

tubesshould be taken apart and given a thorough scrubbing. Under no circumstances should any part of the machine which comes in contact with the milk be allowed to remain in the stable between milkings.

The general consensus of opinion among dairymen and men at experimental stations appears to be that manufacturers of mechanical milkers have gotten the mechanism to a point where the milk can be extracted without in any way injuring the udder of the cows, provided reasonable care is taken in keeping the machine so adjusted as to give the proper amount of pressure or vacuum. With most makes the mechanism is reasonably simple. Of the eight dairymen whose opinions regarding mechanical milkers are expressed in this article, six would not care to be without the milker under the present labor scarcity. One who is not at present using his machine found that it did not injure the cows, but that higher records could be made by hand milking. Of course, it depends on the quality of milkers one is able to secure. It is generally conceded by users of machines that while they are not preferable to good milkers, they are superior to the average milker a dairyman is able to hire, and that they enable the producer to keep a greater number of cows. Two hundred and forty-three members of a cow-testing association in Wisconsin use mechanical milkers, and of this number only thirteen are dissatisfied with the work. This goes to prove that the milker is practical and that its use does not necessarily deteriorate the quality of the milk. There are a number of makes of mechanical milkers on the market which are proving satisfactory. Some dairymen prefer one make and some another. We doubt if it can be said that there is any best machine; it appears to be a case of pay your money and take your choice. One thing is certain, the mechanical milker is here to stay.

Holstein Sale at Dunbarton.

On December 12, the herd of high-quality Holstein cattle, the property of Col. Marshall, Dunbarton, were disposed of by auction at fairly good prices. The highest priced animal was Prince Bonheur Abbekerk, a two-year-old bull which went to the bid of J. Todd, of Agincourt for \$500. The highest priced female was Winnie Mercena Fayne, going to Mr. Anning, Brown's Corners, for \$380. The twenty-one animals sold including a number of heifers and calves averaged \$175.35. The following is a list of the animals selling for \$100 or over, together with the names and addresses of the purchasers:

Edgemont Ormsby Segis, R. W. E. Burnaby, Jefferson.....	\$280
Valentine Dutchland Colantha, J. Nixon, Cobourg.....	200
Perfection's Toronto Queen, R. W. E. Burnaby.....	340
Winnie Mercena Fayne, Mr. Anning, Brown's Corners.....	380
Ormsby Segis Siepkje, Mr. Finlayson, Agincourt.....	125
Lakeview Valentine, J. Nixon.....	105
Emma De Kol Pauline, J. Nixon.....	175
Belle Hengerveld Fayne, F. H. Benedict, Cobourg.....	275
Heifer, J. Nixon.....	175
Dione Mercena Korndyke, Mr. Finlayson.....	140
Prince Bonheur Abbekerk, J. Todd, Agincourt.....	500
Madeline Segis Siepkje, Mr. Nuttall, Pickering.....	172.50
Helena Perfection's Siepkje, J. Nixon.....	172.50
Perfection's Siepkje Fayne, W. Turner, Pickering.....	100
Beulah Ononis Fayne, Galloway Bros., West Hill.....	165

Elgin County Holstein Breeders' Sale.

The second consignment sale of the Elgin County Pure-bred Holstein Breeders' Club was held in St. Thomas, December 18. While fairly high prices were paid for some individuals and some brought all they were worth, it was, in some respects, a bargain day for those wishing to lay the foundation of a pure-bred herd or to add to the present herd. There were a number of real bargains. The crowd was not large, and bidding was draggy at times. A few of the animals would, no doubt, have sold higher had they been better fitted, but, taking the entire offering into consideration, they were well brought out. Most of the mature animals were big-framed individuals and showed indications of being capable of heavy production. Many of the cows and heifers were in calf to such sires as King Segis De Kol Calamity, Sarcastic Wayne De Kol, Fayne Segis Norman and Finderne King May Fayne, all of which have splendid backing. The forty-eight females, including a number of young heifers, averaged around \$155.80. The highest priced animal of the sale, Emma Wayne Houwtje, was consigned by D. Caughell and purchased by R. W. Bedford, Chatham. Only three bulls were in the offering, and they averaged \$140. Among the consignors to the sale were G. S. Butler, F. Carr, E. G. Gilbert, G. I. Willis, H. C. Holtby, L. Lipsitt, N. McGugan, D. Caughell, J. Orchard, G. Locke, R. Sanders, E. Siple and H. A. Copeland. These breeders brought out stock which should satisfy the purchasers and warrant their return to a future sale. The following are the names of the animals sold, together with the names of the purchaser and the price paid:

Teake Ormsby Hartog, J. Campbell, London Jct.....	\$165.00
Teake Ormsby De Kol, F. Sinden, Belmont.....	155.00
Lady Teake Korndyke, W. H. Cohoon, St. Thomas.....	180.00
Miss Teake Korndyke, E. Crummer, Blenheim.....	180.00
Korndyke Ormsby Teake, T. E. Bedgood, Thorndale.....	105.00

