ORGANIZATION OF THE FARMERS.

W. A. Macdonald stated that there would be a meeting of representatives of Farmers' Institutes in Toronto, on the 28th inst., to consider the advisability of organizing the farmers of Ontario by establishing a central organization. The meeting was called by Mr. Valancy E. Fuller, President of the Wentworth Farmers' Institute, and several leading questions were booked for discussion. Mr. Fuller intended to invite other farmers' organizations as well as Institutes, but the Council had not yet received an invitation. He (the Secretary) thought it desirable to unite all the farmers into one solid body, if possible. There were now four organizations which might be amalgamated, viz.: The Farmer M. P. P's. Association, the Farmers' Institutes, the Grange, and the Dominion Farmers' Council. He had written to Mr. Chas. Drury, M. P. P., President of the M. P. P's. Association, asking him to impress this subject upon the minds of this association at their meeting to be held before the Legislature adjourned.

After some discussion, it was resolved that President Leitch be appointed a delegate to represent the interests of the Dominion Farmers' Council at the Toronto meeting to be held on the 28th inst., providing the Council receive an invitation to send a representative.

The Dairy.

Cheese Making.

BY PROF. L. B. ARNOLD.

The principles involved in the manufacture of cheese are few, but the modifying circumstances are many. They are quite too numerous to be comprised in an article of a length suitable for an agricultural periodical. Hence in responding to a request to furnish plain and concise directions for making fine cheddar cheese, I can do little else than to give such as will have the most general application.

I will begin by supposing that we have milk of average quality coming from grass-fed cows, the cheese to be made every morning from the night and morning's milk mixed, and that a curd-mill is to be used. The night's milk should be cured and cooled to 70°, whether it remains on the farm or is taken at once to the factory. If delivered but once a day, the evening and morning messes should be carried in separate vessels, if they have any considerable distance to be carried, and provision should always be made for odors to escape while in transit.

Supposing the milk to reach the factory in good order, it may be heated to 85°; a few degrees below or above that point will not be very material. The degree which is adopted or preferred should be the same every day. Either rennet extract or ordinary rennet may be used. If the latter, it is essential that the rennet skins should be soaked only in brine and the steepings sweet and clean. It is impossible to make fine cheese with tainted, foul, or badly prepared rennet. The use of whey for soaking rennets in, is especially objectionable. Before adding rennet or extract to the milk, let it be well diluted, so that a common pailful will be required to coagulate 5,000 pounds of milk, and if coloring is to be used, it should be equally diluted and thoroughly stirred in before applying rennet.

Rennet or extract enough should be added to have curding begin to be apparent in about 20 minutes with the milk at 85°, and the milk well stirred while it is being added, and as long afterwards as it can safely be, and have it come to rest before curding begins, in order to prevent the cream from rising, and the top of the milk may continue to be gently stirred till the milk begins to thicken. As soon as the stirring ceases, the vat should be covered to prevent cooling, otherwise the top of the curd will be too soft and waste when it comes to be worked. When the curd becomes firm enough to cleave before the finger, it may be cut into half-inch cubes and left a while—say 15 or 20 minutes—till it becomes hard enough to admit of stirring without injury. Heat may then begin to be applied slowly, not faster than to raise the temperature a degree in two to four minutes, careful stirring being continued till the contents of the vat are raised to 98° or thereabouts, and for about 15 minutes after the heating stops, so that the curd will be sure to heat evenly and not mat and injure by settling upon the bottom of the vat. After that the stirring may be continued at intervals just frequent enough to prevent the bits of curd from adhering till they are hard enough to be dipped, or the whey drawn off.

