

compound, which has been found to answer with marked success in the Persian Gulf cable. At the termination of these so-called intermediate portions, the deep sea cable we have already described is continued across the Atlantic to near St. Pierre.

It is in the nature of all practical sciences to advance, and, in spite of all improvements which seem to leave nothing to be desired to keep advancing every year. In nothing is this great truth more strongly exemplified than in the manufacture and working of submarine cables. Every new one is better than that which preceded it. In the Malta and Alexandria cable it was thought that at last true perfection had been attained, but the next one or Persian Gulf was better still. The Atlantic cable of 1856 was better than that again, the cable of 1858 better still, and this last French cable is likely to be the best of all. The standard of the manufactured value of a cable is judged by what are called its units of resistance. There is always a certain amount of resistance to the passage of the electric current through the conductor, and the more perfect the insulation of the cable the greater that resistance will be. This amount of resistance is measured by the galvanometer and is counted by millions of units. Thus, a cable which gave a resistance of only one million of units would at once show that it was defective, and by some odd don leakage allowed the current to escape, and so of course, allowed it to enter the wire faster than it could have done had it been so carefully insulated that all the electricity must have passed all the conductor and along that only good materials, which absorb the current will also give rise to a low rate of resistance and a low rate of resistance is only a scientific term for a bad cable. The Indian Government insisted on the Persian Gulf cable having a uniform standard of resistance of 50,000,000 units, and this pitch of excellence was thought to be almost unattainable yet it was done and more than done. The standard for the Atlantic cable of 1856 was then raised to 100,000,000 units, and that two was accomplished in the cable of 1858 the standard of resistance was raised to 150,000,000 units, and now in this French cable the contract standard is that it must have 200,000,000 units of resistance and no less, and this is actually being done, and in this high electrical condition it will be laid. After it is laid every day will improve its insulation. Thus the two Atlantic cables have gained so much in insulation since they left the factory that often during last year it is said, they gave a resistance as high as 4,000,000,000 units.

About 1,600 miles of the French cable have already been made, and more than 600 are already on board the "Great Eastern." As the rope is being manufactured at the rate of 200 miles a week the contract is well in hand, and all will be ready by the first of June. Commandeur Halpin the former chief of the "Great Eastern," will on this occasion go in command of her. Sir Samuel and Mr. Henry Clifford have charge of the all-important work of laying the line, and Mr. Willoughby Smith and a large staff of electricians have electrical charge of the cable and signals. Messrs. Clark, Ford and Jenkins are the engineers to the whole work and Sir William Thompson and Professor Varley are the electricians. Three ships belonging to the company will go with the "Great Eastern"—two with the St. Pierre section and one with the shore ends. Two or three French frigates will also convey the great ship so that the whole expedition will make a little flotilla.

A NEW RAILROAD PROJECT.

IN a late issue of the *Stockholder* a new railway scheme is announced, that, for brilliancy of conception and improbability of realization, claims a high place among the large schemes with most uncertain issues of the century is so proud. That paper says it is understood that the Chicago and Northwestern and the Milwaukee and St. Paul Railway companies will build a new railroad on an air line from Chicago to New York, making no connections with existing lines, but building a road wholly new, deviating from a straight line only to turn the southern extremities of Lakes Michigan and Erie. This, says the *Stockholder*, will make a road only 720 miles long, that is 180 miles shorter than the shortest existing route, and 24 miles shorter than the route via Niagara Falls and Buffalo. It adds:

To build and thoroughly equip the new line \$50,000,000 a mile is estimated, which makes the cost for the 720 miles \$36,000,000, though the capital of the new company will probably be fixed at \$40,000,000. The cost of leading railways of the country, as represented in stock and bonds, has been about \$50,000 per mile including equipments, stations, depots, machinery, &c., but as most of them have suffered from expensive financing, the real cost should in fact be set down at a much less figure. The financial strength of the eminent capitalists engaged in the new plan will enable them to build a road for cash, thus saving all sacrifices in stocks and bonds such as have swollen the construction accounts of the roads now in operation.

The road for the whole distance can be completed in one year, the construction by sections simultaneously going on. Double track will be laid the entire length.

