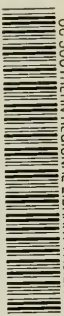


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REPORT

ON THE

BRUNSWICK

CANAL AND RAIL ROAD,

CLYNN COUNTY, GEORGIA.

WITH AN APPENDIX CONTAINING THE

CHARTER AND COMMISSIONERS' REPORT.

BY LOAMMI BALDWIN, ESQ.

CIVIL ENGINEER.

BOSTON:

JOHN H. EASTBURN, PRINTER,

No. 18 State Street.

1837.

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REPORT.

CHARLESTOWN, MASS., JUNE 6, 1836.

SIR:—Having been requested by the Brunswick Canal and Rail-road Company to examine and survey a route for a canal from the Altamaha River to Brunswick Harbour, in Georgia, which was incorporated by an act of the Legislature, passed December 20, 1834, I have executed that trust, and present the following Report, with a Plan, showing the route I recommend for their adoption.

The Altamaha river is navigable from Darien 200 miles, to the forks of the Ocmulgee and Oconee, and up the Ocmulgee, the west branch, 300 miles, to Macon, and on the east branch, Oconee, 200 miles to Milledgeville, the capital of the state. Steamboats are used with wheels at the sides, and take, on each side, a boat loaded with five or six hundred bales of cotton down to Darien from Macon and Milledgeville and the intermediate points of the river. The ascending freight by the same means is considered more than that descending. The amount of cotton is increasing, and during the past year there were about 130,000 bales brought to Darien.

From Darien, the Altamaha is also navigable 12 miles to Doby Island for ships and schooners drawing 11 feet, at common high water in ordinary tides. At Doby Islands, ships may come drawing 14 feet at common high water. Over the bar at Doby Inlet is 16 or 17 feet at high water, but an intermediate bar or spit of sand prevents vessels drawing more than 14 feet at high water, passing to the island.

The country bordering on the Altamaha, Ocmulgee, and Oconee, and their tributaries, for an extent at least of 80 miles

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wide, and 150 miles in length, in the direction of the rivers, abounds with pine, cypress, and white oak, which is now almost useless for want of a good harbor at Darien. The tributaries, the great Ochopee, and the little Ocmulgee, have some saw mills, from which sawed lumber of various kinds, and logs, are rafted to Darien for country use, but none, or very little for foreign markets. The Little Satilla, the Great Satilla, the St. Mary's, and the St. John's rivers, are accessible from the harbor of Brunswick, by the inland navigation. The St. John's is the outlet of a large portion of East and Middle Florida, and the St. Mary's is navigable to Coleraine for steamboats drawing 10 feet of water. The Great Satilla is navigable to the head of tide, above one hundred miles from St. Andrews' sound, for vessels drawing 10 or 12 feet, at all seasons of the year. This is one of the best streams in the state for the lumber trade, having an almost inexhaustible quantity of pine timber in the country through which it flows. The Little Satilla is an arm of the sea, and navigable to its head, a distance of about 35 miles from St. Andrews' sound. These rivers will send to Brunswick market cotton, rice, and lumber in great quantities.

From Darien to Charleston and Savannah, cotton, &c., is sent by steamboats, schooners and sloops inland, and return goods for the interior, to Darien, by the same conveyance. This inland navigation is afforded by the passages between the islands and the main land, though sloops and schooners occasionally pass outside the islands, but the common route for all navigation is inland.

The river Chattahoochee is navigable for steamboats to Columbus in Georgia, from Appalachicola Bay, but not for vessels over 11 feet, at the mouth. This river passes through Florida and in that province called Appalachicola, and is the boundary between Alabama and Georgia, for the distance of 30 miles above Columbus and for 120 down to the bounds of Florida. A steamboat navigation is also afforded on its principal tributary, the Flint river, to Pinderton, in Georgia, at the end of Spaulding's Rail-road communication with the big bend of the Ocmulgee. The town of Appalachicola has been found unhealthy, and a Rail-road has been opened from Wimico Lake to St. Joseph's Bay, where there is 20 feet of water, and much more healthy.

