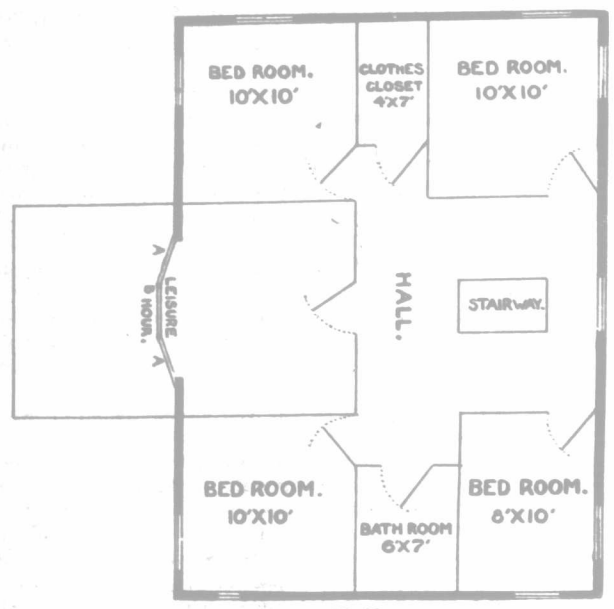
Prize House and Barn Plans.

The accompanying plans of farmhouse and barn were exhibited by J. C. Ready, Lanark Co., at the Ottawa Fair last summer, each set winning one of the Massey-Harris prizes.

The barn is 42x90 feet, with a 10-foot basement, an end drive floor, and a hip roof. The upper floor of the barn is divided into eleven mows and a granary. The stable is intended to accommodate the stock on a 100-acre farm. A plan of ventilation accompanies that of the barn.

The house plan is also suitable for a 100-acre farm. It is 26x34 feet, with a kitchen and woodshed 21x24. Besides being convenient, the portico and large hall are the principal features.



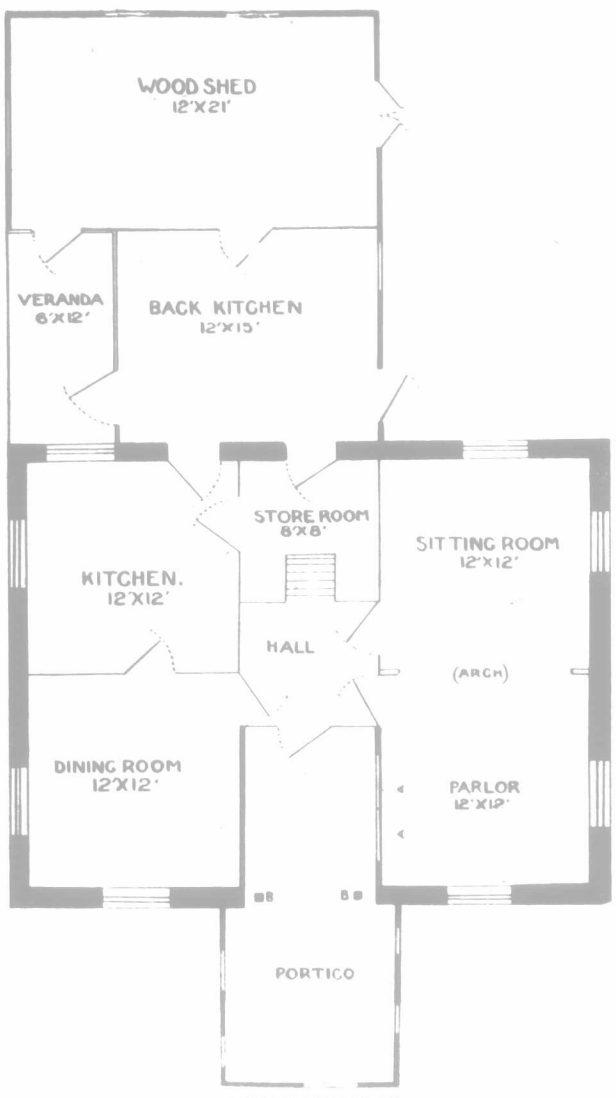
UPSTAIRS PLAN.

