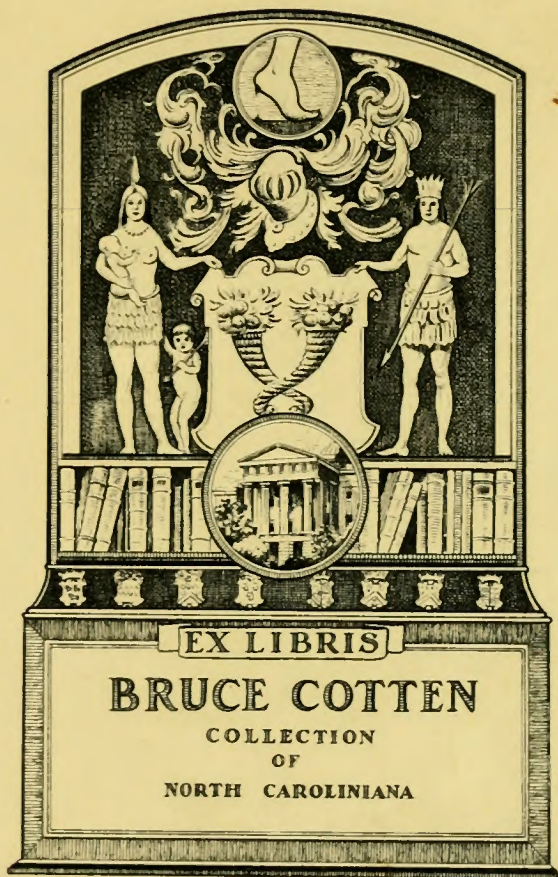


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9

FIFTH
ANNUAL REPORT

OF THE

Albemarle and Chesapeake

CANAL COMPANY.

OFFICE, NORFOLK, VA.

NEW YORK:
HOSFORD & KETCHAM, STATIONERS AND PRINTERS,

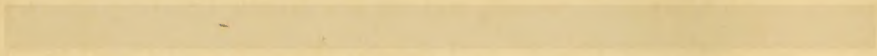
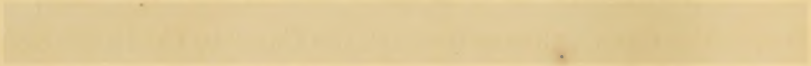
Nos. 57 and 59 William Street.

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1864.

REPORT



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REPORT.

MORE THAN half a century ago, the great importance of this line of intercommunication, considered in a national point of view, received an official recognition in a report by Mr. Gallatin, the then Secretary of the Treasury. He recommended it as the shortest and cheapest route for a line of *inland* navigation between North and South. Just previous to the rebellion, a Company of Northern capitalists had undertaken the construction of this work, and had very nearly completed it, when they were obliged, by the war, to abandon it till the Government had again established its authority over that section of the country. The line is about sixty-five miles in length, from the waters of Albermarle Sound to Norfolk, and consists partly of Canals and partly of natural water courses, the Canals being two in number, one situated in North Carolina, the other in Virginia.

Commencing in North Carolina, at the mouth of North River, a wide and deep tributary of Albemarle Sound, the line extends up that River to the Canal; thence through the Canal to Currituck Sound; thence through Currituck Sound, and up the North Landing River to the Virginia section of Canal; and thence through said Canal to the South-west Branch of Elizabeth River to Norfolk.

Of this line, the length of independent Canal, exclusive of improvements of natural water courses, is 14.10 miles, divided into two sections as follows:

In N. C., from North River to Currituck Sound	5.65 miles.
In Va., through Great Bridge Swamp	8.45 “

All the residue of the line consists of natural water courses, varying in width from 200 feet to several miles.

There is but one lock on the whole line, and that is located at the junction of the Canal with the Elizabeth River, and is rendered necessary only by the tide in the river, which at that point has a rise and fall of about four feet. It is one of the largest locks in the United States, being forty feet in width, two hundred and twenty feet in length between the gates, and has eight feet depth of water at low tide upon the miter sills. The walls are built in the most substantial manner, with dressed stone from the granite quarries of Port Deposit, and rest upon a solid timber and pile foundation. The ordinary surface of water in the Canal corresponds with the surface of the water in the river at mean tide, so that at high tide in the River it is necessary to lock *down* two feet into the Canal, and at low tide in the River to lock *up* two feet into the Canal. The greatest amount of lockage is therefore only two feet; while at mean tide there is no lockage, as the waters are on a level, and consequently the average lockage will not exceed one foot.

