

Roadmaking in New Brunswick.

An instructive address on the subject of road-making was given by S. L. Peters, of Queen's Co., N. B., before the New Brunswick Farmers' and Dairymen's Association, last March.

The speaker drew attention, in the first place, to the importance of the subject of road construction and maintenance, as one absolutely necessary to the progress and development of the country, and the contentment of its citizens. Without good transportation facilities, neither the farm, the factory, nor the social life of the people, is capable of full development and enjoyment.

In the early days, transportation was confined to the rivers, lakes and streams, but soon roads became an absolute necessity. The road mileage for the Province, as given in the official yearbook of 1907, is 13,056.

"How to maintain this large mileage of highways, is the important problem that now confronts both the Government and the people." The speaker took occasion to disapprove the abolition of statute labor as working harm, by lessening the interest of farmers in the roads adjoining their farms. He claimed that between 1876 and 1896, when the condition of the highways was specially good, coincided with the period when statute labor prevailed, and hoped for a return to that system. He believed that this change would be hailed with pleasure by four-fifths of the people in rural districts.

Successful highway roads can only be obtained through a system of thorough drainage. A road as level as a platform may be a good piece of road during the dry summer season, or it may be a good piece of road under certain special conditions; but, to be maintained in good condition, it requires a crown. But you may take the best piece of road you please, giving it the necessary slope from the center to either ditch; if the ditches are not kept clear and deep enough to carry off the water, you are out of it during the wet season of the year." An earth road should be 21 feet wide, with a crown of 18 to 20 inches. If a district can afford to put a few inches of broken stone, covered with gravel on top, few repairs will be needed for years.

For swampy places, instead of the old custom of using logs, the speaker recommended spruce or pine brush, from three to six feet long, as much superior. "Put a foot in depth of brush, nicely laid, with the butts of the bushes towards the outside, which will prevent the earthy material from slipping in the ditches, just as it will help to keep the bank of a brook or stream from washing, and you will have solved the question of roadmaking in swampy or clay sections. When you get near the center of the road, then turn the butts inward, making a smooth, firm floor, nicely shaped, and with the desired crown. On top of this place six or eight inches of the best earth you can get; don't go too far to get it. Cheap construction, with the best results, is what we are aiming at. Adapt your methods to the conditions surrounding you, without undue expense."

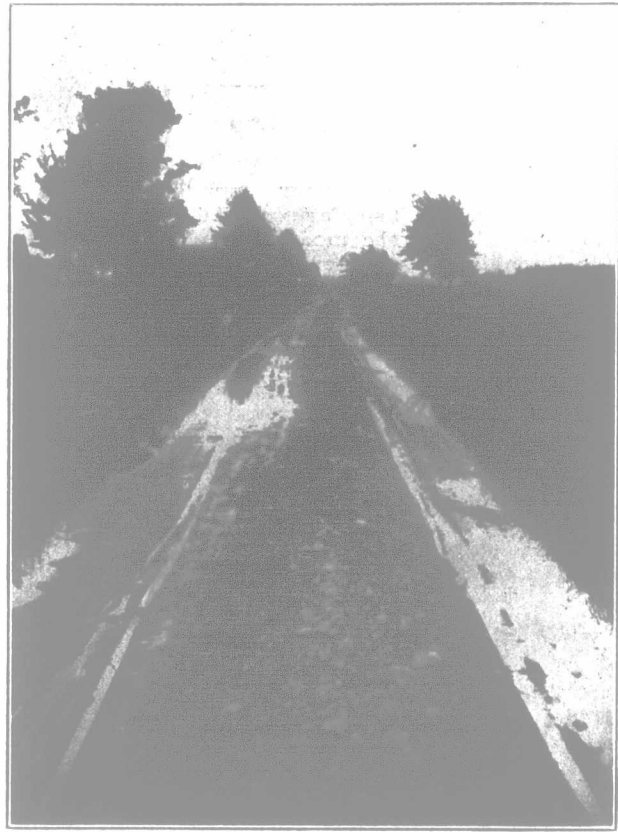
"A little brook crosses the road where you have time and time again placed an ordinary bridge, but the frosts of winter throw out your work in the springtime, and you have to go again and make repairs. Fourteen years ago I was in charge of the roads in our district, and I said to the men, here we are again, we always have something to do at this spot. It was just such a spot as I have described. I determined we would fix it permanently. We cleaned out the old bridge, making an excavation six feet wide, and the necessary depth. Commenced operations by putting a small spruce tree, about 23 feet long, with the limbs trimmed off on every side but one. We laid that tree in the excavation across the road, as the base of one side of our culvert, and on that we put bushes all the way from four to six feet in length, making the butts come even with the first tree, and, after having them laid compactly and nice, we placed about four inches of earth on top of them; then we got another small tree, trimmed in the same way, and put the butt of one to the tip of the other, to keep the material level. More small bushes were added, and ballasted as before. Layer after layer of brush and earth was used, until the desired height was reached. The opposite side of the culvert was handled in the same manner, and the top securely covered. That bridge had been a serious nuisance to us for many years, but it has never since received one shovelful of earth or any kind of material, and is in good condition now. This country cannot afford to have all roads macadamized throughout its length and breadth, and what we want is something that will answer where large grants of money cannot be had. That is the point I want to make in connection with our rural-road construction."

