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## COMMUNICATIONS

FOR THE NATIONAL INTELLIGENCER

NAVIGATION OF CANALS BY STEAM

Since the introduction of Railroads, public attention has been drawn to the improvement of Canal navigation, with a view to ascertain the practicability of increasing the speed of the boats conveyed upon them without injury to the banks. Steamboats of various constructions have been tried, but none of them have realized public expectations, and they have alternately been abandoned. When we consider the limited size to which these boats are subject in consequence of having to pass through locks, and the large space which the machinery occupies, to say nothing of the uncomfortable accommodation to which the passengers are subject from their proximity to the Engine, we are not to be surprised when steamboats should be abandoned upon Canals. When we deduct the breadth of the water wheels from the width of the boat, we have but nine feet left for the breadth of beam, which makes it very unsteady and confining, and even were the wheels made to unship when passing through the locks, they would not compensate for the other evils named. From these circumstances we must infer that there can be no modification of plan of steamboat to be used upon Canals that will secure their adoption in place of horse power, and therefore we must look to some better mode of applying steam for the propulsion of boats on Canals, if we succeed in keeping up the high velocities. That a better application of steam-power may be made than has hitherto been used on Canals, we ought to have no hesitation to admit; and not to do so would be to deny to Canals the same privileges, granted to other objects of human ingenuity, of improvement by experience; recent experiments made upon Canals in England have put it beyond a doubt, that in the ratio of increase of speed of the boat upon them is



the decrease of resistance from the water, and consequently the reduction of injury to the banks from the agitation or surge of the waters. This is an important discovery which must eventually lead to results of incalculable value to Canal navigation. Those who have noticed the operation of a boat passing rapidly through the water, must have observed how it seemed to skim upon the surface of the wave; the resistance which it meets with having the effect rather to lift it over the wave, and no doubt had the velocity continued to increase until the sum of the resistance equalled that of the weight of the boat, it would, practically speaking, have actually rode upon the wave. That we might rightly comprehend the extraordinary facts above stated, connected with high velocities on Canals, let us take a brief view of the experiments made in England on this subject.

On the Ardrossan Canal, Mr. Houston made an experiment with a common gig boat in which 10 or 12 passengers were seated: this boat was drawn through the Canal by a single track horse, at the rate of 12 miles an hour and the result was, that neither surge nor wave were produced. Another trial was afterwards made with a similar boat, and it was found that she could be drawn at the same rate of 12 miles the hour without any surge or agitation of the water, so as to injure the banks. It may be proper to mention that the Ardrossan Canal is throughout very narrow; at the bridges and many other places it is only 9 feet broad. It has a great number of turns, and many of them very sudden. This voyage at once set at rest all doubts on the subject of the effect of a high velocity with a gig-shaped boat on a Canal; and the boat in question has been regularly plying on the Ardrossan Canal, carrying from 40 to 50 passengers, between Glasgow, Paisley, and Johnstown, and has fulfilled all the anticipations of the parties



for whom she was constructed.

From the above (says the Committee of Management) it will be seen that the question of surge and injury to the banks so much feared, and so strenuously insisted upon by the parties opposed to improvement, was forever set at rest by the voyage made by the light gig-boat in one of the narrowest Canals in Scotland. An experiment was then made with a twin-boat, and the result was the same. It was observed that under a less speed than six miles an hour a great swell or wave was constantly in her front, and in her rear a strong surge was beating against the bank of the Canal; the hauling rope was tight, and the horses seemed to labor much, but as the velocity increased the wave in front sunk down, and when the speed reached about 9 miles the hour the swell entirely disappeared, the waters in front became smooth and level, the hauling rope slackened and the horses seemed easy, and little or no surge was to be seen sweeping the banks behind the vessel. This boat was fitted to carry 50 to 60 passengers, and had on board 33 with their baggage. She made the voyage from Port Dundas to Edinburgh, 56½ miles, in 7 hours 14 minutes going, and 6 hours 38 minutes returning, including stoppages in passing 15 locks, 18 drawbridges, a tunnel 750 yards long, 3 long narrow aqueducts, and under 60 common bridges. But a twin boat is not favorable for speed, in consequence of the great extent of surface exposed to the action of the water and from the confined state of the water between the boats, which occasions a considerable banking up of the same here.

It was found in an experiment twin-boat, 30 feet long, on the Forth and Clyde Canal, that when passing through the water (at 10 or 12 miles an hour) there was very little agitation on the outside of the boat, but the water was frequently raised six or seven inches,





and more, in the centre parts of the little trough or canal between the boats; and came out with great rapidity behind, and went off in a small column or wave, sometimes 5 or 6 inches above the keels or rudders, making towards the bank on each side. After this experiment, one of the boats was detached, and the velocity of fifteen miles the hour attained; (the speed seemed, in fact, only to be limited by the power of the horses.) The surf or surge was very slight with the single boat, even when moving at fifteen miles an hour. Both of these trials were made with the same horse, and for the first 2 or 3 miles it was ridden by a heavy man without a saddle. We must not forget to mention one important fact, stated in these experiments, namely, that no danger, even at the highest velocities, was to be apprehended from the stoppage of the double or single boats, however suddenly, as they brought themselves up almost instantaneously. When the results of these experiments were first made known, many were induced to question their validity; but repeated trials convinced the most sceptical, and opened a new field of inquiry.

"Three different results from the above experiments, are worthy attention, (observes Mr. Fairbairn:) 1st, from the ease with which the boats were brought up, or stopped, when moving at a high rate of velocity; 2nd, from the little additional labor in drawing, occasioned to the horses when drawing the boat at this high rate, as compared with a low rate of velocity; and 3rd, from the apparent diminution of the surge or agitation in the water, at a high rate of velocity."

The rationale of these facts must be evident, when we take into consideration the position of the boat, under high velocity, skimming over, instead of cutting through the water, thereby reducing



the resistance. The question, the greater the speed the less the surge or wave, has not merely been demonstrated, but that, at a high rate of speed, surge and wave are done away with altogether; and further, the long established theory that the resistance of fluids to passing bodies is as the squares of the velocities, is only true to a certain extent, (from 6 to 7 miles an hour,) and is reduced afterwards in an inverse ratio to the velocity; so that, under very high velocities, which would place the boat, if not very heavy, upon the surface of the wave, the resistance would be reduced to a minimum. Another fact was ascertained by Mr. F. which went to show that the resistance to a body drawn along a line of water confined within the banks of a Canal, did not appear to increase in the ratio laid down in the (old) theory, and that while at a low rate of velocity, (at and under six miles an hour,) the resistance to the progress of the boat on a broad line of water was considerably less than on a narrow line; on the contrary, at a high rate of velocity, say above 10 miles an hour, the forces necessary to the provision of the boat on a broad and narrow line of water, appeared to be the same, if the advantage was not rather in favor of the narrow line.

When I passed through the Raritan Canal last fall, I understood some experiments had been made on that Canal, to test the correctness of the facts above stated, and the results were satisfactory. I noted the effect, as we passed in the passage boat, under different velocities, and it was evident that the surge or wave was much reduced when the speed exceeded 7 miles the hour. But to attain these high velocities, the application of steam is absolutely necessary; horse power is inadequate to keep up a continued action of 12 to 15 miles an hour, (for there should be no stoppage



except where locks intervene,) even if the expense in so doing was not objectionable. Mr. Fairbairn went into a calculation to show what it would cost to convey a passenger by steam 9 to 10 miles an hour, between Glasgow and Edinburgh, 56 miles, and he reports, it will not exceed two pence, which (he adds) is not a fifteenth of the expense of the conveyance of the same person at the same rate supposing it attainable and maintainable by horses. After fully establishing the cheapness of steam power, he concludes as follows: "The calculation referred to make it quite unnecessary to say anything on the subject of steam power as a substitute for trackage on canals. If it be so much cheaper than horses in the expensive shape of a moving and carrying power, united in the same boat, what advantages may not all Canals derive from its introduction in the cheap form of a tug boat in place of horses; and further says Mr. F., I am the more convinced of the efficiency of steam trackage above all others, from the circumstance that the train of boats intended to be towed, would follow in each other's wake as the eddy formed by the leading vessel materially lessens the resistance opposed to the succeeding boat. In proof of the small amount of power required to a tow vessel, the Steamer Cyclops, from Alloa to Port Dundass, took two miles (one mile in 14, and the other in .15 minutes.) The steamer was then detached from the passage boat and did another two miles, but could not secure by this decrease of labor more than a minute, or a minute and a few seconds in each mile.

These are interesting facts, and cannot fail to be useful to us in the examination of the subject, which I would now invite the public attention to, relative to a new application of steam power to the towing of boats on the Canals.



We have before noticed that with all the economy and advantages of using steam on boats to propel them, these boats are very objectionable as passage boats; and even if the engine is transferred to a tug boat, the weight of the machine, the agitation of the water by the wheels, the resistance opposed by the water, particularly if a twin boat is used, would all operate against its usefulness. The numerous futile attempts to apply steam boats to the navigation of Canals, ought to teach us that no modification of machinery or boat can overcome the radical defect of this system and that if we wish to succeed, we must abandon the use of this power on water, and resort to the land as a better foundation for the action of steam as a motive power for the propulsion of boats. Let us, then, transfer the steam engine from the boat to the tow-path of the Canal, and use it as a tracking agent in the place of horses, and we shall have accomplished all that is required, where high velocities are to be attained, and at an expense much less than when the engine is used on board of even the tug boat, as the resistance thereby will be much reduced. All that is necessary would be to lay a firm stone, or wood track, on the tow path of the Canal, and put a Locomotive to run on it as a tow carriage, and we shall witness results the most gratifying.

If we have a firm surface for the wheels to run upon, we need not resort to laying rails, and thus but little expense in preparing the road-way will be incurred. A steam carriage running upon a good common road is well calculated for towing boats, as its wheels have a stronger bite upon the road and when coming to the locks, it is capable of ascending the rise here without difficulty; for, if required, these carriages are capable of going up a declivity of even 8 to 9 degrees.





Taking the expense of horse power as data to estimate the cost of traction on a Canal, we shall find that there is a difference of from one-half to two-thirds in favor of steam power, even under a velocity of not more than 10 to 12 miles the hour, and this on good common roads; and further, that the saving would increase in the ratio of the increased speed. If nothing more were shown, this fact would be sufficient to prove the economy of substituting steam for horse power in the manner proposed.

But again, the operation of a steam engine placed in a boat to propel it through the water, is much less effective than when applied to the traction of wheels on the tow-path. The resistance presented by the water to the passage of the tug or drag-boat, being much greater than the resistance presented by the traction of the wheels against the road, for the friction of the machinery itself would, in both cases, differ but little; and if there was any difference, it would be in favor of the land engine, for the resistance of the paddle-wheels is very considerable.

It is not necessary here to consume time to go into a calculation to show the difference of effective force of a steam engine worked on water and on land, as a propelling or tracking power, for it must be evident to every one, as we before have said, that this difference is considerable, and in favor of the land engine. We will proceed, therefore, to consider the advantages to be derived from changing the operation of the steam engine from the water to the land.

1st. The passage-boat would be left free and unincumbered for the accomodation of passengers, and by this means the size of the boat could be increased to the full size of the lock.



2dly. The noise, smoke, heat, and nuisances of every kind, connected with the working of the engine in the boat, would be done away with, and the passengers would be free from fear, anxiety, and inconvenience on account of the proximity of the engine. This is a matter of no small moment, for if inconvenience is experienced from this cause on board of the large river steamboats, how much more sensibly would it be felt on board the small steam canal boats. If, as has been proposed, resort is had to a tug, or drag-boat, in which to place the engine, the difference in effective force, operating by wheels on the water, compared with its operation on the wheels of a land carriage, would soon be evident, and the supposed advantage would be found to amount to nothing.

3dly. The substituting steam for horse-power on the tow-path, in the traction of boats, would independently of the economy of this motive power, remedy the evil arising from the horses feet breaking up the tow-path, especially going at high velocities. On this subject Mr. Fairbairn remarks, "One thing is very evident, that the introduction of steam instead of animal power, would dispense with the annual repairs and maintenance of the horse-paths; the complaints and delays arising from drivers, horses, &c. would be avoided, and many contingent expenses saved, by the introduction of this never-failing and very effective agent as a moving power for the towage of boats on canals." From the economy of steam power, which is increasing as improvements are made on the engine and boilers we may conclude that it would be the best policy to substitute steam for horse-power, even in the low velocities, where the trade is regular on a canal. The certain and steady action of this power gives it a decided preference over any other; for a four-horse



engine would not cost more to work it than to keep one horse, and we shall realize a quadruple power.

Upon an examination of what has been advanced, every one must be satisfied of the immense benefits which would flow to canals by the introduction of steam power in the manner proposed; while the high velocity would be obtained, which would put canals upon an equality with railroads. For the transportation of passengers and light goods, these water-ways would possess superior advantages over railroads in the slow travel, for the quantity of work done by a horse under three miles an hour on a canal, will be always three times that which he is capable of doing on a railway, so that the farmer can use his pleasure to travel slow at a moderate expense, or attach his boat to a steam power and accomplish his voyage in a shorter time, but at an increased cost.

As it regards the structure of boats for canals, especially for high velocities, the flat bottom with a keel, is certainly the best form, as it will be in a situation better suited to ride on the opposing wave than if sharp built. Such a boat would be also more steady and roomy for passengers or goods.

The deep interest we have at stake to improve our canal facilities, in order that its superiority over railroads, as the great highway for the trade of the country may be made manifest, should induce a close examination into the best and most economical mode of realizing these benefits; and from what has been advanced, we may venture to pronounce the plan proposed as promising to accomplish all that the most sanguine friends of the canal system could wish. M.



FROM INDIANA

FROM THE FORT WAYNE SENTINEL.

Disturbances on the Canal.--There have been some disturbances among the Irish laborers on the Wabash and Erie Canal, which but for the prompt and energetic measures resorted to for their suppression, would have resulted in a sanguinary conflict between the two factions into which the Irish are divided. For some time past the Corkonians have been the strongest party on the canal line, and have embraced every opportunity of maltreating such of the Fardowns as might fall into their hands; nor have our own citizens at all times been safe from the attacks of these ruffians. The Fardowns, having lately received great accessions to their numbers, resolved upon driving their opponents from the canal, and preparations for the contest were made by both parties. The Irish were observed, by the citizens, to be in the habit of nightly assembling in secluded places in the woods, and all who could in any way procure arms, were providing themselves with them. Three kegs of powder were forcibly taken from a wagon on the highway; the houses of some of the citizens were entered, and the owners compelled to give up their guns; and the lives of others were threatened who refused to surrender their guns. Several outrages were committed by these deluded ruffians upon each other; and Mr. Bredy, a canal contractor, was fired at, but fortunately without effect, by a wretch named Sullivan, who, we are informed, took a prominent part in the disturbances in Maryland last year and is also deeply implicated in the murders committed at Williamsburgh (Pa.) four years ago.

The contest was to have taken place on the 12th inst. the anniversary of the battle of the Boyne. On the 10th about 300, most of





whom were armed. At the same time about 250 armed Fardowns advanced to Wabash, seven miles from Logro, on their way to attack their adversaries. D. Burr, Esq. canal commissioner, and some other citizens of the neighborhood, succeeded in inducing the two parties to suspend their intended fight for two days, in order to give them an opportunity of making some amicable arrangement. In the mean time expresses were sent to Fort Wayne and Logansport, requesting assistance to suppress the disturbances, and protect the citizens from the dangers to which they would be exposed, if the parties should come in contact. The express arrived here on the 11th, and the appeal was promptly responded to by our citizens. The drum beat to arms, and in two hours a company of 63 men, well armed, and furnished with ammunition and provisions, were on their march for the scene of action. Col. J. Spencer was elected to command the expedition; Adam Hull was elected 1st lieut. Samuel Edsall 2d lieut. and H. Rudisill ensign. The company embarked in a canal boat, and arrived at Huntington about midnight. Next morning they marched forward on their route, under the command of Capt. Murray. On hearing of the arrival of the volunteers, the Irish dispersed into the woods, and next day most of them returned to their work, fully satisfied that they could not trample on the laws of the State with impunity, and that, if they attempted to proceed any further in their mad career, they would inevitably meet with the punishment due to such lawless proceedings. The volunteers marched through Logro and Wabash (at each of which places they received reinforcements) to Peru; sending out on the way several small detachments, who scoured the woods in every direction, and examined all shanties on the line, where arms or suspected individuals were supposed to be concealed, seizing several guns, and making many



prisoners. They arrived at Peru on the 14th, where they were joined by Capt. Tinton's volunteer company from Logansport. The number of volunteers now under arms was not less than 250, the whole of whom next day marched back to Lagro, where all the prisoners were assembled for examination.

The display of this force having awed the rioters into submission, and there being nothing more to be done, the Fort Wayne and Logansport volunteers returned to their homes, leaving the prisoners at Lagro under the charge of the Huntington and Lagro volunteers. Upwards of 100 prisoners were arrested; of these several were discharged for want of evidence; 14 of the ringleaders, including Sullivan, were taken to Indianapolis for safe custody; some were admitted to bail; and the remainder were still kept under guard at the date of our latest accounts.

The Fort Wayne company arrived here on Friday morning at 3 o'clock, after a harassing march of 120 miles through a new country performed in the short space of 5<sup>1</sup> days.



Synopsis of Canals surveyed by order of the Legislature the past year.

Lafayette and Terre Haute division of the Wabash and Erie Canal—length 90 miles; total cost, \$1,067,914.70; per mile, \$11,865.79.