This is probably the first lock ever constructed which would allow vessels to lock up or down either way. To accomplish this object, two sets of gates, shutting in opposite directions, are placed at each end of the lock, and vessels now pass through at any state of the tide with equal facility in either direction.

This improvement completes a chain of inland navigation from New York southward, a distance of about 600 miles. By reference to the smaller of the accompanying maps, it will be seen that a continuous inland navigation from New York to Newbern, in North Carolina, is completed by means of only seventy-one miles of canal, viz :

Delaware and Raritan Canal in New Jersey	43 miles.
Chesapeake and Delaware Canal, in Delaware	14 “
Albemarle and Chesapeake Canal, in Virginia and N.C.	14 “

The Canal of this Company, forming the southern link in the chain, opens an avenue, *free from the dangers of Cape Hatteras*, for the large and increasing trade of that fertile region lying upon Albemarle, Pamlico and Currituck Sounds and their tributary streams.

The Canals and water-courses forming this line were intended, when completed, to have eight and a half feet depth at low water, so that vessels of eight feet draft might at all times pass between Fortress Monroe or Norfolk and Newbern, or intermediate ports. Before the suspension of operations, the Canals proper had been excavated to about the required depth of eight and a half feet of water, and certain bars and shoals in the natural water courses, to a depth of six feet of water, leaving on such bars and shoals two and a half feet of bottom still to be taken out, which was being excavated when the work was suspended, there being at that time nine large steam dredges in full operation. Since that time the passage of side-wheel steamers, in government employ, running at too great speed through the Canals, has, to some extent, reduced the depth of water by washing in the sides. But this difficulty was remedied on the attention of the Government being called to it, and it is believed that there is now no place on the whole line having less than six feet depth of water. With the exception of the fourteen miles of Canal, no limit to the speed is required on any part of this line of communication.

At the breaking out of the rebellion, the Canal Company, and Courtright, Barton & Co., contractors for doing the work, were possessed of a large amount of personal property, consisting of steam tugs, steam dredges, steam pile driver, steam pump, barges, machinery, tools, &c., &c., on the line; which property has principally been destroyed by the casualties of the war.

Since the recapture of Norfolk, in May, 1862, this work has been regarded as within our lines, and has been used to a considerable extent, by the Government for the passage of dispatch boats, transports, troops, &c. During this period there have been two raids made upon the line by guerrillas, destroying at each time a considerable amount

of property belonging to parties connected with this improvement. But owing to the peculiar topography of the country, and the distance from the rebel lines, there are but few points where danger is to be apprehended from this source, and these points, it is believed, are now properly guarded by our troops, and it may be regarded as certain that the vigilance of the military authorities now in command of that department will hereafter protect the work from all further similar damage.

Assuming this to be true, and that the Company will hereafter enjoy uninterrupted possession of their work—of which no doubt need now be entertained—it will be their policy to perfect it according to the original design; but owing to so much of the facilities for doing the work having been destroyed as above stated, the improvement will necessarily be very gradual and slow, commencing at the shoalest points and excavating as rapidly as means will permit. If, however, it be deemed important to any interest, either national or commercial, that the full depth of eight and a half feet of water should be secured throughout the entire line, at an early period, it is estimated that an expenditure of \$150,000 will accomplish this object, as the material remaining to be removed is of an easy nature, and free from the formidable obstructions of cypress stumps and logs, which were encountered in the original construction of the Canals. This will be more fully appreciated from the following extract from the Report of John Lathrop, Chief Engineer of this Canal, made to the Company in 1859.

