

ROAD MAKING.

But few subjects are of greater importance to the interests of agriculture, as well as the general welfare of this country than that of constructing good and substantial roads. As the subject of plank-roads is now being agitated, through the columns of a number of the most talented and respectable journals in the Province, we would beg to copy the following extract, from an able report on the subject, published by Colonel J. W. Hudson, United States Engineer, who was recently employed by the citizens of Oswego, to make a tour through Canada, to examine and report upon the plank-roads in use in this Province:—

The plank are pine, three inches thick, 16 feet long, and laid on four stringers of scantling, only four by six inches in size, and spiked to the same at the end of each plank. These stringers are said to be too small, although when well imbedded in the earth, they are quite sound after eight years' constant use. Col. J. states, that where the bed of the road is level, the constant pressure of loaded carriages passing over the centre of the track, renders the road dishing, and collects water after rain, which softens the plank, increases the wear and tear, as well as makes them more prone to rot. To remedy this, he recommends that before the plank are laid, the road or grade be made crowning, so that the water may run off each way from the middle of the track.

Planks have been put down and tried transversely, diagonally, and lengthwise, with the line of the road. The transverse mode is preferred. A plank road made of hemlock plank four inches thick, 14 feet wide with a carriage track to turn out on each side, having five good stringers, six inches by eight, all complete, will cost about \$2500 per mile. The following is the estimate of the engineer—there are several, but this suits my idea of economy better than those that cost more or less.

The stringers must be so placed, as to be directly under the carriage wheels, giving a continuous bearing. These should be six inches by eight, at \$4 per M. feet, board measure—

195,680 ft. plank, 4 inches thick, 14 ft. long. \$4	\$ 211.96
Digging trenches for stringers, putting them down, spiking plank, &c., &c.	268.00

	1,661.92
Contingencies, \$10 per cent.,	166.19

Estimate cost of superstructure....	1,828.11
Grading, dependent on the peculiarities of surface, &c., say from \$500 to 770. Total cost, \$2,500.00	

A good road will last from eight to ten years, with very slight repairs. The plank should rest firmly on the earth beneath the stringers, which gives solidity to the structure and increases the weight that can be drawn on the road. A horse can draw much more on a good plank road than on any Macadamized road.

As anxious as we would be to see the main arteries, or principal roads of the country either Macadamized, planked, or gravelled, as circumstances might prudently dictate, still, we are of opinion that it would be imprudent in the extreme to plunge the country still further in debt for improvements, without there was a certainty of the tolls arising from the works paying the interest and principal of the investment in a reasonable time. In all cases where moderate tolls would pay the interest of the money, and keep the works in complete repair, there would be but little risk in borrowing money to

effect such improvements; as the increase of wealth that would be brought into the country by means of having good roads would, ultimately, enable the Commissioners, or Overseers, to liquidate the original investment.

Although the main roads should be improved to the fullest extent possible, yet the principal concessions and side roads are of equal importance, in a local point of view, and should receive every attention by the farmers. A farmer should feel as much interested in improving the roads in the immediate neighbourhood where he resides as he would in repairing his fences, or making other improvements on his farm. How few there are that take this extended and patriotic view of this highly-important subject. It is only natural to suppose that those who are anxious to make all the improvements possible on their farms, that they would feel an equal interest in having a respectable road alongside of it. To those who entertain a desire to improve in this particular, we would recommend them to adopt the plan which we have seen practised, with remarkable success, in some of the northern settlements of this District. Instead of the road overseers ordering the farmers in their section or division to bring each a hoe, to fill up the *ruts*, as they are usually called, they should request and enjoin upon every man who had a strong pair of horses to appear upon the ground with his team, and the strongest plough that he could procure, and then pursue the following plan, which we saw practised:

A line of road, precisely twenty feet wide, was previously staked out, and as near the centre of the road allowance as was practicable, and the ploughmen were then directed to plough a straight furrow in the centre of the line of stakes; and, after forming a crown for the ridge, they turned the furrows towards the centre, until the whole of the space between the stakes were completely ploughed, furnishing fashion: this process was repeated four times, which raised the centre of the road about three feet higher than the outside, — a ditch which was formed by the plough. The road was then thoroughly harrowed and rolled, which gave it a most beautiful appearance.

We passed over the above piece of road about a fortnight ago, and, although the roads were extremely bad in other sections of the country, we found it to be very passable, and by far the best piece of mud turnpike that we met with in a journey of 150 miles.

Most of the mud roads in the country are by far too wide: where they are not much travelled upon, 16 feet from outside to outside would be preferable to 20 feet. If the land be tolerably free from stones and roots, a great amount of mud turnpike could be made, with but very little labour or cost, if the plan above specified were followed. It is quite impossible to have good roads unless they be thoroughly drained; it is, therefore,

of equal importance to keep open the cross drains.

Where there are stones, roots, and other impediments to hinder the progress of the plough, the ploughshare and coulter should be locked together, somewhat after the style of the old-fashioned bar-share ploughs.

We would recommend the following article to the notice of the Canadian farmers. We have no doubt but that subsoil ploughing would be found to be advantageous on most of the arable lands in this country; but, on close retentive soils it would prove an evil, unless accompanied with thorough drainage, an operation of itself so very expensive, that, on such soils, neither the one or the other need be attempted. A Scotch iron plough, without any mouldboard, would answer as an excellent substitute, to follow in the furrow after the common plough; or even a common plough might serve to make a trial on a small scale:—

[From the American Agriculturist.]

SUBSOIL PLOUGHING.

We are highly gratified to observe an increased attention to subsoil ploughing, for we consider it if it could be generally introduced among us, it would be found one of the greatest agricultural improvements of the age. In vol. I, page 199, we gave full details of the successful operation of the subsoil plow in England, where it was shown, that by its use, crops may be doubled without adding a particle of fertilizing materials to the land. Two years subsequent experience by the farmers of that country, corroborate the benefits to be derived by the free use of the subsoil plow, for grain as well as root crops. Mr. Tilley recently asserted before the Cornwall Agricultural Association, that he had the past year raised hundreds of roots of mangel-wurzel, weighing 25 lbs. each; that the crop of these per acre, as well as carrots and turnips, was at least doubled by subsoil ploughing.

Five years ago we had a piece of land containing 2½ acres of a hard clay soil, which, with the best management we could bestow upon it, yielded less than 150 bushels of potatoes to the acre, and 400 of sugar-beet—while parsneps, carrots, or any long roots, it would scarcely grow. We had just heard of Mr. Smith's subsoil plough in Scotland, and determined upon an experiment. We had no plough of this description, nor could we then obtain one; we accordingly took the mould-board off from a large, strong road plough, and used the point of the share alone for subsoiling. We ploughed the land in the fall of the year, by taking a common plough and one yoke of cattle, and turning over a surface furrow six inches deep. We then followed directly after this in the same furrow, with three yoke of cattle attached to the road plough, stirring the soil eight inches deeper, making fourteen in all. This we then bountifully limed, and the next spring as bountifully manured and planted it with roots, and the following autumn obtained over 1,100 bushels of sugar-beet to the acre from it, and other crops in proportion.

Subsoil ploughs may now be had in this city, of excellent pattern and strongly constructed, from \$10 to \$15 each, which will stir the earth 12 to 18 inches deep, requiring from two or five yoke of cattle to move them, according to the nature of the soil, and the depth required to plough.