Altamaha river is the medium of communication for an immense tract of the interior of Georgia with Darien, which is sit-

uated on the left bank about 12 or 13 miles from the sea, but, unfortunately, has no harbor for foreign shipping. All the produce of the country has now to be sent to Savannah or Charleston, and return goods received from the same places by steamboats and small coasting vessels. No foreign trade, from this circumstance, can be carried on. It is a great state, with abundant and increasing productions, without a good port. It is to connect the immense traffic of the Altamaha with a convenient and capacious harbor for the most extensive foreign shipping, that the Brunswick Canal in Georgia has been contemplated.

Brunswick Harbor, Georgia.

St. Simons Light is on St. Simons Island, at the south end, behind which, at a little distance, the island is one or one and a half mile wide. From the east side, a wide shoal or sand-bar extends about five miles in an east south-east direction, gradually diminishing in width to a point, forming what is called the north breaker. A similar bar extends from Jekyll Island, opposite to St. Simons, wide at the island, but gradually lessening in width as far as the north breaker, and terminating at a point called the south breaker. Between these two shoals and the two islands is the channel, and between the two breakers is the bar about a mile long and half a mile across it. On Saturday, the 13th of February, I went with Edmund M. Blunt, an experienced pilot, Capt. John Anderson, of Brunswick, a good navigator, &c., in Capt. Morgan's sloop, to examine the bar, and found at low water three fathoms over the bar. All on board agreed that there was that depth at low water, and that the tide was six feet at ordinary tides, so that at common high water there was 24 feet over the bar.

If ships, coming in when six or seven miles from the light house, make the light bear W. N. W. they can enter. Immediately on passing the bar, the channel gradually widens and deepens to the light, so that the largest vessels and frigates may pass into St. Simons sound above the Light, and on taking a southerly direction they may pass up Turtle river, into the outer harbor of Brunswick, or continue up Turtle river ten or fifteen miles where it is a mile or a mile and a half wide, having from 4 to 6 or 8 fathoms at low water. This extensive sheet of salt

water is rather an arm of the sea than a river, the tide flows up to the mouth of a small river, which soon diminishes to a creek, has no navigation and furnishes no produce. It is therefore an extensive harbor where there is ample room for the whole navy, with very eligible situations for a naval establishment, but has no river opening into the interior, and hence no ships are ever seen in these waters.

Brunswick is situated on the east bank of an arm or branch of Turtle river, separated from the main river by a marsh island about a mile long and a mile wide. This branch is about a quarter or half a mile wide, with a depth of water sufficient for the largest merchant vessels at all times, except a shallow place or bar between the lower end of the island, and Dennis' Folly, at the lower end of the town. This bar is one mile long and forms the separation between the inner and outer harbor. The town was laid out with streets at right angles, by direction of the British parliament, about a century ago.

Capt. Stockton and Mr. Sherburne were appointed by the Navy Department in 1826, to survey and examine the bar at St. Simons and the harbor of Brunswick. Their soundings over the bar and up the river for a distance of 10 or 12 miles are accurate and numerous, giving over the bar from 16 to 18 feet depth at low water. The report and plans are in the office of the Navy Department. His report and extensive soundings are very conclusive as to the depth of water above St. Simons bar and in the arm of Turtle river, (on which the town of Brunswick is situated,) and on the bar. But the most definite information, and I believe, from personal experience, perfectly correct, is contained in the Report of Messrs. Polhill, Lawson and Fort, made on the 17th of July, 1833, to the Senate and House of Representatives of Georgia, pursuant to their appointment; by a resolve of the Legislature, Dec. 17, 1832, "to go and examine the commercial advantages of the port of Brunswick, and the railroad avenue to the Altamaha, and report thereon, upon oath, whether or not it would be advisable for the state to render any aid in opening Brunswick to the interior."

The valuable report of the commissioners is carefully made and most satisfactory on all points relative to the object of their mission, and especially in regard to the harbor of Brunswick. The following extract shows their opinion upon this point.

