

4. That the Institute shall hold at least two meetings each year in different parts of the Electoral district for the discussion of agricultural subjects.

5. That a sum not less than the Government grant shall be voted to each Institute by the council of the county in which the Electoral district is situated.

6. That a summarized report of the meetings held during the year be sent by the secretary to the Minister of Agriculture.

7. That the Institute year shall terminate with June 30th.

The Dairy.

THE matter of drainage is a very important consideration in silo building, and one that should not be overlooked, especially when there is a chance of making a choice between sites unequally favored in this respect. A dry spot does away with the necessity of flowing of any kind, for if the soil is firmly pounded down it answers the purpose admirably, but if wet or spongy it should be drained, and if this does not affect its purpose then a cement floor is the last resource of the silo builder. Under ordinary conditions, however, the silo may be sufficiently well drained for all practical purposes with either stones in a trench around the outside, or with tiles, and thus a great expense that would be entailed in cementing, is reserved.

The Aroma of Butter.

When the product of truly skilful hands, guided by the best and most intelligent practices, butter possesses an aroma and flavor, enticing and peculiar to itself, that tends strongly to greatly enhance its value in the market. As butter must be looked upon largely as a luxury, though it undoubtedly stands high as a food, its appearance, smell and taste are features of very great importance; inasmuch also as there are few other substances that may vary so much in these desirable qualities. When off flavor there are not many products that are more repulsive than it, but when fresh with its own characteristic fragrance, there are yet fewer that are more tempting to the palate and healthy as a food. Owning these desirable features butter finds ready sale, and it is only the rancid, greasy article that gluts and stagnates the market. The production of high-class butter stimulates a healthy demand, through greater consumption, and hence it is that the butter-maker in bringing into play his skill and intelligence, strives, not only for his own immediate benefit, but for the mutual advancement of his fellow-workers through a broader extension of the trade.

The aroma of butter is mostly derived from the volatile oils contained in the fodder fed, though these may be more or less modified by the processes adopted by the maker. The volatile oils are butyric, caproic, and caprylic, and from these are formed the acids—butyric, caproic and caprylic. The butyric acid is the one that gives rancid butter its unpleasant taste and smell. To prevent the change of these to the acidified state is the aim of the butter-maker, through the use of such substances as salt. Every species and variety of herbage has its own peculiar flavor and aroma, and to discriminate between those that are desirable and those that are not so, and their origin, should be one of the dairyman's aims. The peculiar flavor and fragrance given June butter, through the use of fresh pasture grasses, is familiar to all, and, this, coupled with the changes that occur in the nature of the fats themselves, accounts for the high estimation of the butter made at that season. The volatile oils taken into the system are absorbed into the blood, and, transuding into the udder-cav-

ities, soon finds its way into the butter through the milk. The volatile oils of such plants as cabbage, onion, and turnips, are said to be heavier than those of such plants as peppermint or horse-radish, and consequently it takes some time for the animal's system to eliminate them from the blood. For this reason such food as turnips should be fed just after milking so as to give the cow's system time to throw these odors off. To rid milk of any peculiar flavor, heating it proves effectual to remove most light odors. Air-ing by dipping from one vessel to another has somewhat the same effect. It should be apparent to all studying this phase of feeding, that it is impossible to make a cow a filter of all sorts of garbage and impure water without her system becoming steeped with vile matter that must find its way into the butter, much to its detriment.

By allowing the cream to become rancid before churning, these flavors, so desirable in butter, are broken up and dissipated, while the acid flavor takes its place. While it is very desirable to ripen cream, yet such does not by any means imply souring. Ripening, while imparting a slight flavor to the butter, does not materially affect the natural aroma, while at the same time giving the increased yield of butter that would result from souring the cream.

Outside of the influence on the aroma, foods also have a marked effect on the nature of the fats, and in this way more or less act on the flavor. It has been found that such foods as oats and bran produce a soft and easily digestible butter, having much the same characteristics in that respect to summer butter. A soft or summer butter contains about 60 per cent. olein (one of the three principal fats contained in butter), while winter butter contains only about 35 per cent. This partly accounts for the increased difficulty of getting the butter to come in winter. Such foods as linseed cake and peas are credited with the production of a hard fat, not so digestible in its nature. The study of the influences of food on the production of flavor and aroma in butter are surely of enough import to warrant some expenditure of time and observation to obtain definite data, for those qualities strongly affect the sale and price of the butter.

