

great delay and a heavy expense, and rendering an armed force necessary at all times. This same difficulty may still be apprehended in running their road, but we have reason to anticipate no such difficulty on the Canadian side.

Is it not, also, possible that so sudden changes in climate as must be experienced in passing from the snows of the Sierras to the arid plains of the desert, will have a deleterious effect on some of the Asiatic merchandise, which may be avoided by the more equable climate on the Canadian line?

In summing up, then, we see that the country through which the proposed Canadian Pacific Railroad will run has decided advantages over the American line, in giving easier grades and curves, in being nearly free from snow, in furnishing fuel and water, in capabilities of furnishing local traffic, in safety of transportation, and also in furnishing facilities for construction; therefore, it is fair to conclude that it can be operated with more speed, regularity, profit, safety and economy. We have already seen that between Asia and Europe it is the line of the shortest route. Why, then, should it not attract the traffic across the Continent? And if so, it must pay.

But, as if nature had herself designed that this route should be the highway for commerce, she has stored inexhaustible supplies of coal at either end, which, now that in transportation of merchandise steam is largely taking the place of sailing vessels, is of incalculable advantage. New York is obliged to draw her supply of coal from the hills of Pennsylvania, and San Francisco from British Columbia, while Halifax has her supply at home, and almost any port we choose for a terminus on the Pacific is within easy access of a coal field. Surely, then, there can be no doubt of the superiority of this route nor of its paying qualities. There is also strong political and national importance to be attached to it.

THE PRODUCTION AND MOVEMENT OF GRAIN.

A WRITER in the *Commercial and Financial Chronicle* gives the wheat production of the several States in 1848 and 1859, as follows:—

	1848. bush.	1859.
Pennsylvania.....	15,367,601	13,012,165
Ohio.....	14,487,351	15,119,047
New York.....	13,121,498	8,681,105
Illinois.....	9,414,575	23,337,023
Indiana.....	6,214,458	16,848,327
Michigan.....	4,925,889	8,336,368

From this time, however, a marked change was noticeable. For instance (says the *Chronicle*) Wisconsin, which reported 4,000,000 bushels in 1848 and 15,600,000 in 1859, reported in 1868 20,367,920 bushels, at a valuation of \$33,914,226—a five-fold increase in crop in eighteen years, and a nine-fold increase in value. Other States named above present the following aggregates:—

	1868. bush.	Value. \$
Pennsylvania.....	10,519,660	28,087,492
Ohio.....	10,208,854	25,726,812
New York.....	12,526,406	33,525,904
Illinois.....	23,551,421	55,104,243
Indiana.....	9,114,562	21,965,694
Michigan.....	14,741,639	37,588,630

Pennsylvania, in the interval from 1859 to 1868, fell off; New York, recovering from the devastations of the weevil, gained; Ohio fell off largely, considering her increase in population; Indiana also produced less, while Illinois and Michigan increased. Iowa now enters the lists with a production in 1866 of 14,000,000 bushels, having currency value of some \$20,000,000; Minnesota, which in 1857 imported breadstuffs, had 10,000 bushels for export ten years later, and kept 4,000,000 for home consumption. Twenty years ago the wheat products of New York and Pennsylvania was four or five bushels per head to the population; now it is but two or three. Of course these States and their Eastern neighbours look to these great Western granaries for supplies; and their confidence will not be misplaced. Directly west of Iowa and Missouri, and within the limits of Kansas and Nebraska, the wheat region virtually ends; but it will expand into immense dimensions on the vast areas of the Northwest. There will be a granary never to be drawn down.

There is a lesson of importance to be derived from this statement we have given. These wheat areas of the East, and in this term we include all the regions east of the Mississippi, are by no means exhausted. They need but culture to reach the highest promise they ever gave. The wheat crop of New York fell from thirteen millions in 1848, to eight millions in 1859, and rose then to twelve millions in 1868, the

prime cause of this was the renewal of wheat culture after years and years of disease. The farmers could not contend with the insect, and they yielded. The insect disappeared and again the fields returned productive crops. If land is higher in price in these Eastern States, the farmers are nearer a market and they can compete to a certain extent with the West. In Ohio, Michigan, Indiana and Illinois, there has been a falling off in the average yield per acre, showing a careless cultivation, for these wild lands are yet unexhausted.