“When you approach within half a mile of the town, there is a small salt marsh island which divides the river into the northern and eastern branches, the main channel running southward of this island. Between Brandy-point on this island, and Dennis’ Folly, on the Brunswick shore, there is an inner bar, upon which there is about 12 feet at low water, and as the tide rises ten feet, it gives the same depth of water that we find on the outer bar, with this advantage, that the bottom being soft mud creates no damage to ships, and may be very easily deepened if it were necessary. But no such necessity exists, as any ship that crosses the outer bar can run over this at high water, and find the best anchorage near the bluff along the whole extent of the town, in from 20 to 40 feet water at the lowest time of tide. This we ascertained from careful soundings at low water, and after having finished the soundings for ourselves, ascertained that Stockton’s report and diagram confirmed on our survey.”

Brunswick is healthy, surrounded as it is on the west, south and east by the ocean. It is situated on a plain, generally eight or ten feet above high water, and very convenient for wharves. On the south part of the town, this point terminates in an extensive salt marsh, which extends to St. Simons sound. St. Simons light is eight miles from town, and the bar thirteen miles. Behind the town, and within the distance of half a mile, are several small holes or ponds, which contain shallow water, which may be drained at very small expense. There is no other stream or resting place for fresh water within many miles. These swamps, as they are called, are low places in the sandy plains, where water in rains collect, and in time have given rise to the growth of trees, shrubs and plants of an aquatic kind, thick and matted together, so that it is very difficult to pass between them; but the water is often dried up in the summer, and as they are not boggy, the foundation is sand, clay or hard earth, so that they are passable in any direction when the water is dried up and the bushes are cleared.

Upon the healthiness of the place, the State Commissioners are also decided. “In regard to health, we consider Brunswick superior to any sea-port on the southern coast. It is a high and dry bluff, with the total absence of lagoones, swamps of stagnant fresh water, and rice fields, and with a broad sheet of clear ocean water, almost as salt as the sea, and its pure sea breeze setting in

regularly from the ocean, make it not only a delightful situation in summer, as we experienced it to be, but give the strongest assurance of the health and comfort of seamen and navigators, and of the inhabitants of the town. We found the wells of water as good as could be expected in so low a latitude. Though not very cool, we believe it to be pure, and that which we found in town was better than the wells in the immediate vicinity. The extensive marshes are overflowed at every tide with pure salt water, and are not considered at all injurious to health. The sea breeze sweeps delightfully over them, and we found some of the most healthy families in the vicinity living immediately upon their edge.”

From my examination and experience in February, 1836, I fully believe in the truth of the Commissioners' Report, and from the absence of all natural causes of unhealthiness, and the cheap and easy removal, by draining, of the collection of fresh water within several miles of the town, Brunswick may become one of the most healthy and pleasant residences, in summer and winter, within the southern sea board of our country. If once the buildings become convenient, I believe it will become a resort for people from the northern states, in winter especially, for health or for pleasure.

The above account of the great extent and width of the Turtle river, after passing St. Simons sound, affords a complete land-locked anchorage ground for the largest merchant ships and any class of ships of war, as well as eligible and healthy sites for naval establishments. There appears to me no doubt, that Brunswick harbor will attract the attention of the navy, if the passage of the bar does not forbid. Upon this point the Georgia Commissioners hold the following language in their report :

“The object of Congress in ordering the survey having been the establishment of a naval depot on Turtle river, it is to be presumed that the officer made his report with a view to the strict safety of our ships of war, and therefore preferred being rather under than over the depth of water. We draw this conclusion from the fact, that we found the soundings on the bar to be generally about eighteen feet, at as near low water as we could judge; our shallowest sounding was seventeen feet, but we found more water on the same tack. As we found Stockton's report, very accurate in every respect, and as he had spent some time in the