Shall It Be Ensilage or Cured Fodder Corn?

There are some that hold as an objection to the silo, that it is better in many ways to dry and cure the corn fodder than to make ensilage of it. At one time such persons had the best of the argument, but now that the silo has passed the experimental stage and has become a fixed factor in economical farming, especially in regard to dairying, these statements have largely lost their force. We purpose touching on a few points wherein we think differences of opinion exist.

Handling—In the curing, binding and shocking of the fodder much labor and handling is entailed, which is largely surmounted in the case of the fodder intended for ensilage, as the fodder is easily handled from the waggon to cutter and into the silo. Then there is another matter for consideration in this respect, and that is the easiness of the handling when it comes to feeding. The ensilage is easily carried from silo to manger by means of baskets or a truck, and very little waste occurs, but the same cannot be said of the cured corn, for much of the best part of it, the leaves, is apt to be lost, not to mention the difficulty of carrying it.

Storage—It may be safely advanced that a certain quantity of corn cut would take up less silo room than the same quantity uncut would barn-room. The latter cannot be closely packed to economise room, for it would

soon heat. It is within the bounds of reason to say that fully twice as much dry matter can be stored in a given space in the shape of ensilage as in the condition of wilted corn in the mow. The cost of building a silo presents another phase, but if constructed on modern plans, it is but little more expense than the cost of building that part of the barn that surrounds and covers the corn fodder.

Feeding value.—In the curing of the fodder corn losses occur, and these are equally great as compared with those that result from ensiling the corn. From the time of curing until fed out, a loss of 20 to 25 per cent. results, while Prof. Henry, of Wisconsin, has found to be a similar range to the losses occurring in the silage. As the result of an extended and thorough experiment with a number of cows, this authority draws the conclusion that dairy cows readily consume a sufficient quantity of corn ensilage to maintain a flow of milk and yield of butter rather more than that produced by feeding dry fodder corn. In this experiment the dry fodder corn was run through the cutter and fed similarly to the silage. In regard to the succulency of silage, there is no doubt but that it has not only a value in respect to keeping the animal's system in excellent running order, but it also has been found to increase the churnable fat in the milk. When a certain amount of succulent food is given a cow, her bowels are kept loose and her digestive organs are in a condition to make the best of a grain fodder, and as to its effect on the fat of the milk, W. A. Wolf, of Wisconsin, found that on account of its succulence ensilage has a beneficial influence on butter production, causing a larger part of the milk fat to be recovered in the butter, or what he states to be the cause from the dairyman's standpoint, causing less waste of butter to occur in the churning. About 12.60 per cent. more of the fat was churned out from the mixed milk of both cows when they were fed ensilage than when they received the dry fodder.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL

Notes for Cheese-makers for August.

BY PROF. JAS. W. ROBERTSON, GUELPH, ONT.

A cheese factory's reputation is largely determined by the quality of its August, September, and October output. The beginning of August is a fit time for every cheese-maker who has had only partial success during the hot weather to redeem his reputation and that of his factory. A comparison of the prices realized for the summer cheese of Ontario with the figures reported from the United States markets, shows that Canadian cheese are in demand at higher rates than American cheese will sell for. That we have gained in reputation and in market favor with British importers and consumers is evident. That this advance and advantage are the result of the applied skill of less than half of our cheese-makers, is well known to those who visit the factories and handle their products. To reach and to speedily help those who work in cheese factories without any ambition or aspiration for improvement, is well nigh impracticable. However, we desire to make helpful information not only attainable, but unavoidable to such.

In a short time there will be numerous cable orders from England, calling for "cool August cheese." That brief description implies a mild, rich flavor that may be preserved for the winter trade, a firm, solid body, "full of meatiness," a fine outside finish, with clean, bright rinds, free from cracks, and bandages fresh looking and not likely to appear mouldy.