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E PLURIBUS UNUM.

By Authority.

Laws of the United States

Passed at the first session of the Twentieth Congress.

[Public—No. 4.]

AN ACT making appropriations for the payment of the Revolutionary and other Pensioners of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and they are hereby, respectively, appropriated towards the military service of the year one thousand eight hundred and twenty-eight, and for the objects following; that is to say:

For the Pensions of the Revolutionary Pensioners of the United States, in addition to an unexpended balance of former appropriations, of five hundred and sixty-four thousand dollars, two hundred and thirty-six thousand dollars.

For the Invalid and half-pay pensioners, in addition to a balance of one hundred and forty-one thousand dollars of former appropriations, one hundred and sixty thousand and ninety-five dollars.

A. STEVENSON,
Speaker of the House of Representatives.
J. C. CALHOUN,
Vice President of the United States, and President of the Senate.

Approved—12th Feb. 1828.
JOHN QUINCY ADAMS.

REPORT

FROM THE COMMITTEE ON

INTERNAL IMPROVEMENT,

TO THE

House of Delegates.

The Committee on Internal Improvements, to whom were referred such parts of the Governor's Message as relate to that subject. The report of the Board of Public Works, and an order of this House of the 21st January, directing them to enquire into and to report upon the expediency and propriety of authorising a subscription, on the part of the State, of the stock of the Baltimore and Ohio Rail Road Company, reserved to the state by the act incorporating that Company, submit the following

REPORT:

In accomplishing the general objects of their appointment & in discharging the duties which have devolved upon them in the consideration of the subjects particularly referred to them, this committee have perceived, with high gratification the advances which the state has already made towards a general system of Internal Improvement, admirably calculated to develope all her faculties, to recruit her exhausted energies, to relieve her commercial and agricultural interests from their present enthralled state, and to restore her to a condition of financial ability. They do not now deem it necessary to enter into the general consideration by which the expediency and necessity of such a system is sustained, or to dwell upon the general results of its efficient operation. These have all been presented to the minds of the people of this State; and their full force has been felt and acknowledged by antecedent legislatures, whose liberal efforts for the adoption and effectuation of such a system, have only kept pace with the public feeling. So far, therefore, as the propriety of state exertion for such a purpose is involved in the duties confided to them, this committee are entirely relieved from difficulty. The people of the state, through past legislatures, have acknowledged their obligation to provide for the improvement and to advance the welfare of all sections of the state, by the construction of Roads and Canals, wherever the necessities of our citizens may require it, and the probable results of their construction will justify it. The liberal appropriations which the state has already made for such purposes, abundantly convince us, that whenever an occasion arises presenting such an obligation, her efforts to meet and discharge it, will be limited only by her ability.

In reviewing what she has done, whilst we are compelled to acknowledge that as yet her systems are unaccomplished, and all in *embryo*, and to lament that we have not before us the practical results of their efficient operation to sustain them, and to recommend their extension, we have yet abundant cause to rejoice, because of their mere adoption. In all new enterprises, the first step taken dissolves half the difficulty; and that step has already been taken by this state. Within the few last years, she has seen herself gradually sinking into a condition of comparative insignificance amongst the Atlantic states; she has witnessed the gradual decline of her great commercial emporium; she has found her resources continually melting away under her growing demands and necessities, and she has discovered that her population is stationary in some parts, and declining in others. During that period the mortifying contrast between her own condition, and that of some of her sister states on the Atlantic, has been continually forced upon her. She has seen them advancing in wealth, population and resources; in a degree greater than that in which she has retrogated, and thus reducing her to a state of yet more painful inferiority.—And to enhance this, she has seen states of the Union starting up; in what a very short time since was the trackless wilderness of the west, and already outstripping her in all that gives consequence and power in the National government. This she has been brought to perceive and to feel; and she has been put upon the enquiry for its causes. In making that enquiry, she has found herself possessed of local advantages, which, if properly cultivated, entitle her to the first rank among the Atlantic states; and she has discovered within her own bosom, latent and undeveloped resources, which it is only necessary to quicken into life and activity, to give ample employment to all her population, to diffuse throughout it, wealth and content, and to relieve her from every financial difficulty. It has become manifest to her, that she is impoverished in the midst of untouched resources, and that every day of delay, in availing herself of them, does but enhance her difficulties.

