dam. This being true, small horses can, by using nothing but large sires, gradually be eliminated from our draft breeds.

Don't be misled by fat in selecting a sire. The heavy stallion is not always the large stallion. It is possible, through heavy feeding, to make a comparatively small-framed horse a heavy horse, but such a horse is not a large horse in the strictest sense of the term. There is a difference between size and weight. It is an easy matter, by special fitting, to make a seventeen or eighteen-hundred-pound horse weigh a ton or twenty-one hundred pounds, and a stallion of this latter weight is considered a fairly heavy draft horse, and rightly so, provided he is in good breeding condition and not loaded with superfluous flesh. Do not be deceived by fat. The safest plan in sizing up the horse, after paying strict attention to quality, is to take careful consideration of his height, which should not be under 16½ to 17 hands. Look carefully to size of bone and degree of muscling. In heart-girth, do not be fooled by fleshing, which in the draft horse adds approximately one inch to his heart girth for every hundred pounds of fat added to his body weight. Get as much length of body as possible, coupled with a short, strong back, and, in selecting, do not overlook the head. A stallion's head is one of the best indications as to his ability to get large geldings. No horse with a small head should be selected. A strong head denotes prepotency and vigor. It should be wide between the ears and eyes, and the eyes should be bright and keen.

LIVE STOCK.

A Small Flock of Sheep on Every Farm.

When the question is asked, "Why don't we keep sheep?" the answer is very likely to be: "Prices are not suitable; dogs won't leave them alone; they bite too close for the cattle, and other causes too numerous to mention." But, when questioned more closely, practically all will admit that sheep are profitable. While we must agree that, owing to the scarcity of farm help, fences have been neglected, yet any farmer that has his mind made up to keep sheep will fence at least a portion of his farm so as to keep them; and to do this, no material can substitute woven wire, either from the point of efficiency or economy. While it may cost a few cents per rod more than the rail fence, the extra land that would become workable through the removal of the rail fence would soon pay the extra cost.

Possibly the greatest hindrance to the sheep-breeding industry is the dog nuisance, but even this great obstacle could be largely set aside by each Province establishing a compulsory tax on dogs, giving a reasonable compensation for sheep injured or killed by them, and by strictly enforcing that law. Good laws are of little effect if they are not put into force.

I would like to ask a question right here: Are we likely to have the dog tax thoroughly looked after in the present form? How many assessors are doing this part of their work thoroughly?

Even where dogs are allowed to run at random, how much would it cost to fence a five or ten-acre field with a dog-proof fence, where the flock could be corralled at night, out of danger, and to where they would soon learn to gather if salted there regularly? How much would it cost? Well, let us see. I notice in your columns a ten-wire, 50-inch fence advertised at 31c. per rod; now, add to this two more horizontal wires, at, say, 2 or 3 cents each per rod, making it a twelve-wire fence, 50 or 52 inches high, and I believe that we have a fence that practically no sheep-killer can get through. And this, at an increase of from 4 to 6 cents per rod, which, estimated at the higher price, would only be an extra cost of $9.60 to fence a ten-acre field, or $7.20 for a five-acre field, without injuring the field for horse and cattle pasture, or for grain-growing. Indeed, such a pasture-field near the buildings is a wonderful convenience.

As to sheep being close feeders, that is absolutely correct. If our pastures are loaded to their fullest capacity with cattle and horses, and there is a flock of sheep turned in, it will no doubt be to the disadvantage of the other stock. But if every 100-acre farm had, say, 10 breeding ewes, they would clean up the waste corners and the weeds that the cattle wouldn't touch, and perhaps could have one or two days a week to clean up the roadsides, thereby returning to the farm fertility that would otherwise be lost, as well as a substantial profit on the investment, saying nothing of the wool that would be produced, either to be worked up at home or shipped to the manufactories, where it would take the place of what at present has to be imported; and saying nothing about the advantage of sheep as weed-destroying agencies. This alone should warrant every farmer in keeping a few sheep.

Middlesex Co., Ont. R. H. HARDING.

Beef Cattle Feeding.

"Beef Production" is the subject of a suggestive bulletin by W. A. Cochel, Animal Husbandry Department of the Pennsylvania Agricultural College. Among its points are the following:

Beef cattle should be considered as machines for reducing farm crops to a more concentrated market product. Through a series of years they will return a greater total profit than is secured from marketing crops in their original form, and, in addition, will build up the fertility of the land so that greater crops can be produced. This is in reality the largest source of profit from handling beef cattle.

* * *

The increase of land values has been so rapid in sections which formerly supplied Eastern feedlots with steers, that the time is approaching when Pennsylvania will produce the major proportion of the cattle fed for market within her borders. The relatively cheap land, favorable soil and climatic conditions, excellent local demand for good killing cattle, and the necessity for building up the fertility of the soil, indicate a revival of the breeding of beef cattle in the State.

* * *

The gradual increase in cattle values, as based upon Chicago market reports during the past 25 years, is shown in the following table:

Average price of cattle over 1,200 lbs.

1886-90	1891-95	1896-1900	1901-5	1906-10
$4.34	$4.45	$4.98	$5.53	$6.21

Average price of cattle 900 to 1,200 lbs.

1886-90	1891-95	1896-1900	1901-5	1906-10
$3.77	$3.81	$4.14	$4.73	$5.40

There has not only been an increase during each period of five years, but each increase has been greater than the preceding one during the same period of time. In other words, the average value of cattle has not been permanently affected by short periods of depression. During the time under consideration, the value of heavy cattle has increased $1.87 per cwt., or 43 per cent., and of light cattle $1.63 per cwt., or 45 per cent. Of this increase, 68 cents per cwt., or 36 per cent., on heavy cattle, and 67 cents per cwt., or 41 per cent., on light cattle, has been secured during the last five years. This would seem to indicate that the production of cattle is more profitable than ever before, and that the tendency is to market them at a lighter weight and an earlier age than formerly.