“ Although in the construction of this Canal, we have encountered the most formidable and unforeseen difficulties from logs, cypress and other stumps, both below and above the surface, difficulties greater probably than were ever before met with on any work of equal extent, and which have had the effect to retard the completion of the work, it may be gratifying to the stockholders to know, that when finished, there is no Canal in the world subject to so few contingencies, or the maintenance of which will be attended with so little

expense, or subject to so little depreciation. The water of the Canal being for its entire length below the level of the adjoining country, no embankment is necessary upon the whole line, and consequently must be exempt from breaks. No mechanical work that effects the navigation, except the one lock, which is constructed in the most durable manner. No streams crossing or running into it which might cause bars or freshets. Free from all quicksand or other material, which would be liable to wash in or fill up the Canal, and having an unlimited supply of water, it is scarcely possible to conceive of a work more favorably situated in regard to casualties, depreciation or cost of maintenance."

Commenced in 1855, the work was prosecuted with unremitting diligence (by the employment for most of the whole period of nine large steam dredges or excavators,) up to the suspension caused by the war.

In view of the importance of this line of communication, the inability of the Company to prosecute the work to a speedy completion, is to be regretted—relieving as it does the general Government from making the channel to the ocean, which they had commenced at Nag's Head, and which would have involved an expenditure of some \$5,000,000, together with its national importance, would seem to give a reasonable claim upon the Government, to improve the *natural* water courses connected with the Canals, by taking out the balance of the bars and shoals, to the required depth of eight and a half feet; this done the Company would at the same time perfect the Canal part, thereby making the whole complete.

The Canal was under the control of the rebels from the time our forces abandoned Norfolk and Portsmouth Navy Yard, on the 21st of April, 1861, until the retaking of Norfolk in May, 1862—nearly thirteen months.

The business done upon it since the latter period has been almost exclusively confined to the Government, the receipts from which have not been equal to the ordinary cost of maintainance and the

losses sustained from the destruction by rebel raids of boats, machinery and other property necessarily employed in keeping it up, exclusive of extraordinary damages.

For the financial condition of the Company at the present time, and for the importance of the work as a public improvement, and for its value to the proprietors, reference is made to the annexed Statement and Appendix.

M. COURTRIGHT, *Agent.*

STATEMENT OF AFFAIRS ON THE 1ST OF JAN. 1864.

Authorized Capital.....\$1,500,000 00

LIABILITIES.

Stock paid up and held by

State of North Carolina, \$350,000 00

By County of Currituck..... 44,000 00

“ Individuals..... 506,000 00

Total Stock paid up.....\$900,000 00

First Mortgage Bonds issued and sold..... 250,000 00

Over due Coupons unpaid..... 46,480 00

Bills payable..... 7,500 00

Total Liabilities, Jan. 1st, 1864.....\$1,203,980 00

[NOTE.—The mortgage is for \$400,000,—leaving unissued and unexpended \$150,000 00

Of the individual stock, nearly the entire amount is held by the original holders, who are all loyal Northern men, and the small balance, held in Norfolk and vicinity, is, so far as we know and believe, in the hands of parties who have taken the oath of allegiance to the Government of the United States. The bonds are substantially all

held by parties constituting the firm of Courtright, Barton & Co., who took them in payment for work done.

As indicating the probable future of this work, it may be stated that, though all the traffic thus far has been done upon an *unfinished* work, having commenced with a small channel of less than half the intended width, and only about four feet of water, yet it increased from a few hundred dollars per month for tolls and towage—as the work was enlarged—to between \$5,000 and \$6,000 per month, before the breaking out of the rebellion, and gave every assurance of securing in a short time the whole North Carolina trade. Whether in the hands of the Government or of private owners, this work, it is confidently believed, is destined to be a source of large profit, in a pecuniary point of view.

APPENDIX.

The region tributary to this improvement embraces about 12,500 square miles, or 8,000,000 acres of territory; being larger than either of the States of Maryland, New Jersey, Massachusetts, Connecticut, New Hampshire, or Vermont, and larger than the combined area of Connecticut and Massachusetts, or of New Jersey and Delaware.

Albemarle, Pamlico, and Currituck Sounds receive the waters of twenty-one rivers, and a great number of smaller navigable streams, altogether watering upwards of twenty fertile counties, and affording about 1,800 miles of navigation.

