THE DAIRY.

THE CHAMPION JERSEY COW.

The accompanying photogravure represents the imported eight-year-old Jersey cow, Financial Countess 155100, owned by C. E. Parfet, of Golden, Colorado, which, owing to her performance for one year in an official test, under the rules of the American Jersey Cattle Club, takes first place in her breed in dairy capacity. She calved on June 1st, 1907, and her record began on June 8th. During the 366 days following—1908 being a leap year—she gave 13,248 lbs. of milk, containing 795 lbs. 4.6 ozs. of butter-fat, equivalent to 935 lbs. 10 ozs. butter, 85% fat—just about 31 lbs. less than her own weight of butter, her weight being 967 lbs.

The average daily yield of Financial Countess for the entire year was 36.2 lbs. milk and 2.19 lbs. butter-fat, the average percentage of fat being 6.03. During her year's test she was fed 1,380 lbs. bran, 675 lbs. ground oats, 1,277 lbs. ground corn or chop, 649 lbs. old-process oil meal, 689 lbs. cotton-seed meal, and 5,400 lbs. roots, and was about three months on pasture. The hay fed was not weighed. Before the test of Financial Countess was completed, the highest year's authenticated fat record was that of Olive Dunn (188832), 671 lbs. 13.8 ozs.

THE CREAMERY BUSINESS IN SASKATCHEWAN.

The increased interest that is being taken in dairying in Saskatchewan is to some extent shown by the statement given below. The figures constitute a comparison in the work of 1907 and 1908 to the end of June in each year at the creameries under Government supervision :—

Creamery.	Season.	No. Patrons.	Lbs. Cream.	Lbs. Butter.
Langenburg	1907	54	17,805	5,657
Langenburg	1908	133	93,915	25,494
Tantallon	1907	44	8,140	2,494
Tantallon	1908	79	31,547	9,165
Moosomin	1907	35	8,256	2,433
Moosomin	1908	50	22,856	6,010
Qu'Appelle	1907	15	4,845	1,334
Qu'Appelle	1908	84	25,301	7,596

The make of 1907 was small, but the conduct of the work and the prices paid to the farmers was satisfactory, and it has influenced many to patronize the creameries who did not support them in previous years, but are now sending a liberal supply of cream. The results of the thorough work done by the Dairy Branch of the Department of Agriculture during the winter of 1908, through the extensive campaign of Institute meetings conducted in the districts where the creameries were in operation, is manifest in a practical way by the favorable showing at all the creameries. These meetings, following the results of 1907 wheat crop, were most opportune. The feeling in many places was prevalent that farmers should resort to some other branch of work in conjunction with the wheat-growing to provide for emergency cases. With a full explanation of the assistance the Government was extending, and the work they were doing to develop the industry, and also of the advantages to be derived from farmers uniting to make the undertaking a success, a favorable impression was left with the thoughtful dairy farmer, which is now being put into effect.

MILK, AND THE SANITARY HANDLING OF MILK.

(From an address by Prof. H. H. Dean, at the Eastern Live-stock and Poultry Show, Ottawa, January, 1908.)

THE COW AS A FOOD PRODUCER.

What is milk? Milk is a secretion, or product of the action of certain glands, known as the mammary glands, of the female. Various animals secrete milk in larger or smaller quantities, but the animal's milk mostly used in Canada is that of the cow. The cow has responded more largely to man's efforts at improvement in the quantity and quality of milk secreted than has any other animal. When we consider that a cow has been known to give in one year a weight of milk equal to from ten to twenty times her body weight, we marvel at her wonderful powers. "The milch cow transmutes the pasturage and forage of the farm into edible protein, lactose and fat—into units of nutriment for man—at less than one-half the cost of similar units in beef produced by a steer." (Pearson.) We thus see that the cow not only secretes or makes large quantities of milk for human food, but she does this economically—more economically, according to the authority just quoted, than does the steer. The same authority says, "Milk is not only the most economical, but when pure and undefiled it is among the most wholesome and most easily digested of all foods of animal origin. These are the strongest possible reasons for its extended use."

MILK SUSCEPTIBLE TO CONTAMINATION.

While the foregoing is true, it is also true, as he says, that "There is no food under ordinary conditions which is so exposed to contamination that is so easily contaminated or that so fosters contamination as milk; hence the necessity for the study of milk hygiene." Jensen says there is nothing in the theory that goat's milk is free from disease germs, and that it is not less liable to contamination than is cow's milk.

