

AGE TO BREED HEIFERS.

Considerable difference of opinion obtains as to what is the best age at which to breed heifers to produce their first calf. Time was when it was generally considered that a heifer of any class should not be bred to calve before she was three years old, and in the beef breeds it is probably wise yet to keep pretty near to that rule, since heifers of that class, as well as cows, are generally required to suckle their calves for six to eight months, which is a much heavier tax on their system than being milked by hand. It is now common practice among breeders of the dairy breeds to have their heifers produce at two years old, and in many instances as young as 18 months. There is no valid objection to having them come into milking at the age of two years, if they have been liberally fed and kept growing steadily from birth, as the tendency to milk is developed as the period of motherhood approaches, and should be cultivated by early milking, provided the physical system has been well nourished to give strength of constitution to bear the draft upon it which heavy milking makes. Heifer calves intended for special dairy purposes should be raised by hand on skim milk after the first three or four weeks, allowed ample exercise, early taught to eat, and fed principally on bulky foods, as grass, clover hay, silage and roots, with a fairly liberal allowance of bran and oats, the object being to develop the digestive organs and provide capacity for working up a large amount of food into milk. The idea that dairy heifers should be kept thin has been too prevalent, and has tended to weaken the constitutions of many cows that would probably have made far better records as producers had they been fed more liberally while young. Of course, it is well to avoid feeding freely of fattening, concentrated foods, and this can readily be avoided by using the class of foods above indicated, and by giving plenty of outdoor exercise. Such treatment tends to developing size, strength and capacity for work, all of which are desirable characteristics. Size, which is the least important of this trinity of qualities, could doubtless be more fully attained by having the heifers produce their first calves at three years old, but there is danger, in that case, of their running too much to beef and to barrenness. When a heifer has her first calf at 18 months or under, she should not be bred again for several months, but allowed a rest from the demands of gestation, and a chance given to gain strength, while a long period of lactation will tend to fix the habit of persistent or year-round milking, which is a desirable characteristic in dairy cows, as the system of yearly record-keeping has amply illustrated.

JUNE CONDITIONS.

Editor "The Farmer's Advocate":
I was very glad to read your editorial in Feb. 7th issue on the above subject. This striving after summer or spring conditions is, for the general farmer, who must make money, costly sentimentalism. I have felt this folly for some time, but in face of Institute workers and enthusiastic farm papers, I have not had the courage to express my views before. This fad is only admissible in the case of wealthy men who make their money in the city or who have made or inherited a fortune, and are conducting a dairy for the pleasure of spending money.

I am willing to place on record my belief that if the cost of structure, or even interest on investment in cost of buildings, cost of hired help, cost at market prices of food consumed, were placed against them, that not one cow in one hundred in Canada would pay a clear profit, even where surrounded by June conditions. The fact of the matter is that the large majority of the cows in Canada do not pay their way; but since no branch of farming pays a profit if we take labor, every item of cost, including interest on investment, etc., into consideration, we may as well stick to the cow, since her loss is not greater than many other branches, but aim to get the production and expenses so adjusted that the pail may be as nearly full as possible with the least expense, in spite of the preaching of Government Institute workers.
FARMER.
Nova Scotia.

TREAT THE DOG.

Editor "The Farmer's Advocate":
I notice a great deal of controversy about dogs killing sheep from time to time. Some years ago I had a dog which I could not keep at home four hours in a day. I castrated him, and since then have had no trouble. I have since treated two of my neighbor's dogs in the same way, and they also stay at home. Had it not been done, there is every possibility that, rambling, as they were, they would have been in mischief which would cause their owners and others loss. I feel convinced that if all the dogs in the country not required for breeding were treated in the same way, we would in a short

time hear almost no complaints about killing sheep, as it is always the rambling dog that does harm.
M. J. ARMAND.
Lanark Co., Ont.

STRAW-FEEDING STOCKERS.

Editor "The Farmer's Advocate":

Farmers who are straw-feeding their young cattle, with the intention of turning them out to pasture the coming season, should bear in mind that, in order to get the very best results, the cattle should be fed good hay for one month before being put on grass. Last year I had quite a large herd of cattle belonging to farmers in Victoria County pasturing on my ranch, and I took the trouble to enquire exactly how the cattle had been fed previous to turning them on the range, and the result of my observations are that straw-fed cattle which have lost considerable weight during the winter months, but have again started to make some gain in weight on the month's hay-feeding, do decidedly better on pasture, make bigger gains in weight, and are the most profitable to the owner. Again, I had instances where cattle had been fed grain moderately all winter, and, while they looked better than the straw-fed beasts in the spring, it was very noticeable that they did not make any better showing on pasture. The cattle that had been fed straw alone until pasture time were so poor that it took them most of the season to regain what they had lost during the previous winter, while it should only have taken a month or six weeks to have put them in a good thrifty condition had they been hay-fed for the last month of feeding. Hay is

stormy days. On these days one can water inside by pails dipped from the horse trough, which is handy to the cow stalls. The whole system cost in the neighborhood of about \$100, with quite a bit of my labor thrown in. The single-bowl system may be a little less work for the farmer, but, on the whole, I prefer to let my stock out in the open air at least once a day, for I think that exercise is an essential to good health, and, by the way, one of the principal things omitted by the "June-conditions" fad-dists.
A. W. HARWOOD.

