

of the act Congress and the obligation imposed by good faith and common honesty.

By confining the company to the land grant line the people of Fayette, Bremer and Chickasaw counties will secure the advantages of the road, as intended by act of Congress, and the number of people of these counties exceeds the entire population west of the Cedar river within the limits of the land grant along the forty - third parallel to the Missouri river, and the construction of the road so as to make it accessible to this large population, who now have no road, does not prevent or interfere with the construction of the line so that the greatest possible facilities may be furnished to those who live beyond the Cedar river along the land grant line. There is now in process of construction, to be finished in July, 1868, a railroad to Charles City, in Floyd county, and the Milwaukee & St. Paul road is now running to the State line.

By next harvest such will be the road facilities that there will not be one thousand people between Calmar and Charles City who can not go to a depot and return the same day; and should the lower or land grant line be constructed south of Turkey river, and the road extended from Charles City to Austin, as contemplated, then there will not be a farmer between the Turkey and the Cedar rivers distant more than half-a-day's drive from a railroad depot. If the line south of the Turkey is not constructed, there are now more than 20,000 people who will remain without like railroad facilities.

Having now presented the questions to be determined, in disposing of the land granted by the Act of Congress approved May 12th, 1864, we earnestly urge this house to determine the line, and to confer the land on such a company as will guarantee the fulfillment of the trust reposed in the State,—not merely for the benefit of the people on and west of the Cedar river, but also for those other and more numerous people who also live near the 43d parallel, and who should enjoy equal railway facilities with their fellow citizens of Iowa.

HORACE HAMILTON.
C. R. BENT.

MEMORIAL

OF THE

TWELFTH GENERAL ASSEMBLY

OF THE

STATE OF IOWA

TO THE

UNITED STATES CONGRESS,

RELATIVE TO

WATER COMMUNICATION

BETWEEN THE

ATLANTIC AND MISSISSIPPI.

DES MOINES:

T. W. PALMER, STATE PRINTER.
1868.

MEMORIAL.

The General Assembly of the State of Iowa, to the Senate and House of Representatives of the United States, respectfully represent:

That the great want of our State is cheap transportation for our heavy products to the markets of the world. That the most feasible plan to secure this end is to provide a direct and continuous line of water communication between the Mississippi river and the Atlantic ocean, in a latitude favorable to the safe carriage of grain in bulk, and yet comparatively free from obstruction by frost.

Such a communication, we believe, could be secured most readily by the Ohio, Kanawha and James rivers to Norfolk, Virginia. Upon this subject we beg to submit to your consideration the following sketch and suggestions.

It appears that for years prior to the war of the Revolution, the importance of this connection had occupied the serious consideration of Washington. His plan embraced a double connection between the waters of the Mississippi Valley—the one by the Potomac river, on the east, and the Monongahela on the west, to the point where Pittsburg now stands; and the other by the James river, on the east, and the Kanawha on the west, to the Ohio, at its mouth, two hundred and eighty-four miles below Pittsburg.

The first idea seems to have been suggested to him, or at least to have ripened to a conviction, as to the northern improvement, by his trip, when quite a young man, and as early as the year 1753, from Jamestown to Fort Du Quesne (Pittsburg), as a messenger for Robert Dinwiddie, the then Governor of Virginia. Upon the conclusion of

the Revolutionary war, General Washington was so impressed with the importance of a water line across the Alleghanies, that during the year 1784, he made a personal exploration of the country, traveling for that purpose, many hundreds of miles. The result of that exploration and subsequent action of the Governor and Legislature is thus given in the report above referred.

"He kept a journal, in which were minutely recorded his conversations with every intelligent person whom he met, respecting the facilities for internal navigation afforded by the rivers which have their sources among the Alleghany Mountains, and flow thence either to the east or the west. He returned to Mount Vernon on the 4th day of October, and on the 10th of the same month communicated the results of his observations to the Governor of Virginia, Benjamin Harrison, a warm personal friend of Washington, and the father of William Henry Harrison, ninth President of the United States. In his letter introducing the subject, Gen. Washington says: 'I shall take the liberty now, my dear sir, to suggest a matter, which would (if I am not too short sighted a politician) mark your administration as an important era in the annals of this country, if it should be recommended by you and adopted by the Assembly.' And then proceeds: 'It has long been my decided opinion that the *shortest, easiest and least expensive* communication with the invaluable and extensive country back of us would be by one or both of the rivers of this State, which have their sources in the Apalachian Mountains.'"