The coasting tonnage of North Carolina exceeds two-thirds of her whole commerce; and nearly three quarters, or about 4,500 tons, of her whole coasting tonnage belong in this Albemarle and Pamlico country.* This is the tonnage of vessels *belonging* in the territory. The amount *employed* is much greater, as will be hereafter shown by the official returns of the light house keepers.

The waters of Eastern North Carolina are shut in from the ocean by a long narrow strip of land, consisting of banks of sand thrown up by the waves; and for nearly two hundred miles, the only openings for sea-going vessels are two intricate and changing channels, known as Ocracoke and Hatteras Inlets. Their navigation is exceedingly dangerous, uncertain and expensive. The channels are so shallow that most of the vessels have to discharge cargo into lighters before they can pass the bars, and the weather must be very favorable to enable them to get to sea at all.

The extra expenses caused by this detention, together with the necessary lighterage, are estimated by those engaged in the trade, to amount to one dollar per ton of each cargo.

These inlets being south of Cape Hatteras, all vessels bound to the North, even if so fortunate as to get safely over the bars, are yet

*U. S. Treasury Reports on *Commerce and Navigation*, for 1859.

subjected to the perils of the most dangerous promontory on the coast of America. There is no place of refuge for vessels, between Ocracoke and the capes of Virginia, a distance of nearly 200 miles. And as these inlets are about seventy-five miles south of Albemarle Sound, all vessels from that sound, bound to northern ports, have to perform a voyage of 150 miles to get at sea upon the same parallel with their starting point, besides lightering over the bars of an intricate channel, and encountering the dangers of Cape Hatteras, where there are undoubtedly more shipwrecks than upon any other part of the American coast.

The extra insurance upon Ocracoke and Hatteras risks amounts to about three per cent. over and above the ordinary rates.

The amount annually *lost* in this trade, by reason of this extra insurance, lighterage and detention, is estimated at about half a million of dollars.

That these extra charges enhance the rate of freight and the cost of conveyance to market, is shown by the fact that freights from Wilmington, N. C., 120 miles south of Ocracoke, were (before the war) considerably lower than from the towns of the Albermarle.

If this enhanced freight be estimated as a tax upon produce of six per cent. only, the actual positive *loss* directly chargeable to the defects of this navigation, amounts every year to more than three quarters of a million of dollars, a sum equal to more than one-half the entire cost of the construction and equipment of the new Canal.

These heavy burdens have long demanded a more suitable outlet for this trade; and for the last forty years, efforts have been made to induce the General or State Government to reöpen Roanoke Inlet near Nag's Head. At this point, and also at another near Crow Island in Currituck Sound, where now lie high drifted banks of sand, were once navigable inlets; and it has been thought by many that these could be reöpened. Within the last few years the experiment has been tried.

Congress made an appropriation, and the reöpening of Roanoke

Inlet was undertaken under the direction of the War Department. After four-fifths of the appropriation had been expended, there was "scarcely a trace to be seen of what had been done, the drifting sand filling in the trench as fast as it was excavated by the dredging machine. In fact the machine was very near being imbedded in the sand, it filling in so rapidly behind it."* Under these circumstances the able officers in charge of the work, (Lieut. Whiting, and subsequently Brevt. Col. Turnbull, U. S. Engineers), pronounced the scheme impracticable, "short of an enormous expenditure altogether disproportionate to the object,"* and advised its abandonment as a wanton waste of the public money. Col. Turnbull further reported as an additional reason for abandoning it, that the work was no longer even desirable, inasmuch as the Albemarle and Chesapeake Canal would "*obviate all necessity of a communication with the sea through Nag's Head.*"*

The scheme of reöpening the closed inlets, was therefore abandoned as impracticable and unnecessary. Even where it practicable, the cost would be enormous, at least \$5,000,000, according to Col. Turnbull's estimate,* and after all, there would be no certainty of its remaining permanent. On the contrary, it is highly probable, that as the same causes continue in force, the inlets would in time be again filled up. A similar fate undoubtedly awaits Ocracoke and Hatteras at no distant day, since it is notorious that their channels have been gradually shoaling for several years; and they must in time be wholly closed up, or at all events become impassable for vessels, while the waters of the sounds will force their way to the ocean through the sands still further to the south.