Oxford Co., Ont.

THE FARM.

PRACTICAL FARM DRAINAGE.

II

In the previous article on this subject (see "Farmer's Advocate" of Feb. 28th we elaborated a simple method of ascertaining the total fall along a drain, and hence the fall per 100 feet of drain. In this article I shall give a method of using the plow for almost the entire depth of the drain.

USE OF PLOW IN DIGGING DRAIN.

When the drain has been staked out and the fall determined, one is ready to begin digging. Experience has shown that in the earlier stages the plow can be used to great advantage. Perhaps the most effective method is somewhat as follows:

1. Using a wide plow, open up the drain as

wide as possible, throwing one furrow each way. In stubble, fallow or plowed ground, these furrows will not need shoveling, as they will be thrown well out; in sod, they may need rolling farther back.

2. Using a narrow plow, plow two furrows, one each way, in the bottom of the ditch already formed, throwing each furrow toward the center of the ditch. The second one will turn the first back partly, but this serves only to loosen the soil more thoroughly. The sides of the ditch, which were very sloping after the first plowing, have been trimmed off perpendicular and straight by the land-side in the second plowing. This second plowing is now ready to shovel out, and it will be found in prime condition for shoveling.

The ditch at the present stage should be about eighteen inches wide. It may

be objected that this causes needless shoveling, to which I answer that the plow is to be used till the ditch is about 2 1/2 feet deep, and it is necessary to have the top wide enough to accommodate the handles. The bottom will not be any wider than necessary.

This operation should be repeated till the ditch is about 15 or 18 inches deep. In order that the horses may walk comfortably, one on each side of the ditch, the lines are opened up as wide as possible, and a long doubletree used. To permit the plow to go deep enough in the ground, a chain about 6 or 8 feet long is put in between the beam and the doubletree. This plow will not be found satisfactory after a depth of 15 or 18 inches is reached, as the drain gradually becomes narrower.

3. For the third operation, a plow must be fitted up specially; we want something to dig a narrower trench than heretofore. Take an ordinary narrow plow and remove the moldboard. This, of course, removes the attachment for the lower end of the right handle, but bolt a narrow block between the handles and run a brace to the back bolt in the beam, and the handle is as steady and as firm as ever. Put on a new narrow point.

Now, using this plow, plow right down the center of the drain, and come back in the same furrow. This forms a narrow ditch in the bottom, both sides of which are trimmed straight and perpendicular by the land-side. With a narrow shovel this furrow may now be removed. This operation is repeated again and again until the drain is almost as deep as required.

If one has much draining to do, it is advisable



Dalton King (imp.) (9592).

Hackney stallion; bay; foaled 1901. First prize in three-year-old class and champion Hackney stallion, Ontario Horse Show, Toronto, 1907. Sire Garton Duke of Connaught. Imported and exhibited by Graham Bros., Claremont, Ont.

the best feed for cattle that have to be driven any distance. My rule, in driving cattle, is to see how "slow" they will go, not how "fast," and I find that rule pays well.
S. STEWART.
Victoria Co., Ont.

A WATERING SYSTEM.

Editor "The Farmer's Advocate":

I notice in your issue of Feb. 7th four questions are asked in reference to the manner of watering stock in winter. As I have only recently begun reading your valuable paper, I feel diffident in taking up my pen to offer anything I might think of any interest to your many readers. Eight years ago I had two barns, one 44 x 50 ft., and another 40 x 50 ft. By moving and putting the end of the 40 x 50 barn against the side of the 44 x 50 one, flush on the north side, I have a barn 94 feet on the north side, and part of it 50 feet and part 40 feet on the south side, making a jog of 10 feet facing the south. In this jog or corner I have a water trough, with a roof over it which also covers one horse-stable door and one hall door. My well is near the house, 150 feet from barn. The water is forced to the barn through underground pipes by windmill into an elevated tank in the stable which will hold two days' supply of water for 20 cows, 6 horses and other stock. By means of pipes and taps the water can be turned into the outside trough, and also into a trough inside for horses, hogs and cattle on stormy and very cold days. I let my cows out to water every day, except on very