The local advantages of that portion of her territory watered by the Chesapeake Bay, were such as to leave her but little to accomplish in that quarter; and her efforts were required principally for the purpose of securing to herself the trade of the west and north, by some improvement connecting Baltimore with the Ohio river, and at the same time of relieving from the difficulties, delays and expense of the present intercourse with that or their accustomed market, her fertile, extensive and populous western counties. Having this double object in view, she has entered heartily into the projects which have been set on foot by public-spirited individuals for continuous canals from Baltimore to the Ohio, by the Potomac and Susquehannah routes; and she has given such an earnest of efficient and in the accomplishment of both of these most desirable objects, as will it is hoped, soon lead to their accomplishment. With reference to these, she now only wants the co-operation of those, without whose aid she cannot progress. Her subscriptions for these purposes were originally clogged with many restrictions, but at the last session of assembly several changes were made, both as to the manner and terms of the state appropriations, which of the friends and promoters of both. The subscription to the Chesapeake and Ohio Canal, which as originally made was clogged, was particularly cumbered with these restrictions, since the ascertainment by actual survey of the practicability of a continuous canal by that route, and since the passage of the law of the last session removing some of these restrictions, has now no pre-requisite, and now depends for its efficacy only on a previous subscription of one million of dollars by the Congress of the United States. Applying itself, as this requisite does, to the exercise of a power on the part of the General Government, which is clear of most of the objections urged by those who deny the Internal Improvement power of the General Government and calling it in and for an object as definitively national in all its purposes and results, as any which has ever yet been presented for its patronage, we may look forward with a high degree of confidence to the speedy removal of this restriction, and to the pleasing prospect of a zealous co-operation of the National Government, with our state government in conducting this magnificent enterprize to a speedy accomplishment. The views and wishes of the Legislature have been already so emphatically expressed in the resolutions, which they have just passed, declaratory of the powers of the General Government, and requesting the aid of our representatives in Congress in procuring this appropriation, as to render further remarks upon this subject unnecessary. By the act reported for this committee, and passed at the present session, which converts the stock of this company into personal property, and capacitates aliens for holding it, foreign capital has also been invited to embark in this enterprise, and hence we may also calculate upon a considerable accessation of financial power for its completion. From this survey of the condition of these grants, your committee, it will be perceived, have nothing left to them but to renerate the wish and the hope, that we may speedily witness the employment, and enjoy the rich benefits which they promise.

It only remains for this committee to comply with the order of the house in presenting its views upon the propriety and expediency of subscribing for the stock in the Baltimore and Ohio Rail Road Company, reserved to this state. This reservation, it will be remembered, expires on the 28th instant, and the late period at which this subject has been presented to the committee, and the near approach of the period which terminates the reservation, will not permit this committee to present as detailed a view of the objects and progress of the company, and the practicability, cost, and results of their designs, as the magnitude of the subject warrants, and the present limited information of the public, with reference to it, seems to require. The stock which has been reserved for subscription by the state, if not subscribed within the limited time, falls back into the common mass of unsubscribed capital; and as all such capital may be disposed of under the direction of the company, the president and directors may open books to receive subscriptions for it, or they may dispose of it for the benefit of the company, for any sum not under its par value. Yet even this disposition is a power, and not an imperious duty. They are not required to make any disposition of it; nor does their charter render it necessary, even with a view to an increase of capital—They may borrow money *ad libitum*, or if they deem it proper to increase their capital stock, they may either sell such increased stock, or direct subscriptions to be received for it in any manner most agreeable to them. Having then this unlimited power of borrowing money, and of directing the manner of subscription or sale, so as to give themselves the pre-emption right to such stock, it is entirely in the power of the company after the period of reservation, to exclude the state from all participation in the enterprise. Nor could she, as seems to have been supposed by the board of public works, enlarge that time of reservation by mere legislation. After that period the state's right is wholly gone; the company's control over the stock is complete and exclusive, and any such act of legislation would be in derogation of her chartered rights. If, therefore, after this period, this privilege of subscription ever returns to the state, it must return to her by the indulgence of the company, and she must come in upon the terms which it may be pleased to prescribe. As a *mere right*, it therefore exists only during the limited period, and the committee are left to consider the single question. "Whether is it proper that the privilege of subscribing upon terms of equality should forever pass from the state as a right?"

