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 Chicago Express, 13 12 34 p.m.
 Accommodation, 6 44 p.m.

GOING EAST
 Accommodation, 80 7 38 a.m.
 New York Express, 6 11 16 a.m.
 Accommodation, 112 4 20 p.m.
 C. Vail Agent Watford

CONTAGIOUS ABORTION

A Too Common Trouble With Some Farm Mares.

Cause of the Disease Discovered—Method of Spreading Described—Measures for Control—Oyster-shell Bark Louse With Its Treatment.

(Contributed by Ontario Department of Agriculture, Toronto.)

CONTAGIOUS abortion of mares is due to a specific bacillus (*Bacillus abortus equinus*) which gets established in the uterus, fetal membranes and foetus, setting up local inflammation leading to expulsion of the foetus dead or alive at any time during pregnancy. The symptoms of approaching abortion are not usually in evidence until just before abortion takes place. Then the animal is seized with colic pains, restlessness and straining, and a swollen vulva with a mucous discharge is noticeable. After abortion, the symptoms are more specific. There is a chocolate brown fluid discharge from vulva which has a typical offensive odor, and the foetal membranes are inclined to remain intact, thus necessitating artificial removal to prevent blood poisoning.

The disease has been known in Europe for many years, but it was not found on the American continent until 1886 when it appeared in the Mississippi valley. Since then it has spread far and wide in the United States and Canada. Although many investigations were made here

in Europe and America, it was not until 1912 that the cause of the disease was discovered. In that year E. S. Good, of Kentucky, discovered the bacillus which causes the disease. The same year Dr. Schofield, of Toronto, discovered the same bacillus in some cases of joint ill in colts which had developed in districts in Ontario where contagious abortion of mares was prevalent and the following year found the same bacillus in cases of contagious abortion of mares in Ontario.

Method of Spreading.—The disease is spread mainly by the discharges from the vulva of aborting animals. If a mare that has aborted is served before all discharges from the vulva have ceased and the genitalia have been efficiently disinfected, then the stallion is liable to get contaminated with the bacillus and spread the disease to other mares which he subsequently serves. If the discharges from an aborting mare are allowed to contaminate the bedding or other materials that other mares come in contact with, then the mares are liable to contract the disease. If the discharges are allowed to contaminate water or food materials that are given to other mares, the latter are liable to contract the disease.

Measures for Control.—1. Three months must elapse between abortion and subsequent breeding.

2. Mares that have aborted must not be bred if there is evidence of uterine catarrh, even after three months.

3. Mares that have aborted must only be bred at the end of the stallion season.

4. Application of an efficient disinfectant to the external genitalia of the stallion after each service in infested districts.

Measures to Be Employed at Time of, or Subsequent to Abortion.—1. Isolation of mare at first sign of approaching abortion.

2. After abortion the foetus and membranes should be burned, if possible, or buried deeply in quick-lime.

3. Those handling the foetus and mare should disinfect hands and clothing.

4. Bedding should be burned and the stallion washed with a strong disinfectant.

5. External genitalia, thighs and tail of mare should be washed daily with a good disinfectant. Two per cent. bacterol, lysol, or cresol, is satisfactory for this purpose.

6. Isolation of mare should be maintained for at least a month or until all evidence of uterine discharge has ceased.

Treating the animal with drugs, as carbolic acid, black haw and methylene blue, though popular in some districts, cannot be recommended as being of any value.—Dr. J. H. Reed, O. A. College, Guelph.

Oyster-shell Scale.
 This is a very common orchard insect. It attacks not only apples but also pears, plums, currants and many ornamental and shade trees and bushes. Full grown scales are found almost exclusively on the bark and are easily recognized by their oyster-shell appearance. They are about 1/8 of an inch long, 1-24 inch wide, taper towards one end and in color resemble closely the bark.

The injury is caused by their sucking the juices out of the bark and thus weakening the trees. When very abundant they almost completely cover the bark and in that case may kill either the whole tree or portions of the branches. Most infested trees, however, are not killed but only weakened.

Control.—Spraying the trees just before or just after the buds burst with lime-sulphur solution, 1 gallon to 8 or 9 gallons of water, is a satisfactory remedy. The regular Codling Moth spray with one gallon of lime-sulphur to about 39 gallons of water, to which two pounds of arsenate of lead paste or one pound arsenate of lead powder is added, will also help greatly, because it will hit the young scale insects just after they have hatched, while they are still unprotected and easily destroyed. Dead scales may remain on the trees for several years after date of killing. Pruning the trees early makes it easier and cheaper to spray them well.

—Prof. L. Caesar, O. A. College, Guelph.

If Miller's Worm Powders needed the support of testimonials they could be got by the thousands from mothers who know the great virtue of this excellent medicine. But the powders will speak for themselves and in such a way that there can be no question of them. They act speedily and thoroughly, and the child to whom they are administered will show improvement from the first dose. In Farmers' Stationery of the finest quality, lower than city prices. Call and see samples and prices. THE GUIDE-ADVOCATE

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MICE AND RABBIT MENACE

Injury Always Greatest When the Orchard Is In Sod.

Thousands of trees are injured in Canada every year by mice, and in the severest districts—large numbers of rabbits also. All this could be prevented if the farmer or fruit grower would use the information available and protect his trees from mice. Some years there is less injury than others, and this fact leads to carelessness, and when a bad year comes the trees are unprotected.