An examination of the breadstuffs trade of Chicago for a series of years also indicates the growth of the West, and the tendency of the centre of cereal production in that direction. In 1854 the receipts of flour at Chicago were 234,575 bbls.; in 1868 they were 2,276,335 (a tenfold increase,) and Chicago, which in 1860 manufactured but 232,000 bbls., manufactured last year 747,932. In 1854 the receipts of wheat were three millions of bushels, and in 1868 they were fifteen millions. Corn grew from seven millions in 1854 to twenty-five millions in 1868. Chicago shipped last year 24,800,000 bushels of wheat and flour reduced to wheat. The five lake ports together sent out 53,000,000 bushels, and it is estimated that 18,000,000 bush went on the railroads.

The promise of an increased crop this present year is very good. Illinois has recently suffered so severely from the rains that the corn crop is considered to be in danger, all other sections of the country report good progress, and warrant the belief that the avenues of transportation will be crowded with the products of agriculture. For the great granary beyond the Mississippi, of which we have spoken, the competition of transporting interests is lively. St. Louis has an agent in New York to engage a steamship to proceed to that city and bring a crop of grain directly to this port; Iowa and Minnesota are pushing railroads into the interior; Chicago reduces her charge for handling and storing grain. Freight by rail on competing roads go down, and the great battle between the rail and the water route assumes new and more interesting proportions. Some of the experiments induced by this rivalry between different routes are on an extensive scale. This steamship from New York to St. Louis and return, involves a long voyage. It is 3,000 miles of water against 1,000 by land. It is an ocean voyage, a gulf passage and a long and sinuous river with all its opposing currents and unknown obstructions. It passes by the Mississippi cities, whose hopes have been of direct trade with Europe, and it has for its St. Louis guarantors the enterprise, and capital and pluck of a strong and vigorous city. As one attempt to solve this problem of transportation it is interesting to all observers. The world at large which takes many million bushels of wheat, corn and flour from the United States, and the army of consumers in the non-producing States no less than producers are all directly interested, for to them it is a question of cheaper food.

CROPS IN AMERICA AND EUROPE.

THE crop reports from various parts of the United States are more conflicting and doubtful than is usual at this season of the year. The extreme fluctuations in the weather, and the variations of rain and heat, have produced opposite results in different places. If we were to look only at the accounts from some parts of Illinois and Iowa, the wheat prospects would be gloomy in the extreme. But when we take a broader and more comprehensive view of our vast expanse of country, it will be found, on striking an average of the whole, that the prospects are more reassuring. It is at least quite certain that the usual occurrence of the successive seasons of good crops will be fully realized this year. We shall have as much wheat for home and foreign consumption as we had last year, and if the balance of the season is not very unfavorable we shall have a great deal more.

To come to particulars, we find that the crops are very favorable in the New England States, New Jersey and New York. The hay crops in all these States will be immense, and the cereals are in a prosperous condition. In Virginia and Tennessee there is nothing to be desired. From the Northwestern States the accounts are more conflicting. But it appears that damages by the recent tremendous rain storms are confined to a comparatively limited breadth of country. Wheat, in some parts of Illinois, Iowa, and a few of the Northwestern States, has suffered considerably. But even in the most unfavourable States the harvests—except in the unlooked for event of continued bad weather—may reach last year's average. In Minnesota, which is now the chief wheat-producing State in the Union, the supply will be immense. A harvest of full 20,000 bushels of wheat is expected. In Ohio, Wisconsin, Indiana and Nebraska, the wheat harvest seems superb. Take it altogether, there can be little doubt that the upper Valley of the Mississippi, and nearly the entire Northwest, will advance considerably upon last year's supply. It will be remembered that this result will be partly the result of the increased quantity of land placed under wheat. It was not for the drawbacks in various localities on account of the weather, the yield would be unparalleled.

In California the wheat has been already harvested, and the yield, in spite of the drawbacks on account of rust will be in excess of last year's supply. A greater breadth of land has been sown, much of it on new soil, and the aggregate is unprecedented. Every effort is made to push the grain to market, or to entrepôts where it may be available for transportation. From Oregon, Washington Territory and the Pacific slope generally, the accounts are favourable.

The drawback to this favourable view is the indication that corn will not much exceed half a crop. The cold Spring and the heavy rains have produced injurious results. Nearly all the Western States have something to complain of on this point. A larger portion than usual has been planted in the Eastern

and Southern States, which may neutralize the bad results of the short crop elsewhere. Unusually fine weather for the balance of the season may produce better results. But at the present time corn is in an unusually damaged condition, a fact which is sufficiently attested by the advancing market rates.