This is certainly a very fine project and looks remarkably well on paper, but in carrying it out the projectors would experience some difficulty. Supposing the estimate of the trifling cost of such railway to be correct and that the financial strength of the eminent capitalists engaged in the new plan would enable them to build the line, there remains the difficulty of obtaining the legislative consent of six different States to construct the railway in opposition to existing powerful companies. Such an "air-line railway" must cross New Jersey in opposition to the New Jersey Central, must go into New York against the combined efforts of the Central and Erie, must traverse the entire length of Pennsylvania, in spite of the powerful

opposition of the Pennsylvania Central, and must encounter similar opposition in crossing Ohio and Indiana, in order to get into Illinois and reach Chicago. Considering what it would cost in currency, to buy up six legislatures, against the combined opposition of powerful and wealthy railroad corporations whose interests it would directly injure, we doubt if even the most sanguine friends of the scheme would ever seriously undertake the task of carrying it through. —N. Y. Bulletin

EMIGRATION.

THIS subject has been so long before the public, and so frequently and forcibly urged on the attention of both the Federal and Local Legislatures, that it seems almost superfluous to bring it up again for consideration. We cannot account for the indifference manifested on this question. At first a reasonable excuse was found in the number and importance of the measures that, owing to Confederation, demanded the attention of the General and Local Governments. These are to some extent disposed of. Still emigration that measure of all others most vital to us is put off from day to day as one of those things that can wait, while a mass of local legislation, affecting only individuals or incorporated companies meets with prompt attention. We believe that some scheme of emigration has been devised between the Federal and Local Governments, allotting to each certain duties and responsibilities. Of that scheme we know almost nothing, as it is still in the womb of official reticence. But we know that while our legislators are consulting, debating and poring out the duties of each Government, others are reaping a rich harvest of emigrants; that while we are waiting on concurrent action concurrent administration and concurrent division and allotment of duties the American Republic, the Australian Colonies, and some of the South American States, are actively attracting to themselves the redundant and valuable labor of Great Britain and Europe.

While we admit that some delay was unavoidable, and while we are willing to concede that it required much time, patience and ability to initiate our new system of government, and adapt its machinery to our new position, we cannot admit that so important a measure as emigration can longer be put in the background and made to wait on other questions of infinitely less importance. Since the demise of the late Mr. Buchanan, the Executive of that branch of the Department, something less than nothing has been done to promote emigration. This absence of effort may be owing to some legitimate cause, unknown to the public, and we are content to be satisfied with even this shadowy excuse. But, in the meantime, what has been the result? If we were satisfied to wait patiently for other executive or legislative action the absence of which has paralyzed the old system of emigration, such as it was, other countries were industries to gather in the emigrants and give them an asylum and employment. From an official return issued recently by the American Government, it is estimated that, since the close of the civil war, the direct advantage to the United States was \$30,000,000, and the indirect or collateral benefit \$500,000,000. In fact, during the four years which followed the close of the war, about one million of new subjects, owing to emigration, were added to the subjects of the Republic a population nearly equal to that of the Province of Quebec.

Theoretically, economy is an excellent thing; but when carried to an extent that cramps or prevents development, it becomes vicious in policy, and obstructs public progress. Last year the pruning-knife was applied to the Emigration branch of the Department of Agriculture with no very sparing hand. This may have been necessary, as the finances of the Dominion were not methodized, nor the revenue closely ascertained. We do not cavil at this policy of retrenchment, nor refuse to our financial reformers the merit of doing what they considered the best for the public service, but we refer to it as showing that good policy and economy are not always consistent, and that the one may sometimes be in antagonism to the other. We have always regarded the publication of the *Emigration Gazette* as almost an indispensable auxiliary to the success of emigration. The issue of that paper ceased since last November twelve months, and the result is contained in the following letter of Mr. Dixon, the Canadian Agent in England. We should notice the fact that at no previous period in England was labor more redundant than now, and that not only the poor, but the wealthy are looking to emigration as the only agency that can afford relief to those out of employment and those miserably paid for their labor, to relieve or lessen a destitution that threatens to become chronic in Great Britain. Under this pressure the leaders of the emigration movement, who naturally look to the colonies and dependencies of the Crown as the more natural localities in which to transfer their superabundant population, applied to Mr. Dixon, our accredited Agent, to ascertain what facility or encouragement the Dominion afforded or offered to emigrants. His reply is this:—

"WOLVERHAMPTON, Jan. 20, 1863.

"Dear Sirs,—I have not got emigration papers of any description, nor do I know when I shall have any. The demand for them this winter has been enormous, even without my name appearing in public. The last information I had from Canada was that they hoped shortly to have the Department in working order.

"I am truly, yours,

"WM. DIXON."

