breeders and feeders are, as a body, by all odds the brightest and best representatives of the younger generation of Canadian agriculturists.

The Feeding of a Champion.

Corn is a good fattening food for cattle and hogs, and loud have been the praises sung of the corn-fed cattle of the middle States. Corn has been "king" as a feed in these States for years, and the feeders have gradually become so "wrapped up" in it that they think it impossible to make good beef without it. These feeders got a "jolt" this year at the Chicago International when the grade "doddie" from Manitoba, a steer which had never tasted corn, walked away from the show carrying the purple ribbon emblematic of the grand championship beef animal of the entire show, and was sold at the handsome price of 50 cents per pound. Besides teaching the corn-belt-farmer that there are other good feeds than corn, this should impress upon our feeders that feeds ready at hand should not be promiscously discarded in making high-class beef. Canadian barley and oats are often just as profitable feed as American corn.

Just here it might be of interest to our readers to know just how "Glencarnock Victor," this grand champion, was fed. As Robert Brown, the herdsman at Glencarnock Stock Farm, gave it to a representative of "The Farmer's Advocate and Home Journal, Winnipeg, Manitoba, his feeding was as follows :

For the first 11 months of his life he subsisted largely on doddie's milk, that is, he ran with his dam, a grade Aberdeen-Angus cow, for this period. During the first winter he was stabled and fed grain and hay. The next summer he ran in pasture, getting a light grain ration. That fall he was stall fed, with oats and barley for a grain ration, and last March won the championship at Brandon. During the past summer he was stabled during the day and ran in the pasture at night. During this period he got a light grain ration.

About three months ago he was put on the ration that was to put him in the pink of condition for the International. During that period he was fed four times a day. A heavy grain ration of oats, barley and bran, and his roughage consisted largely of green fodder. To keep in condition he received a light ration of linseed meal and boiled barley. His exercise while on this heavy ration was taken in an open yard during the day.

This feed and care brought him out at the International without a soft spot or a spot that was not well covered, weighing 1,630 pounds.

THE FARM.

Why We Plow.

The question of why the land is plowed, would receive a variety of answers equal almost to the number questioned, observed J. G. Haney, manager the Northwest Branch of the I. H. C. Service Bureau, before the International Dry-Farming Congress, held at Lethbridge, Alta., last October. The ultimate end of all farming operations is, of course, the growing of profitable crops, hence every operation must help towards this end. Plowing the land accomplishes many things. The present growth is usually destroyed by being turned under, and the process of decomposition of the matter turned under thereby hastened. The soil being loosened and broken up is exposed to the elements. The circulation of air through the plowed soil is very beneficial and essential in making available plant food and in promoting the germination and growth of plant life. Plowed land loses excessive moisture much more quickly than unplowed, because there is a greater surface exposed. Hence when there is a surplus of moisture to be contended with in the spring, the land had best be left rough after fall plowing. Such land harrowed down after being sufficiently dry makes a good seed bed in which seed will start promptly.

Plowing also prevents evaporation after the surplus moisture from the surface has escaped, as capillarity is broken in the furrow slice and the moisture not drawn from below as it would be in the unplowed soil.

The root system of cultivated plants must penetrate the soil quickly to obtain the elements necessary to their growth—plowing loosens the soil and makes this possible.

Cedar Block Floors.

In answer to A. D.'s question in our issue of December 19th, 1912, re cemented cedar-block floor, a correspondent says : "As the cedar is a soft wood, it makes a poor floor by filling in with cement, because the cedar wears down very fast and leaves the floor very uneven. Cedar alone also makes a poor floor, as the sapwood is very soft and wears down faster than the rest of the block J. R. B."

THE DAIRY.

The Relation of Food to Milk.

In the discussion of any dairy cattle feeding problem there are a number of factors that must be taken into consideration ; the chief one is that the amount of milk a cow will produce is directly governed by the amount of food that she can be induced to eat over and above that required for maintaining herself, without showing a gain in weight.