The stage to which the curd may safely advance before it is separated from the whey, is an important item, and should be carefully studied by the cheese-maker till he is perfectly familiar with it. If the curd is too immature and soft when it is separated from the whey, it will form into pasty and soggy masses, from which the whey that will continue to be liberated within the masses of curd cannot be properly separated, and the resulting cheese will be sour, dauby and poor. If, on the other hand, it remains in the whey too long—till the whey becomes sour—then a new set of chemical changes at once take place by which certain mineral matters in the curd, which it is important for the quality and healthfulness of the cheese should remain there, are rapidly dissolved out and pass off in the whey. The free acid in the whey also dissolves out of the curd and carries off in the whey that element in rennet which causes the curd to cure into a plastic, rich, smooth-feeling and easy-melting cheese when in the mouth, and its loss makes the resulting cheese hard and comparatively insoluble, with a feeling in the mouth as if it contained uncooked meal. Several other adverse changes will result from permitting the curd to lie immersed in sour whey, by which the flavor and quality and durability of the cheese are altered and impaired.

Though it is very important that the curd and whey should not be separated too soon nor remain together too long, there is ample time between the two extremes in which to make the separation—from 15 to 30 minutes or more. It will do to draw the whey when the curd becomes so firm that if a handful of it is pressed by closing the hand for a few seconds, it will spring apart when the hand is opened. Or it may remain in the whey till it will adhere to hot iron without showing any fine threads when pulled from the iron. The space of time between these two stages of maturity is usually from 20 to 30 minutes. The temperature of the whey should be kept up to 98° till it is drawn, and its separation should be begun soon enough to give ample time to get it off before it gets sour.

After the vat is tipped for drawing the whey, the curd should be gradually worked to the sides and upper end of the vat, and stirred briskly enough to keep it fine till the whey is well drained out of it, which will require about ten minutes. It may then be allowed to settle together and adhere. When it has become tenacious enough to admit of handling, it may be cut into pieces convenient for handling, and turned occasionally to facilitate draining and to keep the temperature in all parts of the curd as uniform as possible. Keeping the temperature at 95°, or as near it as may be, the curd may lie, with occasional turning, till it is ripened enough to withstand the changing temperature in the curing room, and till all strong odors or taint, if any there should be, are removed. This generally requires from three to five hours time. To stand the vicissitudes of the average curing room, the curd ought to be far enough advanced to respond to the hot-iron test with threads at least one-fourth of an inch long. Longer threads would be preferable, and would make the cheese safer. No harm will ensue if the ripening continues till the threads are several inches in length, or till the curd, when applied to the hot iron, will give a distinct smell of toasted cheese. Danger will lie not on the side of over-ripening. It will be on the side of under-ripening always, which is likely to occur from allowing the curd to become too cool. This is where most cheese-makers fail, and to insure best results and for shortening the time for reaching the desired stage of ripening, it will pay to make special provision for keeping the curd warm while maturing after it is out of the whey.

When advanced to the proper stage, as above indicated, the curd may be pulverized by grinding or slicing, and about 2½ pounds of salt added for each 1000 pounds of milk, and, a half hour later, or when it has cooled to 80°, put to press. With an average curing room, this curd will cure into a "fine, flaky and fat" cheese in 30 to 35 days, with a buttery texture melting in the mouth, with high flavor.

A variation of conditions will call for a variation in treatment. If the milk is sweeter than usual, it will require either to be matured in the vat by heating, or set with more rennet, or cut finer or salted higher or varied a little in all these respects. If the milk is riper than usual, opposite variations will be in order. If strong with any odor or from bad flavored food, it will require to be got out of the whey early, and matured till the bad odors disappear. If permitted to sour in the whey, taints and odors will not disappear, no matter how warm the curd is kept or how long it is aired. If milk from hay-fed cows is to be used, and rapid curing is desired, it may be set with a little more rennet than usual, cut coarser to retain moisture, matured a long time and kept quite warm after out of the whey, salted light and cured in warm room. When curing rooms are faulty, cheese cures much better in boxes turned upside down occasionally. The cheese will be finer and will shrink less.

Quality of Milk from Different Breeds.

The average variation in the quality of milk from the different breeds is not so great as is generally supposed, although the individual variations are very great.

The following table gives the results of tests recently made at a Swedish fair. The milk from 800 cows was tested at each milking during the fair, the tests having been made with the lactocrite. The figures represent the percentage of fat in the milk:

SWEDISH BREEDS.

Highland	4,290
Herregards	4,188
Stromsholmk	3,648
Grades	3,878