Governor Harrison communicated the subject to the Legislature, with a Message, as follows:

"IN COUNCIL, October 18, 1784.

"To the Honorable Speaker of the House of Delegates:

"The opening of the navigation of our western waters is of such immense consequence to the State that it has engaged the attention of our late commander-in-chief, and induced him to favor me with his opinion on the subject, which I enclose and request the favor of you to lay it before the Assembly. His reasoning is so conclusive that I have not a doubt of the utility of the measure remaining with me, and shall feel myself extremely happy if the Assembly should

coincide with me in opinion, and should set on foot the surveys recommended as a necessary preparatory step to the undertaking."

He then presents various considerations in its support.

On the fifteenth of November General Washington arrived in Richmond, where the General Assembly was then sitting. The House of Delegates being informed of his arrival, adopted unanimously a resolution expressive of their reverence for his character and affection for his person, and appointing a committee of five members, of whom Patrick Henry was chairman, to wait upon him with the respectful regards of the House. The object of his visit was not only to meet the Marquis de Lafayette, who arrived in the city on the seventeenth, but also to promote in the legislature his views of a plan of internal improvement.

On the 15th of December it was ordered in the House that leave be given to bring in a bill for opening and extending the navigation of James river, and Mr. Madison, afterward President of the United States, was made the chairman of the committee, who were instructed to prepare and bring in the same. This bill became a law on the 5th of January, 1785, on which day the Speaker, John Tyler (the father of John Tyler the tenth President of the United States) signed the following enrolled bills, viz: "An act for clearing and improving the navigation of the James river." "An act for opening and extending the navigation of the Potomac river." "An act for vesting in George Washington, esq., a certain interest in the companies established for opening and extending the navigation of the Potomac and James rivers."

The company was organized August 20th, 1785, and on the next day Gen. Washington was elected its first President.

Edward Randolph (afterward Attorney General, and Secretary of State of the United States, under General Washington's administration,) in communicating these facts to the general, wrote:

"I endeavored to deliver you from the appointment to the office of President, but the universal suffrage called you the the post without an expectation, however, that you would undergo more of the business than your own convenience may reconcile to you."

This company continued its organization until the 20th of February, 1820, and until 1835 this enterprise was prosecuted, for a short time under the control of the Commonwealth of Virginia, and then again, by the "James River Company." It is to be noted that although the title of this company related only to the James river, yet the act of incorporation defined the object to be "An act for clearing and improving the navigation of James river, and for uniting the eastern and western waters of the James and Kanawha rivers."

Under an act of incorporation passed March 16th, 1832, the "James River and Kanawha Company" was organized May 25th, 1835. All the works and property of the former company were then turned over to this last named company, under whom the work has been prosecuted since.

Before proceeding to state what progress has been made, it would perhaps conduce to a better understanding of the whole enterprise, to give a general outline of the purpose and character of this improvement.

It is proposed by it, to connect the Ohio river at the mouth of the Kanawha, with the Atlantic ocean at the mouth of the Chesapeake Bay, a distance of six hundred and thirty-six miles by a water line, of capacity sufficient for boats of three hundred to four hundred and fifty tons burthen, capable of conveying from ten thousand to fifteen thousand bushels of wheat, to pass the whole distance without breakage of bulk. Of this, the first one hundred and fifty-one miles from the Ocean to Richmond will also be navigable for sail vessels and steamboats. From the Ocean to the mouth of the James at the head of Hampton Roads, is about twenty-five miles, of this last named distance. And this will probably be the point of departure for ocean-bound vessels; Hampton Roads furnishing the most capacious, and in every respect the best harbor on the Atlantic coast; thus making the connecting line only about five hundred and eleven miles.

From Richmond the canal extends westward two hundred and seventy-eight miles, passing through the ranges of the Blue ridge and Alleghany mountains to the Green Brier river, a tributary of the Kanawha. From the intersection of the canal with the Green

Brier river, there is to be a slack water navigation, by means of locks and dams, down through New river and the Kanawha, one hundred and nineteen miles; thence, the channel of the Kanawha is to be deepened to its mouth, a further distance of eighty-nine miles.

THE WORK DONE.

1. The first division of this improvement commencing at Richmond, is called: "The Richmond dock and tide water connection," and is one mile in length. This division is thus described in said report:

"FIRST — THE RICHMOND DOCK AND TIDE-WATER CONNECTION."