Gasoline Engine Satisfactory.

During the past season a 20-horse-power gasoline engine has been operating in this vicinity with entire satisfaction to its owner. The cost per day for gasoline and oil has been about $7, but one man has operated the engine and separator, thereby saving the cost of an engineer, fireman and a straw team, as compared with a steam engine. The separator was fitted with a self-feeder, and next season they intend attaching a blower. The results have been so good that this thresher would buy no other machine.

While as portable engines, gasoline has been satisfactory and has done all that its manufacturers claim for it, yet many have the idea that as a traction it would not be a success. Upon this point I am not prepared to speak. One peculiar feature of the gasoline engine is that its horse-power cannot be increased above its normal estimated capacity, while with the steam engine the raising of the steam may increase the power. Thus the amount of fixtures which are being added to a separator must be considered carefully lest the power required be greater than can be had. I think, however, that gasoline is the coming power for this country. It is safe from fire, easy to operate, and any farmer can easily learn to operate an engine.

J. D. MILLER.



DOWNSTAIRS PLAN.

DAIRY.

Effects of Food on Milk.

After having looked carefully into the effects which food has on milk, the British Dairy Farmers' Association have come to the following conclusions :

That when a cow is in full milk and full flesh she will give her normal quality of milk for at least a limited time, even though the quality and quantity of food be very deficient.

That when in good condition a cow will take off her body whatever is deficient in food, in order to give her normal quality of milk.

That an extra supply of nutritious food at all times increases the quality of milk, but the percentage of fat is not in any way improved by it; if anything, the tendency being rather the other way.

That an extra supply of nutritious food almost invariably very slightly increases the solids not fat of the milk.

That a ration poor in food ingredients has a very slight tendency to reduce the solids not fat in the milk, but has little appreciable effect on the fat.

That with a poor ration a cow in full weight will lose carcass weight, while on a rich diet she will gain weight.

That although the percentage of fat in a cow's milk may vary daily, we at present seem unable to control these variations or to account for them.

That for limited periods up to one month or thereabout, all ordinary quantities and qualities of foods seem to have no material effect on the quality of the milk.

That the only food which seems to have had any material effect on the percentage of butter in the milk is an excess of brewer's grains.

That very succulent grass has had only a very trifling effect in altering the percentage of fat.

That most foods convey some flavor to the butter, but scarcely any of them will alter its percentage in the milk.

That some foods exercise a material effect in raising the melting point of butter.

That the aim of all producers of milk, butter or cheese should be to feed what will give quantity in moderate amount and of a mixed nature, and the produce will be the best that the cow can give.

That extra quality must be looked for by improving the breeds, and judicious selection, rather than by any special foods or methods of feeding.

That the variations in the percentage of fat in a cow's milk are caused by something, but what that something is we at present do not know, though if we did we might be able to influence the quality.

Bacteria in Milk.

At the Ottawa dairy convention, Dr. Connell, Bacteriologist of the Kingston Dairy School, gave an interesting address on the importance of cleanliness in milking. A table giving the number of bacteria in 1 c. c. (16 drops) of milk under different conditions of milking and at different temperatures twenty-four hours after milking was submitted :

Careful milking	4,300 bacteria.
Cleanly milking	15,500 bacteria.
Ordinary milking	30,000 bacteria.