The dairy cow, like any other animal, requires a certain amount to keep her alive and to repair the tissues that are being constantly broken down and thrown off as waste products. This amount is called the maintenance requirement and varies but little in different animals of the same weight. That food that the cow eats after she has had enough to maintain herself goes to the production of milk or flesh, and is known as the production requirement.

As I have said before, the maintenance requirement for different individuals weighing the same varies but little, and may be considered practically uniform. Successful feeding lies in making a cow eat enough food so that, after she has satisfied her body needs, there will still be plenty left to produce the milk for which she is kept Different animals of the same breed vary greatly in this respect, some being able to consume large quantities of food, putting the surplus, above maintenance, into the milk pail, while others, after satisfying maintenance, put the food on to their backs, or else refuse to eat at all.

An interesting experiment has lately been completed which emphasizes this very point. Two Jerseys were used in the experiment, the object of which was to determine the cause of wide variation in milk production by dairy cows. Both cows were kept under the same conditions and were given all that they could eat without showing a gain in weight. At the end of the year it was found that both animals had used practically the same amounts of food for maintenance, but that the total food consumed varied, inasmuch as No. 27 had eaten 1.75 pounds for every pound consumed by No. 62. At the same time No. 27 produced 2.67 pounds of milk for every pound produced by No. 62. Deducting the amount of food used for maintenance it was further found that one cow produced milk as economically as the other, but that the cow having the greatest capacity for food above that required for maintenance was the more profitable.

On the other hand, we do oftimes find animals in which the inherent instinct to give milk is so strong that they will take food required for maintenance, and make it into milk at the expense of their bodies. One such cow was placed on an experiment a short time ago, and for thirty days after freshening was fed only enough to satisfy maintenance requirements for an animal of her size. At the end of her thirty-day period she was so weak and emaciated that she could hardly stand, but she had given practically the same amount of milk as she had during the corresponding period of her lactation, and had ruined her body to satisfy her inherent instinct to give milk.

In our practical dairy feeding it is not our desire to make a cow depend altogether on instinct, but so to feed her that, after she has taken care of her body, there will still be enough nutrients left to supply a good amount of milk. Some animals will not, at first, eat a large amount of food, but they can gradually be educated until they are consuming double as much as they were at the beginning of their instruction. This fact is especially recognized in the case of Holstein cattle, where large appetites are developed from calfhood, until by the time the cow is five years old she can consume an almost incredible amount. The same thing is apparent in the record-breakers of the other breeds.

When a cow is dry, she will usually eat enough roughage to maintain herself, although some grain may often be fed to advantage. After she freshens, feed grain to take care of the milk yield, using it in some definite proportion to the amount of milk given. A good ratio is one pound of grain to three pounds of milk, the chief thought being to fix some standard, so that as the cow gives more or less milk she may receive more or less grain. As to the question of roughage, study the individual so that she may receive all the roughage she will eat, up to the point when she begins to show an undue gain in weight.

To be sure, some animals have been injured by overfeeding, but their number is as nothing when compared with those animals that have been, and are being, injured by underfeeding. One of the greatest mistakes of the average dairyman of today is in economizing on his grain bill by feeding the cows a low ration. The sooner that he realizes this, and gives the cow enough to satisfy both maintenance and production requirement, the sooner will he be able to buy better cows and provide better quarters for them. To make money we must spend money ; never was this truer than in the feeding of the dairy cow.

Chatauqua Co., N. Y. T. A. TEFFT.

GARDEN & ORCHARD.

Something about Grapes.