survey, we conclude that the water on the bar may be set down at from sixteen to seventeen feet at low water, and twenty-two or twenty-three at high water, striking a medium between his survey and our soundings. The pilots and coasting captains on board the vessel we employed in this service, seemed to be of opinion that there was still deeper water, as they stated that they would risk their nautical skill and reputation in undertaking to bring the largest class of merchant ships, trading to the south, across this bar, at any time of tide. An experienced pilot, whose services we had engaged, assured us that he had been intimately acquainted with this bar for about twenty-three years, and its breadth and depth had not varied the least in that time. We judge the extent of the bar across it to be about a quarter of a mile, and from half to three quarters in width, between the north and south breakers, to be navigable for large vessels. One of the great excellencies of the bar is, that ships can pass over it in a direct line with a favorable wind, and if the wind should be ahead, she has a plenty of room for beating up. Mr. King, the intelligent and enlightened Senator of Glynn (county,) who lives immediately on St. Simons sound, assured us that it was by no means a rare occurrence for coasting vessels of heavy burden, entirely unacquainted with the bar, and without a pilot, to put into the sound in stress of weather for safety, and that this is done at night as well as in day. This we consider as the most conclusive evidence of the superior excellence and perfect safety of this bar, and the protection afforded to ships that run into the sound in bad weather. Of the entire safety and excellence of this bar, for the navigation of ships drawing from twenty to twenty-one feet of water, we can therefore speak in terms of the highest approbation."

For the purpose of connecting the immense and growing trade of the Altamaha river, which opens an interior navigation within the State of five hundred miles on the Ocmulgee as far as Macon, and four hundred miles to Milledgeville on the Oconee, with the capacious and beautiful harbor of Brunswick on the Turtle river, the Legislature of Georgia has incorporated a company, with very liberal privileges. The State has also been so well convinced of the utility of the plan to unite the Altamaha, which has no good harbor, with the harbor of Brunswick, which has no navigable river, that it has authorized \$50,000 of the stock to be

taken in its behalf. The act of incorporation of December 20, 1834, authorizes the company to make a canal or rail-road, or both, between the water of the Altamaha and Turtle river, and secures them in the perpetual enjoyment of their privileges, and against the erection of a rail-road or canal within twenty miles of either. It gives the company also a right to establish any toll it may think expedient, provided that the amount received shall not exceed, for any successive twelve months, twenty-five per cent., net profit, upon the amount expended in establishing the canal and rail-road, and keeping them in good repair. The capital stock provided by the act is \$200,000, which may be increased one-third, in one hundred dollar shares. The act of the company provides, also, that in the subscription to the stock, \$5 a share shall be paid down at the time of subscribing, and in its own subscription the \$5 per share shall not be paid until the company have paid their portion of the first instalment. This first payment both by the individual subscribers and on the part of the State, have been already made, and \$10,000 are now ready, in the hands of the treasurer, to meet the expense of surveys and other preliminary measures for commencing the work.

Instead of a canal with locks at both ends, it has been suggested that a thorough cut would accomplish the object without locks. But this would be injurious to the country, ruinous to every kind of navigation, and probably lead to a total stoppage of the canal. It would also carry into Brunswick harbor, a vast deal of sand and mud, during freshes, from the Altamaha, and finally fill the harbor so as to destroy navigation. For which reasons, I think it would be policy for the State to forbid the execution of such a plan, from the Altamaha, or from any other river discharging into Brunswick harbor, without a lock navigation in common form.

Proposed Route of the Canal.

Several lines were surveyed for the canal. The first was begun at Powell's landing on Gibson's creek, and carried through the pine woods over the sandy plain nine miles from the south branch of the Altamaha river, as marked on the plan A B C. This line, as seen on the profile No. 1, is very unfavorable, being about twenty-five feet average depth of cutting to high

water mark in Brunswick harbor, besides having a circuitous route by the creek and Turtle river, of about eight miles to Brunswick. Any line west of this will be more unfavorable, while a better route may be found on the east, along the swamps forming the head of Gibson's creek, which enters into Turtle river, and those which form the head of Six-mile creek, discharging into the Altamaha, between the plantations of Mr. Charles Grant and Mr. Hugh Grant, as shown on the plan. It was impossible to carry the survey through those swamps, and it was conducted most of the way along the sides, on hard and dry land, and extending offsets into the swamp, from different points along the main line of the survey. The crooked line O N M L K F was thus surveyed, as that also marked L P Q R, and the profile of each is marked with the same letters, Nos. 2 and 5.