By means of this improvement, vessels ascend from the river into the dock, where they are met by canal-boats, which descend from the basin at the terminus of the canal, and lay alongside the vessels for the purpose of exchanging cargoes; or, the canal-boats can descend to the river, and without breaking bulk, be towed to City Point or Norfolk.

"Vessels enter the dock by means of a ship lock, which is founded upon solid rock, and built of the most substantial cut granite. It is one hundred and eighty feet long between the gates; thirty-five feet wide; has a lift of fifteen feet, and has sixteen feet water on the mitre sill. It will pass vessels of five hundred tons."

"The dock is 4,100 feet long from the shipment to Seventeenth street, and has a continuous wharf, protected by a granite wall, for its whole length on the north side, and for about 1,000 feet on the south side. The depth is from eleven to fifteen feet, and the average width one hundred feet. Above Seventeenth street is a continuation, called "The Upper Dock," which is also surrounded by a substantial granite wall, and is now only used by canal boats, but whenever the trade shall demand it, it can be made accessible to vessels, by means of a pivot bridge, thrown across in the line of Seventeenth street extended. This upper portion is eight hundred feet long and two hundred feet wide.

The dock is connected with the basin by means of five locks, having an aggregate lift of sixty-nine feet. These locks are built of hewn granite, and, with the ship lock, will in their style and finish compare favorably with any similar works in this country.

The total cost of the dock and tide-water connection has been \$851,312. It was completed in the year 1854."

Having, by means of this dock and tide-water connection, reached the basin at the head of the falls, the eastern terminus of the canal is reached.

2. The first division of the canal extends from the basin to the city of Lynchburg, comprising one hundred and thirty-seven and three-fourth miles of canal proper and eight and three-fourths of slack-water navigation; making one hundred and forty-six and one-half miles.

The trunk of the canal is thirty feet wide at the bottom, and fifty feet at the water line, and was originally cut to the depth of five feet — locks one hundred feet long between the gates, and fifteen feet wide.

The second division of the canal is from Lynchburg to Buchanan, fifty miles further, which has also been completed upon the same plan.

Of the next division to Covington, forty-seven miles further, only about fifteen miles has been completed, making a completed canal and slack-water navigation from Richmond westward, of two hundred and twelve miles; and leaving sixty-six miles more of canal to be completed to the head of the proposed slack-water navigation on the Green Briar river. On this distance of sixty-six miles, a very large amount of money has been expended. Besides this, connected with the second division of the canal to Buchanan, is a lateral improvement, known as the "North River Improvement" making a navigation of slack-water and canal of 29½ miles.

All this was done up to the beginning of the year 1860, and there had been expended \$11,785,455, besides the large sum of \$3,034,845 paid annuities and interests on loans from the net earnings of the company.

In the meantime the great West and Northwest, had grown up into a mighty empire, with population, wealth and productions, far exceeding the most sanguine expectations of those who projected the enterprise when all this vast region was a wilderness. In that year *seventeen millions of tons* of the products of this great valley had

reached the Atlantic sea board through the various channels of transportation. And as this line of improvement would, when completed, offer a much cheaper and better means of transportation, to more than half of the valley, than any other line, it became apparent that the line already completed, though regarded as a stupendous enterprise when projected, would be found wholly insufficient, when it should reach the Ohio river, for the immense amount of tonnage that would be ready to offer itself.

During the fiscal year ending September 30th, 1860, this unfinished improvement had so developed the country through which it passed, and so increased the products of agriculture, mines and forests, that 244,273 tons of freight were transported over it, of the estimated value of \$19,810,256, yielding a revenue to the company of \$229,368.

A necessity then presented itself to the company, to greatly enlarge the character of their work. The means to do this were beyond the ability of the present company, and from the State which had already invested so largely, the requisite amount could not be hoped for, within any reasonable time for the completion of the work.

It was determined, therefore to organize a new company, under the name of the "Virginia Canal Company," with a minimum capital of \$20,000,000; to which new company, when organized all the creditors and stockholders of the present company, were to turn over their entire stock and credits, at a rate which would only represent \$1,700,000 of stock in the new company, and an annuity to the State of Virginia of \$135,000, being the interest, at six per cent., on two millions and a quarter of dollars; redeemable at any time, by the payment of that amount of principal; so that the entire property, free from incumbrance, would pass to the new company, at a cost of less than *four millions of dollars*.

A company of French capitalists agreed upon these terms, to furnish the needful capital to organize the new company, and complete the work according to a plan specified in a contract between said capitalists, and the James river and Kanawha company

to which contract the Legislature of Virginia gave the assent of the State, by an act passed March 29th, 1861.

