

streams, an army would be useless and its line of march must on all occasions be governed to a very considerable extent by the facilities afforded for crossing the rivers which intersect it.

As noticed in a previous article "ropes" or hawser bridges are the lightest and most convenient for transport, and in many cases notably in a cavalry advance can be made more readily available than any other plan.

The following table of units of strength for various sized cables will be useful, the dimensions given being the circumference.

	3 strands	4 strands
White rope 2½ to 6 inch.	1,140	1,330 lbs
" 6 to 8 "	1,090	1,200 "
" 8 to 12 "	1,045	880 "
Manilla 2½ to 6 "	810	950 "
" 6 to 12 "	760	835 "

To ascertain the size required it will be only necessary to have the weight likely to be passed over, and the rule is divide the strain in lbs. by the appropriate unit in the table, the square root of the product will give the circumference required.

The weight of a rope bridge of one cable length (720 feet or 120 fathoms) would be about 27,000 lbs. load, say 15,000 lbs. total 42,000 lbs.

$\frac{42000}{1140} = 36 = 6$ inches circumference of white rope necessary.

The weight can be computed from the following table:

3 strand hemp (white rope)	032
4 " "	030
3 " Manilla	032
4 " "	033

The rule is square circumference and multiply it by the unit in the table belonging to its class the product will give the weight in feet per lb.

The circumference is 6 inches square $36 \times 032 = 1.152$ lbs per foot, therefore, two cables each 720 feet long will weigh 1,658 lbs., a network of ropes and lashings weighing 700 lbs. will be necessary in the more elaborate bridge. but with those cables there is no stream in Canada that cannot be passed by a Canadian Army, it is decidedly the simplest, and in the hands of our people would be the most efficient bridge equipment.

In the ordinary instructions given at our military schools our young officers should be taught the art of road and bridge making, and also to be able to decide where heavy trains could be passed in their different localities.

It is under this aspect that the want of a properly organized Engineer Corps is felt, one at least should be attached to each Military District and its efficiency would be thereby considerably increased.

As we are liable at any time to be involved in hostilities with our neighbors, not through any fault of our own, but their political exigencies, it behoves us as being numerically the weaker people to avail ourselves of every advantage practical science

can give us in order to preserve the independence of our country.

An able article in the London *Quarterly Review* for January last entitled the "Proletariat on a false scent," states that seven millions five hundred thousand pounds sterling is disbursed annually in the British Metropolis for charitable purposes, and yet there are no less than 150,000 paupers while the number of "untrained and uneducated children" have not yet been reached by any statistics.

The writer goes on to show the fallacies taught by such men as J. S. Mill and Mr F. Harrison, the Secretary of the "International Society," in persuading the laboring class that the principal panacea for all the evils under which they labour, is to be found in redistribution of land without reference to the present owners or the capability of those into whose hands their possessions would fall for agricultural pursuits.

It is pretty clearly pointed out that those wholesale philanthropists and distributors of other people's property, have in their eagerness to establish their own theories overlooked practical facts whose existence makes the realization of theory impossible.

And in their universal system of citizenship provide nostrums designed to benefit every country but their own. In this respect the Whig Radical Government is but a reflex in political matters of the theories which lead the "Proletariat on a false scent."

It is pointed out that the theory must fail, because all the available land in the British Isles would be absorbed by the present generation, and there would not be sufficient at the rate of increase; there would be a large population of *Proletariats* next decade.

It is manifest then that the deficiency must be sought elsewhere, and it follows that the true remedy is emigration.

In our last issue we published some statistics furnished by the Emigration Department in which it was shown that British North America contained 3,571,105 square miles of an area with a soil and climate equal if not superior to that of the British Isles.

To any Statesmen but those of the Manchester School of Whig Radicalism the obvious remedy for the social evils afflicting Great Britain, demoralizing and pauperizing her people would be prescribed by the above facts, and a system of State Emigration inaugurated which would at once restore the equilibrium of society by relieving the pressure of the labor market.

That this view is sound and the true way out of the difficulties which surround Great Britain, the utterances of a foreign journal looking at the position from an independent stand point clearly indicates.

The "Missouri Republican" says that England within the last 50 years has lost the

chief part of her political influence and the writer is of opinion it will never return, and, therefore, unless she is prepared to sink into complete insignificance, there must be some element to supply its place.

It is evident that this view is the correct one, that all political influence in the Old World is a thing of the past, that it never can be retrieved; and the writer partially asks: "How, then, shall England regain the foothold she has lost, and effectually guarantee its permanence? Colonies are the true, the only means for her salvation."

This self evident proposition overthrows the theories and teachings of the Manchester School and places the experiments of its doctrines in the position of enemies of their country. The *Republican* says:

"How, then, shall England regain the foothold she has lost, and effectually guarantee its performance? Colonies are the true, the only means for her salvation; by them and by them alone may she extend and consolidate her dominion, keep in the minds of her children that intrepid pride which has accomplished so much heretofore, and avert that slow but sure decay which saps the foundation of those nationalities living exclusively in and for themselves. Instead of regarding these colonies with jealousy and distrust, grudging them the money required for development; the forces required for defence; instead of discouraging emigration, and continuing a clumsy system of Government calculated to alienate the affections of her subjects and inspire them with a desire for independence; England's policy should be the reverse of all this. The people who leave the old homes to build new ones in Australia or Canada, should be made to feel that they are not henceforth Australians or Canadians, but now and always Englishmen, whose success is earnestly desired by the Mother Country, whose happiness is the object of her peculiar care, and whose growth and prosperity contribute directly to her own. In other words the feeling of consanguinity should be nourished by every possible method, and whatever tends to cool that feeling or weaken the ties which bind the child to the parent, should be judiciously avoided.

"There are tens of thousands of thrifty families in Great Britain, who by dint of hardest labour and strictest economy are barely able to make a miserable living. In Canada or Australia these families now crushed by ruinous and constantly growing competition, would find their exertions generously rewarded from the resources of a new land, would raise themselves in the social scale, and assist in the elevation of others. Why not send them there, not merely for their own benefit, but to afford more room for the thronging millions left behind? If England can be brought to look at her colonies, not simply as useless and expensive dependencies, but as indispensable accessories to her safety at home and power abroad; if she will swell their population by a judicious system of emigration, and secure to them the blessings of good government by the appointment of wise and honest rulers, she may gain for herself stout and faithful allies in the time of need, and restore that influence otherwise gone for ever. Should India throw off the yoke, and Australia and Canada assert their independence, England will then indeed become a nation of shopkeepers, from whom the