## Cur Roads

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## BY ALAN MACDOUGALL, C. E.

The most common road one meets in this country is the clay road; it is met with in every township in all its stages, with a roadway winding through stumps to a good broad road the full width of the concession cllowance. From the formation of the Western peninsula, clay is the principal substance on which the roads have to be made; those parts over which roads are carried on a rocky or gravelly bed bear but a small proportion to the miles of clay roads.

These clay roads are not bad institutions in their way and time, and in good dry summer weather are not to be despised ; but they all labour under so serious a drawback, that they are spt after the slightest rain to geb into disorder, and in the wet seasons of the year to become so thoroughly impassable, that our attention cannot be too strongly drawn to them. As the general rule, all roads are laid out by Government in perfectly straight lines, irrespective of hills and valleys, ups and downs ; they take everything as it comes to them. On clay roads the effect of judicious grading tells more favourably than on roads through harder soils, and as the same remarks about the principles of road formation apply to all kinds of soil, the subject of what is the proper course to take in laying out and forming a road can best be treated on that substance that is most capable of improvement.

The importance of designing a proper ruling grade, as also the necessity for grading roads, have already been noticed; let us now examine into some other of the modi operandi. The first thing that must be attended to is the water, either what falls on it as rain or melts on it from snow, or comes upon it from the neighbouring lands. Water is always a troublesome thing to deal with, one either gets too much of it or else too little; but on a road it is always preferable to have the latter. The road allowance between any two concessions, has been fixed for the distance of one chain or 66 feet; the v hole of this distance is never taken up for the purposes of the road, but it is kept for the purposes of shovelling snow off the travelled road, or of taking stuff to make the road.

For all purposes a road bed of 25 feet will answer the country for a great many years. If, therefore, the 25 feet in the centre of the grant be used for traffic, there will remain a space of 20 ft., 6ins. on each side of the travelled portion to work upon. The fences chiefly in use at present, are the snake fence, and usually take up 4ft.to 5ft. in the "worm;" but with this large deduction, there will still remain a space of 16 ft. or thereabouts. In the centre of this space a large ditch should be cut, from 2 to 3 ft. in depth, at least, one foot wide at the bottom, and from 8 to 10 ft wide at the top : from these ditches tap

drains should be taken across fields, where necessary, to some creek or outfall, and they should always be so graded that the water from them can get away easily. The stuff taken out of them should be spread over the surface of the road, thereby making it higher in many places than the land around it, and in other places, such as dips and hollows that are likely to be affected by wet, raising the road out of the danger of being constantly in bad order. The great advantage of the side ditches shows itself far more favourably in low and wet places than on a level or rising part, as the road being raised up into an embankment, is in a good position to be constantly kept dry, and is not in danger of being snowed up.

## The Economy of Agricultural Machinery

## THE DRAG SAW.

The other day I made a call upon our neighbour on business. When this had been transacted we soon got deep into a genuine farmers' gossip. It was a lovely day in November, clear and cold, and all along tho road I had observed the teams steadily at work in the fall ploughing, a work which the forehanded farmer will push upon every available day. Surprised to see that my neighbour's team was not at the same job, but was picking in his pasture, I put the question to him, "How is it your man is not at the winter fallow this fine day ?" "Well, the truth is," was the answer, "we were out of wood, and I had to sead him to the bush to bring some up. for the evenings are getting plaguey cold." To-morrow the man will have to go into that firewood with the bucksaw, an implement which has with much justice earned the soubriquet of "Canadian fiddle."

What valuable time is thus lost! Now, this, says the reader, is *apropos* of what? I answer, when we see a man wasting valuable fine weather in the fall, we may safely assume that he has also lost many important hours in harvest time, and at other important seasons, in the same manner.

My plan, and I commend it to farmers, is to obtain a day or two's use of a circular or drag saw and horse power, during the winter or early spring, and cut up a stock of firewood. In this manner we never have to stop the pleugh or the reaper, and take up the bucksaw, to the detriment of our more important work, and to the continued aggravation of the temper both of the farmer and his family.

It is true that the purchase of a horse power and saw will take a considerable sum, but 1 will endeavour to show that the saving effected will more than repay the extra outlay of capital.

be cut, from 2 to 3 ft. in depth, at least, one foot wide at the bottom, and from 8 to 10 I need hardly dwell upon; its application f1 wide at the top; from these ditches tap to the root-cutter and the chaff-cutter, both

absolutely necessary to the farmer who feeds many head of cattle, is so generally approved of that the majority of our better class of farmers look upon the power as an essential in the proper stocking of a farm.

A drag-saw, which is more useful to the farmer than a circular, may be obtained, with patent truck for moving the log, for from \$70 to \$80. The advantage of this form over the circular is that it may be used in cutting up long logs into stovewood lengths. To use the circular the tree must be first cut into cordwood, of such a size that it may be handled. In all our woods, there is much dead and lying timber, which it is very hard to work up with the axe, and this may instead be cut into very long logs, and then cut up with the drag saw. Thus there is great economy in the utilization of dead and fallen timber, which, though making the best of fuel, is too often left to rot in the bush from the difficulty to be encountered in cutting up by the axe.

By logging up a quantity of loag lengths in a clear space in the woods, or by bringing them to the house yard, a sufficient supply of wood may be cut into stove lengths in two or three days, to supply a large house for the year.

The work of splitting this short wood is, of course, very much lighter than that of splitting cordwood lengths.

As the saw would only be required once in the year, let four or even six neighbouring farmers club together to purchase one, and each could have the use of it, without inconveniencing the rest. If four clubbed, each man's share would be only twenty dollars.

Let us now put side by side the relative cost of cutting with the "fiddle" and that done by the drag-saw and power:--

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\$69 00 \$69 00 We have then by the use of the drag-saw economy in the utilization of dead and lying wood, also a saving of \$31 at least in the working up into stove lengths of sixty cords of wood.

The cost of hand cutting is also set down at a lower figure than is generally paid, so that the saving by the drag saw would be even greater than the sum here estimated.