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ABORTION INDUCED BY SHORT PLATFORMS AND DEEP GUTTERS.

"Abortion in cows, I think, in many cases is caused by too short platforms and deep trenches. With a short platform, the cow stands in the trench with her hind part lower than her front. I knew one man who had trouble with his cows. He was advised to fill his trench, and he did so, and he has had no trouble since. That is three years ago, and he has the same cows yet, although some told him to get rid of his cows, as it was contagious."

The above, from a Haldimand County correspondent, indicates one cause which induces abortion; and there are other mechanical influences, such as slippery or steeply-sloping platforms, maltreatment of pregnant cows by rough herdsmen, or by other animals, etc., but there certainly is a virulent form of abortion that is caused by germs, and this form is contagious.

THE FARM.

HOW I BUILT A STONE ROAD.

BEAUTIFY THE SIDES OF THE HIGHWAYS.

I have noticed many roads, or lanes leading from the public highway to farm residences, that were in a very bad condition, and the sides of these roads presenting an uninviting appearance. A good road and tidy fences, or a well-cared-for hedge or a row of trees, adds very much to the attractiveness of the farm. In Germany and other countries, it is quite common to have a row of cherry trees or some other fruit, or nut-bearing trees, adorning the sides of the highway. The ground, being usually well drained—as it should be—makes an ideal place for cherry trees in localities where they thrive. In the Niagara District, on soil that is adapted for peaches, they could be made, by care and pruning, to be quite ornamental. Apple trees, that can be grown in nearly every part of Canada, if well cared for and pruned, with an eye for symmetry and beauty, may be made to add very much to the beauty of the landscape, and be a source of profit as well. I have a row of cherry trees (sweet varieties) along the front of my farm, half a mile in length, that were planted ten years ago, that are now yielding from five to twenty 11-quart baskets per tree. When they are in bloom, or when the cherries are ripe, they are a beautiful sight to behold, and, as an ornamental tree, they compare quite favorably with many of the trees that are being planted along our highways. In latitudes where the sweet varieties will not thrive, the Early Richmond or Montmorency, or some other even more hardy varieties, could be grown.

While I am an advocate of good roads, I wish also to impress upon my brother farmers the importance of paying more attention to beautifying the sides of our roads, many of which have grown up with all kinds of rubbish, presenting anything but an attractive appearance. There is no reason why we, especially here in the Niagara District, could not have the sides of our roads in summer equally as attractive as you find them in Southern California.

I must get back to my subject proper, "Building a Stone Road," which in this case is a private one, but what applies to such is equally applicable to a public road.

GRADING.

I first graded the road, a nice uniform grade, with a rise of about one and one-half inches to the foot, from the gutters to the center of the road. This road being a private one, I made it only eighteen feet wide, from bottom of drains or gutters, which gave me a rise of a little over one foot to the center of road. Public roads would need to be made wider, depending upon the amount of traffic. I am of the opinion many of our roads are too wide; we would have better roads, at less expense, if they were made narrower. By having them narrow, and a good even surface for traffic at all times, the sides of the roads would not be driven and cut up with ruts which only hold the water and injure the road. For a stone road of ordinary traffic, I would say make it no more than twenty-four feet wide from bottom of drains. When made this width, the center of road should be about two feet higher than the bottom of drains, giving a rise of two inches to the foot. This will, no doubt, seem to most people, at first, to be too much of a grade, but, after the road has been rolled and thoroughly settled, you will change your mind; and that is the road that will last and be good when others are bad.

TILE DRAINAGE.

While open drains sufficiently large to carry off all water readily to a good outlet are admitted by everyone as indispensable, there are many who do not seem to fully realize the advantages of tile drainage, which is equally as important.