DESCRIPTION OF THE IMPROVEMENT.

Under the contract above referred to, the said capitalists "Bellet Des Minieues, Brothers and Company," were to clear out, to the original depth of five feet, and put in complete order, the canal already constructed to its western terminus, two hundred and twelve miles from Richmond. They were then to complete the canal, from that point westward to the slack-water navigation on Green Brier river, across the summit level of the Alleghanias, with a width of seventy feet, at the water-line, a depth of seven feet, and a width of forty-two feet at the bottom, the banks sloping on each side, from the water-line fourteen feet, in a descent of seven feet. The locks were to be one hundred and twenty feet long and twenty feet wide; with seven feet depth of water.

The distance is about sixty-six miles. The summit level of the canal was to be fed by a reservoir to be made by damming Anthony's creek with a mound one hundred yards long, whereby a reservoir would be erected, nine miles long, an average of half a mile in width, and sixty feet deep; the reservoir being thirty feet above the summit level of the canal; with which it was to be connected by a lateral canal, nine miles long. From thence one hundred and nineteen miles down the Green Brier, New river and Kanawha, a slack-water navigation was to be constructed by means of locks and dams; the depth of the channel to be in all places seven feet; the locks to be one hundred feet long, forty feet wide and seven feet deep, for steamboat navigation.

From thence to the mouth of the Kanawha, a distance of eighty-nine miles, the shoals to be deepened to six feet, of a width of eighty feet at the bottom, and one hundred and four feet at the top of the water line.

This under the contract was to have been completed by the twenty-ninth of September, 1869.

After the completion of the improvement to the Western terminus, the line Eastward was to be enlarged to the same capacity, both as to canal and locks; for which two years further time was given.

The breaking out of the war defeated the consummation of the arrangement: and the improvement has made little or no progress since.

The "Virginia Canal Company" has never been organized under the charter granted; and the works are still in the hands of the James River and Kanawha company.

To raise the money necessary for the completion of the enterprise, is now the great object of this company. By whatever plan it may be proposed to raise that amount; two preliminaries must first be satisfactorily established:

First, That the advantages of the work when completed will be sufficiently great to justify the outlay.

Second, That it will furnish adequate security to pay the interest, and redeem the principal of such outlay, within a reasonable time.

As to the first proposition. In the recent message of the Governor of this State to the Legislature, the relative cost of transportation by railroad, canal, river and ocean navigation is thus stated.

By railroad from twelve to fourteen mills per ton per mile.

By canal five mills per ton per mile.

By river navigation two and a half mills per ton per mile.

By ocean navigation one and a half mills per ton per mile.

This was assumed by the Governor as a data, for the purpose of demonstrating the greater cheapness of river, gulf and ocean transportation, from any point on the Mississippi river, and of course from any point west of that stream, to the city of New York, over the present modes of transit by railroad, lake and canal eastward to the same point, and was made the foundation of an argument in favor of the improvement of the river navigation, now going on, in order to give the country the full benefit of this cheaper line.

The advantages of the river and ocean transportation over the other route by railroad, lake and canal, claimed by the Governor, has been so often demonstrated, that it may be regarded as fully established. Taking this data, as to the relative cost of transportation, as correct we propose to introduce a comparison between the cost and other advantages of transportation by the river and gulf route to New York, on the one hand, and by the river and proposed water

line through Virginia on the other. This comparison will be made from various points on the Mississippi, from St. Paul to Memphis, and will of course apply to all intermediate points, and to all the territory west of that stream between these points.

The following distances which are believed to be accurate, or nearly so, are taken as the basis of the comparisons to be made:

From St. Paul to the mouth of the Mississippi river, 1,957 miles.

From the same point to the mouth of the Ohio, eight hundred and sixty - four miles.

From Dubuque to the mouth of the Mississippi river, 1,715 miles.

From the same point to the mouth of the Ohio, six hundred and twenty - two miles.

From St. Louis to the mouth of the Mississippi, 1,276 miles.

From the same point to the mouth of the Ohio, one hundred and eighty - three miles.

From Cairo to the mouth of the Mississippi, 1,093 miles.

From Memphis to the mouth of the Mississippi, eight hundred and sixty - one miles.

From Memphis up to the mouth of the Ohio, two hundred and thirty - two miles.

From the mouth of the Mississippi, through the gulf and ocean to New York, 2,400 miles.

From the mouth of the Ohio to the mouth of the Kanawha, seven hundred and thirty - five miles.