A brief view of the progress and present condition of this company, is necessary to enable the committee and house to determine upon the propriety of this subscription. The project for a Rail Road from Baltimore to the Ohio river, was matured during the latter part of the last session of Assembly. The acclamation with which it was received, when proposed to the people of the state, and the unanimity with which it was sustained and sanctioned by the legislatures of Virginia and Maryland, and the corporation of Baltimore, abundantly demonstrate the general conviction that some such improvement was necessary, and their general confidence in the results of the design, and in the motives of those by whom it was promoted. The sanction of these legislatures having been obtained almost without a division, books were immediately opened for the subscription of all the unreserved capital stock, and subscriptions were immediately received for $4,300,000 and upwards; of which 500,000 were subscribed by the city of Baltimore. The subscription of individuals, thus amounting to more than twice the capital stock open for subscription $2,300,000, and upwards, was reduced, and the company deemed it proper to progress without increasing their capital, until their preliminary examinations and surveys of the country had left no doubt in their minds as to the feasibility of their designs.

During the past summer and fall, from the liberal aid which has been afforded by the general government, they have been enabled to extend their reconnoissances to all the various routes from Baltimore to Ohio, between the southern Pennsylvania line and the mouth of the great Kenawha, and they have also completed a survey of four experimental lines, or routes, from Baltimore to the Potomac river.—The result of these reconnoissances & surveys has been such as to elicit from the distinguished engineers, under whose direction they were made, the unequivocal opinion, that the work is practicable, and at an expense which brings it within the compass of the means originally contemplated for its entire completion. In the legislature of Pennsylvania, where at its last session it was met and defeated by sectional jealousies, having reference to its effects upon the improvements which that state had projected, and was executing, the proposition to extend to this company within that state all the privileges of its charter, has been revived at the present session, almost unanimously adopted by the senate, and will it is supposed, receive the sanction of the other branch of that legislature. The effect of this extension will be to give to the company a shorter, more facile, and less costly route, than any which was left open to them south of Pennsylvania. It will give them the choice of the route by Wills' creek and Castleman's river, which for the greater depression of the dividing ridge, and the diminution of the distance, time and lockage, was preferred by the United States engineers, under whose direction the surveys for the location of the Chesapeake and Ohio canal were made, to every other canal route which presented itself to them.

The question before the committee is simply, Shall the state embark in an enterprise which, if accomplished, crowns her with everlasting glory, and bestows upon her exhaustless resources, to the accomplishment of which one third of the capital sum deemed necessary for its entire completion has already been subscribed, and to the practicability of which every canal survey, every reconnoissance, and every examination has borne testimony in the most explicit terms? The progress of this work, if it does not produce entire conviction of its feasibility has at least bestowed upon the design as high a degree of probability as the state has yet arrived at, before authorising any similar subscriptions. It will appear, from facts hereafter submitted by the committee, that the same surveys which assured her of the practicability of the Chesapeake and Ohio canal, may yet be more safely applied to this mode of improvement, and that added to the experience of other countries, and other states of the union, and the surveys actually made with a view to this work, are calculated to inspire as high a degree of confidence as any state ever yet entertained, when she entered upon a new and untried system of internal improvement. The course which has heretofore been pursued by the state, seems plainly to indicate her proper course on this occasion. Had her situation permitted, the execution of all such works, by her own unaided energies, a regard for her duty, and her best interests, would have dictated it.

