

The Ontario Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' \$1; Sheep Breeders', \$1; Swine Breeders', \$2.

BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 50,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HOSKIN, Secretary.
Parliament Buildings Toronto, Ont.

STOCK FOR SALE.

The next list of stock for sale will be published the 13th of December. Lists, in order to insure insertion, should be received by the 8th of December.

AN ABRIDGED REPORT OF AMERICAN EXPERIMENTS WHICH ARE OF VALUE TO CANADIAN FARMERS.

THE GERMS IN MILK.

The New Jersey Station reports some interesting experiments into the increase of germs in milk from the time of milking, during the stages of handling, cooling and bottling, until it was put in cold storage.

In order to ascertain to what extent the germ contamination of milk was increased during the various stages of handling, cultures were made of a drop of diluted milk, in a gelatine culture medium, taking the milk as it passed from stage to stage in the handling, and counting the resultant colonies. Only the best gelatine preparations were used. The test shows the number of germs in a single drop of milk.

When the milk was tested immediately after each cow was milked the number of germs in a drop varied from 70 to 3,332 per cow, nine cows being in the test. When the large can was full its milk was found to contain an average from three samples of 1,575 germs per drop, the germ content having thus doubled. After bottling, the samples taken showed in four bottles 6,580, 5,040, 8,340, and 5,210 germs per drop, respectively. Four samples from a bottle that was to be kept in cool, spring water and delivered next morning at the laboratory, just as regular customers are served,

showed 6,840, 7,704, 8,037, and 7,429 germs per drop. Samples taken from this bottle next morning at the laboratory proved that, in spite of the fact that the bottle had been kept in cold, spring water, the germs had increased to over 11,000 per drop. This bottle was then kept in the laboratory at the ordinary temperature with the result that a test taken at 5 p.m. the same day showed about 300,000 germs per drop. Next morning the germs numbered from 1,000,000 to 3,000,000 per drop. This test was made on May 11th, 1897.

Six days later another successful test was made. Samples from a can of mixed milk taken at 5 p.m. gave an average of 904 germs. After the milk was cooled it was found that 200 germs per drop had been added or about 136,000,000 in all to the whole can of milk, while it was being passed through the cooler. The average milk in the bottles, as they were filled, contained 6,825 germs per drop, but those first filled tested 11,827 per drop, the larger number of germs in these being due to the fact that they received the first milk to pass through the valves of the filler, these being a fruitful source of germ infection.

At 10.30 next morning the milk kept in cold spring water showed 32,960 germs in each drop, which had increased to 80,184 an hour and a half later, in the temperature of the laboratory. At 9 a.m., in the same morning, samples were taken from milk which had not been kept in spring water, with the result that the large number of 247,744 germs were found in a single drop. At the same time a sample was taken from the same evening's milk, after it had been cooled but before bottling, which showed 117,390 germs per drop, a considerable reduc-

tion as compared with the milk that had been bottled, which shows that an enormous quantity of germs are added from the valves of the bottler, even when these are cleaned as completely as possible.

At the laboratory, under ordinary temperature, these various samples, twenty-four hours after milking, contained from 5,000,000 to 10,000,000 germs per drop, and the next morning two of the samples were coagulated. One not yet clotted gave nearly 60,000,000 germs to the drop, another over 40,000,000, and the clotted ones 30,000,000 to 60,000,000. In these latter, however, the colonies came from huge masses of bacteria, and it was impossible to ascertain the exact number.

What further proof can be needed of the importance of the greatest care in guarding the milk from germ infection by the strictest cleanliness of animals, milker and vessels? Here we find that even at the New Jersey Station, with every vessel well cleaned, the milk in its passage through the bottler receives an enormous addition of germs, and that, too, at a season of the year before flies become troublesome. It would be instructive to ascertain how many germs would be found in a sample of milk taken from a dairy where not much care is taken in handling the milk.

THE INFLUENCE OF SILAGE ODORS ON MILK.

The objection is often made against silage that it imparts a flavor or odor to milk and butter, both when fed to cows, and also when stored in a silo near the cattle. Some experiments to test the truth of this were made at the Wisconsin Station in 1894, when it was demonstrated beyond question that, when silage is fed a short time before milking, a sweetish odor is imparted to milk, by which it may be distinguished from milk from cows not fed with silage. It was also made clear that, if the silage is fed to cows just after milking, milk produced from it could not, in the majority of cases, be separated by the sense of smell from milk from cows fed on other feed. This is pretty much in the line of experiments carried on to test the effect on milk when cows were fed turnips at or before milking, and just after milking.

It should be noted here, however, that while butter made from milk having the sweetest silage odor also possessed the same odor sufficiently marked to enable one familiar with it to classify the butter as being from silage milk, yet Chicago experts gave the silage butter in the Wisconsin experi-