There is one result of an economy, however judicious a vessel or two ago, that cannot now be defended. The Government of Ontario boasts of a large surplus of revenue that of Quebec gives a promise equally flattering and satisfactory, while the Dominion or Federal finances seem to yield a surplus over the expenditure. We regard the general debt as a pleasant signment,

neither interest nor principal gives an uneasy thought. All this is highly encouraging. But if economy has helped to this pleasant result, and we do not deny it, will any thoughtful man caring for the future, assert that this rigid economy ought to be continued at the expense of the development of the resources of the country? That for the sake of some thousands of dollars, the savings from the Departments, we should forego the benefits of sharing in the rich harvest of labor seeking employment, and let our waste lands remain barren and unproductive?

Mr. Dixon can do nothing in England, while other countries are eagerly appropriating the emigrant. He is ignorant of the measures of our Government, waiting for instructions which never can reach him. The *Emigration Gazette* so eagerly sought for in Great Britain, and which has done more than any other agency to direct the attention of the emigrant to this country is asked for and denied, because not published. The Treasurer of this Province may look with complacency and pride at the amount he may be able to place to our credit. But we would ask him to place as an offset the unreclaimed lands to be counted by millions of acres, which abound in every section of the Province. We would ask him, and the Government, what better or more profitable investment could there be, than that of settling these large tracts with an industrious population which would increasingly, year after year add largely to the revenue, and aid with a strong arm and a stout heart to give permanency to the new constitution.

The most precious possession the Government can have is a country without inhabitants, or with a sparse population. We sometimes think our rulers have not fully recognized the position in which we are placed. They have duties which our new position presents. They have worked wisely and well to give stability to that position. We require now something more than from a hand-to-mouth legislation, something that looks into the future on whose shadow we are entering, and makes provision for that future. Have our legislators fully recognized the fact, and weighed its vast importance, that the acquisition of the Hudson's Bay Territory, including the present limits of the Dominion, assuming that all the Maritime Provinces will have joined it, with Vancouver Island, British Columbia and Labrador, will give us an area close on four millions of square miles? Assuming the present population to be four millions, and this is its utmost extent, then we have one person to each square mile, or one family to five square miles, or \$200 acres. The weightiest problem of the day is how to fill up this vast territory with population and convert it into a source of strength for the Dominion, and not a source of weakness, which it must remain so long as it is unpeopled. We suppose that the Federal and Local Governments have entered on its solution. At least report has it that some preliminaries are arranged allotting to each its portion of the task. This question is one, however, that cannot be shelved or longer postponed, and if not taken up at once earnestly and successfully on some broad and effective basis, then the Hudson's Bay Territory had better, and even that of the Red River had better, for a few years, remain outside the Union.

We have waited with patience the action of the Committee on Immigration, struck last session by our Legislature. Nothing, so far as we can learn, has yet been done by that Committee to solve, or assist in solving the grave question it was appointed to discuss. A few witnesses have been examined, but the practical results are yet to be discovered. That Committee has an important duty to perform. Mere superficial inquiry will not satisfy the public. Its investigation must, to be useful, be both extensive and critical. Of course the action of this Committee will be confined to this Province. In this Province the average population is about one family of five to the square mile, or 640 acres, a sparseness of settlement which demands a prompt remedy. That was our interest, as a Province, in the question is paramount, and those who wish to study it, and ascertain the issues it involves, would do well to peruse carefully the speech of the Hon. Mr. Langverin at the opening of the present session — *Quebec Chronicle*.

POOR-PACKING IN THE WEST.

IT was variously estimated by good judges that the hog crop of 1863 would, without doubt, reach from two to two and one-half million head. But almost in the height of the season, and during the period of the greatest activity among packers, the cry of "short crop" was suddenly raised. While some believed it to come from farmers operating for a rise, others thought it proceeded from those who were operating for a "corner." But when the number of hogs packed in Chicago was ascertained, it had fallen off some 150,000 head from the number packed last year at the same period, with a corresponding falling off at other packing points. The "short crop" question became pretty well settled. It was then too late in the season for the packers to make up the deficiency, and much less to reach the anticipated limit of 1,000,000 head, which they had set down at the beginning of the season as the probable number that would be salted down in Chicago alone. The facts now reached in regard to the hog crop show, as a rule, that the crop is poor in quality and below an average in quantity, and it is now pretty well settled that the number of hogs packed during the present season throughout the country will fall half a million behind the amount packed during the previous year.

At the commencement of the packing season the supply of barreled pork had not been reduced at all for many years. Not only in this country, but also in Europe, the markets were bare of stock. The acute demand to supply this actual necessity and maintained values, but also stimulated large operations for future delivery, which kept the market in