

"We have never observed any ill results if the ensilage was of good quality. A neighbor said it effected the flavor of his butter, but on inquiry it was found he cut his corn altogether too green. This is a common mistake with beginners. Get a corn that will mature early and have plenty of ears; let it get well advanced before putting it into the silo, and there will be no bad flavor nor any bad results. We have sent our milk to Toronto to one man for five years, and there never has been any complaint about the flavor.

"We always feed from the whole of the top. Peas, oats, and clover hay help to make a balanced ration with the ensilage. Any who intend building a silo would do well to inquire about the round silo."

#### A FIRST-CLASS FOOD.—CARE NEEDED.

Thos. Irwin, Middlesex Co., Ont., writes:—"We have used ensilage for a number of years and consider it first-class as a stock food, and would not like to be without it. We grow the Huron Dent corn, and before cutting it we go through the field and take the best ears off, say about one-half, these to be husked and fed to the hogs, etc. We have found good results in feeding ensilage to milch cows and young cattle, except when fed in too large quantities.

"From 20 to 40 pounds daily per head, young and old, has given best results. We never feed it alone, neither would I do so. The ensilage seems to create in the animals a keen appetite for dry fodder. Owing to some of the ears being picked off the ensilage corn, we add to the milch cows' daily ration from six to eight quarts of mixed meal.

"I would advise those who think of building a silo to visit and examine the stock and silo of men who already have them.

"I consider that good results cannot be obtained from feeding stock where they have not a sufficiency of pure air to breathe."

#### The Use of the Cutting Box and Root Pulper.

SIR,—In reply to your favor, I would say the cutting box is an indispensable machine on every well-regulated farm. However, its uses can be abused, and it is only valuable when the benefits derived are of greater value than the labor involved. For fodder corn, or cornstalks of any description, it is indispensable. It is the only economical way of feeding it. There is no waste in this way, while if fed whole there is one-third waste. For the silo it is the only correct way. In regard to all coarse fodder, it does not pay beyond a certain limit. It is a general practice in our section to save all the chaff. Where this is done, and the hay and straw of good quality, it only increases labor and expense and gives no remuneration. There is a certain amount of short fodder (chaff or cut feed) required to do systematic feeding. Where possible, no meal of any kind should be fed alone; always some cut feed or chaff should be fed to prevent gorging and to cause thorough mastication. When damaged hay or straw has to be fed, cutting is a great help. The cut feed mixed with meal and dampened, everything is ate up clean; but otherwise, where feed is of good quality, the cattle will eat enough without waste. For farm horses, the bulk of the feed should be cut, and no grain fed without being mixed with cut feed. Cut cornstalks or ensilage, mixed with half its bulk of cut hay or straw and a little grain, forms an excellent ration for idle horses or colts.

The root pulper, to my mind, has seen its best days. It is only of value for calves and pigs or some cattle that will not eat whole turnips. I once thought the only correct way was to pulp all roots, and mix with cut feed one meal ahead. This is wasting time and muscle. Cattle will do just as well, and better, where whole turnips, cut feed or chaff, and meal, are all thrown together, when fed in a clean manger. They mix it all up together, and there is much less danger of indigestion than when the cattle gulp down a whole manger full of mixed feed. There is more thorough mastication. A. C. HALLMAN, New Dundee, Ont.

### DAIRY.

#### Creamery Men to Meet.

We are advised by President D. Derbyshire, of the Ontario Creameries Association, that their next annual convention will be held in Cornwall, Stormont Co., on January 14th, 15th and 16th, 1896. The following noted gentlemen are expected to address the convention:—Hon. John Dryden, Profs. Robertson, Fletcher, and Shutt, from the Dominion Experimental Farm, Ottawa; Prof. Wm. P. Brooks, from Dairy School, Amherst, Mass.; Prof. H. H. Dean, O. A. C., Guelph; D. M. MacPherson, M.P.P., and others.

#### "Blood Will Tell."

In a private note to this office, Mrs. E. M. Jones, of Brockville, Ont., writing from New York, where she was requested by the committee to judge the butter at the Live Stock Show, says the highest award went to J. B. Duke, of "Duke's Farm," Somersville, N. J. After she completed the scoring, she was forwarded the number of competitors, and found that Mr. Duke's herd consists of Jersey and Guernsey cattle.