From the U. S. Coast Survey Report for 1857, it appears that "the water on the bar at Ocracoke has decreased at least two feet since the last survey (1852)," a period of five years.

The officer who reports this fact (Commander W. T. Muse, U. S. N.) further says of this inlet, that "the fears in regard to the filling

*Report of Secretary of War for 1857, p. 347.

up of the channel, of which there are some indications at present, will probably be realized at no distant day. It would be a matter of great regret if a convenient access to the sea should be denied to the rich back country, as its inhabitants have begun in earnest to develop its resources, which go to show that as an agricultural district, it is perhaps not excelled." [See Report of U. S. Coast Survey for 1857, p. 152.]

The foregoing facts, we think, sufficiently demonstrate the importance of this work as a public improvement.

THE VALUE OF THE WORK AS A BUSINESS ENTERPRISE.

The profits to the Stockholders will depend first on the amount of traffic, and secondly upon the expenses of maintenance and management.

As to the first, the Board confidently expect *the entire northward trade of the three Sounds and their tributaries.*

On this point there seems to be no room for doubt; for it is inconceivable that a navigator should be willing to encounter the dangers, the vexatious delays, and the extra expenses of Ocracoke and Hatteras, going 150 miles out of his way, and losing from three days to three weeks time, when a perfectly safe and far cheaper and speedier way is open to him. The Canal being specially designed for steam towing, a vessel by this line can reach Chesapeake Bay, and the ocean through the Capes of Virginia, in twenty-four hours from the Albemarle; and may make her voyage to a northern port and back home again in the same time that she would be detained at the Inlets getting over the bars.

No argument can be necessary to prove that trade will prefer a route, at once *direct, certain, cheap, and safe*, to others that are in all respects the very opposite,—*indirect, uncertain, expensive and dangerous.*

Another important consideration is that northward bound vessels arriving by this line in the Chesapeake, have here a choice whether to go up the Bay and through the Canals, or to go by sea from the

Capes of Virginia; either route being free from danger, and from all expenses arising from lighterage, detention, or extra insurance.

These considerations, we think, fully warrant us in counting upon the whole of the Albemarle and Pamlico northward trade, together with all the increase naturally consequent upon new and increased facilities. Let us therefore inquire into the probable amount of this trade, and of its profits to the Company.

The soil of this region is of very great fertility, yielding abundant crops of corn, wheat, potatoes, peas, and the various other agricultural products. Cotton is grown to a considerable extent, and its production is every year increasing. The crop, for the year 1859, was estimated at 100,000 bales. And it is well known that a very large proportion of the naval stores used in the United States are produced in this region. The quantity of lumber, timber and staves is very large, and the number of shingles produced here, is immense. The fisheries, also, are the most productive in the Union.

Of the amount of shipping employed in this trade an approximate idea may be formed from the official returns of the light keepers, who are required to keep daily accounts, and to make quarterly returns of the number and class of vessels passing their respective stations.

Till within the last few years, the principal opening to the ocean was Ocracoke Inlet. For instance, during the year 1855, there were upwards of 5,250 passages through Ocracoke,* while the estimated number at Hatteras was only about 1750; but lately Ocracoke channel has become so difficult that vessels now almost exclusively use Hatteras Inlet in preference.

As to the number of these vessels, we can get a sufficiently correct idea by aggregating the returns from the Lights at *Croatan* and *N. W. Royal Shoal*, since all vessels from the Albemarle, whether for Ocracoke or Hatteras, must pass the former, while most of those from a southerly direction, pass the latter. We are, however, informed by the same officer, that a considerable number of vessels from

* Lighthouse returns for 1855.

Hyde county, going to Hatteras, do not pass sufficiently near any Light to be recorded.

The returns from the two above mentioned stations for the year 1858, foot up as follows:

First Quarter.....	1,229
Second "	1,342
Third "	1,298
	3,869
Total for three quarters....	3,869

To these returns it is safe to add 25 per cent. for vessels passing in the night, or otherwise unseen by the light keepers. Add 25 per cent. to the above, and we have 4,836 vessels for the first three quarters of the year; and assuming that the fourth quarter will average with the other three, we can add 1,612 more, making a total of 6,448 for the year. Supposing them to average 125 tons each, the result is a total of 806,000 tons. The proportion of this that goes northward is estimated to be fully three quarters, or 604,500 tons.