From the mouth of the Kanawha to the tide - water on the James river, 4,865 miles.

From the head of tide - water on the James to Hampton Roads at its mouth, one hundred and twenty - six miles:

From the head of Hampton Roads to the ocean, twenty - five miles.

Now let us take St. Paul as the first point of comparison; the charge per ton will be from that point as follows:

NEW ORLEANS ROUTE.

To the mouth of the Mississippi 1957 miles at 2½ mills per ton per mile.....	\$4.89
To New York by gulf and ocean navigation 2,400 miles at 1¼ mills per ton per mile.....	3.60
Total.....	\$8.40

BY THE WATER LINE THROUGH VIRGINIA.

From St. Paul to the mouth of the Kanawha by the Mississippi and Ohio 1,599 miles; add, from Richmond to Hampton Roads, 126 miles — makes 1,725 miles river navigation, at 2½ mills per mile.....	\$4.31
Canal and improvement of navigation on the Kanawha river 485 miles, at 5 mills.....	2.42
Total.....	6.73
Difference in favor of the water line through Virginia.....	1.76

FROM DUBUQUE — NEW ORLEANS ROUTE.

To the mouth of the Mississippi, 1,715 miles, at 2½ mills per mile.....	4.29
By gulf and ocean as above.....	3.60
Total.....	7.89

BY THE WATER LINE THROUGH VIRGINIA.

River transportation 1,483 miles at 2½ mills.....	\$3.71
Canal and Kanawha improvement transportation as above.....	2.42
Total.....	6.13
Difference in favor of water line through Virginia.....	1.76

FROM ST. LOUIS — NEW ORLEANS ROUTE.

To the mouth of the Mississippi 1,276 miles, at 2½ mills per mile.....	\$3.19
By gulf and ocean to New York as above.....	3.60
Total.....	6.79

BY THE WATER LINE THROUGH VIRGINIA.

River transportation 1,044 miles at 2½ mills per mile.....	\$2.61
Canal and Kanawha improvement transportation as above.....	2.42
Total.....	5.03
Difference in favor of water line through Virginia.....	1.76

FROM CAIRO—NEW ORLEANS ROUTE.

From Cairo to the gulf 1,093 miles at 2½ mills per mile.....	\$2.73
By gulf and ocean to New York as above.....	3.60
Total.....	6.33

BY WATER LINE THROUGH VIRGINIA.

River transportation 861 miles at 2½ mills per mile.....	\$2.15
Canal and Kanawha improvement as above.....	2.42
Total.....	4.57
Difference in favor of water line through Virginia.....	1.76

FROM MEMPHIS—NEW ORLEANS ROUTE.

Descending the Mississippi river, even to Memphis, and the comparison will be as follows:

From Memphis to the mouth of the Mississippi, 861 miles, at 2½ mills.....	2.15
By gulf and ocean to New York.....	3.60
Total.....	5.76

UP TO CAIRO AND BY WAY OF THE WATER LINE THROUGH VIRGINIA.

From Memphis, by Cairo, to Hampton Roads—river navigation 1,093 miles at 2½ mills per mile.....	2.73
485 miles Kanawha improvement slack-water and canal, as above.....	2.42
Total.....	5.15
Difference in favor of water line through Virginia.....	60

The difference between the two routes from any point on the Mississippi, or west of it from St. Paul to the mouth of the Ohio is, of course, the same, to wit, \$1 76 per ton, as that part of the line is common to both routes. But the per centage of difference increases as you descend the river to Cairo (which is the real point of comparison.) The difference in favor of the line through Virginia being only about 20 per cent at St. Paul, while at Cairo it is nearly one-third less.

Of course the disparity between the two routes will continue to increase in favor of the Virginia route, in ascending the Ohio river, for the long distance of seven hundred and thirty-five miles to the mouth of the Kanawha. At Cincinnati the comparison will stand thus:

NEW ORLEANS ROUTE.

From Cincinnati to the Gulf, 1,628 miles at 2½ mills per mile.....	\$4.07
From the mouth of the Mississippi to New York as above.....	3.60
Total.....	\$7.67

WATER LINE THROUGH VIRGINIA.

River Navigation on the James and Ohio, 326 miles at 2½ mills.....	81
per mile.....	81
Kanawha improvement and canal as above.....	2.42
Total.....	\$3.23

Difference in favor of the water line through Virginia of four dollars and forty-four cents, or more than one half; besides requiring only about one-third the length of time for transit.