Central Canal, north of Indianapolis—total length from Indianapolis via Andersonstown, Pipe creek summit, to the Wabash and Erie Canal at Wabash town, 103 miles 34 chains—total cost \$1,992,224.54; per mile \$17,106.51. Length via Pipe creek summit to Peru, near the mouth of the Mississinewa, 114 miles 46 chains; total cost, \$1,897,797.19; per mile, \$14,871.85. Length by Pipe creek summit, (including lateral canal to Muncietown) to Wabashtown, 124 miles 51 chains—total cost, \$2,103,153.61; per mile, \$16,873.83. Length via Pipe creek summit, (including lateral canal to Muncietown) to Peru, 135 miles 63 chains—total cost, \$2,008,726; per mile, \$14,793.12. Total length from Indianapolis, via Muncietown, to Wabashtown, 130 miles 29 chains—total cost \$2,153,356.76; per mile, \$16,518.54. Length via Muncietown to the Wabash and Erie Canal at Peru, 141 miles 41 chains—total cost, \$2,058,929.41; per mile, \$14,549.71.

Central Canal, south of Indianapolis—total length from Indianapolis to Evansville, 188 miles—total cost, \$2,642,285.92; per mile, \$14,054.71. Route down the valley of main Pigeon—length, 194 miles—total cost, \$2,400,947.70; per mile, \$12,376.02.

Terre Haute and Eel river Canal, which forms a connection between the Wabash and Erie Canal and the White river or Central Canal—total length, 40½ miles—total cost, \$629,631.65, which, including a feeder, is \$13,540.46 per mile.

Wabash and Erie Canal, Eastern Division, (east of Fort Wayne.) Upper line—total length, 19 miles 30 chains—total cost, \$154,113.13; per mile, \$7,952.17. Lower line—total length, 20 miles 76 chains—total cost, \$254,817.52; per mile, \$12,159.64.



## THE WABASH RIVER

Extract from a recent Speech of Mr. Hendricks of Indiana in the Senate of the United States.

The navigation of the Wabash (said Mr. Hendricks) is intimately and inseparably connected with the Wabash and Erie canal. It is through the navigation of this river, which empties into the Ohio river, that the Wabash and Erie canal unites the navigation of the Mississippi river with lakes, and opens a channel of inland navigation between the two great commercial emporiums of the country, New York and New Orleans. This line of navigation is on the most direct route; it is the shortest line of navigation which can ever be opened between those cities. The river itself is the largest and most important tributary of the Ohio. It flows through a larger and more fertile region of country than any other river of the Ohio. It floats to the markets of New Orleans and the south, a larger quantity of agricultural productions than any of those rivers. Indeed, it is questionable whether any river of the west of the second class, not even excepting the Cumberland, the Arkansas, and the Red river, is justly entitled to be ranked with it in importance. It is a river navigable for steam-boats to a great distance up, to the mouth of the Tippecanoe, perhaps 500 miles from its own mouth. But this navigation is safe and certain only in time of high water, or when the river is somewhat swollen. In low water it has obstructions which wholly prevent its navigation, and these obstructions are near its mouth. They entirely destroy the usefulness of its navigation in stages of low water, and in some dry seasons boats with the produce of the country have been unable to get out of the river during the whole year. Such was the case in the spring and summer of 1834, when hundreds of thousands of dollars worth of produce, prepared for the markets of the south, literally rotted on hand.





These obstructions (said Mr. H.) are below Vincennes, and pretty much confined to a region of river about fifteen or twenty miles in extent. They consist of ripples, eight or nine in number which are filled with rocks, islands, bars, and crooked and shallow channels. At the Grand rapids, the most difficult of these passes, the depth at low water is but two and a half feet. The river of a great distance is the boundary between the states of Indiana and Illinois, and the improvement of its navigation has long been an object of much interest with both these states. In 1822 laws were passed by both authorizing a joint examination of the obstructions, by engineers of each state. This examination was had, and a report made on the subject, but the estimates were considered beyond the means of the states at that time, and no appropriation was made. At subsequent sessions of the legislatures of those states, about one year ago, appropriations to a very limited extent were made; but during the last summer and fall, the water of the river was too high for operations upon the work, and nothing of any consequence has yet been done. At the recent sessions of those legislatures, other appropriations to this object have been made, and the ensuing season will be, as it ought to be, one of great exertion on this subject.

The work, however, is too important and heavy for the states, and one which, in their opinion, ought to be accomplished by this government. The aid of this government is wanted, and skillful engineers are needed. These obstructions ought to be removed by a canal around them that would pass steam-boats, and the work, in whatever manner, and by whatsoever undertaken, is too important to be any longer neglected. Heretofore, this has not been considered by the federal government an object of much magnitude. This river, unconnected with



any other channel of commerce, has been thought to belong to a class of objects, not specially entitled to the consideration and means of this government. Now, the Wabash and Erie canal is opened. The navigation of the summit level section was commenced on the 4th day of July last, and other large sections will be opened during the ensuing spring. That portion of the canal, as originally located, which lies within the state of Indiana, is, with the exception of 35 or 40 miles, all under contract; and by act of the last legislature of that state, the canal is to be continued down the Wabash to Terre-Haute, a further distance of 80 or 90 miles. The valley of the Maumee, from the Indiana line to lake Erie, will after the Michigan boundary question shall be settled, be speedily made by the state of Ohio, and then this Wabash river, instead of being a local object, not entitled to be considered of national importance, will be an important link in that chain of one of the most splendid and useful inland navigations in the world; certainly the most important that is or can be made in the United States--an inland navigation the shortest and the best that can exist between New York and New Orleans. Now, sir, (said Mr. H.) when this bill was under the consideration of the senate one year ago, not one mile of this canal had been opened to navigation. No high way of commerce than could be said to connect the customhouse and the ports of entry on the lakes with those on the Mississippi. All this change has since taken place. The condition of this work, and of the whole country, has since essentially changed. The navigation of this river is closely and inseparably connected with the canal. Without its improvement, the canal must be a great portion of the year comparatively useless. The canal is now ahead of the river; and begin this work when you say, the canal will continue ahead.



I repeat, Mr. President, the navigation across the summit level of the country is already perfect, and a splendid work is going on in the valleys of the Maumee and the Wabash. It has changed the condition of the whole country. It has sold for you millions of acres of land. It has brought you millions of dollars into the treasury, and you are already doubly paid for your canal grant of 1827. The ordinance of 1787 had designated this summit level as a carrying place between the navigable waters of the Mississippi and the St. Lawrence, and had guaranteed its free navigation forever. The government of the United States ought to have made this canal. The guaranty has not been kept inviolate; but the work has been performed and is in a state of rapid completion by the state of Indiana. Things have rapidly changed upon the Upper Wabash within the last year. There is now no question about local and national objects in reference to the Wabash and Erie canal, and the navigation of the Wabash. These works can no longer be considered as separate, or of doubtful importance in a commercial point of view. A great highway of commerce is established there, and the union of the waters of the Mississippi and the northern lakes is effected.---All objections of this sort to the passage of the bill will no doubt hereafter entirely cease. It will obtain the sanction of the executive, as I believe, and I hope the unanimous vote of the senate.



TO THE PEOPLE OF INDIANA.

Inasmuch as an effort has been made by certain individuals to produce an impression on the public mind, prejudicial to the commissioners and principal engineer on the Wabash and Erie Canal, by charging them with improper motives in making its location at certain points, I have thought it best to publish this paper for although the popular branch of the legislature, after full investigation, have unanimously pronounced the charges unfounded, yet I can discover a disposition in a certain quarter to continue the effort.

I believe the principal mover in this matter is not known to the public as such, and although he is a member of the United States' Senate, it may not be the less necessary, under all the circumstances to publish the papers and letters following this article.

General Tipton, the individual to whom I alluded, commenced his attack by publishing an article in the Logansport Telegraph, on the 4th of April last, over the signature of "A Friend to the Canal," saying, "the writer regrets to learn the engineers have gone south to prosecute surveys elsewhere, and this part of the line has been so far neglected, to the serious injury of all concerned." Gen. Tipton was, it seems, unable to see that we were required by our duty, to pay some regard to the interests of other parts of the state as well as the immediate neighborhood of Logansport. It is plain that while he is talking about the interest of his neighbors and the public, that he thought of little else besides his own; for in all the potent sour complaints he has made, we have not been charged with neglecting the interest of any other portion of the state. He again appears over the same signature on the 25th of the same month, in which he says that "no good reason can be assigned for the unpardonable delay of the commissioners." On the 16th of May he published a third article, which appears to be a reply to one





written by some person over the signature of a "Prudent Friend to the Canal;" in which he indirectly charges those having the management of the Wabash and Erie Canal with a criminal neglect of duty, as will more plainly appear from the article itself, which is herunto appended.-- Gen. Tipton complains because the canal officers have purchased land on the canal line.

And is it, indeed, criminal in a servant of the state who receives two dollars per day for his services, of which he must expend one and a half, and then leave his private affairs at home to sustain much loss, to lay out the little pittance he may have left, in a lot or two of land, which he can secure by paying the state one fourth of the purchase money and one year's interest in advance. I have not myself, purchased a single lot of land on or near the canal line; but if my little means had not been otherwise employed, I should not have considered it criminal to have done so. And under the circumstances I should not have expected any man in the country would have complained; and least and last of all, Gen. Tipton, who has within a few years accumulated by speculation, Indian wills, &c, &c, a princely estate.

If the commissioners had acted in accordance with the wishes of Gen. Tipton by putting the line under contract at the time that would have best suited his views and individual interest, and should then have gone on to making fences and building bridges for him, all would have been well, and no complaint would ever have been uttered by him. But as this was not done he was offended, and hence his effort to remove the canal officers.

Gen. Tipton has long been trying to procure the removal of J. I. Williams, Principal Engineer of the Wabash and Erie Canal. He at one time said to a member of the Board, "he should be removed," and on another occasion he endeavored to enlist the services of Gen. Wm.



Marshall as his statement shows. He could have had no object in view in wishing the removal of the engineer, but the hope of getting some one employed who would have been subservient to his views, wishes, and dictation. As evidence the commissioners did not err in refusing to remove J. L. Williams at the demand of Gen. Tipton, I might refer to the very strong expression of confidence in that officer, contained in the remonstrances presented to the legislature signed by 840 citizens of the upper Wabash country, most of whom to say the least, were as well qualified to judge of his qualifications and merits as the Hon. Senator. When a man, holding the high station of U. S. Senator, will either secretly or openly attempt to control the actions of state officers, conducting an important public work, saying who they shall, or shall not have as engineer to superintend its construction, at what times and under what circumstances they shall put work under contract, the people ought to know who that man is, and if they approve of his views and plans of operation, and believe the great interests of the country will be best promoted by placing all under his control, they will know where to find him, I have therefore thought it right to publish, not only my own correspondence with him, but his letter to Col. Stansbury, and also some that have passed between the Senator and J. L. Williams.

I will call the attention of the reader to the extraordinary letter of the Hon. Senator to D. Burr and myself, of the 21st of September last, in which the terms of "taunting" "throwing stuff," and wrecking vengeance" are so freely used, with the bare remark that uttering disclaiming on my part the indelicacy of such acts, and leaving the vulgar sentiment of wreaking vengeance to any one who may be so unfortunate as to feel its influence or use it, I could not consent that any reply should be given to that communication, under the belief that the correspondence was so marked with coarseness of expression, accusations of conduct



and impeachment of motives, that its continuance could not possibly profit either party or benefit the public--the tribunal which he prefers to adjudge his claims to liberality and patriotism, and the tribunal to which I feel it my duty to appeal in relation to the subjects which have transpired between us.

J. B. JOHNSON

In your last paper I observe an article signed "A prudent friend to the Canal," replying to an article written by me, and published on the 25th of last month. This "prudent" friend of the canal charges me with becoming a newspaper scribbler, before I have a correct knowledge of the facts of the case. I admit that I am not in the secret councils, or confidence, or the Canal Commissioners, as regards their plan for this summers's operations on our canal: and I doubt not that this more prudent friend of the canal is. Nor am I, like him, interested in keeping the work on this canal in the hands of the favored few, who by salaries and speculations are enriching themselves.---- By this I do not mean contractors more than others; but I am, in common with my neighbors, interested in the prompt and energetic prosecution of the work to its completion.

The writer of the article to which I am replying, puts great stress on the prudence of the canal commissioners. This is admitted on all hands; but none can be so blind as not to see that the commissioners have been imposed on by a few individuals who flatter their credulity and produce departures from the original line, thereby enriching some, to the serious injury of others. Will Mr. Prudence deny this?

Last Spring the work was commenced with a spirit that was creditable, and did fair to be beneficial to the public. A letting took place in May, and another in July; both contractors and laborers flocked to our



canal line from every quarter. But, Sir, last year one village was to be pulled down, and two or three built up! Of the calamitous effects of these things I need not speak. Look at the destruction of farms, and the sand and gravel banks thrown out of the deep cutting through and near Miesport. Was there no departure here from the original line, run by both the United States and State Engineers? This extraordinary departure has shaken the confidence of many friends to the commissioners, and to the work, in their judgment. But I will pursue this branch of the subject no farther at this time, intending to resume it on another occasion. And, Sir Prudence, as you have pointed your finger of envy at Huntington and Logansport, I tell you that the people of these villages have rights, and that they will maintain them. You need not expect by your whisper of "the greater the unity the more effectual the effort," that you will silence them, while things stand as they now do.

The sentiments you have uttered are qualified, as they are intended, to mislead our friends abroad, and to create a prejudice against certain villages and men on the canal line. You are interested in perpetual salaries and frequent speculations. It is my purpose to arouse the public attention to the real cause of the tardy movements on the canal this spring, and I will pursue it. Prudence is a virtue of which I was never overstocked; and I judge that your prudence is of the kind spoken of by a writer who held that prudence was the better part of valor:

"He that fights and runs away,  
May live to fight some other day."

You ask if I think that the location of the canal through Legansport should be made a matter of convenience to the people there; or if the commissioners should be influenced in their determinations by the value





of a bed of onions? Yes. I think that the convenience of every farm and village, and the value of every cent's worth of onions or cabbage, should have due weight with the commissioners in making their determinations; and I am not alone in the opinion that, instead of dividing the whole disposable force of Engineers to examine routes not expected to be commenced in less than ten years and some that doubtless will never be begun, the commissioners should have caused the canal line to be located to Georgetown in last month. Ten or twelve farms, and two villages are interested in this location. Is not this sufficient cause to ask an immediate location? But the day for speculations has gone by on this part of the line; and now, Mr. Prudence, you come in an endeavor to sing us to sleep with the syren song of "the greater the unity the more effectual the effort," a little too late. We understand you and cannot slumber.

Again, you ask what advantage would the canal derive from a notice of a letting in the spring; would it influence laborers to come from Pennsylvania and New York. I answer yes; it would have brought hundreds of laborers and contractors from the older states; and this would have given an impetus to the work that is now dragging on heavily.

You say a letting would divide and distract the force now on the line. And, Sir, do you, and those now engaged on the line, intend to prevent another letting until your present contracts are completed, that you may get other jobs, thereby monopolizing to yourselves the whole profit of the construction of this canal? Your statement that another letting will retard the work is too ridiculous to deserve a reply--as is that in which you state that there is already too much work under contract, and that if I knew any thing I know that there



never was half force enough on the line to finish it in two years. To this perversion of truth I will offer no other reply than to tell you that if you will make this statement over your own proper signature, your claims to truth and veracity will be forever prostrate in this intelligent community. Every school boy will stamp you with the seal of condemnation. "Oh shame! where is thy blush." You speak of the price of provision; cannot flour and pork now be had as cheap as it has generally sold since the country was settled? Is not five dollars per barrel for flour and twelve dollars for pork a pretty fair price to the seller and not extravagant on the buyer; when labor and provisions are at fair prices both the farmer and labourer do well. To produce this state of things was one of the prime objects that the projectors of this great public work had in view when they ushered it into existence, and to continue if should be the object of every real friend to the work. Speculators on public works and public opinion, like yourself, will live; but those who earn their bread by the sweat of their brow need the fostering care of the state.

If it be true that there was sickness on the line last fall, is it not also true that after the sickness subsided the work was resumed, and that much work has since been done on the line? I have heard of the death of but two contractors one by sickness, the other was drowned. This surely is not great mortality where so many are engaged. If the Commissioners had given notice in March that labourers would be wanted in May, they would have come; but the profound silence that prevailed has caused these that would have come here to engage elsewhere.

Now Mr. Prudence, in conclusion, I beg you to write again and to sign your own proper name and I will reply over my name. I hope to hear from you, as I am not done with you, nor this subject.



Being called on to state the subject of conversation which took place between me and the Hon. John Tipton, while riding the road between Indianapolis and Logansport, on 18th of last July---On my oath depose and say that in substance the said John Tipton stated in unqualified expressions and in rage the ignorance and duplicity of the Board of Canal Commissioners in not letting that portion of the canal between Peru and Georgetown at an early period, as his own property and that of other persons had sustained a loss--He (the said Tipton) stated that the commissioners had in their determinations, consulted Jesse L. Williams and his engineers, together with a few intriguing contractors, who all for the sake of their salaries and swindling the state out of her funds, so controlled, these poor simpletons, (the board of commissioners) as to sit down in a state of lethargy, neglect their duty, and do nothing that they should have done--whilst their best friends who had labored hard to get some of them into office, and who had made that canal their study for ten years past, were passed by and neither consulted or listened to. But he would be heard and would express his opinion, and if they were within his reach he would hurl them out of office if they were his brethren--He did not care whether they were in error willfully or ignorantly, they lacked energy, and he knew more poor devils to die for lack of energy than from any other cause--that they need not think to live always in office, dragging along the work by a favored few of foreign contractors and officers, who care nothing of the good of the state but to make their livings, drive it on, and if it costs the state a few thousands, her sons will get it. What is for out to raise provisions and labor.

He interlined the former conversation with a number of contemptuous epithets and concluded by saying he always got in a rage when he talked



on that subject.

And further this deponent saith not.

