

oily and rank, and shows itself in that form after it is smoked and cured. If they use Indian corn alone they will not be able to produce better pork than the Americans. And the English traders do not demand such quality, nor will they pay the price, as it would be impossible to classify such meat as the finest.

Bear in mind, that it does not cost more to make the finest quality than the common American bacon. Hogs to be suitable for the finest bacon should range from 180 to 220 lbs., live weight. This size will pay the farmer best.

The Danish Government have proved, by many experiments conducted on their farms, the various values of the different kinds of food for hogs, and the results obtained are as follows:—

400 pounds of grain make 100 pounds of live hog.
1 pound of grain equals 4 pounds of boiled potatoes.
1 " " " 6 " " skimmed milk.
1 " " " 8 " " turnips cut small
1 " " " 12 " " sweet whey.

Barley, rye, wheat and peas produce the best pork, and all grain should be ground, soaked and mixed. In all cases feed hogs mixed foods, which give the best results.

Particular attention to cleanliness is most desirable, because it pays. In cold and in wet weather plenty of bedding should be used. Exercise in summer or in fine weather adds greatly to the health and well-doing of swine, and nothing is equal to red clover for pasture.

The Danish Government have given special attention to bringing the pork packing and butter-making industries to perfection, which has proved most satisfactory to the farmers of that country. What the Danes have succeeded in doing Canadians can do. Only let the farmers of Canada raise the right kind of hogs, fed upon proper principles, and there will shortly spring up an immense trade for Canada.

Our Public Roads.

In our struggle for road reform, we are following in the footsteps and repeating the history of European nations, where, in the beginning, the same objections were urged, and the same obstacles interposed which we meet with at the present time.

Macauley makes graphic reference to the difficulties of travel upon English country roads, at the time when the English farmers indulged in the same periodical diversion of working out their road taxes that is provided for in our old-fashioned Ontario Statutes, which we still keep in force for the maintenance of our highways. He states:—"Not so are the English roads of to-day. By experiment, and by the better light of experience, the English people and their neighbors all over the European continent have learned that true economy in the construction and repair of the common roads, as in the construction and repair of the great railroads, consists in the scientific making and the systematic maintenance of these roads according to fixed rules, and under the direction of an intelligent head."

In the perfection of this enlightened system, it is probable that France leads the world. The government maintains a large body of trained engineers in its special department of roads and bridges, to whom is entrusted the practical work of constructing and repairing the common roads. No part of the road system of France escapes attention, and every road is divided into sections, varying in length according to its importance, each section being placed in charge of a man who is held responsible for the constant excellence of its condition.

But our conditions differing in some respects from those of the European nations, I deem it wise to deal with the matter more from a local standpoint than from a general. And having said sufficient to convince any one of the necessity of putting our roads in a state of greater efficiency, I will try to point out how I think it can possibly be done without increasing the cost very materially. And, in order to do this, it will be necessary for me to give you an illustration, from which I can submit figures and draw comparisons. And to do this, I will take the Township of Blanshard, in which I live, as a typical one, convinced that what is here said in regard to this township will be applicable, with slight variations from local circumstances, to most of the townships in this province.

Generally speaking, this township presents few difficulties in the way of road-making, it being traversed from north to south by the Thames, which has several small creeks running into it. This gives ample opportunity for drainage. Entirely within the limits of this township we have the town of St. Marys, which is the grain market for the surrounding neighborhood, which causes much heavy traffic over its roads, rendering it necessary to keep in good repair its main entrances. All the main roads of the township lead in the direction of the town.

The sideroads are little used, and, consequently, need little attention. The main roads are those on which nearly all the expense occurs, and it is of them I will speak principally.

All the roads of this township, with the exception of seventeen miles of company road that was built under the turnpike and toll-gate system, have been built and maintained by what is known as the

Statute Labor System, a proceeding well known to you all, and which it would be superfluous for me to describe here. Although possessing some good features, this system is not the most suitable for the construction and maintenance of good roads, and should give place to a better.