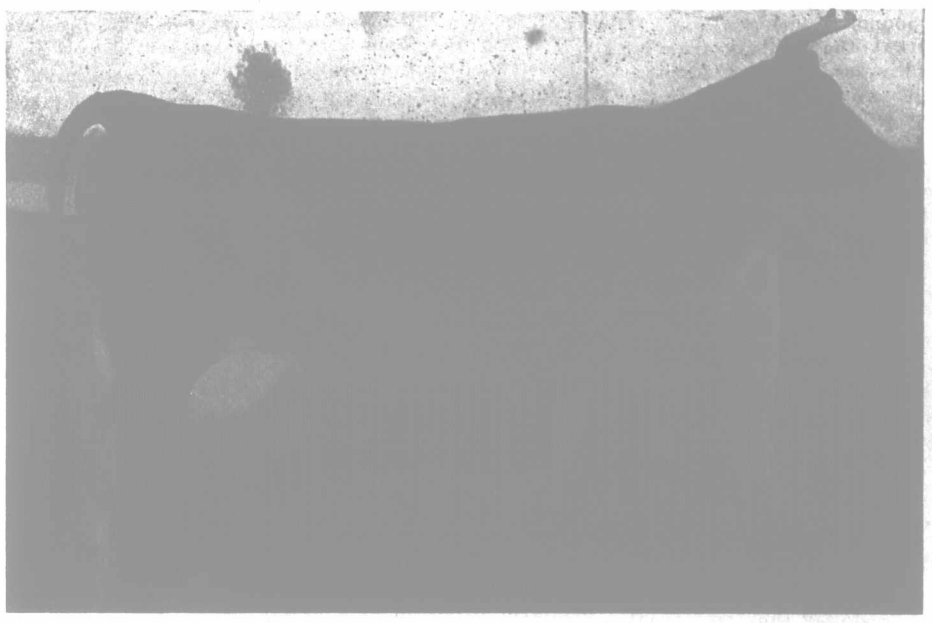
Following the excellent lead given us by European countries, more particularly Denmark, and in recent years our neighbor to the south of us, we in Canada are beginning to realize the importance of sanitary milk, and of the study of "Milk Hygiene."

FILTHINESS A CRIME.

Up to the present we have concerned ourselves more with a study of the adulterations of milk, in the form of watering and skimming. These are but minor offences. The allowing of dirt to get into the milk used for human food is a much worse offence than the addition of water or the removal of cream. To contaminate milk, knowingly or unknowingly, with disease germs is criminal. Ignorance of the law in an ordinary court of justice is not recognized as an excuse for the offence. Ignorance of the principles of milk hygiene is no excuse for the person committing the offence. A few examples will illustrate how ignorance of milk hygiene may be very harmful.

HARMFUL PRESERVATIVES.

A milk producer or dealer puts boracic acid, salicylic acid, formalin, soda, etc., in milk without knowing that they are harmful. Is such a person to be excused on the ground of ignorance? We think not. Let us see what are some of the results from using these so-called preservatives in milk. In this we shall follow largely the views of Jensen, as set forth in his work, "Milk Hygiene," and translated by Pearson "Boric acid may cause illness, vomiting and diarrhea, and if given for a prolonged time may injure the kidneys and cause loss in weight." "Salicylic acid has the effect of checking digestion—particularly for children it should be considered injurious; on this account its use should be prohibited."



Financial Countess.

Champion Jersey cow. Record in year's test: milk, 13,248 lbs.; butter-fat, 795 lbs. 4.6 ozs., equivalent to 935 lbs. 10 ozs. butter 85% fat. Owned by C. E. Parfet, Colorado.

"Formalin or formol is a 40% solution in water of formaldehyde" (gas). "Formaldehyde is a powerful poison for animal cells and tissues. Investigations have proven that the addition of formalin to milk, even in the proportion of 1 to 50,000, may be injurious, especially for the young animals, and even to the point of causing death. The addition of formalin to milk should, therefore, be rigorously prohibited." Alkalies, such as baking soda, "hide changes and conceal the fact that the milk is, perhaps, already spoiled."