WILLIAM A. OLIVER

Sworn to and subscribed before me a Justice of the peace for Wabash county this 18th day of October, A. D., 1835.

J. M. LEMON, J. P. [seal]

The following is the substance of a note addressed to Gen. Tipton on the 17th July last;

Logansport, July 18, 1835

Gen. Tipton:--

I have this moment learned from W. A. Oliver that thee has taken the liberty to speak in a light and disrespectful manner of the canal commissioners and censure them severely for the course they have taken in conducting the operations of the present season on the Wabash and Erie Canal. This course is uncalled for, improper, and unfriendly, and so far as I am concerned I have to say that I shall neither turn to the right hand nor to the left from the course which I believe duty points out, for thee or any other man; and if thee has any complaints to make hereafter, I trust thee will pursue the more friendly course of coming to us and not be uttering of them to every passenger thee may chance to meet on the highway.

Thy friend &c.

J. B. JOHNSON

FALLS OF THE WABASH  
July 21st, 1835

Sir:--I have the honor to acknowledge the receipt of your letter of the 18th inst. stating that Mr. Oliver had informed you that I had spoken in a light and disrespectful manner of the canal Commissioners, and informing me that you consider my course as improper and unfriendly





--and also stating that you will pursue your own course in your own way, without turning to the right hand or to the left for any aid, and in reply I have to inform you that I am happy in having the opportunity to correspond with you as one of the Canal Commissioners. I deny having spoken in disrespectful terms of the Commissioners, nor have I the remotest hope of being able to influence your action, or of being patiently heard by a single individual engaged in conducting this public work. All my efforts for a year past to have a free and friendly intercourse with the board of Canal Commissioners, has been treated by them with silent contempt.

Early last spring I was informed that the Canal Commissioners would not put that portion of the canal authorized to be let to contract this year, until late in the fall, and much dissatisfaction prevailed here upon that subject. Not believing that the Commissioners would adopt a course so hostile to the best interest of the state, I addressed a letter, in as respectful terms as I am capable of writing, to Mr. Burr one of your colleagues upon that subject, hoping that he would confer with the other members of the board and reply either verbally or otherwise; my letter was written in March, and about four months has passed off without being favored with a notice. Last fall I also applied to your Chief Engineer and one Commissioner requesting them to prepare the way in constructing the feeder dam at Lagre to allow a portion of the water power created there to be used there. I see that nothing has been done in compliance with my request. And this summer I made a written communication to the board upon that and other subjects of much importance to me, and seeing that one of my attempts to be heard by your board are deemed of sufficient importance to engage the attention of the Canal Commissioners, no alternative was left me but to avail



myself of the right of every citizen, to examine the conduct of public men; and this right I felt called upon to exercise toward yourself and your colleagues in behalf of the state, my neighbors, and myself.

My very slight acquaintance with you and the unfriendly attitude assumed towards me by another member of the board for years past, forbid the idea that I was at liberty to approach either of you as individuals, when you had declined hearing me in your public capacity. Thus circumstanced I could do no more than to speak of your public conduct as I understand it--and I have done so in terms strong but always respectful; this sir, I consider the right as well as the duty of one deeply interested in your public conduct.

I have before this had occasion to address public men and public bodies, and the board commissioners of which you are one, it is believe is the first in this country to deny a hearing to a citizen whose property, the earnings of his whole life, is to be materially benefitted or injured by the manner in which your board discharges its duty to the country. I am aware that you may consider me dictatorial, or call me insolent, but I have not nor your board cannot divest me of the right of every freeman. I know that many reflecting men think as I do, prudence may keep others silent, but of that virtue I can boast but a very small share.

I beg of you sir, to believe that this letter is written more in sorrow than in anger, and most happy will I be if you will lay this letter before your colleagues at as early a day as may be convenient to you, and that our correspondence may produce a return of mutual confidence and of that friendship so necessary to all concerned. This is my sincere desire, but should your board feel and act on different principles, upon them not me, be the responsibility for what follows.

Your obedient servat,

John Tipton



Crawfordsville, Aug. 4, 1835

Gen. Tipton:--

Thy communication of July 21 came to hand last night. I was gratified on receiving it as it gives me an opportunity of making a written communication to thee which, otherwise, I should have delivered orally, intending to have called on my way up the Wabash, (and indeed I yet think of doing so.) In quoting me thee has left out the qualifying words, "from the course duty points out," and from my expressions, they qualified: I can never retract, for at all times and under all circumstances, I trust that I shall never, when entrusted with public business, turn either to the right or left from the course duty points out, for any man or set of men. In so saying however, I have no unfriendly feelings for thee, no would I willingly and unnecessarily hurt thy feelings, or injuriously interfere with thy interest more than with any others of my fellow citizens, no do I believe that either of my colleagues would.

Thee says, "nor have I the remotest hope of being able to influence your action or of being patiently heard by a single individual engaged in conducting this public work," Be not here deceived, for I am willing, and I believe I may say we are willing, patiently to hear, and if after hearing any suggestions may have been made, out of which we can gather something that will enable us to improve or in any way better any portion of the work in which we are engaged, we shall cheerfully attend to them and not otherwise.

Thee says, "early last spring I was informed that the commissioners would not put that portion of the canal authorized to be let in contract this year until late in the fall:" "not believing that the commissioners would adopt a course so hostile to the best interests of the state I addressed a letter," &c.



That any man of thy judgment and experience could after a moment's reflection say or believe that the interest of the state could be furthered by putting any part of the canal under contract early in the year, is truly astonishing to me; and that thee should say it, and say it publicly, is yet more astonishing, after taking the course thee did in the Senate of the United State on the boundary of Ohio.

I believe I am warranted in saying that had the whole of our representation in Congress understood and supported the interests of Indiana, when the boundary question was before them that a large portion of the Wabash and Erie Canal lying within Ohio, would before this have been under contract and the work at this time in a state of forwardness. Had this been the case there would now be some more reason to complain of us for acting too tardily, but I contend that even then we should be justifiable in the course we have taken.

We considered it necessary for the interest of the particular works as well as the state at large to finish the upper division of the canal by mid-summer, because it has been long under contract, required the constant attention of two engineers, passed through the most sickly part of the whole line, and if not done by that time could hardly be finished in the season, since sickness and other unfavorable circumstances would operate against that portion of the line; beside we found that provisions would be scarce and dear, and to put more than twenty additional miles and canal line under contract early in the season would not only be the means of compelling many contractors on the line already under contract to abandon their work which must be re-let at greatly advanced prices; but many of those who would have taken contracts, in the spring unable to foresee the great advance in the price of provisions that would take place later in the year, would also be





compelled to abandon their work which must in turn be relet at much higher prices than it will be taken for, say in September next, which would altogether occasion a loss of from \$15,000 to 20,000 to the state. And what, I will ask, could possibly be gained to the state in return for so heavy a loss, or where is the outlet until Ohio will have completed her portion of thw work? And who, permit me to ask, has contributed so largely as thyself to the cause that has been the means of stopping her; and yet the principal agent th t h s brought about the state of things that renders it unnecessary for us to prosecute our work with r pidity is loudest in his complaints against us for not pushing the canal faster.

There is not an individual (if except my colleagues) in this country more anxious than myself to see our canal in operation, and if it is speedily completed it must be put under contract soon, and the work pushed with energy. But what do we gain by having 70 or 80 miles of canal finished in a country that has no surplus produce to send out? And indeed, if she had, could not get out with it until the north end is opened; neither can she get in for the use of her sparse but increasing population a portion of the surplus produce of the older settled parts of our own country that may be wanting for a new beginning population to subsist on; neither can they bring in such of the products of other countries as their wants may demand. Must we not then loose the interest on the money expended until the northeast end of the canal is opened, for now we can neither go north nor south, and the portion that is completed and under contract is surrounded by a deep wilderness. Thy energies would have been much more advantageously directed if thee had at the proper time in the Senate chamber and in private and in fire-side conversations with members of Congress used the whole of thy in-



fluence in securing to Ohio the strip of territory which she claims and to which, she is justly entitled, and not be complaining of our board for not doing that which thy own conduct has been the means in part of rendering unnecessary to be done at this time.

I have only made these remarks to show that I think thee should have been the last man to have made public complaint against us. The first reasons given are, I believe, entirely sufficient to show that great public loss would have been the result of an early letting.

I can assure thee that we have not been operated upon by unfriendly feelings, that we have not disregarded thy interest more than others, and if there has been any neglect it has been unintentional. I have a recollection of thy making written application to our board to have some arrangement made by which the water could be used at the Legro feeder dam. But such is the situation of the canal at the point that there is not sufficient room to use the water with safety and advantage on the Legro side of the river. To me it does appear if the water is ever used from the dam, it ought to be on the other side of the Wabash. I must confess if thee has never been answered on that subject it has been an improper and censurable neglect; and I must say, to use a trite expression, that every body's business is nobody's and therefore it has been neglected. I thought that one of the other members would answer thee, and so they doubtlessly thought, and in that way the neglect has occurred and not from disrespect.

That every man has a right to speak and be heard in this country is admitted by all, and I trust ever will be; and while this right is used with honesty of intention and prudent moderation we shall continue to be a free and a happy people. But I trust that my fellow citizens will at all times during my brief stay in office, (for such I think



it will be) when they think I have erred, be kind enough first to mention such error to me, and if we then think differently, and they believe public good requires them to express themselves publicly in regard to my conduct, then let them do it.

Thy friend &c.

J. B. JOHNSON.

FALLS OF THE WABASH  
August 21st, 1835

J. B. Johnson,

Sir:--Your letter of the 4th inst. on the subject of my complaints against the conduct of the Canal Commissioners came some days ago, and found me confined with a fever from which I am only so far recovered as to be able to write a few words.

I am happy to hear that you intend calling on me. I wish a personal interview with as many of the Canal Commissioners as will allow me that honor, and as I am seldom in town, even when in good health, I beg you to waive formality and call at my house, or if more agreeable to you call in this vicinity and send for me.

You assign as one reason for not progressing more rapidly with the canal, my vote against the claim set up by Ohio to a portion of the Michigan Territory, so if I have done wrong in the one case you may in another, this reason may satisfy yourself but will not be satisfactory to others. And sir, permit me to tell you that I have investigated this boundary question and am confident that Ohio is claiming what she has no just right to, and I cannot sanction with my vote giving her a portion of Territory that should belong to another state, unless instructed to do so by those I represent.



The boundary dispute is between Ohio and Michigan. Indiana has no direct interest in the matter. Whether this or the other state has the jurisdiction, Indiana has the right to navigate the bay. Ohio has accepted our grant to land, and stands pledged to construct that part of the Wabash and Erie canal that lies within her limits, and I am confident she will perform her contract.

The United States Engineers fixed the termination of our canal at Maumee, three miles within the present limits of Ohio, and our board of Canal Commissioners approved the termination; and there it would have remained but for the fact of some two or three influential speculators becoming interested in property at Snow creek, Toledo--and so they discovered the great importance of extending the canal to their town site. These interested speculators have aroused the politicians of Ohio, and the weak nerves of our Canal Commissioners have taken the alarm. It would seem that not only the interest of three states, but the peace and permanency of the Union, is put at risk, if these heartless shillocks who own Toledo, are not accommodated.

Were it true that Ohio will not commence her part of the work until the boundary question is settled, it furnishes no reason why Indiana should falter. She should press her work with redoubled vigor--because we can use our part of the canal when finished, and Ohio would find it her interest to finish her part to enable her to reap a portion of the benefit of ours, and the interest of the state would be looked at--and would then overbalance the interest of the Toledo company. I have no doubt that Congress will settle the boundary question next winter; and our Canal Commissioners have made a most fatal and unfortunate blunder in not having more of our canal now in progress of construction.





You admit that you have made no preparation to allow a portion of the water power created at Lagro to be used there, because there was not sufficient room between the river and the canal to allow the erection of works to use it. This is unfortunate for that ill fated town, too true, for if those whose duty it was to lay out the canal through my land had been paid to lay it so as to injure my interest most, they could not more effectually have crippled my property and the interest of the village; but another object was to be effected of which I will not now speak.

You are now about to commence the work on the canal through my land here. It is in your power to save or to injure me materially and I confess that from what has been done elsewhere, and the feelings that exist between your Engineers and myself I am alarmed. I wish to be heard by the Commissioners, and if there is a speck of regard left for the feelings or the interest of others, I hope to shun the blighting influence of your and their power upon my home and property here.

Your obedient servant,

John Tipton.

Crawfordsville, Aug. 24, 1835

Gen. Tipton:--

Thy letter dated 21st inst. I have this moment received. I pretend not to say that an improper act on thy part, can justify one on ours, but I must continue to say, that so far is our act from being wrong, or in the smallest degree calculated to have an unfavorable influence on the interest of the state, that it has been the means of saving her many thousands of dollars.

I am however, well satisfied that no reasons that can be given,



(Judging from the communication before me) will be sufficiently strong to satisfy thee. As to the others I know not who they are, but believe that unless they are situated like myself, what I have already said in a former communication, will be entirely satisfactory, and clearly show that the putting of the work under contract early in the year would have been deeply injurious to the state; and I am entirely willing for myself or any other person to publish to the whole people of the state, all that we have done, under just such coloring as may be most agreeable to yourselves, reserving always the right of correcting your incorrect statements.

I am ready to admit that the matter of boundary has but little to do with the putting under contract that portion of our line authorized to be let this year by the Legislature. I principally named that in connection with thy vote &c. to show thee that in my opinion, thou should be the last man to make complaint, after having been a prominent agent in bringing about that state of things, which has enused Ohio to decline making a permanent location, and putting her work under contract sufficiently early to ensure its completion within two or three years from the present time. That Ohio will complete the work she has undertaken to do, I have no doubt, but we know that she has about twelve years to do it in; and should she decline doing it for eight or ten years to come, it will seriously injure us; for I again say that our canal will be of little value to us until Ohio finishes hers, because the Maumee is worth but little as a navigable stream above the foot of the rapids. I have been told by persons who had no interest in any of the country on the Maumee Bay that when the wind is unfavorable there is not sufficient depth of water within the line, to which Michigan claims, to admit the largest



vessels that do business on the Lake; which is a serious objection to the canal terminating within that line, as it would sometimes make two transshipments instead of one, and build up a town and create business at that point, to which the large vessels could at all times come, much to the injury of Ohio, which makes it all important to Her, that she should hold the entire Maumee Bay, since she will have expended in the completion of the Miami and Erie Canal, some millions of dollars, and ought therefore to hold the best possible point of termination to be of the most favorable kind; for transshipments will be prejudicial to Indiana, as well as Ohio. I do therefore contend that Indiana has a direct interest in the matter, since she will through all time to come, be constantly receiving injury, should the canal terminate where the largest vessels of the Lake and canal boats cannot at all times meet. And she has a further interest: if Michigan succeeds in holding to a line running due east from the southern extreme of Lake Michigan, she has told us in the memorial of the Governor's Council to the President that they should at another time, and in another way, clip off the northern extreme of our state and thereby exclude us entirely from the Lake; and yet Wheat says that Indiana has no direct interest in this matter. Strange indeed, that a large landholder can say that we have no direct interest in an uninterrupted communication with the Lakes. She considers that Ohio has no just claim to the disputed territory. In that we widely differ. Ohio has not just now set up that claim. We know it to be as old as her existence as a state. It is embraced in her constitution, and the acceptance of that constitution by the people of the United States through their representatives in Congress was a firm and unalterable contract between the parties, that such should be



her boundary, and that contract can never be nullified without the consent of the contracting parties. These says, "the United States' Engineers fixed the termination," and there thee errs; for it is ever considered that the first running of a line must be permanent; neither have the engineers the right or power to do such things, especially U. S. Engineers, in making a state location. Thee further says, that the Maumee termination would have remained unaltered, but for two or three speculators, through whose influence, the politicians of Ohio were aroused, and by their noise alarmed the weak canal commissioners of Indiana, and caused them to neglect doing that, which thy unclouded judgment says ought to have been done. We are strange beings, often blinded, and made to err by an extravagant degree of selfishness, and it is this my friend, that does in the present case make thy judgment so remarkably clear. Thee can see, or thee thinks thee can see self-interest operating upon a few individuals interested in a town site at Toledo, to a sufficient extent to induce them to make a great effort to change or extend the termination of the canal; but thee sees no selfishness in thyself, when branding us with weakness and neglect of duty, because we do not, at thy nod, consent to sacrifice public interest to further thy individual welfare, and such would have been the case had thy wishes been complied with at Lagro. At that place there will be surplus water only a part of the year, and that can be used to much better advantage on the opposite side of the river from Lagro, and equally well accommodate the country, when the Indian lands come into market and are settled. Must the state throw her canal nigher into the hill and encounter more rock elevation, with an additional cost of several thousand dollars, with no other view than to put it into the pocket of an individual, when the public could be equally well accommodated without a waste of their funds?





We shall most assuredly my friend, notwithstanding thy complaints, "weak nerves," &c. do or try to do, what duty points out to us, and thy interest shall be as much consulted and as closely attended to as any other fellow citizen's, but it can never have the preference.

Thy friend &c.

J. B. Johnson.

John Tipton.

Crawfordsville, August 1st. 1833.

Gen. Tipton:--

On further reflection, and examination I find that I did not fully answer thy letter dated Aug. 21 last, neither in my written reply, nor in the conversation we had at thy house at a subsequent time. And I forgot to ask an explanation of that part of thy letter which says (in alluding to the location of the canal at Lagro) that "another object was to be effected of which I will not now speak." This sentence does indirectly charge us or some of us with improper conduct; and as I do know that not only every section but every station of the canal has been located solely with reference to the public welfare separate and apart from any private or interested views, I consider that an explanation of that definite charge is due us. I believe that I fully understand its meaning, but lest I should do thee injustice in giving it that interpretation which I believe correct, I prefer hearing thee.

