

THE IRON TRADE AND IRON MINING IN CANADA.

The high prices now obtained for iron of all descriptions will undoubtedly stimulate the production, and as the pessimists delight in reminding us, it is only a matter of time before the production again surpasses the demand. There is probably no one who will dispute the assertion; the point at issue is the length of time it will take to fill up the gap created during the past four or five years of depression. Can the demand which now exists be satisfied in a few months? We think not. During the period of depression through which we have passed, railways have avoided spending money even on necessary repairs; while, as for improvements, no one has dared even to speak of them. In other ways, too, there has been an abstention from the use of iron until matters could go on no longer, and as all were in need of the material about the same time, it is no wonder prices advanced to the point they have reached, though they are still a long way below those current previous to the setting in of the "bad times." Take pig iron; the price of Scotch Warrants on December 31st, 1879, was 67s., while in the same month of 1873 the average price was 105s. 9d., and in 1872 104s., and yet some say we are at dangerously high prices. There has been a decline from highest points reached during the advance in the fall, and there may be some little further move in the same direction, but to suppose that any serious break will occur is to suppose that the demand will seriously fall off, and this, we take it, will not be the case for some time to come, for the wear and tear of years cannot be renovated in a few months, and consumption must continue large for a long period. How long this will be it is beyond anyone's power to determine, but it does not seem unreasonable to calculate upon two years of active demand after five of complete stagnation. In the United States the rush for iron continues very great, and not only for iron but for iron ore, of which they are at present unable to get a sufficiency from their own mines. In consequence of this, ore is again being got out in various parts of Ontario and Quebec, and is shipped to the American furnaces, notably from the Madoc district, where the iron mining industry is exciting great attention, and from telegraphic reports sent us, fresh discoveries of ore are constantly being made. The richness of the mineral wealth of that region is as yet but little known, but we shall not be surprised if the prospecting which the existing demand has caused, leads to developments such as have not hitherto been thought of. The absence of coal from the region is a great drawback to any scheme for starting iron works, as the transportation of fuel from a long distance would add greatly to the cost of manufacture, but in the future perhaps a substitute for coal may be found; it would certainly be preferable to supply ourselves and our neighbors with iron rather than with the mere ore, for the cost of working would not be lost to the country as is now the case. But "a bird in the hand is worth two in the bush," and the sale of the ore brings some money into the districts whence it is obtained and helps to provide employment, a most necessary thing in a young country like this whose population we all hope to see yearly increasing. In addition to the Madoc mines the Ottawa district has contributed its quota to the supply of ore sent to the States. At Three Rivers the furnaces are again started after a long period of idleness, and further supplies of the iron of that district, which is so well adapted for the manufacture of car wheels may be looked for before long, while in Nova Scotia the Londonderry furnaces are working to their utmost capacity. If the present excitement in the iron trade did no more than spur us on to develop the resources of the country it would not have been without its use.—*Montreal Herald*.

ASOTHER addition to the dangers of the ocean passage, which is generally overlooked in the consideration of the perils that beset those who go down to the sea in ships, was shown to exist in very serious reality by the explosion that took place on the passenger steamship "Greece," just arrived from England, and about entering her dock. The descent of one of the hands with a lighted lantern into the hold, to unfasten the hatches, caused an explosion of coal-gas that had been generated during the voyage in the confined space, without opportunity to escape, by reason of a want of adequate provision for ventilation; and the result was the loss of five lives and the serious injury of seven persons. Unfortunate as the accident was, it would have been far more serious had the explosion occurred a little after the vessel had made fast to the pier. The immediate cause of the accident is, we think, very properly ascribed to the practice of the English owners of steamers of taking on coal enough on the other side to carry them back again. The danger attending the carrying of bituminous coals on long voyages, even where every precaution is taken to guard against their spontaneous combustion, or the generation and accumulation of explosive gases, has been so frequently demonstrated that it is time that the rule should be adopted and strictly enforced—at least with steamers engaged in the carrying of passengers—that, in addition to being required to take the well-known precautions respecting the proper mode of storing and ventilating their coal supply, ocean steamers should be prohibited from taking on at one time any more than enough coal to provide for reaching the first destination where re-coaling is practicable.—*Engineering and Mining Journal*.

COAL.—The production of anthracite coal last week was 422,314 tons, as compared with 417,380 tons for the previous week, and 400,686 tons for the corresponding week of 1879. The total production from January 1st to January 31st was 1,682,636, as against 1,440,200 for the like period of last year, showing an increase this year of 242,436.