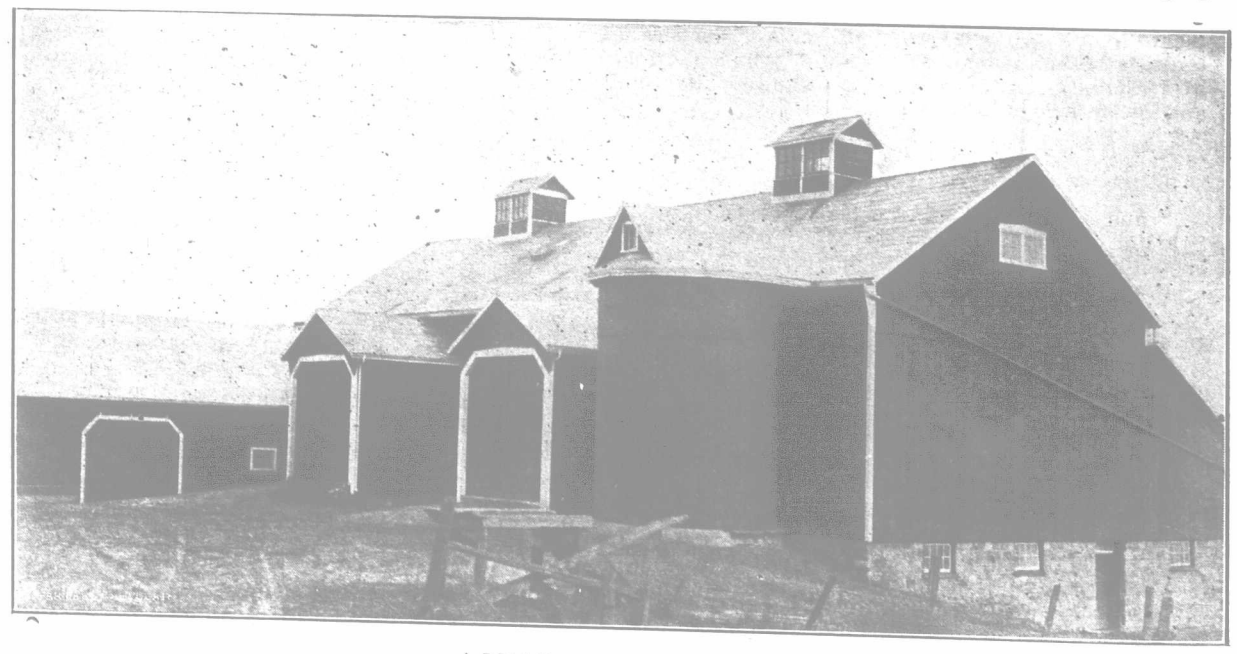
Editor "The Farmer's Advocate":

There are very few people who do not have a little more than a passing regard for grapes. Yet there are very few who try to cultivate the grape in the house garden. The prevailing idea among many people is that they are hard to grow and no doubt this is the reason why grapes are not more generally cultivated. But that they are hard to grow is not the case—at least, not to such an extent that most people have either to buy this fruit or do without.

Grapes like good soil, location and culture, but they readily adapt themselves to circumstances ; so that lack of proper ground is anything but a sufficient reason to prevent almost anyone who has a garden from planting them.

A grape vine, if properly supported, requires very little ground space, but if given some place to climb, will grow as long as twenty or thirty feet. A friend of mine, whose henhouse faces the south, planted a couple of vines at the west end of it, and by means of a few yards of wire netting had them cover the entire end of the building and in a few years after planting they were getting all the grapes they required. Planted at the side of a doorway or verandah, they not only provide fruit, but afford shelter as well.

The grape vines do not need any summer pruning, except in rare cases, although people who are not certain about this often spoil their fruit by following the advice of those who ignorantly advise to do so. The only time when summer pruning is necessary is when the trellis room is not sufficient, and in that case it might be well to cut out some of the new wood. But the fruit should be covered from the direct rays of the sun by the foliage of the vine itself, but not by the shade of buildings or trees. They need the full benefit of the sunshine, but do not make the mistake of thinking that the fruit clusters must be exposed directly to the rays of the sun. It is the grape



A Middlesex County Barn.
Note the covered drives, the silo and implement shed at the far end.