Thee says "our canal Commissioners have made a most fatal and unfortunate blunder in not having more of our canal now in progress of construction," this would indeed have been an unfortunate blunder if Ohio had been carrying on her work at the time so as to have given some reasonable assurance that her part of the work would have been com-



pleted as soon as ours, or nearly so; but very far from it, when we know that such was not the case.--It would indeed under such a state of things have been an unfortunate waste of public funds. I do not wish to be understood to say that because Ohio is still, we should decline operating, but it surely furnishes no good reason for Indiana to "press her work with redoubled vigor." As well might we say that because steam boats can ascend the Wabash in time of floods that there is no necessity to improve the river or extend the canal, as to say that we should be very energetic, because we could have no outlet were our work completed to the state line knowing as we do that until Ohio opens her part of the canal there is no outlet in that direction for any other vessel than a common perouge.--We should however continue our work, but under the existing state of things, no faster than economy in the cost of construction will warrant, and as I have before observed, to have let the 20 miles last put under contract, early in the year would have greatly increased the cost without any corresponding benefit-- a course that could only have been warranted by opening sooner a certain and direct outlet for the agricultural products of a large district of well cultivated country, and this we all know cannot be done until Ohio completes her part of the canal. I am inclined to believe seeing that so much of the canal that was put under contract in 1834 will be completed early in 1836 that economy may warrant the Legislature in putting 30 or 35 miles of canal under contract in the coming year.

Is it not strange that two or three speculators should influence the whole Legislature of Ohio except one member? Is it not speaking in a very light and disrespectful manner of that body to say that they were so influenced?--Have we not speculators in Indiana and some indeed even



on the Wabash, but can we believe that any three of them could so effectually influence the Legislature of Indiana as to induce them to do an act of injustice to a neighbour, & that too at the hazard of the public peace--were we to say that such a thing might hapen, we should say but very little for the honesty or the intelligence of that body.

It does appear to me that to hold forth such language is well calculated to produce unfriendly feelings in the people of Ohio towards us, for they cannot very patiently or with strong feelings of friendship hear the Representatives of their choice thus indirectly charged with weakness or dishonesty; and it is most assuredly neither our inclination nor our interest to create any unfriendly feelings towards us in the minds of our brethren of Ohio. Might we not with just as much reason believe that the councils of Michigan are influenced by speculators at Detroit and other places.

Thes says "if those whose duty it was to lay out the canal through my land had been paid to lay it so as to injure me most, they could not more effectually have crippled my property and the interest of the village."--This complaint is uncalled for--extremely selfish, illiberal, and ungenerous--all of which thee will be compelled to acknowledge when thee recollects that between Huntington and the mouth of Fel river the canal passes between 7 and 8 miles or about one seventh of the whole distance through thy lands, and through them as all other places it is the duty of the Engineers to seek the cheapest and best line, which must be laid with reference to the level and the general topography of the country. And it should be borne in mind that a canal cannot like a road be taken any where, but must of necessity go where the level indicates. Under these circumstances it is reasonable to expect that the location



which the interest of the state requires would in every instance for the 7 or 8 miles that it passes through thy land be exactly such as would best suit thy individual interest, or would thee wish us first to secure individual and afterwards public interest? Let us enquire further into the facts of the case and see whether in truth the location of the line generally, is not as favourable to thy interest as a reasonable man could or might to expect. There has three towns on the line, Huntington, Lagro, and Logansport.

In locating the line through Huntington the Engineers found it to the interest of the state to make a change in the original location, which brought two locks on the town plat, giving the place thereby considerable water power. Was this ruinous to thy interest? thy partner Captain Murray expressed himself as highly gratified with the location.

In the location through Logansport a lift lock giving great water power, and two basins have been placed on thy new addition to the town. Is this ruinous to thy interest? In our conversation thee admitted that the location through thy lands in the neighborhood of thy residence was as well made as it could be, and here the line must pass through about two miles of thy land.

According to thy own and thy partners admissions the location through a large amount of thy property has been as favourable as could be wished or expected; but because it has not been exactly so at Lagro thee has both publicly and privately expressed great dissatisfaction, and very improperly charged both Engineers and Commissioners with a dereliction of duty. I believe if thee will carefully examine the ground at Lagro, that thee can't do otherwise than admit that to have made the location as thee wished it made, would greatly have increased the cost without any increased public benefit.





As I feel unwilling myself to lay under charges even directly made, when I know them to be unfounded, so do I in like manner those with whom I am connected, that I know to be faithful in the honest discharge of their duty. But charges indirectly made on account of their intangibility are yet more objectionable, and I do therefore ask a full explanation of "another object was to be effected," &c. I ask it not as a favour, but claim it as a right. And I do fondly hope that one whose property must in a short time be enhanced in value more than \$50,000, by the opening of the Wabash and Erie Canal, will no more stoop so low as to be uttering complaints because the canal does not at every little point crook exactly to his notion.

Very respectfully yours &c.

J. B. JOHNSON

Gen J. Tipton

FALLS OF THE WABASH  
15th Sept., 1835

To D. Burr,

Sam'l. Lewis,

J. B. Johnson,

Gentlemen, with this I have the honor to send a proposal for the construction of sections 146 and 147 of the Wabash and Erie Canal. My object for bidding for this work is to have control of part of the work that lies in my fields, as I have reason to fear a sad destruction of my property, should this work fall into other hands. But should I fail to get the contract, I avail myself of this occasion to inform you that I cannot consent for my fences to be thrown down in my absence & my crops destroyed; and I claim it of you as an act of justice to instruct your contractors to fence off their part of the work from my enclosed grounds before commencing the construction of the canal. The state



having reserved timber in this vicinity for the use of the canal, it is hoped that my timber will not be considered as common property and cut or used for any purpose.

The state of my health prevents me from leaving my house and I would like to hear from you.

Your obed't. servant,

JOHN TIPTON

In a note appended to the bid referred to in the above letter Gen. Tipton says, "it is indispensable that I should have a bridge over the canal on that section to enable me to pass to my mills, and that part of my farm that lies north of the canal;" when at the same time he could not have been ignorant that the commissioners built no bridges for other farms on the line.

CANAL OFFICE

Logansport, Sept. 16, 1835

Gen. Tipton:--

We acknowledge the receipt of your proposal for the construction of sections Nos. 146 and 147, covering the note of yesterday expressing fears in case the work you propose for should fall into other hands that in waste and destruction of your property will take place, and that you cannot consent to have your fences thrown down in your absence and your crops destroyed; and you ask that the contractors be directed to fence off the ground required for the canal before they commence the work. On your proposals you note that a culvert was expected on sec. No. 146, & that a bridge will be indispensable to allow you to travel to your farm and mill.

In reply we respectfully state that the great caution which has uniformly been used to prevent waste of any kind to the property of persons on and near the canal ought as we believe, to prevent any reasonable



fears on that subject. There has been no instance whatever in the construction of the canal where fences have been thrown down and crops destroyed: the engineers in every instance direct the contractors to wait till the crops are taken off of so much of the lands as the canal and its embankments necessarily occupy. Notices of this kind have been put up in the specifications to bidders, which every one sees and reads; and hitherto, both engineers and contractors have used the most praiseworthy care when entering on private property to construct this great (and to this county most valuable) public work, to commit no unnecessary waste.

The ground necessarily taken for the canal including space for deposit of earth excavated, or for embankments or for stumps and timber that will not burn is taken off by the engineers, if fences are in the way, the contractors remove the materials of which they are made and place them where the fences are to be rebuilt, and there they are carefully left to be used by the owners in such a way as will be most agreeable to themselves, and here all control over them ceases with the contractors.

In regard to contractor taking timber from land, the course taken is this, where timber of suitable quality cannot be procured by the contractor from the state lands or purchased at a reasonable rate, the board of commissioners or engineer superintending give permission to enter upon any lands in the neighborhood and take what he may want, doing no unnecessary damage, and for such timber or stone so taken, as well as for damages which may be sustained, or supposed to be sustained, either for land occupied by the canal, additional fences made or to be made, materials taken, or damage of any other nature, the proprietors file a claim for damage, in the office of the canal commissioners, upon which



in due time, they notify the board of assessors, who convene, examine the premises, hear testimony, and make such award as to them may seem right. We have located a culvert on section No. 147 on your land, but confess that we have not yet seen the necessity of another on 146, where you state one is expected to be, but if on further examination, it shall appear necessary, one shall be put there.

In regard to making a road bridge to enable you to pass to your land and mills, we cannot learn from your note whether you intend to convey the idea that it should be built at the public expense, or whether you expected to build it yourself, if the latter the engineer will cheerfully furnish you with a plan and superintend its construction if you desire it.

No public work of this kind was ever before made in a wilderness, nor was there ever a country so far inland, where the lands have so rapidly advanced in value, while it yet remained a wilderness as they have in this. In 1830 the proprietors became possessed of nearly all the lands through which the canal passes by paying the part of \$1 25 per acre and the interest at 6 per cent, since; they are not certainly worth an average of \$10.00 per acre and in 3 or 4 years if the canal is finished to the Lake will be worth 25 or \$30.00 per acre. This great advance has been occasioned solely by the expenditure of the public money in the country, and the prospective advantages to be derived from the canal. These advantages are sufficient for any farm situated on the canal, and justice to other parts of the state would seem to say that we should have no more, & that if the lands in this quarter have been rendered from 5 to 10 fold more valuable on account of it, it is no hardship for an individual to build his own bridge or fence, especially when he holds large tracts of land on and near the canal, which were purchased for small sums as late as 1830, and by the increased value





which the canal has already given them have grown to a great estate.

If it were just it would be bad policy to have the state make bridges and fences for individuals. Under such circumstances there is a remote probability that possibly the other parts of the state may have to contribute for the payment of the debt contracted for the construction of the canal, and this will be the case if the tolls are not more than sufficient to pay the interest on the canal debt, and it would then follow that farmers remotely situated from the canal would have to make bridges and fences for those directly situated on and enjoying all the advantages of the canal. Would not this afford just ground of complaint for that portion of our population that may be located at a distance from this work?

So well has this subject been understood by the people along the line of the canal that they have cheerfully made their fences and bridges and with much patriotism and liberality put up with the unavoidable inconveniences that must ever attend the construction of public works, and they have seen and felt the necessity of having their farms opened and their timber and other materials taken, well knowing that these things must be done before they could reap the many advantages they would ultimately derive from the canal, very properly considering that it was enough for the state to encounter the cost of opening the canal through an entire new country; they have felt unwilling to excite odium in other quarters by asking the state to do so much more for them than she possibly could for those remotely situated; and this has been the case with men of small property, and we feel well assured that such examples would not be less worthy of imitation if they had come in the first place from higher places, nor would they have been less likely to be properly appreciated by the residue of the state.



Permit us to assure you that there is no just ground for apprehension of injury to your property. It is perfectly safe from any damages in the construction of the canal, and will remain so.

We are sorry to inform you that your proposals for the section above named are so much under bid by responsible contractors that we cannot award them to you.

Very respectfully yours,

J. B. JOHNSON  
D. BURR

FALLS OF THE WABASH  
21st of Sept. 1835

Gentlemen:--

I have this moment received your letter informing me of the course you seem determined to pursue to regard to conducting your canal operations, and in reply have to inform you that it is not the first time I have been taunted about large fortunes and high places, but must be permitted to say that it is the first time that such stuff has been thrown in my face from so respectable a source as a board of canal commissioners should be; and when my claims to patriotism and liberality are to be adjudged, I hope to come before another tribunal.

You state that where timber cannot be had from the state's land for canal purposes, nor procured by the contractor from owners, that the canal commissioner give the contractor orders to take timber, and the injured party must put in his claim for damages. I beg you to refrain from giving such an order for my timber. I have but little here, not more than will build a Mill-dam that I must build next year, the state may as well buy timber as for you to wreck your vengeance by taking mine in the plenitude of your power, There is not timber enough five



miles of this place for your work, and for mine I have sufficient for myself, if you will let me keep it, and I will not consent for one stick to be taken from my land, and you know that nothing will be given me for damages. I have asked nothing but justice, if others do not it is their fault.

If you have no other feeling that I can reach I hope that your sense of justice will make you retrace your steps about fences and timber. I cannot consent for the state to take my timber and make me buy and haul for my own mill-dam, and this will be the case if the state takes my timber.

Your obed't. servant,

JOHN TIPTON

D. Burr,  
J. B. Johnson.

Indianapolis, Dec. 22, 1835

I this moment received your note of this day. I have not Gen. Tipton's letter with me and therefore can say nothing about it at this time. As soon as I reach home I will comply with your request. Gen. Tipton has frequently approached me on the subject of removing Mr. Williams as far back as 1833, and said that every friend to Indiana and the Wabash and Erie Canal ought to drive him from the state, for he was an injury to the work, and made many other spiteful observations. I will write you more fully on the subject hereafter.

Yours respectfully,

WM. Marshall.

Indianapolis, March 14, 1836

Friend Williams:--

I have determined on publishing the correspondence between the Hon. J. Tipton and myself, in order that the public may see the impropriety



of his conduct in relation to canal operations, and this cannot be fully done without the General's letter to C. L. Stansbury, and the correspondence between the Senator and thyself; do therefore, be so good as to consent to furnish me with all the letters that have passed between you touching this matter.

Thy friend,

J. B. JOHNSON

J. L. Williams.

Indianapolis, March 14, 1836

Dear Sir:--

In reply to your note of this morning I have to remark that the controversy between the Hon. John Tipton and myself has been a source of regret, and one in which no other consideration than a regard to my character, could have involved me. As Gen. Tipton's last communication seems to require no reply from me, I had indulged the hope that the subject would now be dropped; yet, from my relations to you, I cannot properly withhold any correspondence having reference to the public works or to those who conduct the . I therefore send the correspondence you refer to, leaving it with you to determine whether it shall be published. The suggestion is, however, offered, of letting the matter rest where it now stands, and suffering it to sleep forever.

Very respectfully yours,

J. L. WILLIAMS

J. B. Johnson

At Home, 8th Nov. 1835

Col. Stanbury:--

Dear Sir,--In reply to your letter of the 15th last month it is proper that I would inform you that with M. H. or his operations against the canal commissioners, I have nothing to do, having neither





conversed or corresponded with M. H. for the last three months; nor have I set on foot or countenanced any movement to oust the canal commissioners, nor will I; although I know that some of the commissioners and engineers have made speculations at the expense of the state and of individuals, it is my opinion that we should not now assail them more than what has been done in the public papers and in private rounds. They are conducting a public work in which we are deeply interested. We are about to commence a general system of internal improvement, and if their conduct here was known to all the people, it would destroy public confidence and do much mischief at this time. That there has been wrong done I have no doubt, but it has been spoken and wrote about. The, the delinquents, are now in dread of an investigation, and of course cry persecution beforehand to forestal public opinion; their own guilty conscience is sufficient punishment, and will, I hope, prevent them from future speculations. I have advised my friends to take no steps against them. I will prevent it if I can, not for their virtue but for the public interest. You recollect what Aristotle said of scaring the flies.

Do not consider this letter confidential. I wish that every man in the state knew the sentiments of.

Your obedient servant,

JOHN TIPTON

I certify the within to be a correct copy of the original letter in the hand writing of Gen. Tipton.

JOHN H. WILLIAMS

November 28, 1835

Logansport, 21st. Nov. 1835

Sir:--In the Logansport Canal Telegraph of the 16th May last, I observed an article signed "a friend to the canal," in which it was charged, or at least insinuated, that the Wabash and Erie Canal under my charge,



has been improperly located, of which article I have reason to suppose you are the author.--But lest injustice should be done you, I make this communication that you may have an opportunity of disclaiming the authorship, if you did not write or advise the article in question.

I intended to have written you on this subject before you left the state, but did not reach home until after you had started. Lest you should fail to receive this, through the irregularity of the mail, I shall mail a copy at Indianapolis.

Very respectfully,

J. L. WILLIAMS

Gen. John Tipton  
Washington city.

Indianapolis Dec. 11, 1835

Sir:--

In your correspondence with one of the canal commissioners, you make statements which taken in connection with what has fallen from you at other times, induce me to suppose that you have co-operated with Mr. Joseph Holman in his efforts to produce an impression that the Wabash and Erie canal has been located with a view in private interest, instead of public benefit. As this subject is now before the House of Representatives on an application from me for an investigation, I deem it proper to inform you of this fact, in order that you may have an opportunity of presenting, by yourself or through a friend, any evidence that you may be in possession of, going to establish the correctness of this charge--

Respectfully

J. L. WILLIAMS

Gen. John Tipton  
U. S. Senate

Washington, 12th Dec. 1835



Sir:--I have received two letters from you, dated 21st. last month both stating that you had observed an article published in the Logan-sport Telegraph of the 16th May, in which it is insinuated that the Wagash and Erie canal under your care is improperly located. You state that you have reason to believe that I am the author and that you make the communication to give me an opportunity to disown the authorship, if I did not write the article. And in reply I have to inform you that I will neither deny, nor acknowledge being the author of the article you refer to, and I avail myself of the opportunity to inform you that I did write an article over the signature of a friend to the canal, that was published in the paper, and I intended to write two more, but was prevented by sickness. That you may fully understand what I have written, and intended to write, I will now state it. I intended to give it as my opinion, that a portion of the canal line is improperly located, and being informed that you had charged the location, and were speculating in property at Peru and elsewhere along the new line,--I hoped that if you had done so, it was without thinking how improper it was for one like yourself, who can control the location of the line, and make speculations, to do so. And I thought that a few hints in the papers would correct, what every friend to the work, not interested, considered a great and growing evil. I am told by a man that has as good a right to know, as any man living, that the new line by Peru will cost the state over \$8,000 more than the old, or straight line, would have cost, and we concur in opinion that the feeder dam built on the sandy bottom at Peru is more expensive, and less durable, than a dam would be built on the rock foundation four miles below, but I am told that a dam at the latter place would have thrown the pond of the dam in front of your own farm.-- I also intended to call the public attention to the tardy operations on the line to produce an early letting.