Having my road graded, I next dug a trench in the bottom of the open drains, from two to

three feet deep, and put in three-inch field tile, taking care that they have a uniform fall of not less than three inches in one hundred feet to a good outlet. These tile will keep the roadbed dry, which is all-important, especially in the spring, when the frost is coming out, and our roads suffer so severely, as well as the human mortals who are compelled to use them at that season. The tile also add very much to the durability of a road, besides saving much expense in repairs, to say nothing of the time saved and the pleasure afforded the travelling public. Tile laid on one side of the road, always on the side of the highest ground, usually answers every purpose. These tile drains lower the water line, and thereby make a dry and, consequently, solid earth for a foundation upon which road material can be placed that will prove durable. Stone or gravel should never be put on a road that has not been properly drained, any more than you would think of building a house on a poor foundation. As soon as the advantages of tile drainage are better understood, it will be found that nearly all our roads would be so much improved that tile drainage will be the first and most important matter to consider in road construction and maintenance. The soil under the road material must be kept strong enough to support the traffic. Dry earth will do this; wet earth, which is simply mud, will not. The importance of tile drainage was ably discussed by A. W. Campbell, Provincial Road Commissioner, in a recent issue of "The Farmer's Advocate," and I think we should by this time be getting sufficiently educated to realize its importance.

APPLYING THE STONE.

You now have an ideal place upon this properly graded and drained road to place your metal. See that it is placed in the center of the road. A little attention at the time, as well as getting

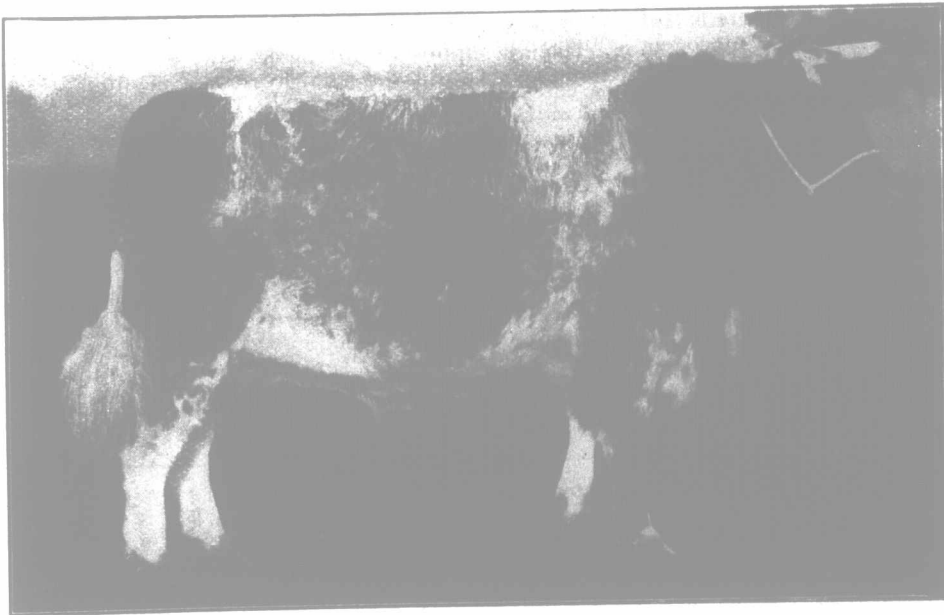
rolled by a heavy road roller, keeping the gravel and stone well wetted during the operation, and applying more gravel if needed, until the stones are thoroughly consolidated, and you have a smooth, even surface. You will now have a road that will last, with very little attention, for many years. I would prefer to have the first layer of stone and gravel rolled before applying the second, but it is not always possible to secure a roller on small jobs just at the time wanted. In rolling, see that it is rolled beginning on the sides, in the gutters if possible, and gradually approaching the center. If the rolling is commenced in the center, it spreads the road and gets too flat, while beginning at the sides gives it a nice crown. In this way, you will have a good road at once, that will be a source of pleasure every time you drive over it. While a road roller is all-important to make a really good road, where one cannot be secured, a land roller heavily weighted will do some good in preparing the road, or a wide-tired wagon, well loaded, driven over time after time at different places, will assist very materially. If you cannot have the road roller, you must have patience till the traffic makes the road good, instead of the road being made good for traffic. W. B. RITTENHOUSE, Lincoln Co.