While the depredations from mice and rabbits in winter vary from one year to another, depending on the scarcity or abundance of food, the number of mice which are in the vicinity, and the character of the winter, the injury is always greatest when the orchard is in sod, and when there is rubbish lying about; hence the latter should be removed before the winter sets in. As mice may be expected in greater or less numbers every winter, young trees should be regularly protected against their ravages. Mice usually begin working on the ground under the snow, and when they come to a tree they will begin to gnaw it if it is not protected. A small mound of soil from eight to twelve inches in height raised about the base of the tree will often prevent their injuring the tree, and even snow tramped about the tree has been quite effective, but the cheapest and surest practice is to wrap the tree with ordinary building paper, the price of which is small. Tar paper is also effective, but trees have been injured by using it, and it is well to guard against this when building paper will do as well. After the paper is wrapped around the tree and tied, a little earth should be put about the lower end to prevent the mice from beginning to work there, as, if they get at the paper, it will not stand in their way. It may be stated, however, that among several thousand young trees which have been wrapped with building paper for years at the Experimental Farm, Ottawa, there have been practically no instances where the mice have gnawed through the paper to get at the tree. The use of a wire protector, or one made of tin or galvanized iron, is economical in the end, as they are durable.

There are a number of washes and poisons recommended for the protection of trees and the destruction of the mice and rabbits, but none of these is very satisfactory, as, if the mice or rabbits are numerous, the poison has not sufficient effect upon them to prevent injury altogether. The following method of poisoning has been found fairly successful for mice, but rabbits are very difficult to deal with:

Make a mixture of one part, by weight, of arsenic with three parts of corn meal. Nall two pieces of board, each six feet long and six inches wide, together so as to make a trough. Invert this near the trees to be protected, and place about a tablespoonful of the poison on a shingle, and put it near the middle of the run, renewing the poison as often as is necessary.—W. T. Macoun, Dominion Horticulturist.

Lubrication of Tractors.
 It is quite a common practice of local agents for tractors to recommend some one certain brand of oil. This leads the tractor purchaser to believe that unless this one certain brand of oil is used, they will not be responsible for anything that happens to the tractor through faulty lubrication.

But the majority of tractor manufacturers we are not recommending of oil to such narrow limits, and as a rule are willing to list and recommend any high grade oil that will meet the tests they think advisable.

Tractor dealers are sometimes influenced by an oil company to press upon tractor users the importance of a certain brand of oil, and of course do it mainly for profit.

This representation is generally fraudulent and the farmer should be given the understanding that a particular tractor can be lubricated with other than the particular brand of oil specified by the dealer.

Where a dealer does advise a particular brand of lubricant, the owners of tractors should write to the tractor manufacturer direct or to some reputable oil company and get absolute proof as to whether or not the claim made by the dealer was true.

Dealers of the class mentioned who do actually recommend one certain brand of oil are standing in their own light, and doing both themselves and the buyer an injustice. There are those who may hesitate to buy a tractor whose successful operation is dependent upon one lubricant.

First and Second for Col. Cox.
 The New York Horse Show closed with the largest entry list in its history. Great interest was aroused by the large harness and saddle classes, but the greatest enthusiasm attended the officers' jumping class for a cup presented by Judge William H. Moore, of New York, which had 24 entries, and Lieut.-Col. Herbert C. Cox, of Toronto, carried off the cup and second place, with Ridgefield and the Strand, both of which he rode himself. The same owner's Matt H., ridden by Major K. D. Marlatt, was fourth in the open jumping class. Ennisclare Farms were again much

Auction Sale Bills

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IN EVIDENCE, WILLING TO SELL SAME third, with Glenorchy and Ondramon, out of seventy entries.

Poultry Suffer for Water.

Allowing fowls to suffer, even for short periods, for the want of water is not only detrimental to robust health, but has an indirect bearing on productivity. Green food in variety is beneficial not only because it helps slake thirst, but for its mineral salts and its feeding value as roughage. For this reason it should be fed in liberal quantities, and pure water should not only be always available, but in full measure. Both stand for health and productive values.

CATTLE OF FRANCE.

Some Facts Regarding the Breeding "Ox" There.

Triple-purpose is essentially the type of the cattle of the eastern departments of France. While these departments are the dairy producing districts, the cattle are distinctly more than dairy in type and function. Practically all of the breeds are selected with beef type in mind, and all of them must be capable of taking their turn at draft. Milk production varies, the amount being almost directly correlated with the feeds given. An authority states that the herds of the department of Jura produce averages of 24 to 30 pounds. A farmer in the same locality has several cows that have made best records of 40 to 52 pounds.

There are several breeds of economic importance in this section, the most popular being the Fribourgeois, a fawn and white breed almost of Guernsey type as far as color is concerned. For ordinary farming conditions this seems to be the most adaptable breed of Eastern France, and is by all odds the most popular.

The Simmental is a breed of Swiss origin. It has spread broadly into the country north and east of the Alps, but has not proved so popular in France. It is a lighted fawn and white than the Fribourgeois, is not quite so large, and is a little more typically dairy in character. There is a much less degree of spotting, the body being more purely white.

The Brown Swiss is, of course, known in this country. On the average it is larger than the two breeds mentioned, but it is not very commonly distributed. It is crossed to some degree with the Fribourgeois, many of the crosses showing the typical Brown Swiss color with the white face of the Fribourgeois showing up much like the typical Hereford face. Thus far I have been unable to ascertain the reason for the failure of the Brown Swiss to be more strongly represented here, except the very general one offered by M. Friant, that there is no necessity, for such hardy breed.

The least known breed in America is the native Jurassic breed found in the departments of Jura, Doubs, Ain and Haute-Savoie. It is a red and white breed of sterling constitution, very resistant to disease (particularly tuberculosis) and of even superior milk production to the Fribourgeois in properly selected herd. There is a strong movement on foot in these provinces looking toward the rehabilitation of this breed, as it is much more satisfactory for the average farmer in these departments than the Swiss breeds. Its general type is that of the Fribourgeois, except that it bears the red instead of the fawn.—Capt. E. N. Wentworth, A. E. F. University.

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