

obtaining seed from fertile land, producing large yields, always bringing it from north to south, never from south to north.

In hog rearing he is a specialist. After experience with other breeds he prefers the Berkshires, but insists that farmers should breed from nothing but large, long-bodied, deep-ribbed animals, discarding all the little, chunky ones. He thinks the best time for pigs to be farrowed is in March, and if properly handled they should and will weigh 200 lbs. each by the last of October. He claims that unless pigs can be kept largely on vegetables and grass they are not profitable. His plan is to feed carrots, sugar beets and mangolds during the winter and early spring months, and then to keep them in clover pasture supplemented with only a little grain and slops, but they must be provided with plenty of fresh water and shade. If running water and shade trees are in the pasture all the better. The large pigs subsist almost entirely on the clover during the summer months; but should there be any young ones among them they are given a little extra food. One of the small fields adjoining the water is each year sown with early peas; when nearly ripe enough to cut the pigs are turned into these. One would suppose this would be wasteful, but the pigs seem to get every pea and do wonderfully well, much better than they would if fed the same amount of feed and kept shut up in the hog pen during the hot weather. On this point Mr. Adams is very emphatic. When the peas are all picked out a horse rake is used to gather the straw, which is taken to the stables for bedding. By the time the peas are all exhausted the barley and other stubble is ready to receive the pigs, and in the meantime their clover pasture will have recuperated and will again furnish excellent feed.

The rations of his thirty hogs (which were of all sizes), when we visited him last May, were five bushels of carrots and twenty pounds of peas daily, all boiled together, and fed warm but not hot. When furnishing for the butcher a few more peas are added, and when the pigs are very young a little meal is given in addition; but in either case the extra amount of feed is small. This is his winter system of feeding, sometimes using carrots, parsnips, mangles, or sugar beets, all of which can be cheaply and easily grown. From the appearance of the pigs when we saw them this treatment agreed with them well, a finer and more thrifty lot would be hard to find, all were looking well, many of them in show condition. For several years past the annual income derived from his pig pen has been \$400, besides a large amount of excellent manure. The pen is so arranged that all the liquids are saved; the solid manure and bedding is mixed with it, and when drawn out all is again mixed with that taken from the other stables.

After testing several breeds of cattle, Mr. Adams thinks the Herefords the best suited to a grazing country; he believes they will put on more beef when on pasture than any other kind. The Polled Angus, he says, are very hardy and suitable to a cold country and coarse feed, especially where the feed needs searching for. The Shorthorn he declares the king of all cattle in the older and wealthier parts of Ontario, and as a general farmer's cow. He has had grades of each of the above breeds which were good milkers and butter yielders. He thinks the Jerseys and their grades are exceedingly good city, town or

village cows, but are not suitable for general farming.

Like nearly all our sheep breeders he expects a very strong and growing demand for black-faced sheep. The American demand is likely to be larger this year than usual, from the fact that many of the western ranches are abandoning cattle and horses and going into sheep raising. Sheep can be more easily and cheaply raised than cattle, and not so liable to die as horses. Many western horses die before old enough to break.

Having travelled extensively in the United States, Mr. Adams, though a staunch Conservative, is an earnest advocate of extended trade relations with our neighbors. He says if our cattle, horses, sheep and swine were allowed to enter the United States free of duty it would be a great benefit to both countries. He says, the Buffalo and other city buyers claim that the best horses come from Canada, but the duty is a great disadvantage; if it were abolished, five horses would go over the lines where only one goes now, and our farmers would receive a higher price. He also says Canadian beef, mutton and pork is decidedly superior to American in quality and flavor. If we could send our cattle in free, many of our best beasts would bring as much in their large cities as they now do in England, and the demand would be strong. Our pork is very much superior to theirs, which is coarser, softer and more oily; ours is also free from disease, which theirs is not, and is also of much better flavor, it will always command a better price than theirs in their own markets. But the most marked superiority is in our mutton, which far excels that produced in any part of the Union, our lambs are in strong demand in all American cities, and with free trade an ever growing and very profitable industry could be carried on by our sheep raising farmers.