BLACK MUCK AS STABLE ABSORBENT.

Editor "The Farmer's Advocate":

In looking over the crop bulletin of the Ontario Department of Agriculture, it is plain to be seen that there is a shortage of fodder over the whole Province, and I think now is the right time for farmers to be planning for their next season's crop of fodder, and not leave it till seeding time, when the rush of work is on, when they will have less time to think and study the matter over carefully. Stable manure is one thing that the farmer should turn his attention

to more than most of us—how to get more of it, and how to handle it properly. Very little attention is given to farmyard manure in many cases. This year there is a great shortage of hay, and straw has to take its place, and, as a result, cattle and horses are standing and lying on bare floors, and the liquid manure left to run away. This is where more attention should be paid to stable manure, something to take up the liquid. Lots of fertilizer is the backbone of the farm, and where can there be a better fertilizer obtained so cheaply as by absorbing the liquid manure of horses, cattle and hogs? Some may say, How can we do this when we have to feed



Two-year-old Shorthorn Steer.

Bred by Mr. John Ross, Milleraig, Scotland. Winner of many first prizes in 1907.

the drains straight, adds considerably to the appearance of the road. The old adage, "A thing of beauty and a joy forever," is applicable here. When stone can be secured from a crusher, such is preferable, as then you also can secure the screenings—that is, the dust and chips created in crushing—for the dressing on the broken stones, which undoubtedly is the best material for cementing the stones together, and making the road impervious to water. In my case, I did not have access to broken stone from the crusher, but, fortunately, had neighbors who had been having good crops of stone, that had been harvested on large piles, that were offered me for the hauling. These were placed on the road and broken by hand at spare times. The stone in the bottom layer were left somewhat larger than the next layer, and on them was applied a dressing of lake gravel, then another layer of stone and a dressing of gravel. They were put on not less than eight inches deep in the center of road, and a little shallower as they approached the sides. The width of the road covered by stone should be not less than eight feet. Many farmers who have the material requisite to make a good road on their own farms, or near-by, would, I think, if they gave this matter a careful consideration, improve the roads leading to or adjoining their residences. With a view that I might perchance stimulate some to take action in that direction, I am penning these lines. The question of Good Roads is a live one, and justly so. The man who builds only a short distance of good road is setting an example that will be gradually imitated by others.

ROLLING

The next important step is to have it well

all the straw this hard year? Here I would like to state how I worked it last summer and the present winter. When the weather was at its driest, last summer, I hauled in black muck which was nearly as dry as road dust, and piled it up in a building adjoining the barn. This I have used for bedding my horses and cattle and hogs, and, at the same time, all the liquid manure is absorbed, and my manure pile is increasing twice as quickly as without it. I am one who does not believe in drawing out manure in winter. I store it in a large building in front of my barn, made for the purpose. There I pile it up, mixing all kinds together, and watch very carefully that it does not start to ferment; but it is less apt to ferment when all kinds are mixed. I have proven that for several years in succession. In the fall, on dry days, I stopped the plow and took my two farm laborers, and we gathered up a large quantity of dry autumn leaves, a quantity of which I still have. I also scattered those under all the live stock. This makes the manure much easier forked, and I have no doubt there is some fertilizing qualities in the leaves, too, but I did not make any inquiry about that. What I wanted was a big manure pile. Ninety per cent. of the farmers in this district wheel out their manure into the yard, in many cases taking up the whole yard; there it gets all the winter's snow and spring rain, and, as a result, a black stream is running to a creek near-by. That way of handling manure, brother farmers, will not give you half the result that well-cared-for manure will do. Pay more attention to the manure pile, and you will have a larger area in corn crop, which is the Ontario farmer's stand-by in the long winter months. J. E. M. Lanark Co., Ont.