PROVISION EXPORTS.—The Chief of the Bureau of Statistics has received reports from the several collection districts of the exportation of provisions from the United States for the month of December and the last six months of 1879. The following is a statement of the amount of each of the articles named exported in the month of December last, and the corresponding month of 1878:—

	1878		1879
Pounds.	Value.	Pounds.	Value.
Bacon.....	86,241,567	\$6,037,771	67,600,409 \$4,261,856
Beef, fresh.....	6,488,230	579,630	8,423,149 756,222
Salted beef.....	3,604,049	226,764	4,461,573 382,603
Pork.....	9,380,702	552,472	7,536,445 513,593
Lard.....	35,934,410	2,398,961	32,047,354 2,440,732
Butter.....	2,224,819	311,936	2,238,888 482,873
Cheese.....	6,720,881	657,421	10,682,884 1,253,577
Tallow.....	9,668,584	663,527	9,098,705 653,355

Total values... \$11,457,522 \$11,169,303
The total values of provisions exported during the last six months of 1879, compared with the exportations of the corresponding period in 1878, are given in the following table:—

	1878.	1879.
Bacon.....	\$22,702,192	\$20,953,428
Fresh beef.....	1,901,247	2,949,784
Salted beef.....	1,092,688	1,329,437
Pork.....	2,289,344	2,810,622
Lard.....	9,983,036	10,928,276
Butter.....	2,514,685	3,562,717
Cheese.....	8,036,505	6,638,570
Tallow.....	3,166,814	3,151,933

Total values.....\$51,677,511 \$51,424,767

THE WINDSOR BRANCH RAILWAY.—The Western Counties Railway Company, who were recently deprived of the Windsor Branch Railway by the Dominion Government, which transferred it to the Windsor and Annapolis Company, have forwarded a petition to Ottawa setting forth that in 1874 the Parliament of Canada entered into agreements to give the Windsor Branch and all the earnings thereof in consideration of the petitioners working it efficiently, and keeping it in repair; also of their prosecuting the building of the railway from Annapolis to Yarmouth, and completing the same with reasonable despatch. This, they contend, has been done. They announce that trade interruptions that have occurred were not their fault, while any difficulties between Companies are provided for by the Provincial Railway Act. They aver that they have raised money to complete all the engagements into which they entered. They are, they say, willing, as a matter of immediate settlement of the difficulties, to receive from Parliament the same title to the Windsor Branch property, which the Dominion received with it from the previous owner, the Province of Nova Scotia, that is, possession and ownership subject to the Windsor and Annapolis Company's original charter rights. They, therefore, respectfully ask that the Government and Parliament of Canada will grant them relief by a declaratory Act such as they transmit, which will be accepted by all those interested in the petitioners' undertaking, as a settlement of the difficulties that alike embarrassed them, taxed the people uselessly, and led so far to the unprofitable expenditure of very large sums of Provincial and private money, without having, as yet, accomplished the policy of Parliament.

A DEEP ARTESIAN WELL.—The artesian well near Buda Pesth is now completed. The works were commenced in 1868. The total depth is 3,200 feet; and the temperature of the water it yields is nearly 165° Fahr. The temperature of the mud brought up by the borers was taken every day, and was found to increase rapidly, in spite of the loss of heat during its ascent, down to a depth of 2,300 feet to 2,700 feet. Beyond this point, the increase was not so marked. At a depth of 3,000 feet, the temperature was 177° Fahr., giving an average increase of 1 degree for every 23 feet bored. Water first commenced to well up at a depth of 3,070 feet; here its temperature was 110° Fahr., and from this point onward it rapidly increased both in quantity and temperature. Thus, at 3,092 feet, its temperature had already risen to 150° Fahr., and the yield in twenty-four hours 9,500 to 44,000 gallons. Finally, when the boring had reached 3,200 feet, at which point it was stopped, the temperature of the water, as it burst from the orifice of the tube, was 165° Fahr., and the volumetric yield 272,000 gallons in the twenty-four hours. The yield was afterwards reduced to 167,200 gallons in consequence of the bore being lined with wooden tubes which reduced its diameter. The water obtained disengages carbonic acid in abundance, and also contains nitrogen and a little sulphureted hydrogen, and 80 grains per gallon of fixed matters, chiefly sulphates and carbonates of potash, soda, lime, and magnesia.—*Engineer*.

DURING the year 1879, three new railroad companies have been organized in Maine under the general railroad law of 1876, and roads located and built by the same, over which trains now run regularly, viz., the Sandy River Railroad, leading from Farmington to Phillips, a distance of eighteen miles; the St. Croix Railroad, leading from the European & North American Railroad station in Vanceborough to the centre of the St. Croix River (the eastern boundary of the State, a distance of about three-fourths of a mile, to connect with a branch of the Canada & New Brunswick Railroad; and the Norway Branch Railroad, leading from Norway village to the Grand Trunk Railway at South Paris, a distance of about one and a half miles. The first named road, from Farmington to Phillips, is a narrow gauge of but two feet. The others standard gauge of four feet eight and a half inches.