The South will, undoubtedly, produce more food than last year. In the Valley of the Colorado, Texas, and in portions of the lower Mississippi Valley, immense damages have resulted from the unusual inundations. Vast tracts of country have been devastated. But the supply of food from all the Southern States may be safely estimated as being in excess of last year's products. From all parts of Canada the wheat and corn accounts are highly satisfactory.

In Europe, we find the crops have been subject to very nearly the same conditions as in the United States. A cold backward spring and a wet summer, will reduce the supply of cereals in England below last year's average. A drought in France will produce very nearly the same results. From Hungary, Germany, Southern Europe and Russia, the accounts are much more favourable than they were a few weeks ago. Spain will have a more than average good crop, a fact that is the more gratifying in view of last year's deficiency. But when we come to balance the accounts from the surplus grain-producing and the importing States in Europe, it will be found that the entire supply can hardly be expected to reach last year's average. Unless, in the contingency of very favourable weather, the supply may fall considerably below the present estimates.

For the American producers, then, the prospects are generally favourable, so far as relates to the chief staple of wheat. There will certainly be a good demand for exportation, a fact that will keep prices firm on this side of the Atlantic, and prevent the decline that would otherwise result from the abundant harvest. The deficiency in the corn crop is to be chiefly regretted on account of the probable influence upon cattle and swine. This product feeds the millions in America and Europe indirectly. Its enormous bulk scarcely pays the cost of transportation. But Western farmers, by feeding it to cattle and swine, realize upon it in another form. The condition of this staple is therefore a matter of much interest, and it is to be hoped that a favourable turn in the weather may materially improve the only drawback to an otherwise highly prosperous harvest.—*United States Economist*.

NEW MODE OF CARRYING MOLASSES IN BULK.

THE *Boston Journal* gives an account of the arrival there of the iron tank molasses brig "Novelty," from Cuba, of which we have already given a brief mention. This vessel was constructed by the owners of vessel and cargo, to test this method of transportation. The *Journal* says:—

"She made the homeward passage from Matanzas in eleven days, which is a very quick run. The sea-going qualities of the vessel have proved to be all that could be desired, while the new and novel method of carrying the cargo has been fully demonstrated to be correct in principle, and its practical result has become a success. On the outward trip the vessel behaved finely, and as considerable heavy weather was encountered, a good opportunity was afforded to test the working qualities of the craft, her highest speed being 12½ knots per hour. The tanks were ballasted with water, but did not leak a drop. On her arrival at Matanzas her tanks were pumped out in a single day, and the vessel was then ready to receive her cargo, which she took on board at the rate of 200 hogsheads per day, easily, while 50 hogsheads is considered a good day's work when stowed in the ordinary way. The hogsheads of molasses came alongside in lighters, and were turned into troughs, from which it flowed readily into the tanks. In this way she can take her cargo on board in three days, but if she had loaded at Havana, where the article is stowed in tanks on the wharf, she could have loaded in one day. With the cargo on board she draws eleven feet three inches. On her return voyage everything worked well, the tanks remained perfectly tight, and not a pint of molasses was lost by leakage.

It is calculated that when the cargo is already at the point of shipment, it will require only four days to load her when it is received from lighters, and under favourable conditions the round voyage can be performed in thirty days. Heretofore charter parties considered it necessary to allow thirty days in which to receive cargo by vessels of the size of the "Novelty," and it is shown by the experience this vessel has thus far gained that there will be an immense saving in point of time over the old method.

The cargo of the "Novelty" consists of 84,075 gall, which will be pumped by steam power from the vessel into pipes connecting with an iron tank at the Oxnard sugar refinery. This tank holds 125,000 gallons, and the whole cargo can be discharged in about five hours, or at the rate of two and a half to three hogsheads per minute.

The greatest difficulty to overcome was to allow for fermentation, which is usually equal to ten per cent. To insure safety it was necessary to keep the tanks full, or otherwise the rolling of the vessel would destroy them by the swashing of the molasses; so over each tank a turret was constructed holding about 12 per cent of the cargo, and when the article was in a fermented state it would naturally rise to the turret, a hole in it being made for the purpose, and when it subsided it would fall; thus by having molasses in a sufficient quantity in the turret, it insured a full measure for the tank.

The advantages acquired by the success of this experiment are important. It saves large in the expense of cooerage, and in the handling of the cargo, while the gain in the point of time and the prevention of leakage can not be readily estimated.