After twenty-four hours, milk carefully handled and kept at different temperatures contained :

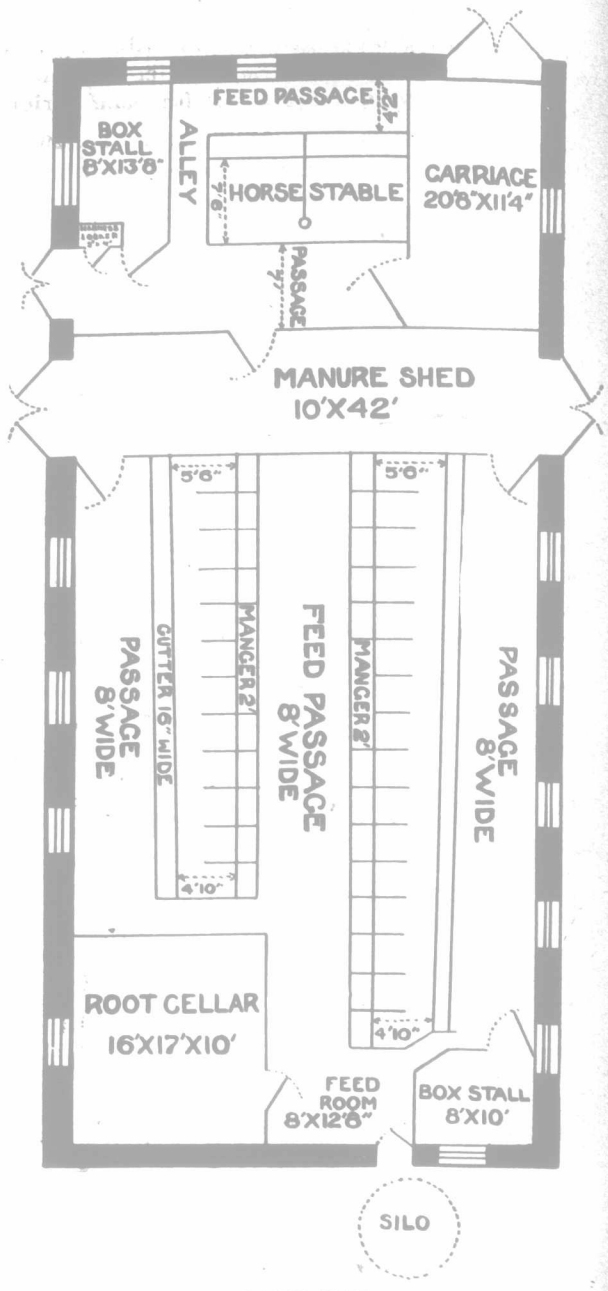
At 50° F.	4,500	bacteria per c. c.
" 55° F.	18,800	" "
" 60° F.	180,000	" "
" 68° F.	450,000	" "
" 86° F.	1,400,000,000	" "
" 98° F.	2,500,000,000	" "

In different temperatures, the ordinarily taken milk contained :

At 50° F.	48,000	bacteria per c. c.
" 55° F.	187,000	" "
" 60° F.	900,000	" "
" 68° F.	4,000,000	" "

These figures demonstrate clearly the very great importance of keeping milk clean and cool. It is evident that many of these germs find their way into the milk through dirt and dust. Most of those present under careful milking were the useful souring forms, while the additional number under ordinary handling were of the injurious kinds.

The gas-producing forms seem to grow faster



BASEMENT PLAN.

in higher temperatures than do the souring species. Well-cooled milk seldom produces gassy germs. Returning whey in the milk cans is the most general method of disseminating these injurious bacteria.

STARTERS.

In the discussion, the following points were brought out :

To begin a starter, get a pure culture from the Kingston, Guelph or other dairy school.

Do not be surprised if the starter does not give a good result the first time used.

Use a small closet in which to keep the starter.

A starter should not get over 5% acid, as determined by the alkali test.

Carefully observe the action of the amount of starter used from day to day.

Try and keep the starter at nearly 60° F.

If water is added to the starter it should be pasteurized first.

Use a starter when milk works slowly, when gassy germs are present and when the lactic acid germs are not active.

In using a starter first, be sure you know what you want to start.

There seems to be a desire on the part of makers to hurry through their work, consequently too much starter is often used.

A bad starter will spoil the best milk.

To test the purity of water from gassy or bad flavored germs, take two samples of milk, to one add a little water, put in some rennet, and compare the curd from each sample.

Milk having even one disease-producing germ should be pasteurized before being used for food.