In these comparisons we have treated the whole distance from the mouth of the Kanawha to tide water, four hundred and eighty-five miles, as canal navigation, whereas, two hundred and eight miles on the west side will be navigable for steamboats, towing river barges; better and cheaper than canal navigation proper.

To this great difference in the cost of transportation is to be added the great advantage in time over the Gulf route, and less liability of

injury to flour or grain, from souring or heating in its longer journey and through a hot climate, the route actually passing for a portion of this distance within the tropics.

Taking all these things into consideration it is clear, the water line through Virginia, in the language of General Washington's letter to Governor Harrison "is the shortest, easiest and least expensive communication with the invaluable and extensive country west" of the Alleghenies.

Assuming that the superiority of this line over the "best route," by the way of the Gulf, and consequently over any other, for the larger portion of the Mississippi Valley has been demonstrated. The next question is what results will it accomplish when completed?

WHAT IT WILL ACCOMPLISH.

The amount of freight which annually passes to and from the Mississippi Valley to the Atlantic seaboard now exceeds twenty-five millions of tons.

"The Directors of the Bureau of Statistics have completed an elaborate report for one of the committees of Congress, which shows the tonnage and value of the freight transported during the year ended March 31st, 1867, across the State of Illinois, westward of the meridian of Chicago, from which it appears that there was transported over eight railroads running eastward, 4,358,000 tons of freight, the value of which amounted to \$235,000,000; and westward, 1,345,000 tons, valued at \$411,000,000. The combined movement amounting to the enormous aggregate of 5,703,000 tons, valued at \$646,000,000, an amount equal to nearly two-thirds of the entire foreign commerce of the country." This is less than one-fourth of the whole amount.

The cost of transporting this tonnage varies as to locality and distance. The charges between Dubuque (about two hundred miles west of Chicago) and New York is now, for that class of produce carried eastward which pays the lowest charges, one dollar and ten cents per hundred, or, twenty-two dollars per ton. In the summer, when canal and lake navigation was free, it was ninety-five cents per hundred or nineteen dollars per ton. The lowest rate on westward

bound freight is now one dollar and thirty cents per hundred, or twenty-six dollars per ton; while the next class of heavy freight pays two dollars and thirty cents per hundred, or forty-six dollars per ton. These charges on westward bound freight were somewhat lower, when the lake and canal navigation were open. This is nearly as favorable a point from which to transport produce or merchandise from the Mississippi across to New York, or *vice versa*, as any other point west of that stream, as it is nearly in the line of the general route of transportation. Clinton, further south, is a little nearer to Chicago, while this point is nearer to Milwaukee, the two principal cities on Lake Michigan, and is nearer to either city than any other place, with the exception of Clinton, north or south of it, by railroad connection.

It may, therefore, be safely stated that transportation on produce paying the lowest charges, from any point on the western bank of the Mississippi, to New York, will not fall far short of an average throughout the year of twenty dollars per ton; and the westward bound freight is still higher; while, from the data given, it has been demonstrated that the same kind of freight can be carried over the route proposed, from any point from St. Paul to Cairo, at an average of less than six dollars per ton, making about eighteen cents per bushel for wheat, and sixty cents per barrel for flour. And from St. Louis the rate will be about fifteen cents per bushel for wheat and fifty cents per barrel for flour; a difference of fourteen dollars per ton from present charges, from that which pays the lowest rate, and a still greater difference on other classes.

It is not only on the amount of freight which will seek the newly opened route, on which this saving will be realized. While a large portion of the Western trade must seek this water line through Virginia, and can not be competed for successfully by any other, yet both north and south of it, there will be a large and valuable trade to be competed for by rival routes; and this competition will compel the reduction of charges to the lowest paying rates, and will also compel the rival interests to increase their facilities to meet it.

If a reduction of only five dollars per ton is secured by the

completion of this improvement (and we think it has been demonstrated that it must be more than double that) it will save to the Mississippi Valley *One Hundred and Twenty-Five Millions of Dollars a year*. And this amount and more is lost every year its completion is delayed.

MODE OF TRANSPORTATION.

Barges propelled by steamboats constructed for the purpose, carrying 15,000 bushels of wheat, equivalent to four hundred and fifty tons, and drawing from three and a half to four feet of water, are now in use on this river. We are authorized to say that one steamer which can pass through the slack-water locks will propel a fleet of six barges of this character in a good stage of water, with 90,000 bushels of wheat, or its equivalent, from St. Paul to the head of slack-water navigation up the Kanawha and its tributaries two hundred and eight miles from its mouth; provided the Kanawha river and the slack-water improvement are wide enough; if not, then to its mouth, or as far up as a sufficient width of channel is furnished.

