most remunerative prices.

Formulas of Some Standard Spray Mixtures.

This article and the accompanying spray calendar have been especially prepared as a season's guide for the farmer and orchardist. The spraying calendar is taken from the catalogue of the Spramotor Co., of London, Ont.—Manager, W. H. Heard, recognized as a thoroughly practical orchardist and a reliable, well-posted authority on spraying. If you do not keep the paper filed, cut this leaf out and keep it throughout the season for a reference.

BORDEAUX MIXTURE.

Copper sulphate	5 pounds.
Quicklime	5 pounds.
Water, Imperial gallons	40 to 50.

To destroy leaf-eating insects, add four ounces of Paris green. For peach, use only three pounds each of copper sulphate and lime, and three ounces of Paris green, on account of the tenderness of the foliage.

To prepare, dissolve in a coal oil barrel, part full of hot water, five pounds of copper sulphate (bluestone), by suspending, immersed, in a cotton bag or basket. In another vessel slack five pounds of fresh lime with as many gallons of water. If the lime when slacked is lumpy, it should be strained through a fine sieve or coarse sacking. Nearly fill the barrel containing the sulphate solution with water, add the lime water, agitate, and it is ready for use. Use good lime, and slack carefully. When a large amount is to be needed, make separate stock solutions of lime and bluestone, to be diluted as needed. Dissolve 100 pounds of copper sulphate in 40 gallons of water; two gallons of the solution will thus contain five pounds of the bluestone. In another barrel slack 100 pounds of fresh lime, and make a milk by adding 40 gallons of water. When well stirred two gallons will contain five pounds of lime. To make a barrel of Bordeaux mixture, take two gallons of the stock solution of copper sulphate, partly fill the barrel with water, and add two gallons of the milk of lime; if the lime is of good quality it will be sufficient to neutralize it completely. If the lime is air-slacked or impure, the right quantity can be ascertained by applying the ferro-cyanide of potassium test. A two-ounce bottle containing a saturated solution of ferro-cyanide of potassium (yellow prussiate of potash) added to the mixture will turn brown. Add the milk of lime till the drop of ferro-cyanide of potassium remains colorless, then add a little more milk of lime to make sure that the strength is uniform, and fill the barrel with water.

It is desirable to dilute both the lime and sulphate before mixing, and especially important that the sulphate be poured into the lime, and not the lime into the sulphate.

COPPER SULPHATE SOLUTION.

Copper sulphate	1 pound.
Water	25 gallons.

This should be used only before the foliage appears. It is easily applied, and acts as a general germicide and disinfectant. In simple solution copper sulphate is very injurious to foliage. When lime is added, as in making Bordeaux mixture, its corrosive action is neutralized and injury to the foliage prevented. In this way a larger quantity of bluestone may be used, and it adheres to the foliage better by the agency of the lime.

AMMONIACAL COPPER CARBONATE.

Copper carbonate	5 ounces.
Ammonia	2 quarts.
Water	50 gallons.

The copper carbonate is best dissolved in large bottles, where it will keep indefinitely, as it should be diluted with water as required. For the same purpose as Bordeaux.

LIME, SALT AND SULPHUR.

Lime	35 pounds.
Sulphur	15 pounds.
Salt	10 pounds.

Hot water enough to make 30 gallons of mixture.

The proportions of this mixture may be varied to almost any extent. Salt may be omitted, but is considered useful in making the mixture more adhesive. To prepare, place half of the water in a large kettle, add the salt and sulphur, bring the water to a boil, throw in the lime, adding hot water from another kettle to prevent burning; boil two or three hours, increase the quantity to 30 gallons with hot water, and apply while hot. Though not mentioned in our spray calendar, the lime-salt-sulphur mixture is highly recommended for scale insects, notably San Jose scale. It is also a