* * *

Beef cattle should be found on every farm in the State where cattle are not handled for the exclusive production of milk. Whether or not the farmer enters the dairy business, or handles beef cattle, should depend upon the amount of labor available in proportion to the crops produced, the demand for milk and its products, and the equipment for the proper production of milk. Beef cattle will consume a larger amount of feed than any other class of farm animals in proportion to the labor necessary in handling them. They are especially adapted to the utilization of roughage, require a small outlay for buildings and equipment, and return to the soil a very large percentage of the plant food consumed, thus reducing expense of fertilizer.

* * *

Whenever a feeder secures a profit from finishing an inferior steer, it means that the producer has marketed the animal at a loss. When steers of the best beef type are purchased and finished, it usually means that they have been profitable from birth to market. The production of steers from dairy and scrub cows is a practice that should be discontinued. Calves from such cows should be marketed as prime veal, weighing from 160 to 180 pounds, when their total value will be greater than that of the same animal at 12 months of age in stocker or feeder condition.

* * *

There are two factors which determine the weight of cattle—their size and their condition. With corn at 60 cents per bushel, the total cost of fattening two-year-old steers will be approximately $10 per hundred. The higher the condition, or the degree of fatness, of a feeder, the more valuable will he be per pound. Assuming that a steer costing $5.00 per hundred will weigh 1,000 pounds, and require 300 pounds, at $10 per hundred, for finishing, he will have to sell at $6.15 per hundred to prevent loss. If, at the same time, another steer, weighing 1,100 pounds, the increase being fat, rather than mere size, could be finished with a gain of 200 pounds, and sold for $6.15 per cwt., it would be possible to pay $5.45 per cwt. for him as a feeder, without loss. The difference in condition of the two steers would be represented by a difference of 45c. per hundred in initial value.

It is essential, in finishing cattle for market, that there be an increase in value per cwt. When cattle are not made excessively fat, a monthly increase in value of 25c. to 30c. per hundred pounds, based upon weights in feed lot, is sufficient to insure a profit.

* * *

If the cattle are very thin at the beginning of the feeding period, they will make rapid and economical gains on roughage alone, provided the roughage is palatable and nutritious. An excellent ration for such cattle can be made from corn silage and a leguminous forage crop, such as alfalfa, clover or cow peas. When the steers have fattened sufficiently to be classified as "fleshy butcher steers," a light grain ration should be added and increased as the cattle improve, until they are ready for sale. Corn should always be used as the basis of a fattening ration. When the roughage consists of corn stover, timothy, millet, sorghum, or straw, nitrogenous concentrates, such as linseed or cottonseed meal, or gluten feed, should be added to the regular rations at the rate of two to three pounds per 1,000 pounds live weight of animals. When alfalfa, clover or other legumes are used entirely as roughage, the nitrogenous feeds may be profitably reduced one-half or more. In starting cattle on grain, it is advisable to use great care to prevent them from becoming "off-feed." This may be done by feeding at regular times each day, starting with six pounds of concentrates daily per 1,000 pounds live weight, divided into two feeds of equal amounts, and increasing, when the condition of the cattle warrants, at the rate of one-half pound per day, until the cattle are consuming twelve to fourteen pounds of concentrates per 1,000 pounds live weight, after which the increase should only be half as rapid, until a full feed has been reached. Fattening cattle should have all of the roughage that they will consume without waste at all times. The grain ration should be limited to what they will consume readily in from one-half to three-quarters of an hour, even when on full feed.

* * *

The rate of gain will depend largely upon the condition and breeding of the cattle and the character of the ration used. If they are quite thin and well bred, the gain may be from two to three pounds per head daily, where proper rations are fed. As they fatten, the rate of gain will decrease, so that just before they are made prime they will not gain more than one and one-half pounds daily, even on the best of rations. The age of the cattle has a material effect on the rate of gain. If fed on heavy rations from birth to maturity, the rate of gain will decrease as the age increases. If, however, cattle are allowed to become thin, the older cattle will fatten more rapidly than calves.

Silage for Cattle to Be Finished on Grass.

Editor "The Farmer's Advocate":

The expression, "O ye of little faith," might be applied to many of our so-called critics on "corn silage" as a food for cattle. The deep-seated prejudice is not the result of any long-continued period of practical experience with this fodder as a cattle food, but is almost invariably heard from the lips of those who know nothing whatever of its virtues or defects from a practical standpoint.

Just the other day, at a meeting of farmers, the audience was treated to such an outburst. When the explosion had vented itself, the party, in response to a question, was sufficiently candid to say he had never grown any corn, had never fed a pound of silage, and had no experience whatever with silage-fed animals.

As has been repeatedly emphasized, the feeding qualities of the corn crop is only one of the many desirable features of the plant as a favorable factor in the operations of the live-stock farmer. It is very valuable because:

First, along with roots it forms the cleaning crop in a desirable system of rotation.

Second, in this way it takes the place of the bare summer-fallow in cleaning the land.

Third, it will at the same time grow more real cattle food per acre, and

Fourth, will give a greater return for the labor expended than can be obtained from any other crop of the farm.

These are all-powerful reasons why an effort should be made to grow corn. After the crop has been grown, it is harvested by means of the silo, for three reasons:

First.—This is the only method by which the whole crop (stalk and cob) can be well preserved for feeding purposes.

Second.—It is the cheapest and most convenient form of preparation.

Third.—Carefully-conducted experiments have proved that, as a stock food, more profitable returns are obtained through the medium of this form of preservation.

Much prejudice and misconception as to the feeding value of the crop has arisen as the result