It was no part of my purpose to have any man turned out of the public employ or seriously injured in public estimation; because that would destroy public confidence and damp the ardent spirit in favor of internal improvement, that we have labored for twelve years to get up, and if properly directed will do much good in our state.

I conversed last year with some of the Canal Commissioners and with yourself, about matters in which I felt great interest, and received no kind of satisfaction. No alternative was left, but to exercise the right guaranteed to me by the constitution, to write and publish my opinions on the conduct of public men, and although I am well aware that I shall be made to feel the power placed in the hands of the Canal Commissioners and yourself, by the millions pub under your control, yet I cannot be deterred from exercising my rights as a citizen of the state.

I knew that if I wrote over my own signature, against the course that you were pursuing, that most of those employed on the work would become my enemies without knowing the motive by which I was actuated. The Editor was at liberty to show my signature to any Commissioner or Engineer who might feel aggrieved, and you have long known what I have written. My anticipations of the enmity of those engaged on the canal been verified. At our elections in both Log nsport and Peru, one or more of your sub', Engineers, were heard to say, that we, meaning the Engineers and Contractors, must vote for an enemy of Tiptons, because he is unfriendly to the Canal Commissioners and Engineers.--Acting on this principle, they have carried all the elections in the weak counties on the canal line, as I have no doubt you will do, until the order of things is changed.

You have read my replies to letters from the Canal Commissioners, in which my views are in part stated, and my opinions were given to you in





our conversation, before I left home; you have known of the publication now complained of, for the last six months,--and it is passing strange that you waited until three days after you knew I had left the state, to be absent on public business 6 or 7 months, and then made this cowardly call. This goes to confirm my opinion, that you feel guilty of having done wrong. Be this as it may, I have no object but the good of the work, and to defend myself against impositions.

Your obedient servant,

JOHN TIPTON

J. L. Williams,

Logansport.

Washington, 24th Dec. 1835

Sir:--

In reply to your letter of the 11th instant, informing me that you are induced to believe, from conversation with me, and from my correspondence with the canal commissioners, that I am concerned with Joseph Holman in producing the impression that the canal line was improperly located &c. &c., I have to inform you that your impression is without the slightest foundation. Your conversation with me warrants no such conclusion. I stated to you directly that I would prefer complaints against no one, nor would I go before your white-washing committee to plaster your reputation. I repeat it, I have neither conversed nor corresponded with Mr. H. since July. If he is doing aught against you he has kept it from me. I have no doubt that your committee will be honorable men, that will do justice if rightly informed. I of course expect them to be my enemies, but have not yet learned who they are. Your conduct warrants the belief that you wish a quarrel with me when I am out of the state, that you may cry persecution and throw yourself



upon the sympathies of the members of the General Assembly to sustain you. I have evidence that satisfies my mind that you have acted improperly, but for the reasons mentioned in my letter to you of the 12th July, (a copy of which I now send you, fearing that you have not received it,) I must decline interfering with you at this time. Why tease me? If you wish difficulty with me, note my return and you shall have it to your heart's content. As evidence that I have spoken against interfering with any one engaged on the canal line at this time, I refer to Esq'r. Rockhill and Mr. Hamilton of Fort Wayne, Messrs. Carter and Taber of Logansport, Col. Stansbury now in Indianapolis, and Judge Keller of Wabash county. The latter informed me that a petition for your removal with 400 signers was going round in Miami county, and I advised him not to sign it.

Your Obe't servant

JOHN TIPTON

J. L. Williams

Indianapolis, January 4th, 1836

Sir:--Your two letters of the 1th and 24th December, come to hand this morning. I may, or I may not, reply at length to these letters at a more leisure moment. At present, I have only time to request that you will give the name of the individual who concurred with you in opinion, in regard to the location at Miamisport, and who you say "has as good a right to know as any man living." From first to last I have urged the fullest and freest investigation, and I wish the name of this individual that my accusers may have the benefit of his testimony.

You say that you have evidence sufficient to satisfy you, that I have acted improperly, but you withhold it for fear of injuring the cause of internal improvement. I hope sir, that this consideration will not influence you. Our public works will doubtless go on prosperously, what-



ever may become of the individual who now addresses you.

In replying to my note of the 11th Decembeer, inviting you to forward your evidence, you express rather fretfully, a desire that I should not "tease" you in that manner. But I regret that I cannot, consistently with duty to myself pay more regard to your wishes on this point. When charges such as you have made, are preferred, affecting my private character, no platter now exalted may be the station of the couer, I must "tease" him so far as to invite him to prove his charges before an impartial tribunal.

Very respectfully

J. L. WILLIAMS

Gen. John Tipton,  
U. S. Senate

Indianapolis, Jan. 25, 1836

Sir:--

At the time of writing my note to you of the 4th instant, I entertained the hope that no further reply to your letters of the 1th and 24th Dec. would be required, but having ascertained that you have forwarded copies of these letters to several members of the General Assembly, the duty is forced upon me, in my own defence, of exposing some of the misrepresentations which they contain. It cannot be necessary, however, to say any thing in regard to the merits of the charges which you have thought proper to repeat in these letters, inasmuch as these charges have recently been the subject of an investigation before the House of Representatives. It may be proper to remark here, that I submitted the letters to the committee of investigation soon after their reception, with a request on my part, that due consideration should be given them.

In more than one place in your letters is the idea expressed that I have sought a quarrel with you. Is this true? Let us revivie the case.



In the month of May last, while I was quietly engaged in my professional duties, and taking no active part in the political conflicts of the day, you wrote and published an article of the day, you wrote and published an article in a public newspaper, over an anonymous signature, in which you charged those who directed the canal operations with deviating from the original line for the purpose of private benefit; with enriching themselves at the expense of others; with delaying the letting of the canal at Logansport from sinister motives, &c. &c.

Again, in repeated public conversations held during the summer, of which I was dutily informed, you reiterated the charges and insinuations contained in your newspaper publication.

Again, in a letter addressed to one of the canal commissioners dated 21st August last, you say that if I had been hired to locate the you say that if I had been hired to locate the canal at Legro to injure you most I could not have accomplished this object more effectually and you insinuate that a sinister motive governed this location.

Again, on the 8th Nov. last you wrote to a gentleman then in this place, that you knew "that some of the commissioners and engineers had made speculations at the expense of the state;" that they were "in dread of an investigation," and concluded by requesting that the letter should not be considered confidential, saying that you wished every man in the state to know your sentiments. It is true that the individual to whom this letter was addressed, owing to his high, honorable and gentlemanly feelings, did not make it public, yet this does not alter the case so far as relates to your intentions and objects.

Now what has been my course under these circumstances? Notwithstanding the repeated attempted to excite suspicion in the public mind against the canal commissioners and engineers, I took no notice of your





ungenerous and improper course until the 21st Nov., when I dropped you a respectful note requesting to know if you were the author of the newspaper article referred to. On the 11th Dec. after having requested of the House of Representatives an investigation of the charges made by yourself and others, I wrote a second note inviting you to forward the evidence on which your charges were founded.

And now sir, with a full knowledge of these facts, do you attempt to produce a feeling in your favor and a prejudice against me, by asserting that I have sought a quarrel with you? Let a candid public decide which of us is the assailant.

You charge me with having used the influence of my station to defeat your friends at the elections along the line. The imputation is without foundation and utterly untrue. For the last ten years, during which I have been employed as an engineer here and elsewhere, I have not attended a political meeting, even as a spectator, or written a political letter that I now recollect, nor have I attempted to exercise any influence in the political questions of the day, other than to give my vote according to my own judgment. What are the facts in regard to the elections of August last to which you have made allusion?

In the Fort Wayne district you will find, if you seek information with an honest purpose, that some of the canal officers voted for one candidate and some for the other; but I am confident that none of them did more than give a silent vote, excepting perhaps, two of the assistant engineers, who, I am informed, made efficient exertions in favor of Mr. Rockhill, the candidate known to be most friendly to you.

In the Logansport district you recollect that both candidates were alike in reference to National politics. The contractors did not ask me how they should vote. If they did vote contrary to your wishes,



which I think is very probable, a sufficient motive for this course may be discovered, without seeking others, in the fact that you had been urging an early letting, which would have increased the difficulties under which they were then struggling, without producing any corresponding public benefit. But it is worthy of remark that had all the engineers and contractors supported your friend, Mr. Carter, he could not have been elected, so great was the majority against him. If you bring out an unpopular man whom the people will not elect, I must protest against being held responsible for his defeat.

These are the only elections in which we could have exercised any influence had we been so disposed. So much then for your remarked regard to the power given us "by the millions put under our control," and your assertion that we "have carried the election in the weak counties on the canal line." I regret that I am compelled to refer to these uninteresting and unimportant details, but your course has rendered it necessary.

You represent that your views and wishes in regard to the location of the canal have received no attention. I deny that you ever made a suggestion to me on the subject which was not treated with the highest respect, or which was not complied with so far as was consistent with the interests of the state. When preparing the line for contract through your Logansport property, you requested that the location should then be made permanent, and assigned as the reason that you wished to make a record of the lots in the addition which you had just laid out. In order to meet your views, I gave my personal attention to the location, and I am confident that every suggestion made by you during the whole of two days, which you spent with the party was respectfully regarded and fully examined. I am sure that on all occasions the same courtesy and attention has been extended to you that other citizens have received, and I did not know until recently that you claimed more.



For evidence that you have "spoken against interfering" with me "at this time" you refer amongst others to Col. Stansbury. Your manner of speaking in my behalf is somewhat peculiar and deserves a particular notice. In one part of your communication to Col. Stansbury, for instance, you say "I have advised my friends to take no steps against them; I will prevent it if I can." In another part of the same letter you charge us directly with having defrauded the state, and in the conclusion express a wish that the letter should be made public. Again, you say you advised Judge Keller not to sign the petition preferring charges against me, and yet about the same time you signed your own name to the letter written to Col. Stansbury and intended for the public eye, in which the the same charges were made in stronger language than was used in the petition. Of the amount of my obligations to you, for such intercession with your friends in my behalf, I leave others to judge.

You say you decline "interfering" with me at this time. Perhaps I do not exactly understand the meaning which you attach to this expression. I know of no other lawful mode by which you can interfere with me than by preferring charges and proving them, and so far as preferring the charges is concerned, you have already done this in the bitterest terms. Or am I to understand by this term "interference," some secret influence which you imagine you can bring to bear upon my through the patronage and power belonging to the station you fill.

You insist strenuously upon your constitutional right to write and publish your opinion. No one I presume desires to abridge any of your rights. I likewise have rights, among which is the right to be heard in my defence before I am condemned. And when charges of a serious nature are made against me, no matter from what source they come, I shall always insist upon my right to ask the accuser for proof before the proper



tribunal, and if he fail entirely to make out his case, I am not answerable though society in its usages should accord to him the place of a columniator.

You express surprise that as I have known of the publication signed "a friend to the canal" for the last six months, I should now make a formal inquiry for the author. It is true that I saw the article when first published, and it is also true that I had strong grounds for believing you to be the writer, yet when I considered the high station which you occupy and the dignified bearing which is usually deemed appropriate to that station, I did not feel authorized to attribute a production of this character to you upon evidence less conclusive than your own acknowledgement. I may perhaps be excused for hesitating to believe without ample testimony, that an individual who had been selected to represent the state in "the most dignified body in the world," would descend from that high station, and, shielding himself behind an anonymous signature, become the retailer of scurrilous insinuations and petty complaints in regard to the management of a public work, the delay of the canal letting, and the manner of placing the "sand and gravel" on the farm of a particular friend &c. &c.

In one of your newspaper publications you represent yourself as "the personal friend of both commissioners and engineers." Those who make themselves acquainted with your course will doubtless consider these officers fortunate in having few just such personal friends. When our friends observe any thing improper in our management (and there is no doubt but we sometimes err) we shall feel it is a very natural and reasonable supposition that they will find some other mode of communicating the suggestion that through the medium of an anonymous newspaper correspondence.





It was certainly my intention to have addressed you on the subject of the newspaper article alluded to before you left the state, and the reason that I did not is given in my note of the 24th November, to which I refer you.

I trust I have shown that this unpleasant and unprofitable controversy is entirely of your own seeking, and that I have taken no step in the matter not necessary to a defence. My course for the future will be the same. Whether the correspondence shall be continued depends wholly upon yourself. My aversion to controversy does not authorize the conclusion that I shall fail to make good my defence, whenever defensive action becomes necessary.

Very respectfully,

J. L. WILLIAMS

Gen. John Tipton,  
U. S. Senate

Washington, Feb. 7th, 1836

Sir:--

I had determined not to reply to any thing written or said about your conduct, or my course towards you; of this determination I apprised you some weeks ago. The receipt of your long letter of the 5th last month, induces me now to repeat that it is left to your choice--on account of having already told you so, do as you think fit. While here I have no time to devote to such unpleasant controversies, and I repeat, that after my return if you desire it verbally or on paper, it will give me but little trouble, to expose the many errors into which you have fallen, --the erroneous conclusions come to, and statements made in your letter of the 25th last month. I have read the evidence before your white-washing committee, with great care, and I confess that it is much weaker



and leaves you and Mr. B. more in the shade than I expected.

Your obedient servant,

JOHN TIPTON

J. S. Williams,

Indianapolis.

Indiana Journal

April 16, 1836

pp. 1-2



W. BASH AND ERIE CANAL GRANT

A friend has just called my attention to an article in a late number of the Vincennes Sun, copied from a Crawfordsville paper, on the subject of the Wabash and Erie Canal Grant, and the right of the state to an extension of this donation. As the attention of the public has thus been called to correct any misapprehension that might arise ground, upon which it is understood the claims of the State are based.

The act of Congress of 23d March, 1827, forms the basis of the claim. The first section of this act grants to the State of Indiana, for the purpose of aiding in the construction of the Wabash and Erie Canal, "A quantity of land equal to one-half of five sections in width on each side of said canal and reserving each alternate section to the United States to be selected by the Commissioner of the Land Office, under the direction of the President of the United States, from one end thereof to the other." The limits of the donation in regard to its length are thus very clearly made co-extensive with the canal.

But Congress directed six determinate points for the commencement or termination of the canal. The reason of this is obvious. The country, at the time of the passage of the law, had but just been purchased of the Indians, and very little of course was known as to the character of the rivers, or the extent of artificial navigation, which the interests of commerce, or the purposes of the General Government would require on this route. This could only be determined by a thorough examination of the streams, and after further developments in regard to the importance of this thoroughfare as a channel of commerce. The duty of making this examination and the



discretion to determine the necessary extent of the canal, was, by the act of Congress, confided to the State, without reserving, to the authorities of the General Government any concurrent control over this subject. The language of the law on this point, is that "so soon as the route of the canal shall be located, and agreed upon by said State, &c."

It appears very evident therefore, from the provisions of the act of Congress, that since the State, after a careful survey of the route, and a full investigation of the whole subject, has found it necessary for the purposes of commerce, to extend the canal to Terre-Haute, a corresponding extension of the grant follows as a matter of course. The rights of the State under the law are plain and indisputable.

The principles of construction for which the State contends, have already been recognized and acted upon in respect to that portion of the grant lying within the State of Ohio. It is probably known to most of your readers, that the Board of Public works of that State, with a view to a more perfect channel of commerce, have recently extended the canal 12 or 15 miles farther down the Mounsee river, than the point selected for the termination in the original survey, made by Mr. Stansbury U. S. Engineer. And by reference to the last annual message of the Governor of Ohio, it will be seen that the State collected funds for this portion of the route, under the law of 1827. This precedent may be viewed as conclusive in support of our claims, especially if we consider that the Mounsee river along which this extension was made, is always navigable for steam boats of a medium size, having no where less than six and a half feet water at the lowest stage, while the Miami, in the summer season, is not more than one-fourth of this depth, in many places.





By the 24th of this month, the necessity of the Government of the United States to provide for the maintenance of the line, it will be seen that the proper authorities have not been able to secure the necessary amount of the General Land Office, in view to the collecting and setting apart the public lands for the construction of the route extending from the mouth of the river to Terre-Haute. As to the lands along the line of the canal, which are held by the General Government, it is expected that authority will be given to select other lands in lieu thereof, and also the case is being considered as to the lands in other States.

The Government of the United States has the honor of the General Government, and it is a matter of course that the Government, in view of the fact that the Government, for the benefit of the nation, in order to be satisfactory to the State. It will be noted, however, that it is the wish of the Government, that the Government should be able to find the means to free the land from international objections, in the accomplishment of this great national work.

H.



The Warrenton (Ill.) canal, now in progress, is to reach  
St. Louis, at the mouth of the Missouri river, to Terre Haute, on the  
Ohio, 100 miles; thence, by a cross-cut 10 miles to Central canal,  
and from the southern end of that 110 miles to Evansville, on  
the Ohio river, in the southeast part of Indiana, making a total  
distance of 210 miles. The summit level, about 100 feet above  
Lake Erie, is at Fort Wayne. One hundred and ten miles of this  
canal, east of Fort Wayne, is nearly finished. One hundred  
and thirty miles eastward from Fort Wayne to Huntington, in the terminatio,  
reaches in contract, particularly, and to be completed by October 1, 1861.