Another class of milk contamination, even more serious than the foregoing, needs emphasizing, viz., the danger of transmitting disease from animals to man through consuming milk from diseased cows. We shall not take time to consider the more dangerous diseases which may be transmitted, but will mention some common troubles that cow owners usually consider quite harmless. In this connection we shall quote again largely from Jensen's "Milk Hygiene."

COW POX.

This is considered to be a harmless disease by the owners of cows. Were it not for the trouble and discomfort of milking cows afflicted with this disease, the average man would consider it, "not worth making a fuss about."

On this point Jensen observes: "Among the examples of this disease (cow pox) in children, which have occurred through the use of milk from infected cows, and which are to be taken as unmistakable transmission of the disease, the following observation by Stern may be given: A large number of children that had used milk from this herd (having cow pox) became affected with an eruption on the face, which healed, leaving scars."

INFLAMMATION OF THE UDDER.

This is a common trouble among cows. There are various forms and causes of the disease, which veterinarians find it difficult to separate. Jensen says "the various forms of mastitis (inflammation of the udder) are of microbic origin." He instances several cases of catarrh of the stomach and intestines in children, caused by drinking infected milk a few hours before being attacked.

His conclusions are: "Since cases of udder inflammation in which the secretion contains bacteria harmful to man cannot be differentiated by clinical means from the less dangerous, the milk of every cow affected with mastitis should be regarded as injurious to health. This applies not alone to the altered secretion, but also to the apparently normal milk from the parts of the udder not affected."

"CALF CHOLERA"

is also regarded as a dangerous disease in a stable, especially where "nursery" or children's milk is produced.

PASTEURIZATION MINIFIES DANGER.

The foregoing facts are not cited with the desire to "scare" anyone, or to injure the dairy business, but with the object of calling attention very forcibly to the dangers which lie in the careless, unsanitary handling of milk and milk products. Milk and milk products are not alone in this respect. Similar dangers lie in all our foods. We cannot escape them if we would. The wise thing is to reduce the danger of infection as far as possible. For ordinary milk we believe that pasteurization is the most effective treatment. Better than pasteurization, undoubtedly, is the production of milk in such a hygienic manner that contamination is practically impossible, but until we reach this stage, we had better rely on pasteurization. It will be necessary, however, to see that the work is properly carried out, and in such a manner as to render any milk which might be infected perfectly harmless. Where continuous or momentary heating is followed, a temperature of 176° F. will be necessary for the best results, although a temperature of 160° to 165° F. will produce very good results, and destroy most of the harmful germs. Rapid cooling to 50° F. must follow.

TUBERCULOSIS DECREASING IN DENMARK.

There is a tendency to pooh! pooh! any agitation which has for its object the prevention of disease. History repeats itself, and we as a young country should be willing to learn lessons from the experience of the older dairy countries. We cannot do better than follow that great dairy leader, Denmark. They found, for example, that tuberculosis was spreading at an alarming rate among their people.

The leaders in agricultural and medical science of Denmark decided upon an aggressive campaign of prevention. The chief means adopted was pasteurization, and as a result of this they find the "White Man's Plague" decreasing at a rate which is most gratifying. Why should we not learn lessons from this aggressive, scientific dairy nation? The trouble in Canada is that every man considers "he is just as good as any other man," and knows just a little more than any "scientific chap" who has studied bacteriology or any other "ology."

There also appears to be a false idea with reference to our commercial standing in the eyes of the world should it become known there is any taint on our stock or products. While we should by all means possible maintain the highest standard of purity of stock and products, nothing is gained by pretending to be what we are not. We are altogether too sensitive to such a slight thrust at our vanity as is contained in "Our Lady of the Snows." Has the fact that Denmark acknowledged the situation and made an heroic endeavor to abate the evil, lessened the value of her dairy products or lowered her reputation in the markets of the world? Not by any means. If anything, her sanitary measures, adopted without undue publicity, have commended themselves to thinking people wherever dairy products are used, and this small country has become the "cynosure of neighboring eyes."

In a previous address, recently, we dwelt on details in the production of sanitary milk, such as the need of healthy cows; clean, sanitary stables; cows milked in a cleanly manner; proper care in cooling of the milk in a suitable dairy, or room used only for handling milk; and delivery of the milk to the dealer or customer at a temperature not above 50° F. We also advised a milk commission, inspectors, laboratories, etc., to insure pure milk.