Stone could be used for ordinary culverts, but cement concrete is better.

After a road is built, maintenance in proper condition is the next problem. Try to inspire each man in a district with a desire that his

shall be the best road there. Mr. Peters referred to correspondence in "The Farmer's Advocate" extolling the merits of the split-log drag, and was glad to know that many districts in New Brunswick were using it. Others present gave a good word for this simple, efficient implement.

In conclusion, Mr. Peters advised all to work like good citizens, giving best service in every line, and they would have the satisfaction of having helped both themselves and the country.



Misuse of the Grader.

Shallow gutters scooped out just inside the sod shoulders, thus retaining instead of draining off the water.

Misuse of the Grader.

It sometimes seems as though there were more distinct and different brands of folly exhibited in roadmaking than in any other phase of rural enterprise. The statute-labor system affords scope for a great variety of individual hobbies, but, as remarked by a New Brunswick farm-

provement is noticeable, but good commissioners are none too plentiful, and in many a township long stretches of highway may be seen, treated in a manner fitly characterized as asinine. With the commutation of statute labor in whole or in part, came the expensive road-grader, and, while this is a very good and serviceable implement in its place, its misuse has been so common and deplorable that we sometimes think our roads would be in better condition to-day if a grader had never been brought into the country. One of the most general mistakes consists in depending upon it for maintenance, instead of employing for this purpose the cheap, economical and effective leveller, or, better still, the split-log drag. Earth roads which receive no smoothing but an annual grading, can never be really good, except at times when they would be fairly passable, anyway, without any work at all.

But the misuse of the grader is not confined to its employment for wrong purposes. It is often used in such a way as to work more harm than good. The accompanying illustrations, made from photographs taken just after a rain by a member of our staff, on the third concession of Nissouri, Middlesex Co., Ont., indicate one or two common errors, which we have observed elsewhere, as well. The road in question is rather wide, and grown over with grass from the gutter to the edge of the narrow wheel-track. In order to put such a road in shape, the sod shoulder should be shaved off clean, so as to permit unimpeded flow of water to the ditches. Here and there this was attempted, as one of the pictures shows, but for long stretches the grader had apparently been run along with the edge just inside the sod shoulder, making a miniature 2-inch gutter there, to hold the water after every rain! The result is that the water submerges half the driveway in places, finally soaking down into the surface to soften it, and cause it to cut up easily, while in winter the frost will congeal and expand it, the moisture disrupting the bond, and converting the roadbed next spring into a better place to plant oats than to drive. This kind of work may look all right to an untutored eye just after it is done, but it is the wrong way to make roads. If the appropriation does not permit a thorough job, better leave it alone; better still to take a split-log drag and go over it a few times in spring and early summer, keeping it smooth until it can be put into shape properly.

The second illustration shows the results of delay, and the kind of work necessarily done by the grader. In this case, it was not easy to do differently, but the point is that roads should, by frequent dragging, be kept in a smooth, grass-free condition that will not require such operations as here shown. Having become grass-grown, the grader was put to work to shape the road up, and, while it has done this, it left a lot of loose

loam and sods in the center of the road, forming a spongy mass, which cut up under the combined influence of water and traffic, making mud and ruts as shown. By disk and rolling the surface, then dragging occasionally, it could have been improved for immediate traffic, and brought more quickly into a firm, compact condition. It will not be so bad, however, if this road is henceforth kept well dragged; otherwise, it will only revert to the sod-bound condition, soon rendering another grading necessary.

It all goes to prove that reliance on the road-grader is an inefficient and objectionable means of road maintenance. One grading should be enough for a lifetime. In fact, the split-log drag,

with plow and disk harrow, will grade a flat road without the road machine at all, and do it better, though, if hired done by the township, the expense might be a little greater. The road machine is all right enough for putting an earth road up in the first place; after that, put it away, and use the split-log drag.

Alfalfa is a rather shy maiden, but well worth courting.



Freshly-graded Road that Needs Dragging.

er, in an address before the New Brunswick Farmers' and Dairymen's Association, it had at least the merit of maintaining a degree of general interest in the practical problems of road management. The commutation system, which has succeeded it in many municipalities, lacks this in a measure, and, unfortunately, lacks, also, in too many cases, the expected compensating advantage of greater uniformity and intelligence in methods adopted. Where the supervision of the roads is placed in the hands of a competent commissioner an im-