Teake Ormsby Fern, F. Sinden.....	190.00
Beauty Ormsby Korndyke, C. Holborn, Shedden.....	105.00
Princess Dorliska Ormsby, A. D. Turner, Shedden.....	180.00
Korndyke Belle Zeeman, J. McMillan, Glanworth.....	200.00
Louise Abbekerk, W. H. Cohoon.....	260.00
Louise Ormsby, J. Campbell.....	145.00
Bessie Beets Hartog, T. E. Bedgood.....	125.00
Primrose Madolyn De Kol, F. Sinden.....	155.00
Salla Mercedes, L. McKenzie, Pt. Stanley.....	110.00
Clothilde Dorliska May, R. W. Bedford, Chatham.....	125.00
Dorliska Wayne, J. Garton, Springfield.....	165.00
Calamity Brookbank Hengerveld, R. W. Bedford.....	160.00
Verstella Wayne 2nd, J. McMillan.....	165.00
Ida Colantha Dorliska, R. W. Bedford.....	190.00
Martha Colantha, C. Millson, Wilton Grove.....	165.00
Emma Wayne Houwtje, R. W. Bedford.....	325.00
Minnie Colantha Mercedes, J. McMillan.....	175.00
Lizzie Korndyke, R. F. Armstrong, Tillsonburg.....	160.00
Delaware Beauty 2nd, R. W. Bedford.....	130.00
Grace Fayne Ormsby, J. Sanderson, St. Thomas.....	120.00
Sir Mechthilde's Beauty Posch, S. Dawes, Springfield.....	140.00
Miss Aggie De Kol, F. W. Miller, Lawrence Sta.....	105.00
Jennie Brook Princess, W. A. Hepburn, Union.....	105.00
Brownie, E. Crummer.....	155.00
Mildred Lady, J. Campbell.....	140.00
Rose De Kol Tilla, R. W. Bedford.....	132.50
Alice Ormsby, J. Garton.....	205.00
Ella May Pontiac, C. C. Pettit, St. Thomas.....	135.00
Mercena Ormsby, C. C. Pettit.....	120.00
Ormsby Beauty Lass, R. Willis, Lambeth.....	125.00
Sunnybrook Mary Segis, E. Crummer.....	255.00
Bull calf, W. J. Thompson, Pt. Dover.....	120.00
Segis King Fayne, R. H. Fletcher, Middlemarch.....	195.00
Lady Peg, W. H. Cohoon.....	220.00
Laura Echo Segis, J. McMillan.....	300.00
Lady Colantha Fairmount, T. E. Bedgood.....	145.00
Maysies Pietertje, Van Zant Bros., Elora.....	135.00
Fayne King Veeman, F. W. Miller.....	105.00
Duchess Ormsby Calamity, L. Begg, St. Thomas.....	160.00
Axie Veeman Calamity, N. McGugan, Shedden.....	155.00
Pauline Countess De Kol, J. Carmichael, Ilderton.....	105.00
Dina Howtje Netherland, F. W. Miller.....	130.00

POULTRY.

Tuberculosis: Its Nature, Symptoms and Methods of Eradication.

Tuberculosis is a disease which is present in a great many flocks, and is causing a heavy yearly loss. In Bulletin 255, of the Ontario Agricultural College, Prof. D. H. Jones, of the Bacteriological Department, gives concrete information relative to the cause of the disease, its nature, symptoms and methods of control and eradication. Not only is there a loss from birds dying off, but disease is liable to cut down the egg production. Tuberculosis of fowls is produced by a small microscopic organism which gains entrance to the system of the bird and multiplies in various parts of the body system. Information relative to the disease, as given in the Bulletin, is to the effect that the organism on entering the body feeds on the body juices and develops and multiplies. In so doing it produces a toxin or poison which acts on the tissue cells surrounding them, causing a local disturbance, which finally results in degeneration and death of the tissue cells so affected, and forms a mass known as a tubercle. From these the bacteria pass in the blood to other parts of the body. These tubercles are usually pale yellow in color, sometimes cheesy, sometimes gritty, and sometimes pus-like in texture. They vary in size from smaller than a pin-head to as large as an egg. These tubercles are most commonly found on the liver, spleen, intestines and mesentery, although they may also be found on other parts of the anatomy.

With a live fowl it is difficult to detect the disease in its early stages. As the disease develops, emaciation, paleness, listlessness, lameness, and reduction of egg laying are some of the marked symptoms. It is comparatively easy to detect the disease in a bird which has died, or has been killed, by the tubercles which appear on the various parts. However, there are other diseases which cause conditions of the liver, lungs and intestines similar to those of tuberculosis; therefore to be certain a bacteriological examination of the affected parts is necessary. The liver is the most commonly affected organ. The liver of a tubercular bird is usually softer, is larger and more easily torn than that of a healthy bird, and pale, yellow lumps or tubercles are found on its surface. When such a condition is found, on performing a post-mortem examination, it is a pretty sure indication that the bird has been tubercular. The small lumps forming on the spleen also make it irregular in shape and frequently enlarged.