Perhaps it would be necessary for me here to make some reference to the way in which our roads have been constructed. Most of you have had some experience in building, corduroy, and grading. A width of about twenty feet was left in the middle of the road allowance, the earth on each side was loosened with a plow to a depth of six to nine inches, and conveyed to the centre by scraper and shovel to a depth of from eight to twelve inches, and about eight feet wide. In places where the ground was high, no grading was done at all, the longitudinal slope being depended on to keep the surface dry. The traffic soon compressed the clay, and pressed it down so that in the majority of cases it was only from two to five inches above the original level of the land, and where no grading was done the track became passable only in dry weather. On the other hand, the narrow roadway was raised, where the ground was low and wet, to a height of fifteen to twenty inches, making a dangerous place for teams turning off when meeting. This is what was known as the clay, or more commonly and appropriately as the mud road, for many years in use. On this, as a road-bed, pit gravel was hauled and spread loosely to a depth of from eight to twelve inches, according to the fancy of the man doing the work. When the foundation of the road-bed interfered with the natural course of the surface water, culverts were put it. These were usually built of logs, with a plank covering, but sometimes stone sides were built up, without mortar, and a plank covering put on that. The defects of this condition of things are obvious. The superintendence of the work is placed in the hands of parties who have no training or experience in the best methods of work, who have given the matter no attention or consideration, and who are, consequently, unskilled and incompetent to make the best use of the time and money spent.

No good roads of any kind can be made and kept without a proper system of drainage, and this fundamental fact is almost entirely neglected by pathmasters. In many places no side drains exist at all, and when they do exist, they are always too shallow.

In the wet weather of spring and fall (the seasons when traffic is greatest) the road-bed becomes softened and saturated, and unable to support the covering. Heavy wagons cut through the gravel and bring up the clay, mixing it with the covering, permanently ruining the road where it occurs, and rendering reconstruction necessary the following summer.

Too great a depth of gravel is put on at one time, and it is a long time before it is possible to go over it with a heavy load. If this condition the traffic seeks the side of the road when possible, cutting it and bringing the clay on the gravel.

The gravel is taken from the nearest pit, with no regard to its quality, and always contains too much clay or large stones to make a good road. The large stones are the worst, as they cause ruts on either side from the concussion of the wheel as it drops over them.

Wooden culverts are a constant source of danger, being generally in a state of ill repair. The foundations, as a rule, are not put deep enough, and the water soon undermines them, allowing the walls to fall in, in which condition they are usually allowed to remain until someone complains or the township becomes liable for an accident. Moreover, they are not economical, decaying as they do so rapidly from the alternate wetting and drying to which they are subjected.

The cost in this township for repairs to culverts alone for the year 1880 amounted to almost \$300, and this without any road commissioner's salary, which, if added, would amount to almost another \$100. This, of course, does not include a dollar spent for new ones.

To effect an improvement in these roads through drainage is a prime necessity. This can be provided by an open drain on each side of the road, with slopes of one to one and a-half feet and a width of one foot in the bottom. Culverts should be made to last as long as possible, and for this reason they should be built of stone, where stone can be got so conveniently as it can be here. It will always be found to repay the extra cost of construction by its solidity, permanency and consequent safety.

The floor should be made of concrete, to provide a bed that the water will not wash out and render the cleaning out easier. The walls should be built on a solid foundation got by digging down to the solid clay, and should always go below the flooring. The mortar used should be made of cement, as it best resists the action of water. A culvert properly built will never need repairing, will be always perfectly safe, and of no expense save for cleaning out once or twice a year.

In order that the road covering should be maintained so that extensive repairs will never be needed, minute repairs should be made to the surface systematically, in small patches, as soon as ruts and depressions appear. The road should be constantly undergoing repairs. To have this done the road should be divided into lengths, on each of which an intelligent laborer should be placed, who thoroughly understands his business, to attend constantly at all times to the condition of the road, and for which he should be held accountable.

[TO BE CONTINUED.]

STOCK.

Studs, Herds and Flocks of Ontario.