Such has been the course pursued by the sister states of Pennsylvania and New York, who have not lagged in the rear of individual enterprise, but have gone forward boldly, upon enterprises more doubtful than those projected by us, as the pioneers of every such improvement. The course and policy of our state has been to stimulate individual enterprise by stipulating to go hand and hand with it in its designs. Hence, although many persons professed that they had come to no definite conclusions as to the practicability of the Chesapeake and Ohio canal, yet the legislature of the state, at a very early period, and when the question of practicability was much more doubtful than at present, pledged itself for the subscription of its quota of the stock of that company, to be made as soon as the residue of the money, necessary to the completion of its eastern section, was obtained. And at its last session this pledge of subscription was made dependent only upon the condition, that twice the amount of her subscription should be subscribed by the government of the United States. With reference to the present work, twice the amount of the stock reserved to the state has already been subscribed by others, and the condition has therefore already occurred, upon which they engrafted their grant to the Chesapeake and Ohio canal company. As, therefore, they aim at the same general results, and are sustained by the same evidences of practicability, it seems to be the duty of the state not to withhold from the one, that aid and protection which she has extended to the other.

Such seems to be the duty of the state, from the consideration of which the committee turn with increased confidence to those which address themselves to her sense of her own interests. If the question before the committee be regarded as one merely of financial interest, it involves the several considerations of the physical practicability of the contemplated road—its probable cost, and the adequacy of the means which can probably be obtained to defray that cost; its general results with reference to individual benefit, as well as the various sources of state revenue, and of its probable results as a source of revenue in itself. All of these will be very briefly considered by the committee.

The question of physical practicability must depend for its solution, upon the observations, examinations and surveys, of men of science and experience, made with a view to the determination of that question, and upon our own knowledge of the intrinsic difficulties of the contemplated work, and a contrast of these with those which have been overcome by skill and labour elsewhere. Either of these modes of determination will in general suffice to put any such question to rest, and when they concur, they leave no room for doubt. If in the present instance the full benefit of both of these *media* of proof is not afforded to us, they will as the committee believe, be found to exist, and to concur in such a degree, as to impart as high a degree of certainty to the conclusions which they warrant, as could be derived from the entire benefit of any of them. The examinations and surveys which guide us in the decision of this question are of a double character. They are either those which were made by the Rail Road Company, with direct reference to the location of the contemplated road; or those which were made by the engineers of the United States, with a view to the location of the Chesapeake and Ohio Canal, and can be demonstrated to be equally applicable to the location of a Rail Road.

The survey and examinations which have been made under the direction of the Rail Road Company, include, as has already been remarked, a general reconnoisance of all the routes for this road lying between the parallel of the southern Pennsylvania line, and the mouth of the Great Kenawha river and surveys of four experimental lines from the city of Baltimore to the Potomac river. These were made under the direction of Lieut. Col. Long, and Capt. M'Neill, of the United States Topographical engineers, and Dr. William Howard United States assistant civil engineer. The high character of these gentlemen is of course calculated to inspire confidence in their opinions, to the full extent to which they go, and these opinions will be found highly satisfactory. In their first general report of November 6th 1827, after a detail of their operations, they present us their conclusions for them in the following language:—"We (say they) have found the country more favorable to the accomplishment of such an object, as that of the contemplated Rail Road, than could reasonably have been expected from its rough and broken aspect. Great facilities for the construction of such a work have, on a careful examination, with the object in view been developed, where a superficial examination could hardly have led to expect them; and when minute and accurate surveys shall have determined the precise features of the country, we may anticipate the discovery of still greater facilities. The difficulties which occasionally present themselves, are great it is true, but we have met with none which we do not think that we even now perceive the modes of successfully overcoming, and when science and experience shall have increased our resources, we may reasonably expect, that with their aid these obstacles will diminish to a much lower point than that at which we have now estimated them. It is also necessary to remark, that interspersed with these difficulties are considerable extents of favorable ground, which by the facilities they will afford, will compensate for the expenditure accumulated on the rougher portions, and thus reduce, to a reasonable amount, the average cost of the whole. Our conclusions, founded as they are on a mere examination by the eye, are of course liable to error, and may not be sustained by a more minute and accurate survey with instruments; but with this qualification, we feel warranted in pronouncing, that the Rail Road from Baltimore to the Ohio is practicable, and that it can be accomplished at a reasonable expenditure of time and money."