Wm. McNeil, of London, Ont., has won another piano (an \$800 one this time) on his poultry exhibit at the Kansas City Show—took it "easily," Mr. S. Butterfield wrote the ADVOCATE.

#### Why Add Two Per Cent. to Fat Readings when Apportioning Dividends to Patrons of Cheese Factories?

SIR,—The above query naturally arises in the minds of some when thinking over the "two per cent. system," as I described in your issue of Nov. 15. Some might say that adding two per cent. to the fat of all will make no difference in the results. That it does make a considerable difference will be seen by what may be called a *Mathematical Explanation* of the two per cent. system of dividing proceeds among patrons of cheese factories.

Suppose that one patron's milk tests three per cent. of fat and another's tests four per cent. In this case we have seven units of fat to divide. One man ought to receive three units and the other four units. Or, to put it another way, we have a ball of fat weighing seven pounds. One man is entitled to receive three pounds of the ball and the other four pounds. Or if we divide the ball into seven equal parts one man obtains three parts (sevenths) and the other four parts (sevenths). The relation is 3-7 to 4-7, or 3 to 4.

Now, when we add two per cent. to each we make the one (3+2) 5, and the other (4+2) 6. In other words, instead of having a ball weighing seven pounds we have one weighing eleven pounds, and the relation is 5-11 to 6-11, or 5 to 6. Instead of there being a difference of one-seventh in the amount of fat (money) obtained by two such patrons, the difference is but one-eleventh, which corresponds more nearly to the actual difference in the cheese yield from such milk. An increased percentage of fat in the milk increases the cheese yield in all normal cases, but the increased yield of cheese is not in proportion to the increase in fat, as shown in my last article. Why?

A *Scientific and Practical Explanation*.—There are six compounds which make up the substance we call milk. These compounds are water, fat, casein, albumen, sugar, and ash. Of these but two—fat and casein—are of value in cheesemaking, assuming that the water has no value and ignoring the small amount of the other compounds which enter into cheese, these being foreign to the matter under discussion, though of importance, one in the making and another in giving value to cheese as a food.

The cheesemaker adds rennet to milk under certain conditions, which rennet acts on the casein and indirectly on the fat. The amount of cheese which can be made from milk in good condition, and with a skillful maker, depends upon the fat and casein present in the milk. The fat may be readily determined by the Babcock Tester, but the casein can be determined only by chemical analysis, which is an expensive operation. Analyses conducted at the Guelph Station during the past two years indicate that the percentage of normal milk, averaging about 2.3 per cent. I estimate that the per cent. of casein over two is represented by the fat and casein lost in the whey; therefore if we add a constant number (two), which represents the casein in milk) to the varying percentage of fat in the milk, as determined by the Babcock Tester, we have a correct basis upon which to work—or at least one nearly correct, and to my mind a basis which comes nearest to giving justice to the patrons of cheese factories.

I wish to deny the reports which have been circulated that I do not believe in the accuracy of the Babcock Tester, when properly made and handled. I also wish to say that in my judgment paying according to the butter-fat alone is a much fairer system than pooling by weight of milk alone. H. H. DEAN.

[NOTE.—We feel sure that the above needed explanation will be appreciated by all who are seeking to get at a proper understanding of this vexed question. A very important point remains to be dealt with, viz., the comparative quality of the cheese made from milk containing different percentages of fat. We note by a recent report of the Quebec Dairymen's Association that a large number of cheese factories (over 100) there are paying for milk according to the Babcock test system.—ED.]

#### A Dairy Cow for the Dairy Farmer.

Canadian farmers and breeders are credited by our U. S. neighbors with great steadiness of purpose, which, verily, is one of the essentials of success. However, in some cheese sections, owing from the past season's unfavorable returns, arising from drought and other causes, we may expect a reduced production, continuing next season, by reason of some of the newer patrons and possibly factories dropping out of the ranks. For the farmer who makes dairying a specialty, one means of keeping down the cost of production when profits are narrowing is to keep a cow especially adapted to convert her food into milk. This should not be lost sight of.

The following external points of a dairy cow indicate her ability to serve her owner well if she is given a good chance:—She should have a large, well-formed udder, of fine elastic quality; a mellow, flexible skin, covered with soft, fine hair; a long, deep barrel, shoooped with flat, broad ribs, wide apart; a broad loin, spreading out into broad, long hind quarters; an open twist, with rather thin

hips, and a lean neck of symmetrical length, joined to a clean-cut, fine head, with dished face and prominent eyes.