## WABASH IMPROVEMENTS

From the Wabash Cour

We are gratified to learn from the Acting Commissioner, who has just returned to this place after an absence of several weeks on the Lower Wabash, that the work preparatory to the construction of the dam and steamboat lock at the Grand Rapids is progressing steadily, and with a fair prospect of completion before the Winter of 1839, unless some unforeseen accident should, in the mean time, occur to impede its progress. In connection with this important branch of the the service, the Acting Commissioner has availed himself of the favorable opportunity afforded by the unusual low stage of the Wabash, to detail a party of Engineers, under the direction of Mr. Burr, to explore the river from below the Grand Rapids to the mouth, with the view to the continuous improvement in the navigation. The report detailing the result of reconnoissances made under such favorable circumstances, cannot fail to be looked for with great interest by the people of the State, but particularly by those inhabiting the rich valley of the Wabash; for it will most probably furnish the data and basis upon which all future plans for the improvement of wabash navigation must rest. Should the efforts now making, and in vigorous prosecution for the improvement of our river, be crowned with success, (as no doubt they will be,) it will be a proud event for the entire Valley of the Wabasn, as it will secure almost uninterrupted navigation the year round for steamboats of a respectable class.



## CHIEF ENGINEERS REPORT.

### REPORT OF THE CHIEF ENGINEER ON THE IMPROVEMENTS:

#### GENERAL:

The close of another years operations in the public works of the state makes it my duty to present to the Board the following report in relation to the progress of the several improvements, and the operations of the engineer department thereon during the past season.

#### WABASH AND ERIE CANAL

The navigation of this canal from Lossport to the west bank of the St. Mary's river has been uninterrupted during the past season, with the exception of those trivial hindrances to which new canals are liable.--Boats have been prevented from entering the town of Fort Wayne by a breach in the St. Mary's aqueduct, caused by a flood of an extraordinary and unexpected character which occurred in May last. Early in the ensuing season the navigation may be extended as far west as Geers town; and from that point to Fort Wayne, a distance of 90 miles, including the St. Joseph feeder, it is expected that a regular navigation may be thereafter maintained. The remaining portions of the canal between the state line and Lafayette, may, by proper exertions on the part of the contractors, be completed simultaneously with the Ohio division, thus perfecting at once the communication between Lake Erie and the steamboat navigation of the Wabash river, opening to that extensive and fertile valley all the advantages of the northern trade, and realising to the state an immediate revenue from the receipt of tolls. By the terms of the contracts the whole of this line is required to be completed in October next. The great importance of this connection to the state





and to the country at large would seem to require a rigid compliance with this stipulation, under a confident expectation that the authorities of Ohio from the same consideration will make a corresponding effort for the accomplishment of this great object.

The canal from Fort Wayne to the state line was originally laid out by order of the Board with 60 feet width at top water line, and 6 feet depth of water.--This order was based upon the expectation that the whole of the canal thence to the lake would be made of corresponding dimensions. By the final determination of the Ohio authorities these dimensions were continued only from the lake to the junction of the Miami canal, reducing the size from that point to the Indiana line to 50 feet surface and 5 feet depth. When the intelligence of this decision was received, the work in this state had progressed too far to allow of a general reduction in the width, though some sections have been reduced to 50 feet surface where a saving could be effected thereby. The depth was generally reduced to 5 feet. The several divisions of the canal between Fort Wayne and the lake will therefore be dissimilar in their dimensions, though at no point will there be less width at the surface than 50 feet or less depth than 5 feet.

The Peru dam was reported as finished last year with the exception of 4 feet of covering timber on the upper slope, which the superintendent was prevented from putting on by an early rise of the river. In consequence of this failure, a portion of the dam was carried out by the ice freshets of last winter.--During the past season this breach has been repaired, and the dam may now be considered a safe and durable structure.

Dam No. 4 across the Wabash at Delphi has been completed. This dam is 590 feet long & 12 feet high in low water, resting on a



rock butt about 2 feet below the surface of the water. It is constructed upon the usual plan of crib dams, the crib having 18 feet base, raised with perpendicular sides to the height of 4 feet above low water, & then drawn in at the rate of 3 ease to 1 rise, both on the upper and lower sides presenting a cross section, not unlike in form to that of an ordinary cabin roof. This crib after being firmly connected together with round ties, has been filled with stone and covered with six inch plank. A projection upon has been provided to receive the descending floods: the character of the bed of the river rendering this unnecessary. The contractor for this dam, deserves credit for his energy and skill. Although the largest Dam which has been constructed in this state, yet it is believed to have been very successfull managed and finished in a shorter time than any of the lower class of dams. It is worthy of remark in this connection, that this dam has been constructed in all its parts without the use of ardent spirits, affording conclusive evidence in favor of the belief that, even in the most exposed situations, this artificial stimulus is not necessary or useful to the laboring man; a belief to which an experience of thirteen years in the management of public works authorizes me unequivocally to subscribe.

The dams over Deer creek and Wild Cat, I regret to say have been advanced but little towards completion since my last report. It was a part of the general plan of operations that these dams should have been completed within the low water of the past season, and directions were given accordingly during my visit to that line in July. The failure of the contractors to carry out this plan is the more to be regretted in account of the favorable opportunity for constructing dams, afforded by the long continued low water of the past season. The public interest will require that such measures



be taken at the expense of the insurance companies will guarantee the completion of these dams during the low water of next year.

It is gratifying to be able to state, that all the dams connected with this canal across the Ashesh or St. Joseph rivers, so far as they were finished, have withstood the operation of the numerous and extraordinary floods which have occurred since their completion, without sustaining any material injury; thus affording the strongest guarantee that they will answer fully the objects of their construction.

The steam boat lock designed for the passage of boats around the Delphi dam is now in progress. It is proposed to construct this lock 175 feet long and 38 feet wide in the chamber, corresponding with the lock at the Grand Rapids. It is to be regretted that nothing more durable than oak timber can be found in the neighborhood for the construction of this lock.--The cost of keeping it in repair will necessarily be great. The canal intended to pass boats from the river to the lock has been completed. Another pier has been added to the towing path bridge across the Ashesh, with a view of constructing a draw in the bridge for the passage of steam boats.

Within the last year several of the contracts have been abandoned and re-let, generally at advanced prices. This, together with the additional expenditures in repairing and strengthening the navigable canal, will cause the cost of the work to exceed the estimate presented in the report of last year. From the best data available at the present time, the total cost of the canal from the state line to the mouth of Tippecanoe, a distance of 118 miles, 69 chains, is computed at \$1,750,000; exclusive of the cost of superintendence. The approximate value of labor performed on the whole



line up to November last, amounts at contract prices to \$1,400,000, as per monthly estimates and final accounts of the Engineers; leaving \$25,910, as the value of labor still to be done.

In obedience to an order of the Board, measures were adopted to prepare for contract a portion of the Wabash canal lying between Shawnee creek and Covington. To obtain a proper location of this portion of the route required very minute surveys and comparisons of various plans, embracing the whole route so far up as Africa. These examinations were confided to Mr. Wm. J. Ball, Resident Engineer on the Cross-cut canal, who has conducted them with his well known zeal and judgment. His report, which is herewith submitted, presents all the facts and comparative estimates in detail.

With a view of avoiding the expensive work at Nickoff's Bluff, a line was run diagonally from the old line at the mouth of Bear creek, passing thence through a depression back of this bluff, cutting 14 feet deep for  $2\frac{3}{4}$  miles, and intersecting the river line near Covington. This line, in comparison with the river route, is one mile and 4 chains shorter, and according to the estimate of the Engineer, \$1,998 cheaper. The back route was of course adopted.

Of this line 5 miles and 9 chains, embracing only the heaviest jobs, are under contract, the total cost of which, at contract prices, is estimated at \$120,000.

It will be seen by Mr. Ball's report, that the line from Shawnee creek, to Covington, according to the plans and estimates of this year's survey, is more costly than was reported in 1836, by the sum of \$73,000. This disparity is accounted for by the fact that the level adopted by the Engineer who made the former survey was much too low, the top of the towingspath being 6 feet below the highest





floods. In the estimate now presented the falling-water is supposed to be 2 feet above the highest water.

The operations on the public works of the state have been much hindered during the summer and fall months by sickness. The line between Georgetown and Lafayette has suffered perhaps more severely than any other. Among the many valuable men who have fallen in the public service on that line, I have to mention the name of Anderson Davis, resident engineer, who had been in the state service for the last six years.

#### WHITE-WATER CANAL.

From Lawrenceburgh to Brockville, a distance of 30 miles 68 chains, the canal is very nearly finished. The water is now being introduced, and with the exception of those unavoidable hindrances to which new canals are subject, there will be nothing to prevent a regular navigation during the whole of the next season.

The long continued low water of the past season has enabled the contractors to complete all the dams connected with this line in a substantial and generally satisfactory manner. The contractors for these dams deserve much credit for their perseverance and skill. The loose and sandy character of the bed of White-water renders the construction of dams across it a difficult and reasonable undertaking. The dams are all framed with sloping cribs of timber filled with stone, and rest on a foundation of brush and unseasoned trees. The Harrison dam is 375 feet long and 8 feet high from low water. This dam not only forms the pool in which the canal crosses the river, but at the same time will furnish an abundant supply of water for the line to Lawrenceburgh, as well as for the branch to Cincinnati. Dam No. 2, at McCarty's Bluff is 340 feet long and 11 feet high



from low water. The purpose of this dam is two-fold; it gives us control of the stream for the supply of the canal; as well as for water power, at the same time that it forms slack-water for the distance of one mile and ten chains, which enables us to pass the most difficult and expensive bluff on the line without the cost of constructing a separate canal.

The dam across the East Fork, which was finished last year, sustained no damage by the numerous high floods of the winter and spring, although the guard-bank on the north side was carried off by a flood which occurred in December last. These guard-banks have been repaired and raised higher, and made more secure than at first. Every part of the work connected with the crossing of this stream appears now to be substantial.

At the time of selecting this line under contract it was designed to form a turning-path across the pool of the sea at Harrison; and also across the East Fork, by means of temporary and cheap bridges resting on wooden trestles. The rapidity of the current however, and the great amount of drift brought down by the floods, which was made more manifest by further observation, induced me to recommend a change of plan, substituting permanent covered bridges with longer spans, resting on stone abutments. These bridges will not only furnish a turning-path but will also afford a carriage-way of 12 feet in width for the ordinary travel of the country. The cost of course will be increased by the change.

The total cost of the work and the amount of labor performed on this division, together with the cost of other portions of the improvements which may be described, will be embodied in a tabular statement on a subsequent page of this report, to which the Board are referred.



The course of the river on this line have been enlarged during the past season, when other duties would permit, in revising the location of the line from Brookville to Hamersburg, and preparing it for contract. Some changes have been made in the location of last year by my advice, with the view generally of rendering the canal less liable to interruption in its navigation. The most important of these changes is that of crossing the White-water at Somerset, by means of an aqueduct, instead of passing it in the pool of a dam.

During the past season the location of the canal has been extended as far north as Greenstown, a distance of 6½ miles—early above the national road. The minimum discharge of White-water, which must supply the canal with water, has been ascertained during the past year to be as follows, to wit:

The two Forks united at

Hamersburg,	1000 cu. ft. per min.
The main stream at Felton's mill	1100 " " " "
Do at national road,	1500 " " " "
Do at feeder below mouth of Greenstown,	3260 " " " "

From Brookville to the Feeder near Somerset, the whole of the line is under contract. Above that point as far as the National road, some of the heaviest ice only have been let. The total amount of contracts which have been made north of Brookville, estimating the work at contract prices, the amount of work performed, &c. will be seen in the tabular statement before referred to.

Since the last annual report the public service has sustained a loss in the death of Simon Lambert resident Engineer on this canal. The vacancy thus created was filled, with the approbation of the Acting Commissioner, by the appointment of Mr. S. Wilson, who had been several years in the service of the State.



## CENTRAL CANAL--INDIANAPOLIS DIVISION

Twenty-five and a fourth miles of this division, extending from a point 8 miles above Indianapolis to Port Royal, are now completed, with the exception of the frame work of the wooden locks, which has been purposely delayed. The whole division is ready for the admission of the water, and about three miles of the canal has been filled. The navigation of this division, however, situated as it is in the middle of a line can be of very little service to the country until an outlet be opened to the Wabash & Erie canal or the Ohio river.

The dam across White river at the Broad-ripple has been completed in a manner very credible to the contractors. This dam is 8 feet high from low water, and three hundred feet in length. The dam across the same stream at Port Royal is in progress. The foundation, which is formed of trees and brush, has been raised above low water and secured, and the abutments have been placed and partly raised.

In the location of this line it was found impracticable, without a large increase of cost, to maintain the level of the canal sufficiently high to pass all the streams under it, by means of arched culverts or aqueducts. The submerged wooden culvert of the required cross section, was therefore adopted at most of the streams. At three of these, to wit: Lick creek, Buck creek, and Upper Pleasant run, it has been the design to drive piles around the upper end of the culverts, in such form as to arrest the drift wood and prevent injury to the work. These piles should be driven as soon as practicable.

Agreeably to the order of the Board the final location of





this line has been extended south to Martinsville, and 16 sections, including 9 miles 51 chains, of line, and embracing most of the heavy work between Port Royal and that place, have been placed under contract.

#### CENTRAL CANAL--NORTHERN DIVISION

On that portion of the route extending from Broad-ripple to the Wabash and Erie canal, and embracing the pipe creek summit, which may be called the Northern Division, the formation of the country is such as to present various practicable plans of location. To determine which of these plans was the best, required very full and extensive surveys. Believing that I could not perform my duty to the state without presenting to the Board for their action, a full statement of the cost and relative advantages of these several routes, I advised the employment of a location party during the past summer for the purpose of making the necessary examinations. The immediate direction of this party was confided to Mr. T. A. Morris, the Resident Engineer on this canal, who has conducted these surveys and investigations with much industry and judgment, and in a manner which evinced an acquaintance with his profession. His report in relation to this subject is herewith submitted.

In the course of these examinations it was ascertained that an improvement in the general arrangement in relation to the Pipe creek summit level could be made by forming the reservoir designed for its supply, on a prairie or valley, lying about 5 miles south-east of Yorktown and extending from Bell creek, across to the head branches of Fall creek, instead of the site originally proposed, which was selected from a hasty examination, and merely for the



purpose of presenting to the legislature a practicable plan for this canal. The situation of the Bell creek reservoir is considered peculiarly favorable, not only as to its cost, but also with respect to the safety and certainty of the supply which is to be drawn from it. It is much safer than the site near Andersontown, inasmuch as the streams relied upon to fill it (Bell Creek and Fall creek) flow naturally into it without the hazard of a long artificial feeder as at the other site. Nor is any artificial feeder required to conduct the supply to the canal, as the water will be drawn through a culvert from the reservoir into Bell creek, along the natural channel of which it will flow to Buck creek, through which it will pass to White river, and thence into the summit feeder taken from that stream. The proposed area of this reservoir when full is 1094 acres, and its cubic content 468,600,280 cubic feet which is deemed sufficient to meet any demand that will be made upon it. The area of country, and drainage of which naturally flows into it, has been found by examination to be about 33,280 acres. Estimating the annual drainings at 11 inches in depth over the whole surface, the reservoir may be twice filled in the course of the year. The capacity of the reservoir can be increased, if it should be found necessary by a proportionate increase of its cost.

It will be recollected by the Board that the Pipe creek summit does not rely wholly or chiefly on an artificial supply, and that the reservoir is only necessary as an auxiliary source of supply in the driest seasons. White river at a point 8 miles above Andersontown is high enough to flow into the summit level with the aid of a dam 8 feet high, from which point a feeder is to be constructed on the north side of the river, which will form a part of



the navigable feeder to Muncietown, authorized by the Internal Improvement law. The stream at this point, has been gauged repeatedly during the extreme low water of the past season, from which its minimum discharge has been ascertained to be 1500 cubic feet per minute, or about one third of the quantity required for the supply of the summit and the levels dependent upon it. Deducting about four months of the driest portion of the season, this feeder will furnish an ample supply for the remainder of the year without aid from the reservoir.

From this important change in the site of the reservoir, and in the plan of supplying the summit with water, a saving of \$183,043 will result in the cost of the whole canal.

In the report of the Fall creek survey, submitted to the Board on the 13th December, 1836, the prominent difficulty in the construction of the canal on that route, was reported to be in the fact that the reservoir on the Andersontown prairie occupied for several miles the natural route for the canal, forcing the canal out of its proper course, and thus adding greatly to the cost of this route. The removal of the reservoir from that prairie, as before stated, made an essential change in the relative advantages of the Fall creek route, which seemed to impose upon me the duty of making further examinations on that line under the new state of things.

In my report on the original survey of this line, presented to the Canal Commissioners on the 15th December, 1835, it was suggested that the canal from Palmer's, on the Pipe creek summit, to Strawtown, might be shortened six or seven miles by continuing the main line down the valley of Pipe creek, and intersecting the



valley of White river near the mouth of that stream. In accordance with the view then suggested, I deemed it my duty to survey this route and submit the results to the Board.

From these surveys and comparative estimates, the following general results were ascertained, to wit:

1st. That the Fall creek route, diverging at Indianapolis and passing thence up Fall creek valley to Andersontown, in comparison with the original survey along the White river valley through Noblesville to the same point, would be  $7 \frac{3}{4}$  miles shorter, and be less costly by the sum of \$15,634.

2d. That the Fall creek route, diverging from the White river valley at the Broad-ripple, 8 miles above Indianapolis, and thence along the Fall creek valley to Andersontown, in comparison with the original survey along the White river valley thro' Noblesville to the same point would be about  $3 \frac{1}{2}$  miles shorter, and less costly by the sum of \$17,520.

3d. That the Pipe creek line, diverging from the White river valley at the mouth of Pipe creek, and uniting with the navigable feeder near Alexandria, in comparison with the White river line by Andersontown, would be 8 miles shorter, and would be more costly, including the additional length of feeder, by about the sum of \$25,000.

In respect to the relative advantages of these several plans of location, it may be remarked that the Fall creek route would be less valuable to the country and to the state as it regards the creation of water power, than the White river line. The adoption of this line would have injured materially the natural water power of Fall creek. The adoption of the Pipe creek, line, by





which the junction of the MADISON AND INDIANAPOLIS RAIL ROAD.