In their report of 12th January, 1828, relative to the surveys of the experimental lines to the Potomac, they also remark—"We have endeavoured, thus briefly, to exhibit a summary view of our recent operations, of which a more detailed account will be rendered, in connection with appropriate maps and profiles, from which an opinion may be formed much more definite and certain than were our former conclusions, founded as they were on a mere examination by the eye; and we feel gratified in expressing our confidence that we shall soon be enabled to exhibit unquestionable proof of the entire feasability of your enterprize, as far as the limits to which our surveys have extended."—This committee are also authorized to state, that rugged and impracticable as the country, intervening between the Baltimore and the Ohio river, may appear in some of its parts, yet, in the opinion of these gentlemen, no greater obstacle to the execution of this work exists along the entire line, than that which is presented by the south mountain in Washington county of this state; and that the opinions of these gentlemen, as to the practicability remain unaltered, nay are even expressed with more confidence than at the period of making these reports. As therefore, the survey of experimental lines, which have extended beyond this obstacle, seem to have determined the entire practicability of surmounting it and thus to prove the accuracy of the general reconnoissance in points of the greatest difficulty, they give to that general reconnoissance nearly all the accuracy of an entire actual survey. The reconnoissance of the middle section it will be remembered, was also confined to the country south of the southern line of Pennsylvania; but should the route through Pennsylvania be thrown open to the company, it will give them the superior advantages of the route by Castleman's river, which is at least 20 miles shorter, has a difference of elevation of 436½ feet in its favour, and several other advantages not necessary to be particularised, but all of which will fully appear in the report of General Bernard, Capt. Poussin, and Dr. William Howard, submitted to the congress of the U. S. in 1826—27.

The evidences of practicability deduced from an examination of the surveys for the Chesapeake and Ohio Canal, will not be found to be inferior in force. These surveys, conducted with the utmost minuteness and accuracy by the most scientific engineers of this country, whilst they are admitted to have determined favourably as to the latter will be found to be equally as conclusive, if not more so, as to the former. The universal doctrine of all writers of this day, who have drawn a contrast between railways and canals, is that a railway can be made wherever it is practicable to make a canal, but not *vice versa*. The same doctrine was also fully sustained by the examinations before this committee. The language of Mr. Strickland, who, it will be recollected, was deputed by the Pennsylvania society for the promotion of internal improvement, principally for the purpose of collecting information as to canals, is very explicit on this subject. "It will be admitted, (says he,) to be evidently cheaper to cut through a hill, or form a tunnel for the passage of a rail road, than for that of a canal. And again there is no country, however varied its surface, but what will afford as many facilities for the execution of one as the other. The stationary engine, and inclined plane, afford equally as simple and speedy a mode of communication between two level stages, and may be constructed with a lift of 50 feet in 1000 feet, for half the sum required to overcome the same elevation by lockage." And a part from the numerous testimonies which might be brought in aid of this doctrine, it receives full confirmation from the canal report made by General Bernard, Captain Poussin and Dr. William Howard in 1826, in which they suggest this very mode of improvement, as best adapted to the middle section of the contemplated Chesapeake and Ohio Canal, and to the most difficult parts of the entire route of that canal, and in which they recommend to the congress of the United States, that a survey be instantly made with a view to the construction of a railway across the country intervening between the sources of the eastern and western waters.