#### Holstein-Friesian, Shorthorn and Jersey Cattle.

At a recent meeting of the Peel Farmers' Institute, Mr. Smith, of the firm of Smith Bros., Churchville, Ont., read a very good paper on Holstein cattle, from which the following is abridged:—

Let us begin by taking a look back over their history to the earliest period of their existence as a separate breed, and to the land of their birth, N. Holland. More than 2,000 years ago a few poor peasants in this land of dykes and water, of frugality and thrift, began to devote their attention to breeding and dairying with the sole object of profit. It was a principle among them to select bulls from the largest and best milk cows, and breed from them. As a result it came to pass in the course of time that the milking qualities developed, the size increased, and the stock gradually grew better, and a strong family resemblance appeared. Later on the cattle were better housed, well cared for and well fed. This extra attention so much improved them that they soon became an important and distinct factor in the country's prosperity. To such an extent has this been the case that the revenues received from the dairy products of Holland far exceed the revenues received from all other sources combined, and surpass in value those of any other country in the world. There are to be seen in England, France and Germany dealers who handle only the products of Holland dairies at highest prices. During the last half century and longer in Holland may have been seen the cattle and the family under the same roof, separated by only a thin partition. Being so close they received extra care, and the stables were kept very warm and clean, so clean that often the dining table was put in one corner of the stable. They were curried and well-fed,

petted and handled with kindness, thus developing that excellency of disposition, which is so marked a characteristic of the Holsteins and an essential of a good milker. With all these advantages they have gradually reached a high degree of excellence, and developed distinctive marks of breeding as well as of color. This is the condition in which Americans found them when they visited Holland a few years ago.

Previous to 1850 there were very few Holsteins, if any, that were brought to the States. In 1852 one cow was brought over, and in 1857 one bull and two cows. In 1859 four more were imported. On account of a disease that broke out in 1859-60, all pure-bred stock of this breed were destroyed in America, so that at the end of 1860 there was not a single Holstein to be found in America. In the autumn of 1861 an importation of five head laid the foundation and was the real beginning of this breed of cattle in America. The next recorded importation was in 1869, when the Hon. Gerrit S. Miller brought over a bull and three cows. In 1870 there were less than twenty head of this breed in America. Since then there have been many importations, and they have increased with wonderful rapidity, so that at the present time more than 15,000 are scattered over this continent.

Wherever found they have always taken a foremost place among the dairy breeds, and now bid fair to become the best in the world for dairy purposes. The art of developing the milking properties of cows, and the skill in feeding them for this one object have of late years received much attention from American breeders, and have brought to light milk and butter records that seem almost incredible to those not acquainted with these cattle, and who have not seen what they can do at the pail.

Experienced breeders cite cases where cows have had calves that were only ordinary milkers, but after a process of development have had calves that were excellent milkers; also cases where two cows of similar quality had calves, the one having undergone a process of development, the other not, the calf from the developed cow always being far better than the calf from the undeveloped one.

By means of this process of development and by intelligent breeding the Americans have gradually improved the milk producing qualities of Holstein cattle until we have some wonderful records. I will give you the greatest annual milk records from 1870 to date.

In 1871 Dowager .....	12,681 lbs. 8 ozs.
" 1873 Crown Princess.....	14,027 " 0 "
" 1875 Lady Clifden.....	16,274 " 0 "
" 1881 Aegle.....	16,828 " 10 "
" 1881 Aaggie.....	18,004 " 15 "
" 1883 Echo.....	18,121 " 8 "
" 1884 Lady de Vier.....	18,848 " 4 "
" 1884 Empress.....	19,714 " 4 "
" 1884 Echo.....	23,775 " 8 "
" 1886 Clothilde.....	26,021 " 2 "
" 1888 Pieterterje.....	30,318 " 8 "

This simply goes to show that the breeders of to-day have learned the art of proper selection and feeding, and are wisely putting it into practice. Just as horses are trained for great speed and endurance; just as athletes are trained to perform wonderful feats by wise and judicious training, by selected diet and by proper development of muscle, so cows are fed, at first light, then their food is gradually increased, their powers to change food to milk strengthened by judicious means until they reach a high state of perfection, and developed a Clothilde or a Pieterterje. We may reasonably conclude that this strengthens their constitutions, increases their size, and develops all the parts that go to assist in the production of milk. Cows developed in this way give from 40 to 100 lbs. of milk in a day—eight to thirty thousand pounds in a year, and give from 10 to 25 lbs. of butter in a week.

Sometimes breeders of rival classes raise the objection that the milk is not rich in butter ingredients. There are some cows in this breed, as in all breeds, that do not give rich milk, but as a rule we find their milk good and rich. Several American breeders have answered this objection by giving their own experience with their own cows and heifers. One man says:—