Seventeen miles of the tract extending from the head of the plane at Madison, to Graham's fork have been laid, and on the 28th of last month the undersigned, with many citizens of the state, had the satisfaction of witnessing the successful passage of a locomotive engine, with its train of cars, over this portion of the road. The track appears to be very substantial, and well adapted to the employment of steam power with the highest rates of velocity that are attained on the best rail roads in this country. The propriety of the selection that was made of the heavy rail, in preference to the light flat rail is now very apparent, notwithstanding its greater cost. Should the road be completed with the same plan of track, and with the improvements in the grades, which the country further north will allow, the trip of of passenger cars from Indianapolis to Madison, in the ordinary course of business, can be made in about five hours.

The plan of track laid down, may be briefly described as follows: Two longitudinal sills, not less than ten inches square, are laid down, one under each rail, in trenches prepared for that purpose, and adjusted to a proper level. Across these bearing timbers, sleepers or cross ties, 6 by 8 inches are placed, and firmly secured by locust pins  $1\frac{1}{4}$  inches in diameter. The tie under the joining of the bars, and also the one in the middle of each bar, are further secured against a movement in any direction, by being sunk into the under sill, and receiving by its side a well seasoned taper wedge. The intermediate cross ties are placed 2 ft.  $10\frac{1}{2}$  inches apart, measuring from centre to centre; those next the joinings are so arranged that the end spaces or bearings



are about one foot less than the intermediate spaces, an arrangement of the ties ascertained to be necessary in order to give equal strength to every part of the rail. Across these cross ties, and immediately over the longitudinal sills the iron rail is placed, and secured at the joinings in a cast iron chair, and on the intermediate cross ties by broad-headed spikes  $5\frac{1}{2}$  inches long, and  $\frac{1}{2}$  inch square. The rail adopted is an edge rail,  $3\frac{1}{4}$  inches deep, of what is called the H form, weighing 45 lbs. to the yard, in bars 18 feet long; the same pattern of rail now in use on the Philadelphia and Reading road. In addition to the chairs at the joinings, a small cast iron chair is placed and secured on the cross tie, under the middle of each bar, so formed as to fill notches in the lower web of the rail; constituting the centre of each bar a fixed point, towards which and from which the two ends of the bar must move equally in the contraction and expansion occasioned by the variation of temperature; thus reducing the opening between the ends of the bars which must occur in cold weather, the tendency of which, when large, is to derange the track and injure the machinery.

In furnishing a plan for this rail road track, and directing the mode of fastenings, &c., it was the object to guard against those defects and the causes of injury which experience elsewhere had disclosed, so far as these evils could be overcome without too great an increase of cost. The derangement by the frost, is the principal inconvenience that will be experienced in the track which has been laid. As this road passes through a clay region, there were no means of securing it effectually from this evil, short of forming an entire foundation of broken stone, which



was deemed too costly an expedient for the amount of funds appropriated. The unusual size and strength of the undersills, and the secure manner in which the cross ties are fastened to them, it is believed, will in a great measure prevent derangement in the track. A perfect drainage of the road bed is highly important to the stability of the track. I would recommend, therefore, the enlargement of the side ditches, and the perfection of a system of drainage on the finished road, as soon as practicable.

The resident engineer who has had immediate charge of laying the track, reports its cost, so far as has been laid, at \$10,300 per mile.

The contracts for grading have been extended by the commissioner during the past season, to Six mile creek, five miles north of Vernon, and the labor embraced in these contracts is already nearly finished. The whole of the grading from Madison to this point, a distance of 26 miles, 42 chains, may be completed in the early part of next summer, excepting one of the heavy sections on the inclined plane at Madison.

#### NEW ALBANY AND VINCENNES M'ADAMIZED ROAD

On accepting a general supervision of the M'Adamized turnpike roads in the state, the subject of their proper location, and graduation so as to render them in the highest degree useful as public thoroughfares, claimed my attention. The investigation of this subject, and an inspection of the turnpike roads of the country, produced a conviction that, until very recently, the advantage of gentlegrades, although well understood by engineers, had not been appreciated by those who have generally directed the location of roads; that on the contrary, many of the older



roads now in use have been laid out with high grades, when a much lower grade might have been obtained at different route, and that, in consequence of this common error; the public in many instances are subjected to the perpetual tax of transporting their trade over elevations; from which they might have been relieved by a judicious location of the road. It will be a sufficient illustration of this idea, to refer to the Lexington and Maysville road, or to many other roads now in progress in Kentucky, which are graded at 2 degrees as the maximum, and contrast their advantages and general utility with portions of the road between Lexington and Louisville, which have a much steeper grade.

Many considerations might be suggested, going to establish the policy of forming the roads which the State is now constructing at so great an expense, as level as practicable, without increasing materially their cost. These roads are to be the great public highways, not only for the present, but for future times. As they are now located and graded, so must they be travelled without any reduction of grade, through succeeding years. Any defect that may be permitted in the stone covering of the road can at any time be remedied by adding to the depth of the stone, but, if the roadway be formed with grades unnecessarily steep, the evil must continue; it cannot be removed, to any extent short of constructing a new road. On a good Macadamized road, graded to two degrees, six horses in the ordinary course of business, will haul on a broad tired wagon, from eleven to twelve thousand lbs. besides the weight of the wagon, at the rate of 20 miles per day; while on a road located with 3 $\frac{1}{2}$  degrees maximum grade, the same team, travelling at the same speed, will haul only seven to eight thousand





lbs., which must produce a material difference in the cost of transportation. The speed of passenger coaches may be greater on the lower grade, while the liability to serious accidents will be diminished.

It should here be observed that the reduction of the grade from  $3\frac{1}{2}$  to 2 degrees, over an ordinary surface, does not necessarily cause any material increase of cost. The more gentle inclination is not obtained by cutting down the hills, and filling the valleys, but by winding gradually around the hills, and by selecting generally a different location by which they can be avoided, or where the natural inclination of the ridges and valleys is found to coincide with the reduced grade. In this way the cost of the grading is increased very little if any, while the cost of bridges and drains, together with the stone covering, which are the principal items of expense, remains the same. Whatever increase of cost may result from reducing the inclination, it is generally balanced by the diminished expense of repairs on the lower grade.

Impressed with the importance of these considerations I deemed it my duty to prepare and forward to the several roads, some "general rules and specifications for the location and construction of M'Adamized turnpike roads" in this state, a copy of which is herewith submitted. These directions were designed to secure the utmost degree of economy in the application of the funds, to correct the prevailing errors of location which I have noticed, and to introduce, in this important and useful branch of our public works, all the improvements which the lights of science or the latest experience of the country may have suggested. It will be observed that the leading principles upon which these directions are based, so far



as respects the location, are, 1st, that a route must be selected on which the proper grade of the road will be nearly coincident with the surface, so as to avoid all the expense of deep cuttings, or high embankments;--2d, that the road must be made as short as possible between the points which may be fixed, paying due regard to other considerations named;--and 3d, that the grade of the road way must generally be limited to two degrees--that the maximum grade, whatever it may be, should only be attained where it cannot be properly avoided; and that every portion of the road be made as level as possible, excepting the very slight inclination which may sometimes be desirable on account of a more perfect drainage.

I consider it a matter of regret, with reference to the public interest, that I have not been able to convince the acting commissioner on this road (who it is well known differs from other members of the Board in directing personally the detail of the surveys,) of the advantages of a level, or gently inclined road, over a more hilly one. The Board will recollect that in my last annual report I suggested the propriety of reducing the maximum grade west of Paoli to  $2\frac{1}{2}$  degrees, which, however, was objected to by the commissioner. A personal examination of the ground in April last confirmed me in the belief that this reduction should be made, and accordingly in my communications with the commissioner, both verbal and written, I earnestly recommended that an experimental line, at the reduced grade should be run. No such examinations were made. The surveys were continued by the commissioner to Mount Pleasant with the maximum grade of  $3\frac{1}{2}$  degrees, and submitted to me for my approval jointly with himself, a required by the



order of the Board of 17th February last. Such approval I could not give consistently with a sense of duty to the Board, and to the state.

As the only means of obtaining the desired information in reference to the propriety of reducing the grade, the undersigned, availing himself of the authority given in the order of the Board before referred to, adopted the expedient of detailing an Engineer from another line for the purpose of making a survey. Mr. L. B. Wilson the resident Engineer on the Jeffersonville and Crawfordsville road, was requested to repair to Paoli and make a location thence to Mount Pleasant, according to the principles laid down in my general directions, and with a maximum grade of  $2\frac{1}{2}$  degrees--the surface of the country being so hilly as to render a lower maximum grade inexpedient. Mr. Wilson's location for the first 20 miles west of Paoli, run at  $2\frac{1}{2}$  degrees as the maximum, was ascertained to be about one mile shorter than the commissioner's line between the same points, which was run at  $3\frac{1}{2}$  degrees, has less rise and fall in the aggregate by 755 feet, and with a single modification in the valley of Lick creek, which I suggested, will not be more costly; a result, which, while it illustrates and confirms the principles recommended for the location of roads, is creditable to Mr. Wilson as a locating engineer. The re-survey here noticed, caused a postponement of the letting west of Paoli beyond the time fixed by the Board. The great improvement made in the location, proves that the public interest has been promoted by the delay.

After receiving the report of Mr. Wilson, the reduction of the grade was yielded to by the commissioner, and his location adopted, excepting for the first 8 miles west of Paoli. With



respect to this portion the commissioner informed me that he should suspend the operations of contractors until he could submit the question to the Board. On this portion of the route, the line which the engineers recommend, pursues a direct and level way along the valley of Lick creek, crossing that stream four times, while the commissioner's line runs north of the valley, passing over several high ridges running transversely to the road, which rise from 150 to 200 feet above the intermediate streams. The prominent facts which bear upon the comparison between these routes, are, that the former is about  $5/8$  of a mile shorter, has less rise and fall in the aggregate by 504 feet, and will cost probably about the same sum.

The bridges over Lick creek will require about 80 feet span. The sites are all very favorable; excellent stone are found at the spot, and at two of the crossings the rocky bank of the creek will afford a natural abutment. The four bridges built in the most permanent manner will cost about \$19,000 at contract prices, which, it is believed, will be very nearly, if not quite balanced by the increased cost of grading on the other line over the rocky hills before described, together with the cost of the additional length of road. Should the Lick creek line cost considerably more than the hill route, it would still be the interest of the state to adopt it, if we take into view relative cost of transportation and future repairs. There will, however, be no material increase of cost.

The importance of avoiding this unnecessary ascent, even though it may not exceed the maximum grade, will appear from the consideration that in respect to every vehicle which may pass, the





gravity of the load for this additional ascent must be overcome; that this will require the exertion of a greater amount of horse power than the more level route; and that this power cannot be furnished without extra cost. And if we consider also the greater hazard to which the lives of passengers are exposed, in descending long hills at a steep grade, and recollect that these inconveniences will continue as long as the road is travelled, we shall have a more correct idea of the tax to which the public would unnecessarily be subjected by the adoption of so hilly a route, where a more level one presents itself.

With this statement of the facts, I would respectfully recommend to the Board, as I did to the acting commissioner, the adoption of the Lick creek route.

It has been urged by the commissioner that the reduction of the grade west of Paoli is of little consequence, while the road east of that place remains at  $3\frac{1}{2}$  degrees. It is certainly much to be regretted that so high a grade was adopted on the eastern portion of the road. This error will be more fully appreciated hereafter, when the forwarding merchants of New Albany shall be able to send but six or eight thousand pounds by each wagon to Paoli, while with the same teams they can load 12,000 lbs. for the Salem road which is graded at  $1\frac{3}{4}$  degrees. But the reasoning that would sanction high grades or unnecessary ascents on every part of the route, because one portion of it has been constructed with this defect, is as much at variance with the common experience of every man as it is unsound in theory. The true principle is to make every part of a road as level as the character of the ground will allow, and if the hilly portions should still limit the load,



there will, nevertheless, be a diminution of the exertion or an increase of speed on the more level parts, which will reduce the cost of transportation and enhance the usefulness of the road. Upon this principle I would recommend a still further reduction of the maximum grade between Mount Pleasant and Vincennes. From the level character of this section of country it is believed that a grade of  $1\frac{3}{4}$  degrees as the maximum, may be obtained without adding materially to the cost or distance.

The views here submitted in relation to the location of roads, are sustained by the latest experience and practice of the country, as well as by the deductions of science. On the portions of the National Road which have more recently been constructed, the grade has been reduced to two degrees, while on some sections of the old road east of the Ohio river, where very high grades had been used in the first instance, a new location has recently been made by the officers of the general government, and the road reconstructed for the purpose mainly of reducing the grade. The road companies of Kentucky, after constructing portions of their roads with grades of 3 and 4 degrees, and making a test of their inconvenience, have generally reduced their maximum grades to 2 degrees, and are making their roads every where as level as practicable. The opinion which I have expressed, that the reduction of the grade does not necessarily increase the cost, if the road be skilfully located, is well sustained by a comparison of the several divisions located during the past year with the road previously commenced. The average cost of grading and bridging, on the several portions of the roads located and placed under contract during the past season, 97 miles in extent, the most of which has a maximum grade of  $1\frac{3}{4}$  degrees, is \$5959 per mile,



while the cost of the road previously located from New Albany to Paoli at  $3\frac{1}{2}$  degrees, will average for grading and bridging \$6893 per mile.

The grading and bridging from Paoli to Mount Pleasant is under contract, excepting the White river bridge. The distance by the new location is  $25\frac{1}{2}$  miles. The resident engineer reports the average cost of this division at \$4858 per mile. The quantity of rock excavation, however, is necessarily assumed, and as the amount of rock on side hill locations on this road has generally exceeded the engineer's first estimate, I have added 10 per cent. to this average to cover such contingencies, making the average \$5514 per mile.

The stone covering (McAdamizing,) of the road is also under contract, and in progress, from New Albany to Paoli, at an average cost per miles of \$5042. As this branch of construction was entirely new in this state, and most of the contractors were unacquainted with its true value, some difficulty and delay was encountered before it could be placed under contract at fair prices. Agreeably to the directions of the Board, I made out and furnished to the commissioner an estimate of the value of the various parts of this work, with advice that if the bids should greatly exceed this estimate, the work should be suspended, and another day fixed for the letting. As the bids at the first offering of the work were far above the estimate, the commissioner very properly postponed the letting, to another day, at which time the propositions were much lower. By this arrangement of the Board, requiring an estimate of the value of the work to be let, and directing a general adherence to that estimate, at least \$100,000 were saved to the state in this instance alone.

The stone covering recommended for the turnpike roads in this state, and which these contracts require to be put on, is to be 18 feet wide, besides the slopes of the material at the edges, 11 inches deep in the centre, and 7 inches. The stone is put on in two layers; the bottom layer being broken to the size of 8 ounces, and the upper one to the



size of 5 ounces. Hard limestone only is allowed to be used.

#### JEFFERSONVILLE & CRAWFORDSVILLE ROAD.

In pursuance of the order of the Board, measures were adopted early in the season, with a view to a commencement of operations on this road, both on the Southern division, and in the vicinity of Greencastle. Mr. L.B. Wilson, who had been for several years in the service of the state, was, with the approbation of the acting commissioners, appointed resident engineer on the southern portion of this road. After a reconnoissance of the route by the undersigned, the final location of the road was commenced by Mr. Wilson, upon the same general principles that have already been referred to in the report on the New Albany and Vincennes road. Mr. Wilson has made an excellent location from New Albany to Salem, there being no grade higher than  $13/4$  deg. nor any very expensive work; while the new location is only 74 feet longer than the present travelled road. The road will be very little, if any, more costly than if located at a higher grade of 3 or 4 deg. while its value to the community will be far greater. If graded and metaled according to the present location and plans, this will be as good a turnpike road as has been constructed in the United States. The total length of the road from New Albany to Salem is 32 miles 68 chains, and the average cost of grading and bridging, at contract prices, is estimated \$5,513 per mile.

Mr. O.P. Jennison was appointed resident engineer on the Northern division of this road, in connection with the road from Crawfordsville to Lafayette. He has located the whole road from Greencastle to Lafayette in a very satisfactory manner. The maximum grade is  $13/4$  degrees. The grading and bridging 14 miles 75 chains of the road extending from Greencastle towards Crawfordsville, are under contract, at an average cost of \$5,543 per mile, at contract price. The bridges across Eel river, Ramp creek and raccoon creek, are embraced in the estimate.

The grading and bridging of the road from Crawfordsville to Lafayette,





are also under contract and in progress. The length of this road is 26 miles 67 chains, and the average cost of grading and bridging is estimated \$3,039 per mile.

By reference to the specifications for turnpike roads, it will be seen that the plans and manner of building the various structures are of the most permanent kind. Where stone can be procured, all streams of the smaller class are to be crossed either with square drains of stone, or with durable stone arches. Streams of the larger class are crossed with covered wooden bridges with 80 to 150 feet spans of the most permanent construction, resting on substantial stone abutments. The plan of superstructure, generally known as the "burr plan," combining the truss frame with the timber arch, has in most instances been adopted on all the roads now being constructed by the state.

In fulfilment of a law passed at the last session of the legislature, the resident engineer was directed to make a survey of this road from Greencastle by way of Spencer to Bloomington. From his report, which is herewith transmitted to the Board, it will be seen that a favorable location on this portion of the road can be made with a maximum grade of 2 degrees, and that stone for macadamizing is abundant on the route. From Greencastle to a point 21 miles south of that place, two lines were run, one passing through Putnamville, and thence to the point of intersection, crossing Eel river at the Narrows. These two lines are of equal length. Of these routes the eastern line is less costly, according to the estimate reported to me, by the sum of \$33,053, and is also more level, having less rise and fall in the aggregate by 248 feet. Mr. Jennison alludes in his report to third route, which he thinks may be more favorable than either of the others, but which he was prevented from surveying for want of time. This route, in running south from Greencastle would pursue the eastern route, above described through Putnamville to the crossing Deer creek from which point it would diverge to the east, following the



dividing ridge between Limestone creek and Musquito creek connecting with the eastern route about 5 miles north the Narrows of Eel river. This plan of location should be examined previous to the final location of the road. The length of the road from Greencastle to Bloomington will be 45 miles and 50 chains, and if the cheapest route be adopted the average cost per mile, of grading and bridging, is estimated at \$4,161.