When the water is at a low stage, the same barges will carry 10,005 bushels of wheat, or three hundred tons, and only draw about two and a half feet of water.

These barges are both too long and too broad to pass through the locks of the canal proper, or even to pass each other in the canal. There must, therefore, be a transfer of freight from the river barges to canal boats, built upon a different model, and more suitable for canal navigation. The latter, carrying the same amount of freight, can be constructed to pass through the canal locks; but to make up for the diminution of length and width, as compared with the river barges, must draw about five feet of water, when fully laden, instead of three and a half feet.

This necessary transfer, when of grain, may be made at a very low rate, and in a very short time, by steam engines on the river barges, which will add about one-eighth to their cost. But there will be an advantage in making this transfer which will fully compensate for the delay and cost. By lifting the grain out of one vessel and pouring it down into another, the airing and friction it

will receive in its passage, will have the effect of checking any tendency to heat which it may have acquired in its passage, besides reversing its position and putting the bottom of the barge cargo on top in the canal boat.

Another great advantage to the West, especially, will result from the opening of this connection, which may be here stated. The Kanawha improvement passes through a coal region, furnishing coal of the same character and quality as the Pittsburg coal, to an unlimited and inexhaustible extent. Cannel coal too, in large quantities, in veins of from three feet to five feet in thickness, and worth fully double as much even as the anthracite, and three times as much as the Pittsburgh coal, for domestic purposes; will offer still greater profits in transportation and benefits to the consumer.

The river barges, being discharged of their eastern bound cargoes, which have paid them a profit, and wanting freight back again, to pay expenses, or perhaps add to their profits, will be ready to receive cargoes of coal as return freight, and to transport them down the Ohio and up the Mississippi at a very low rate. Fuel is very high on the Upper Mississippi; and even now, coal which is boated down to Pittsburg through the Monongahela, and from thence down the Ohio, to the amount of about *one million tons per annum*, passes by the mouth of the Kanawha, 284 miles below, and finds its markets along the Ohio towns and cities; and up the Mississippi, even as far as St. Paul; competing along the whole route with the fuel nearer at hand.

It needs but little reflection to see that, when a regular trade shall be opened from along the Mississippi and Ohio rivers, through the Kanawha region, the countless wealth in coal of that region can be brought back, and distributed along the great rivers of this valley, at a rate which will greatly reduce the price of this invaluable fuel. It is not too much to say, that besides all the other advantages, the heavy cost of fuel on the Upper Mississippi during the long cold winters of this region, will be reduced one-half, to say nothing of the advantages of the cheap transportation of lumber, and the millions of bushels of salt manufactured in the Kanawha valley.

WILL THE CANAL PAY AS AN INVESTMENT?

The second question to be answered as a preliminary to the asking of an advance to complete this work is, will it pay the interest, and redeem the principal of such an advance in a reasonable time.

To answer this inquiry it will first be necessary to get at the capacity of the canal for transportation; next, at the amount of freight which can be calculated on to pass through it, and the probable amount of tolls to be received over and above expenses.

The capacity of the canal is measured by the amount of freight which can be passed through any one of the locks on it in a given time; as the boats which can pass through them, but one at a time, can pass and repass each other without difficulty on the line. Now as the canal and locks will be of the same capacity at all times, and as boats of four hundred and fifty tons burthen may pass through the locks, and of course through the canal, the time taken to pass a boat measured by the number of days the canal will be in operation in each year, will give its utmost capacity. By experience it has been ascertained that a boat can pass through a lock in seven and a half minutes, and the canal will probably be in operation for three hundred and thirty days in each year. On this data, upon the supposition that every boat will be of the largest capacity, and fully laden, and one just ready to enter a lock, when another leaves it; 31,104,000 tons of freight, could be passed through the locks. But none of these things will happen; many of the boats will be able to carry much less than four hundred and fifty tons; perhaps but few will be of that capacity; they will not always be fully freighted; of return freight especially, they can not hold that amount in weight; and at some seasons of the year, there will be a slackening or falling off of the freight offered. The locks will some times get out of order. But after making all these allowances; and taking into consideration the experience of the working of other similar improvements, and especially of the Erie canal, which, (though closed at least six weeks, when this canal can be in operation) for the year 1853, passed 1,742,056 tons of up freight, and 2,505,797 tons of down freight, a total of 4,247,853 tons. Making we say, all these allowances, and taking all these things into consideration, it is a moderate estimate,

to put the capacity of this work at 5,000,000 tons of through freight going east and coming west; besides the freight along the line.