Even when the greatest precautions are taken, it sometimes happens that infection gets into the flock. An apparently healthy bird may have the disease and be a spreader and a source of contamination. The following gives the methods of control and eradication as outlined in the Bulletin:

"Care should be taken in buying new stock that birds are obtained only from flocks known to be free of the disease. When once the disease gets established in a flock it is difficult to eradicate except by the most drastic measures. The quickest and most effective method is to kill off all birds that have run with those proven to have the disease and to disinfect the entire premises as thoroughly as possible. New stock should

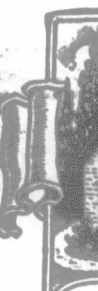
be obtained from healthy sources, but should not be placed on the runs which had been used by the diseased flock, for a year or more. The houses, providing they have been thoroughly disinfected, may, of course, be used. The first thing to do in putting the poultry premises in sanitary condition is to scrape the roosts, walls, ceilings, floors and nest boxes of the houses thoroughly clean with a hoe or other convenient implement. Accumulated manure may be mixed with lime, spread on the land and plowed under. Loose litter, pieces of boards or other valueless material should be completely burned. When this has been done the entire inside of the houses may be washed down with some good disinfectant, such as carbolic acid, one part in twenty of water, zenoleum, lysol, chloro-naphtholeum, or other disinfectants, in the strengths indicated by the manufacturers. Any of these may be put on with a spray pump. In place of these, quicklime in the form of whitewash may be used, prepared as follows: Slake the quicklime by adding water in the proportion of one and one-half pints of water to each quart of lime, or by weight, sixty parts of water to one hundred parts of lime. The resulting dry powder is hydrate of lime. For use mix one quart of this with four quarts of water. This must be freshly prepared in small lots and used immediately. It is best applied by means of a spray pump, although it may be put on with a brush or broom. If a spray pump is used, the slaked lime should be put through a fine sieve or strainer in order to prevent clogging of the nozzle. It is important that every crack and crevice and every particle of surface be covered with the disinfectant. After disinfection, clean boards may be placed beneath the roosts to catch the droppings, thus facilitating the work of future cleaning. Slaked lime placed on these boards will absorb the moisture from the droppings besides adding to their fertilizing value. Disinfection of the houses should be carried out at intervals as long as any diseased birds remain in the flock.

"To disinfect the runs is a difficult matter, because it is impossible to have the disinfectant come into contact with each minute particle of soil. The best that can be done is to completely cover the ground with freshly-slaked lime and plow under. Sow some quick-growing crop for green manure, lime and plow under again. By this method the soil can eventually be well disinfected. The fact must be kept in mind, however, that any tubercular fowls may be continually re-infecting the soil by voiding the tubercle bacilli with their droppings; consequently, it would be impossible to keep the soil free from infection so long as diseased fowls were kept on that ground."

HORTICULTURE.

Fighting Enemies of the Orchard.

In order to keep the orchard healthy so as to produce No. 1 quality of fruit, there is a continual fight with insects and fungous diseases. No sooner is one pest brought under control than a new one makes its appearance. To a certain extent this is due to failure to maintain a balance of nature. The decrease in the number of birds has had a lot to do with the prevalence of insects in the orchard. New plants have also been imported, accompanied, in many cases, by scale insects or other pests which did not do much harm in their native land owing to the presence of parasites. But, when parasites do not accompany the importation the new insects increase rapidly; therefore the orchardist must ever be on the lookout for enemies which would rob him of his profits. A large staff is continually at work in the Dominion as well as in other countries studying the life history of the enemies of all farm and orchard crops, in an endeavor to find an efficient and practicable method of controlling them. An outline of the work is given in the 1917 report by the Dominion Entomologist, G. Gordon Hewitt. A series of spraying experiments have been conducted in Nova Scotia in about thirty orchards for the testing out of different spray materials for the control of insects, and the report states: "As a result of the large experiment it was demonstrated that arsenate of lime is a safer poison to use with lime-sulphur than arsenate of lead, and that weaker solutions of lime-sulphur are desirable." In Ontario considerable work has been done in investigating the work of plant lice affecting the apple. The green apple aphid is a troublesome plant louse which gives orchardists and nurserymen considerable trouble. The value of tobacco decoction and commercial nicotine extracts mixed with lime-sulphur and applied when the buds were about to burst was again demonstrated as an effective means of controlling apple aphids. Mr. Hewitt reports that "the most important investigation on fruit trees carried on during the year in British Columbia was the study of the life history and control of pear thrips, which has proved so disastrous to the fruit crop for a number of years in the Saanich Peninsula, Vancouver Island." The main facts relating to the life history of pear thrips under British Columbia conditions were obtained, and the practical results of the spraying experiment exceeded all expectations as unusually large crops of fruit were obtained in well-cared-for orchards which had almost ceased to bear on account of this insect. The most satisfactory spraying solutions were nicotine sulphate (Black Leaf 40), in combination with whale oil soap or Miscible oil. The codling moth is reported as being a troublesome pest in certain parts of the Pacific Province in spite of every precaution taken to prevent its introduction. However, it is believed to be possible for fruit growers to successfully control it. Fruitmen should not relax their fight against orchard pests.



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