MR. C. W. GURNEY'S SHROPSHIRE.

About five miles from Paris, Ont., is situated the stock farm of Mr. C. W. Gurney, who last season made his first importation of Shropshire sheep, and the beautiful flock that are now domiciled in the excellent quarters he has provided for them speaks well for his judgment.

Mr. Gurney has been breeding Shropshires for a number of years, and, having sold completely out, he decided to launch out further. He therefore visited England last fall and selected a lot of most superior in-lamb shearing ewes, ewe lambs and ram lambs, in order to form the foundation of an entirely new flock, which is characterized by wonderful uniformity in each of the ages. These consist of a particularly fine lot of shearing ewes, which had been drafted out for breeding in the flock of Mr. J. Jones, Bronton, and therefore had been mated with exceedingly choice rams, and, as may be expected, they have the character that advanced English breeders are now aiming to produce. They have plenty of size; are neat and straight, with good constitutions. In making the selection, Mr. Gurney paid great attention to quality of fleece, bright pink skins and well-covered heads; all are well woolled down the legs. The ewe lambs are also a particularly nice, strong lot, with any amount of character and quality. These are sired by Crisdon's Choice, to which ram the majority of ewes had been bred in England this season, and another season's lambs should show the same high character that the recent importation possesses.

Of the ram lambs imported, two are bred by Mr. R. Jones, of Norton, and are sired by Patrimony, one of Mr. T. Mansell's rams. These lambs have plenty of size, with capital coats; stand well on their legs; are good and thick, with strong constitutions; well let-down legs of mutton, and promise exceedingly well for shearlings another year. They were in the pen of highly commended lambs at the Royal at Warwick, also at the Shropshire and Midland shows. Altogether the selection is such that should give the best results hereafter.

Mr. Gurney has a number of nicely bred mares; just the type for breeding the horses now required for saddle and park purposes, and that he is breeding them right is attested to by a few exceedingly good young things he has in his possession.

SHROPSHIRE AT HILL HOME STOCK FARM.

Messrs. Hammer & Sons, who are proprietors of this farm, have been steadily increasing their business until their flock now comprises between sixty-five and seventy head, of which the greater number are breeding ewes, which they selected in person from the best flocks in England during the year 1891.

It has evidently been their aim, in selecting the individuals of which their flock is composed, to choose such as have plenty of quality. Their sheep are remarkably thick bodied and short in the leg, and retain the Shropshire character of the highest type. If one may judge by the present appearance of what remains of last year's crop of lambs, it is not surprising that they carried so many prizes at the last season's shows. They now promise to turn out a grand lot of shearlings for another year.

We were particularly impressed with six ewe lambs that had been placed together. These are remarkably strong, even youngsters; wonderfully thick and well-fleshed, standing well upon their legs, with capital chests and good legs of mutton, while their broad backs and dense, heavy coats, united with their grandly-covered heads, formed a picture long to be remembered. These lambs were sired by Royal Marquis, a ram selected with a lot of ewes brought out in 1891. He is from the flock of Mr. W. Levitt, Harmer Hill, Shropshire, England. Among a good lot of ram lambs, also sired by the same ram, is a lamb of outstanding quality and individuality. He is remarkably thick and straight, with two as good ends as we ever remember seeing, while his middle piece left nothing to be desired. If he only goes on as he now promises, he will be a hard nut to crack at next season's shows.

Two imported rams have been used on the flock during this season, one of which is the above-mentioned Royal Marquis; the other is Wool Merchant, so successfully used by Mr. W. S. Hawkshaw, his importer. He was bred by Mr. Bach, of Onibury, England.

Messrs. Hammer are among the most successful exhibitors of Canadian-bred and fitted sheep, and have generally succeeded in carrying their share of winnings against the flower of imported flocks. It now looks as though they will make a still stronger showing next season, and that they will also be able to hold their own among those English-fitted sheep that are sure to be on hand at the Columbian World's Fair, for which a number have already been selected by the Commissioner from the Hill Home flock.