Will that amount of freight offer itself? Looking at the country and its productions and wants, with which this improvement connects; the absolute monopoly which it will command on both sides of the Ohio for a distance of seven hundred and thirty-five miles westward, as to all the trade which now touches, or will be invited to that stream, and regarding its demonstrated superiority, as to cheapness, for a large portion of the country up and down the Mississippi and west of it, over any other line that now exists or can be constructed, and the question will be: not whether that amount of tonnage will seek that route, but whether the much greater amount, that must offer itself, can be passed through without delay. When that question presents itself, the capacity of the improvement, for through tonnage *can be doubled by doubling the locks on the canal proper.*

Putting the through tonnage then both ways, at five millions of tons, and the tolls at the lowest rate of two mills per ton per mile, which will be but ninety-seven cents per ton toll on the whole length of the improvement, and the income from through tonnage will be \$4,850,000 besides the local tonnage.

It appears from the twenty-sixth annual report of the present company, that the receipts from the main canal and its lateral improvements, in its progressing and unfinished condition, from its organization in 1835 to the 30th of September, 1860, were \$5,594,315.59; while for repairs, maintenance and general expenses of administration there were expended \$2,569,470.58, leaving a clear profit of \$3,024,845.01, which was paid out in annuities to the old James river company, and in interest on money borrowed for construction either from the State, or on bonds guaranteed by the State.

The estimated annual expense of keeping up the whole line when completed, including repairs and expenses of general administration, based upon twenty-five years experience, was in 1860, \$363,750. This was based upon the original plan. But if it were more than doubled, when the amount and character of the freight which will go both east and west from the Kanawha coal region is considered,

and added, there can be no question but that the tolls on local freight will pay all expenses of keeping the work in perfect order and the administration of the affairs of the company, and leave a margin of profit.

But claiming only the tolls on through freight as profit, how will the matter stand?

Let the capital stock represent the amount expended, exclusive of interest, say \$12,000,000, the sum necessary for completion, to be borrowed, say \$20,000,000, and of the net profits (\$4,850,000) there will be enough to pay the interest on the sum to be borrowed, \$1,200,000; a dividend of ten per cent on the capital, another \$1,200,000, and there will then be left the sum of \$2,450,000 to apply on the principal.

This the answer to the last inquiry whether the work when completed will furnish sufficient security for the payment of interest and principal of the sum needed for its completion in a reasonable time.

HOW SHOULD THE MONEY BE RAISED.

This is a work of great national importance. Its benefits will be shared directly by more than half the people of this country; and indirectly by all. It is a necessary addition to the improvement of the navigation of the Western rivers, without which the benefits of that measure will be but half realized. It is a work to be done by the whole country, for the benefit of the whole country. It belongs to the Government of the United States.

Nothing need to be given. An advance upon good security, for the return of principal and interest is all that will be necessary. Not only will this advance be returned in kind with the interest, but the benefits of each year will return the outlay more than five fold. Instead of increasing our national burthen of taxation it will so increase the means of payment as to greatly lessen it.

To the end, then, of obtaining government aid, there should be a co-operative movement of cities, towns and States. It should be connected with the western river improvements as a part of the same enterprise, and the influence of the great interest to be promoted by it, should be concentrated through a convention, and brought to bear

upon Congress, to ensure a speedy completion. Keeping it it always in mind that every year's delay is a loss of more than five times the amount required for that object.

Resolved, By the General Assembly of the State of Iowa, That the great rivers on our Eastern and Western borders are the natural highways for the trade and commerce of our State, and any measures that will add to their efficiency and importance, as channels of communication will increase the value of all our productions; add to the price of all real property, and contribute to the prosperity of all our people.

2. That the line of water communication between the Valley of the Mississippi and the Atlantic Ocean, by way of the Kanawha and James rivers, through the States of Virginia and West Virginia, is a work of national importance, and one deeply affecting the interests of the grain producing States of the Northwest.

3. That our Senators in Congress be instructed, and our Representatives requested to use their best efforts to obtain such aid from the General Government, as will secure the early completion of said line of water communication.

4. That a copy of these joint resolutions and the accompanying memorial, be forwarded by the Secretary of the State to the President of the United States, the President of the Senate, and to each of our Senators and Representatives in Congress.