A cow with all these points cannot produce much butter from a straw diet. Feed her poorly, and even this typical cow will soon become a scrub—simply an unprofitable scrub. But give her comfortable quarters and a liberal, well-balanced ration, then she can look her owner squarely in the face, fully assured that she owes no man anything. A dairy cow that will not return a profit when given the above treatment should be sent to the block to be turned into beef and leather.

#### Dairy School for Western Ontario.

We are advised that arrangements are now being made for the opening of a new dairy school in Strathroy, Ont., at an early date—probably in about a fortnight—by which time it is expected the building will be completed. At this writing the exact date is not known, nor were the instructors appointed.

### GARDEN AND ORCHARD.

#### To Fruit Growers—A Practical Greeting.

(BY THE DOMINION HORTICULTURIST.)

DEAR SIR,—I am pleased, through your good offices, to extend a hearty word of greeting and good cheer to my horticultural friends throughout the Dominion. The year past has been a remarkable one in many ways. The tropical heat of early spring, followed by chilly winds and rainy weather, lessened the crop of apples and grapes probably more than half, and almost destroyed the crop of peaches. The vagaries of the frost fiend were plainly marked in the amount of injury wrought to fruit on farms almost contiguous in the Grimsby and Winona districts. The principal lesson to be derived was that of always keeping in mind the necessity of selecting for the tender fruits location possessing good natural air drainage. Every farmer notices certain parts of his farm, which seem to be specially favored by visiting fogs. Such locations show lack of air drainage, and should be avoided in planting fruit trees. Soil drainage will, of course, do much to ameliorate the condition of affairs by equalizing the temperatures of soil and air.

#### VARIETAL ADAPTATION.

Among other lessons which each year are being impressed upon fruit growers, is that each fruit has its zone of highest development, and sometimes this region is comparatively limited in area. When this fact is appreciated in regard to a particular fruit, money is saved to the man who not only bears it in mind, but acts upon the knowledge. After all, the lessons that nature teaches are improvements in many respects upon some of our improvised theories.

The peach boom in the Leamington (Ont.) district is quite in accordance with what botany teaches us regarding the natural habit of this fruit. Although its constitution and characteristics have been, no doubt, greatly modified during the period of its wandering westward from the hot and sandy regions of Persia, yet it still retains the aboriginal instincts sufficiently strong to appreciate and flourish in conditions somewhat approaching those of the land of its nativity. Of course, this is no reflection on Essex, for, without bias, I am free to say that fortunate is the man who has a young peach orchard in that favored locality. What is true of Essex, is just as true of other localities in regard to apples, plums, grapes, and pears. Any one who had the opportunity of seeing the plum trees of Winona bending to the ground with crimson Lombards in August might well wish to have their lines cast in such pleasant places; nor must we forget the clustered grape vines of the same place, each pointing to perfect adaptation, as well as to the care, skill, and intelligence of the cultivator. But I must not give undue praise to this district. The plum growers of Eastern Quebec, the small fruit producers of New Brunswick, or any "blue nose" friends in the famous valley down by the sea, where, I believe, the shipping records of the present season compared favorably with if they did not surpass those of any previous year. How the not Gravenstein and Nonpareil are truly at home with regard to British Columbia, I am pleased to say that I shall, at the Fruit Growers' Association in Woodstock, have the pleasure of showing my Ontario friends some specimens of Canadian Pacific Coast fruit, which both in point of beauty, size and quality can be shown without fear of unfavorable criticism. The samples were grown by Mr. Thos. J. Earle, of Lytton, and are the product of trees grown in the irrigated region.

#### HOPE FOR THE FUTURE.

There is encouragement for the fruit grower in summing up the situation at the end of the year. Improved methods of culture, greater care exercised in destroying injurious insect and fungous life, and better judgment exercised in marketing our products, mark a new era in fruit culture. Much instruction has been given through the press; by the specialist; and by the Dominion and Provincial Governments. Ontario is specially favored in this respect, with her army of institute workers, her magnificently equipped and efficiently manned Agricultural College, and lastly, Mr. Editor, her agricultural press. The hope of the future, then, lies in the successful sale of our fruit products, and it is gratifying to note that our Federal Government has this