Besides these, the proofs from analogy will be found to be very strong, and of themselves almost equal to the removal of doubt. The difficulties which have been overcome in the construction of Rail Roads, both in England and in this country, appear from the surveys of the country through which the contemplated road is to pass, to be quite equal to any which the latter presents. In the Hetton Rail Road, which extends from the Hatton Colleries to the town of Sunderland on the river Weir, over a series of high hills, and is only seven miles and five furlongs in length, there is an ascent of 266 feet, and a series of descent equal to 546 feet, or 812 feet of elevation and depression. In speaking of this, an American traveller remarks—"Here is a practical and very striking illustration of the effect of this novel mode of transportation in a hilly and mountaineous country. A sterile, broken region, hitherto nearly inaccessible, and entirely unproductive, suddenly emerges from obscurity, and becomes, by this ingenious contrivance, a source of great private emolument as well as national utility." The Stockton and Darlington, the Manchester and Liverpool, and many other Railways, executed or projected in England, furnish instances equally as striking. Upwards of two thousand miles of railway have already been completed in England, or are speedily progressing to completion; and for the most part for the very purpose of overcoming peculiar difficulties of ground which inhibited other modes of improvement.

But the examples furnished by our own country, young as it is in the knowledge of all that relates to this mode of improvement, are yet more striking. The Mauch Chunk railway, which is about 9 miles in length, presents a rise of 943 feet in 8 miles. The following tabular view will show a progressive elevation greater than any which will be encountered on the proposed route.

Point.	1 mile	2d	3d	4th	5th	6th	7th	8th	9th
Eleva. ft.	240	353	469	538	633	735	844	943	936

This railway terminates about 240 feet above the river, whence there is a descent to the river by an inclined plane, of 700 feet in length.—Its elevation, it will be observed, is nearly equal to one third of the entire elevation and depression of the entire route for a railway from Baltimore to the Ohio river. The Quincy railway, which is three miles in length, is for a considerable part of it constructed over a deep morass, where the rails are supported by piles, and yet the entire cost of that road did not exceed 11,000 dollars per mile. There also they have recently completed an inclined plane of five hundred feet in length, of which the elevation is about 36 degrees, or 330 feet on which, in four minutes they can take up an empty wagon of one ton weight, and let down a full wagon of nine tons weight. A railway has also just been projected, and is now in a train for completion, and is, in connection with the Delaware and Hudson canal, which will extend over Moosick mountain to the coal mine, on Lackawannock creek, & the length of which will be 16½ miles, on which route they will overcome an elevation of 858 feet.

The general rules in relation to the constructions of railways, as established by experienced and scientific men are:—That locomotive engines may be used whenever the deviation from the horizontal line does not exceed 27½ feet per mile, which is considered as a level with reference to their employment. That horse power may be used to advantage, where the elevation is much greater; and that by the aid of stationary engines, any elevation may be overcome.—The remarks which will be submitted hereafter, as to the probable cost of this road, will be found to apply, with great force, to the question of physical practicability, and the committee will therefore content itself with a general reference to them.

Passing from this branch of the subject to the consideration of the probable cost of this road, it is found to be surrounded with more doubt and difficulty.—All estimates of it must of course have more or less fallacy about them. Here, however, the committee have been relieved from the necesssity of forming so difficult an estimate, in having been furnished with that prepared by Col. Long, in obedience to the request of the President of the rail road company, which is here submitted in the form in which it was given.

"Agreeably to your request, (says he in his report,) I have the honour to submit, in general terms, my opinions as to the cost of the contemplated rail road between this city and the Ohio, together with the cost of transportation thereon. I take the liberty to premise, however, that the practical results afforded by this country, in reference to works of this character, are too limited to admit of any definite conclusions as to their cost, or best mode of construction. England has been looked to for examples in the construction of roads and canals, and is still regarded as furnishing the best models for rail roads. In respect to the former, our imitations, although they may have proved inferior in point of workmanship, have certainy surpassed the originals in economy of construction. In reference to rail roads we have every reason to expect that they will be placed on a similar footing. Although iron, which is an indispensable article in their construction, is somewhat dearer here than in England, yet timber and stone, not less essential, are far more abundant, convenient, and less expensive in this country. Accordingly, if we adopt a mode of construction embracing the facilities, and avoiding the inconveniences, there presented, or in other words, if the quantity of iron employed in the construction be the least practicable, and timber

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