This is more than double the tonnage of the Delaware and Raritan Canal, other than its coal tonnage, upon which that Company received for the year 1857 tolls amounting to \$128,586 25.*

It is more than two thirds the tonnage of the Welland Canal for 1857; upon which the tolls amounted to \$232,437 18;† and it is more than two thirds the tonnage, other than coal, of the Chesapeake and Delaware Canal, where the tolls for the year 1857 were \$229,081 33.‡

If, therefore, our tolls be fixed at the same rates as those of the Delaware and Raritan Canal Company, they should amount to upwards of \$257,000 per year. At the rates charged upon the Welland Canal, the amount would be about \$155,000 per year; and at the Chesapeake and Delaware rates, about \$152,000.

To these estimates must be added the business that has hereto-

* Information obtained at the Delaware and Raritan Canal office, Princeton, N. J.

† Information obtained from the Welland Canal office, St. Catharines, Canada West.

‡ Information deduced from the Annual Report of the Chesapeake and Delaware Canal Company, for the year ending June 1, 1857.

fore passed through the Dismal Swamp Canal; inasmuch as that canal is so notoriously insufficient for the wants of the trade, that its entire through business must inevitably be diverted to the new route. The small capacity of that Canal, its insufficient supply of water, the number and diminutive size of its locks, and its connection with the difficult navigation of the Pasquotank River, commonly called from its circuitous channel the "Moccasin track," constitute objections to that route too serious to admit of any doubt on this point.

The tolls received by that Company were for several years, prior to the rebellion, upwards of \$40,000 per year.

The foregoing estimates, it will be observed, are based only upon the northward trade of the Albemarle and Pamlico country, which is estimated at three-fourths of the whole. But we see no reason to doubt that even southward bound vessels can ordinarily get to sea through this line, and by the capes of Virginia, *in less time* than by the Ocracoke or Hatteras route, to say nothing of diminished expenses and entire freedom from danger. Should this expectation be realized, it would increase the amount of tonnage to about the same as that of the Welland Canal, upon which, as we have seen, the tolls for 1857 amounted to \$232,437 18. At Delaware and Raritan rates the amount would be upwards of \$334,000 per year. This, it must be remembered, is from tolls alone.

But in addition to tolls, this Company is authorized to derive revenue from *towage*; and the Canal having been constructed with sole reference to steam towing, it is expected that the receipts from this source will be nearly, if not quite equal to those from tolls.

The Company also hold the tract of land, consisting of about 6,000 acres, traversed by the Virginia section of the Canal, the whole of which is covered with valuable wood and timber. The quantity of wood is estimated at 250,000 cords; worth, standing, one dollar per cord. And if the opening of the Canal shall have the effect of draining this tract, as in all probability it will, the land, when cleared, will be of the most valuable description for farming purposes.

REPORT

On the number and date of visits to the ...
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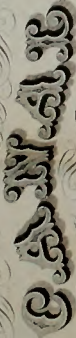
No.	Name	Address	Profession	Religion	Marital Status	Age	Sex	Color	Height	Weight	Build	Complexion	Education	Occupation	Income	Religious	Political	Other
1
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MARSHALL PARKS

President

B. F.

ALBEMARLE & CHESAPEAKE



CONNECTING CHESAPEAKE BAY
WITH CURRITUCK, ALBEMARLE AND PAMLICO SOUNDS
AND THEIR TRIBUTARY STREAMS

BY
JOHN LATHROP, CIVIL ENGINEER

1864

MANUAL PUBLISHED BY
AMERICAN ENGINEERING SOCIETY
OFFICE
NEW YORK



EXPLANATIONS.

Albemarle & Chesapeake Canal	8 1/2 Miles
Length of Virginia Canal	5 1/2
North Carolina Canal	5 1/2
Canal and River Navigation	70
Old Lock	250 Feet
Length	60
Width	60

105

201

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