On the division extending from Jeffersonville to New Albany, but little labor has been performed during the last season. The Silver creek bridge is still in an unfinished state. The plan of structure originally designed for this stream by the engineer then in charge of the work, was a cut stone arch of 80 feet span, springing from abutments raised 25 feet above low water. When I saw this work for the first time, in October, 1837 soon after taking charge of the roads, the abutment had been partly raised. Finding the masonry very imperfect in its character, and wholly unsuited to sustain a plain stone arch of so great a span, the duty was imposed upon me of directing an immediate suspension of the work, and the removal of a portion of the stone already laid, with a view of effecting an entire change in the character of the masonry. On returning to New Albany in December following. I found that these directions had not been followed, but that several courses of stone had been laid without sufficient improvement in its character, and without removing the more imperfect work in base of the structure. As the only means of controlling the style of the work, and protecting the interests of the state, I advised the resident engineer to declare the contract forfeited as provided for in the contract.

As soon as the floods of the Ohio subsided last spring a portion of the defective masonry was removed, and preparations made for completing the work. Finding that the abutments, as they had been built, could not with safety sustain the pressure of a stone arch of this size, and believing that they might support an ordinary timber bridge, I recommended a



change of plan, substituting a wooden arch. By this course the expense of removing the abutments to their base was saved, and the cost of the bridge reduced. Upon this plan the bridge has been re-let, and the work is now progressing in a substantial and workmanlike manner, and will, no doubt, be ready for the travel in the course of the ensuing season.

The cost of superintendence is not included in the foregoing table. In the statement of cost on the Madison and Indianapolis rail road, the cost of the locomotive engine, cars &c. is not included; the amount of these contracts not having been fully reported to this office. The amount of the contracts entered into in behalf of this state at the rapids of the Wabash is in like manner omitted, the undersigned having no charge of that improvement. With the addition of these items to the aggregate of this statement, all of which are in the possession of the members of the Board, the total liabilities of the state for the purpose of Internal improvements will be shown.

In arranging the elements of the calculation upon which was based the estimate of the several works contained in my last annual report, it was assumed that the price of labor for the future, would not exceed 15 to 16 dollars per month, exclusive of boarding. The then existing aspect of the financial and commercial operations of the country, seemed to justify the expectation that a reduction in the price of labor and provisions would take place. This expectation has not been realized. The great extent of public works now in progress in this and the adjoining states, by which so great a proportion of the laboring population is diverted from agricultural pursuits, becoming non-consumers instead of producers, has prevented any material diminution in the price of labor or provisions. This circumstance will account mainly for the increase in the cost of the several divisions of work, as now reported, over the estimate of last year. On some of the lines, however, the increase is owing in part to the adoption of more permanent and costly plans for the mechanical structures.



The importance of procuring hydraulic lime of a good quality near the lines of our improvements for the construction of the locks, induced an examination of the state during the past year. These investigations were confided to Mr. Arthur Johnston, who had been for a number of years engaged in the manufacture of this article in the state of Maryland. The water lime strata, which had before been discovered by excavating the canal in the counties of Wabash and Huntington, was found by a careful test to furnish a cement as good as that manufactured at the falls of the Ohio. Hydraulic lime was also discovered on White river near Andersontown, and in the river mill near Madison. So far as this cement can be furnished at the site of the locks, without unreasonable cost, I would recommend its use.

I herewith submit the reports of the several resident engineers, to which I beg leave to refer the Board for much interesting detail in relation to the operations on the several lines.





## EXCURSION ON THE CANAL.

Messrs. Editors--

As one of a company which recently sailed up the canal to Broad Ripple, permit me to give you a short account of the voyage and its incidents, scenery, &c.

We left the lock at 8 A. M., being about thirty in number and soon passed Cottonville, the seat of the enterprising Mr. West. Here is one of the most delightful residences near the city, and highly improved; also one of the best mills (grist) and also a cotton spinning establishment in full and beautiful condition. Near this you also pass the beautiful and inviting residence of Mr. Blake--one of the most beautiful situations in the county. The country is flat on each side of the canal and but little improved, but susceptible of cultivation, and we soon passed over the aqueduct over Fall creek. This I am told is in very perfect condition, and is really an object of curiosity. Here there is a beautiful pool containing water twelve or fifteen feet in depth, and gives one a faint idea of a lake; the width and depth would admit of a steam-boat.

Having passed the aqueduct the country is more elevated and the soil of a better quality, and I am told there is some of the finest tillable land on either side of the canal. The bluffs here on the right of the canal are high and remarkable, and furnish some of the most delightful sites for country residences to be imagined. The breeze on the canal is very comfortable and refreshing. Three miles from tow we passed McIlvain's bridge. Here the ground is a little rolling and beautiful. Shortly after this we passed near White river; and the



prospect here is delightful; there is a view of the river for half a mile, and the banks are beautifully adorned with shrubbery and flowers. At 10 we passed the Michigan bridge near Pittsburgh, and had a remote but pretty view of Mount Pleasant, distant about one mile, and on the top of a beautiful ascent. The country is delightful and productive. The bluffs continued and very remarkable. Six miles from town the bottoms on each side of the canal are extensive and productive, and the bluffs here terminate. Eight miles from town we passed Smith's bridge near the Rocky ripple of solid limestone, which would furnish a quantity of good building stone, and for other purposes. We soon reached Broad Ripple, which is caused by a dam thrown across White river a little below the mouth of the canal to turn the water into it. The view here is beautiful. Here there is a most comfortable public house, kept by Mr. Earl, the enterprising and attentive owner of the boat. Here a number of the company spent the day delightfully, and partook of a good dinner and some fresh fish; others of the company amused themselves rambling on the banks of the river. In the evening we returned pleasantly and safely.

When we permit our minds to revert back to the first settlement of this country only about twenty years, when the country was one dense and wild forest, roamed by savages and frequented by wild beasts and serpents, and then reflect on the changes which have taken place within so short a period, we almost fancy ourselves amidst a fairy land. It furnishes a strong argument for and striking illustration of the advantages



of internal improvements, arts and arms, and sufficiently demonstrates the superiority of mind and of an intelligent people over barbarism and ignorance. I would here most warmly urge others to make a similar expedition this hot weather. They will find themselves amply rewarded for their time and money, and I will promise they will be politely and comfortably entertained by Mr. Earl, the enterprising and indefatigable proprietor.

One of the Company.

Indiana Journal

August 3, 1839



## THE EAST AND THE WEST.

The Hon. JOHN REED, a member of Congress from Massachusetts, was at Maumee city, Indiana, on the 5th ultimo, and joined in the celebration of the day. The Express says that, on being called upon for a sentiment, he rose and addressed the company to the following effect:

"I rise, Mr. President, to offer an apology, and, in so doing, I am impelled to state the feelings that have prompted me to offer the few remarks with which I shall trouble you. I came among you, gentlemen, a stranger yesterday evening, and, but for an unexpected interposition of Providence, should have left you this morning. I have to thank your hospitality for the kindness with which you have treated an entire stranger, whose only claim upon you was that he was thrown among you on a day of national rejoicing, when the bonds of love to our kind are drawn stronger by the recollection of the signal benefits that have arisen from the union of men, all acting in a good cause, and influenced by the same motive. My thanks, flowing from a full heart, you have, for the generous consideration which has enabled me to participate in the celebration of a day dear to us all, and especially for that cordiality that has taken away all feelings of strangeness from my bosom, and identified me with you in social as strongly as I have been attached to you, as a part of the great West, in my national feelings.

"For a number of years, it has been my lot to represent the district in which I reside in Congress, and it is with feelings of just pride that I state that, during the time, no single member has given more votes for the furtherance of Western improvements. I have watched the growth and improvement of the West for many years;





and, although this is my first visit to your land, my spirit has wandered here much and often, while I have examined your maps--traced your great rivers--followed the meanderings of your mighty lakes--tracked the course of your canals and railroads--and fixed in my mind the points where future cities are to arise, rich in the trade of a people rendered wealthy by the cultivation of a soil whose fertility can only be compared to itself, and beside itself can find no parallel. Nor, in turning my eyes to the West, am I alone. Massachusetts--the whole of New England, is looking in this direction with an intensity which is the offspring of their feelings of national pride as well as of their interest. Thousands of the enterprising of every sort are looking upon the luxuriant plains and rich valleys of the great West as the places for the future homes of themselves and their children; while thousands more look upon this same country as the land from which their bread must flow, and which will receive from the East in return its supplies of those innumerable manufactures which have rendered that country emphatically the workshop of America, and in many respects of the whole world.

"And this, gentlemen, leads me to the subject which called me up to express my feelings. One of the regular toasts of this day speaks of the great system of canals, of which the Wabash and Erie forms the eastern branch, as the chain that binds the fortunes of this place with those of the great States of Ohio, Indiana, and Kentucky. There is a bolder and a broader view to be taken of these great improvements, and one that seems to me more consonant with the spirit of the day we are met to celebrate. I speak of these great works as they appear in a national point of view. We at the East look on them, not so much as the means of building up one particular town,



as the great chains that are to bind together the feelings and the interests of sections the most remote from each other. We in Massachusetts are viewing with feelings of intense interest the progress of the great public works of the Western States. We look upon this country as being to us what Egypt was to Rome--its granary; and we cannot, of course, be indifferent to the means which are provided for the bringing of your productions to our market, and for returning our productions to yours. Permit me, then, to offer as a sentiment--

"The Wabash and Erie and Miami Canals--The chains that bind together the interests of the East and the West, the North and the South."



Indianapolis, 8th Jan., 1841.

Editors of the Journal:

From the Maumee Bay to Providence, 30 miles up the Maumee river, the Wabash and Erie Canal is finished--60 feet wide 6 feet deep, and all in all, is one of the most splendid pieces of canal in the world. The water was let in last fall to Maumee city.

2d. From Providence up to Defiance, 28 or 30 miles, and thence to the Indiana line, some 23 miles further, in all say 50 or 60 miles, it is full half finished, except the Reservoir near the Indiana line, to cover 2500 acres of land, which is not yet commenced by Ohio.

3d. From the Ohio line west to Lafayette, it is so far finished that boats passed between those points last fall. From the Ohio line to the City of Fort Wayne, it is a large canal 60 feet wide and 6 feet deep. So that all that remains to open, about 250 miles, of the canal from the Steamboat navigation of the Wabash at Lafayette to Lake Erie, is this reservoir, and the half of 50 or 60 miles of common canal, all of which, after making a personal examination in September last, our Chief Engineer declares can be completed by Ohio in 12 months, by the adoption of energetic and vigorous measures! Let this be done by Ohio by the 1st of September, 1841, and in twelve months thereafter, Indiana will receive her \$100 to 120,000 of tolls to assist paying the interest on her loans. But the course heretofore pursued by Mr. Dickerson, the Ohio Commissioner in charge, will not effect this object. Some three years will yet be wasted, and as many hundred thousand dollars lost to the Treasury of Indiana if he



persists in his former course. Thus, last winter, he pledged himself to our Chief Engineer to re-let, in small jobs or small contracts, all the unfinished work, and the Reservoir, in March of April last; yet in September last, when the Engineer visited the lines, he had not even advertised a re-letting! So that no reliance can be placed upon his pledges. And thus was lost one whole season, the most favorable for operations. And as to the Reservoir, not one tree was dug up, or a shovel of dirt thrown out the 1st December last, when I was upon the place selected, (except work done on the canal line, forming part of it). Mr. Dickerson now tells our Chief Engineer, that though they have been long delayed "and cursed with large contracts, and inefficient contractors," yet he closes his last letter with another fruitful pretext for delay. He says as follows: "We shall be compelled to depend on Indiana to fill our Reservoir, and for a supply of water from the State line, to the junction with the Maumee Canal, some permanent arrangement should be entered into upon this subject." This is in his communication of the 31st October last. Our Chief Engineer had before advised him, that he was aware that Ohio relied upon Indiana, to fill her Reservoir, and he tells him "to meet this arrangement--we shall at once prepare for increasing the depth of our feeder, (the St. Joseph's feeder) so that on our part nothing will be wanting to perfect the communication." But now Mr. Dickerson requires "a permanent arrangement not only to fill the Reservoir, but to supply their canal to the Auglaze river, to the junction of the Maumee with the Miami canal; hence, on the 1st December for the most of this "permanent arrangement," nothing was done towards a Reservoir! and as Mr. Dickerson is employed, as I am in-





formed, in selling goods largely to the contractors, a speedy completion might cut short two or three years of his profitable goods operations! By giving contractors small estimates, as he has done, and payments about twice a year, they are willing to take goods rather than starve or go to jail; and if Mr. Dickerson has three or four years more to do what he might have done in twelve months from September last, his goods operations will no doubt be very large and profitable; but if cut short in this by a completion next season, the loss may be repaid by a license for "the coon trade," which can be obtained, should I be appointed "a committee" for that purpose, as called for by a resolution of the Senator from Cass.

But Indiana is deeply interested in this matter, and has a right to find fault and complain of the dilatory course pursued by the Commissioner in charge of the Ohio division. Ohio has and will provide ample and abundant funds to effect the object, and our reasonable and just complaints should, in my opinion, be reiterated to the Board of Public Works of Ohio against this officer. To remove all these difficulties--to protect the Great Summit Feeder Dam of the St. Joseph's upon which depends a supply of water west and east, 30 to 40 miles each way--to preserve the timber upon the canal lands, upon nearly all of which only one-fourth has been paid, and which may be forfeited after taking off all the valuable timber--to preserve these great interests, I proposed by joint resolution, to have a resident Commissioner upon the line, in lieu of a superintendent; as it is now evident that the various duties of the Chief Engineer upon other of the public works will prevent him residing on the lines, as was expected he could



do last winter, when he was placed in sole charge of the Wabash and Erie canal. To effect these objects, and secure a speedy revenue from this large investment of the public money. I have proposed the adoption of measures precisely similar to those most successfully resorted to last year, which resulted in a more vigorous prosecution by Ohio, and the expenditure of about \$500,000. (half a million dollars) and the completion of all but the half of 55 to 60 miles, and the Reservoir, all of which our Chief Engineer reports can be finished, by a vigorous prosecution, in twelve months.

I proposed that this resident commissioner go to Columbus, see the Board of public works of that state, present our Chief Engineer's able report and correspondence with their Commissioner, that Mr. Dickerson may more fully explain his course, and remove every obstacle as to his "permanent supply of water" throughout, converse with the members of the Legislature of that state, and urge upon them the imposing necessity of prompt action, and the adoption of more vigorous measures than can be expected, or hoped for from their present Commissioner Mr. Dickerson. Our Chief Engineer urges that a state force should be called out, and "extraordinary efforts," resorted to, to secure a finish by March, 1842.

All this however, has met with the denunciations and vast opposition of the more sagacious Senator from Cass, who in the slang and miserable cant of a stump speech, as you will notice in his counter report published in the last Journal, calls it folly! merely "sending an Indian runner,"--in our enlightened day!!"

There remains unsold of the canal land offered in October



last some 38 or 40,000 acres, mostly in the upper counties, and as convenient to the City of Fort Wayne as at any other prominent point, where the entries can be conveniently made, and where the commissioners' office has been kept the last 10 years, with great satisfaction to the country as to its locality, and where its convenience to the great summit feeder dam, Ohio reservoir and division enables the Commissioner to oversee and protect these great works. The interest on the canal land is collected in each county throughout the whole canal line; nor was any removal of this office contemplated or directed by the bill of last year, only directing a public sale of lands at Peru the first Monday of October last. Yet the locality of this little land office, is but a matter of small moment, nor should it interfere to prevent proper legislation now called for to secure a completion of the Ohio division, and the security and preservation of these great interests.

If then the good people of the counties of Cass, Miami and Fulton must pay for the next 3 or 4 years some \$3 per hundred extra on all their articles imported or exported; a dollar extra on the hundreds of thousands of bushels of salt they may use, let them look to the folly of their Representative in the Senate, for their disappointment and uncalled for burthens; pursuing a course as he has, the very reverse of his predecessor, who toiled through the labors of a whole session, with indefatigable labor, zeal and energy last winter in assisting to procure the adoption, under like circumstances, of precisely similar measures I have now proposed; and which the present Senator from Cass opposes, with the levity and folly that may result to the great injury of the country. Last year a like opposition came from other quarters, but was most fortunately unsuccessful.



The Senator from Cass commenced with great zeal, a modification and improvement of the laws regulating the high courts of justices of the peace, the duties of constables, fence viewers and other great functionaries of the law "in our enlightened day," by the presentation of many bills upon those paramount subjects, with which his important services to the country heretofore rendered had made him most familiar; and I regret to notice his temporary abandonment of these, for the purpose of enlightening the citizens of this state with counter reports, in opposition to the completion of the Wabash and Erie canal during the coming season, and securing the opening of navigation to Lake Erie, by March 1842. The enclosed Protest I felt it my duty to have read to the Senate, after hearing read the very indecorous, burlesque and contemptible counter report of the member from Cass in the Senate, published in your paper of the 8th. Please publish the foregoing remarks and the enclosed Protest.

Respectfully,

W. G. Ewing.

Tri-Weekly Journal.      January 13, 1841













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**JUL 91**



N. MANCHESTER,  
INDIANA 46962