It seems probable that the sophism that national debts are the bulwark of governments must soon be exploded in Europe, where the increase in the public debt has proceeded at a prodigiously rapid rate during the past fifteen years, and has come to be an irksome burden upon the people. Since 1865 the annual expenditure of European States has risen from £398,000,000 to £585,000,000, and national debts have swelled in the same period from £2,626,000,000 to £4,324,000,000. Every department of government has contributed to this increase, but it has been most apparent in the army and navy expenditures. Thus Germany in 1865 spent £10,000,000 on her army and navy; now she spends £21,000,000 annually for the honor of being considered the military school of Europe, and Russia within the past fifteen years has increased her expenditures on the army and navy from twenty-two to thirty-six million pounds. France has brought up her annual outlay for the same services from seventeen to twenty-seven millions, while England has made the comparatively modest increase of five million pounds, viz., from twenty-seven to thirty-two millions. Italy and Austria alone have effected a saving in the cost of their military system, but Great Britain and Holland only have been able to make a reduction in their national debts. The capital that Europe has been compelled to spend upon the maintenance of high armies and costly navies we on this new continent have devoted to the improvement and development of our national resources, and have thus been enabled to derive a direct benefit from the increase in our national debt which has not flowed to European peoples.—*Gazette*.

A NEW LIGHTNING ROD.—A great novelty in the way of a lightning rod is fathered by the "Chambers National Lightning Protection Company," of Cincinnati, in the State of Ohio, and marks an immense improvement over every thing of the kind ever before presented to a gullible public that expends hundreds of thousands of dollars upon public schools.

The Americans, says the *Popular Science Monthly*, apropos of the subject, are a progressive people, great on improvements, and the Westerners are especially wide awake in this respect. So the new lightning rod is a great step forward in inventive science. It is laid flat on the ridge of the building, and turned up at the two ends, and has no connection with the ground. It's rationale seems to be that the lightning discharge is caught upon one of the points, and, there being no rod to convey it to the earth, it is obliged to "diffuse back into the air, where it belongs, and whence it came." The richest part of this story is yet to come. Prof. Macomber, of the Iowa Agricultural College, had the audacity to pronounce the new-fangled rod a humbug and a fraud, whereupon he is promptly prosecuted by the C. N. L. P. C., which lays its damages at \$50,000. Macomber is so badly frightened that he goes and gets the opinions of a lot of ignoramuses, like Tyndall, Loomis, Pickering, Stillman, Rod, Meyer, Clarke, Morton, and others, who, being naturally blinded by prejudice, can see no good in the invention, and, of course, agree with Macomber, that the thing is a humbug. But what will an Ohio jury say to this interference with the profitable business of the Lightning Protection Co.? We are decidedly curious to know.

THE world's production of Bessemer steel has enormously advanced since 1870. Since that year, the production of the United States has increased from 40,000 to 550,000 tons, and that of Great Britain from 250,000 to 750,000 tons. Germany and France now have a yearly production of 250,000 tons each, while that of the rest of Europe, not here included, would swell the foregoing figures by about 200,000 tons more.—*Electro-metallurgy* has been applied to the making of statues, the method having been successfully inaugurated by the reproduction of a large clay model in bronze by the electrolytic process, instead of the usual one of casting. This statement is warranted by the announcement that the Electro-Metallurgical Company of Brussels has just completed a colossal statue in Bronze of Jan Van Eyck, the great painter, by the system of galvanic deposition.—The American Manufacturer evidently anticipates a lively year for the iron business. It says, in its latest, that accounts are coming in from almost every direction of blast-furnaces blowing in, and of others that are being put in readiness to go in blast as rapidly as possible, while statements of new ones being erected are not rare. An unprecedented quantity of iron, it is stated, will be made in the United States this year.

ARTIFICIAL DIAMONDS A POSSIBILITY.—Dr. Percy, writing to the *London Times*, says:—"I agree with Mr. Maskelyne in thinking that there is reason to expect that the diamond will some day be artificially produced, but if so, possibly a very long period will be required to form a crystal of sufficient size and quality to be of any commercial value. Alumina, the substance of sapphire and ruby, has long ago been crystallized, yet to this day no artificial sapphire or ruby worth a farthing has appeared in the market. The balas ruby, or red spinel, was formed about forty years ago by Ebelmen in small but distinct crystals, of which I have specimens in my collection; yet so far as I am aware, the natural gem is alone known to jewelers. Possessors of diamonds have not at present any reason to fear that the value of their property will be lowered by the crystallized carbon of the chemical laboratory."

POTASSIUM salts have been used for some time in Austria as a manure, and have yielded, so far, better results than any other artificial manure.

ALD. George Harris, of Ottawa, has contracted to deliver 15,000,000 feet of lumber at Burlington during the coming summer. This is about one of the largest contracts made as yet. The price is a considerable advance over last summer.