From these lines of survey the offsets were occasionally made into the swamp, at places where the level of the water standing in them indicated a general level of the ground. From these offsets, or cross levels, have the two lines through the swamp been drawn, either of which may be adopted for the canal. The first, beginning at F, on the left bank of Gibson's creek, below the bridge; thence the line F straight to G, thence straight to H, thence straight to I, where it opens into the Six-mile creek, and follows the creek to the Altamaha river. The second direct line is the same to G. Here is an angle at the creek, from which point to the Altamaha river at J the course is straight.

It will be seen that both these lines, on the profiles Nos. 3 and 4, through the swamp, are much alike as to expense of excavation for about four and half miles to S, and having a mean depth of about twelve feet to the level of high water in Turtle river or Brunswick harbor. The north end of the first line crosses the Six-mile creek, twice between the Messrs. Grants farms, then passes over Mr. Hugh Grant's rice field, and enters the creek about half a mile above its junction with the river. On examining the profiles, Nos. 3 and 4, from S to I on the first line, and from S to J on the second, some advantages are obvious in the excavation of the first over the corresponding part of the second line. But the claim for damages by Messrs. Grants, for injury to their plantations, disturbing their use of the creek, crossing the rice fields, and the inconvenient mode of entering the Altamaha, render it doubtful whether it is not expedient for the

company to encounter the greater expense of excavation on this part of the second line, rather than to incur the risk of claims for damages on the first. It will be seen, also, that the place of entering into the Altamaha on the second line is much more advantageous than into the Six-mile creek. The length of these two lines, from G to J on the Altamaha, and on the first from G to the mouth of the creek, are much alike, and making a circuitous navigation of the river more than a mile and a half from the mouth of the creek to the termination of the second line at J. If the second line be adopted the navigation by the canal to Brunswick will be one and a half miles shorter than by the first route.

The second line passes straight from G to the river, and over the west side of Mr. Hugh Grant's rice field, to avoid which, and keep the canal still straight, the line may be turned on the point G, so that it may be laid along the edge of the swamp on the western side of the rice field, and thus lessen the damage he may claim, enter the river in a better position, and the cost of the work be no greater.

From S on both lines, the one through the deep cutting will cost about \$40,000 more than for the other along the creek, and the part through the rice field or both will be nearly the same. From I on the first to J on the second is two miles of crooked navigation by the creek and river, which is lengthening the canal nearly for that distance more than the straight line. The course may be turned along the foot of the high land towards T, and then fall into the river, unless it goes in a direct line to J.

I propose also to drain the swamp by the Six-mile creek, as the waters of Gibson's creek, where I propose to let it into the canal, is now almost fresh during many seasons of the year. All the water may therefore easily be sent the other way to the Altamaha, and leave the little that is allowed to collect at the other end to run into the canal, and Gibson's creek will then be salt. As no fresh water ever ought to be admitted into the canal in great quantities, some inconvenience for the drain by the creek will arise from making the canal on that route.

I present these views to the consideration of the company, because Messrs. Grants are the only persons on the whole route, who can have any claim for damages, and in no case have I estimated the value of land taken, as I believe all the adjoining

owners, even Messrs. Grants will be greatly benefitted by the canal.

The line I shall therefore recommend for the canal, on account of the much better and shorter route, is as follows :—beginning about a mile from Brunswick, on the Academy creek at D, thence the surveyed line to E near Ellis' bluff is 3.2358 miles. The first part of the line across the marsh from D to V to be a canal and the remaining part to follow the creek, deviating but little from the line surveyed, as laid along the edge of the marsh at the foot of the sandy bluff.

From E to F through open fields and woods to the left bank of Gibson's creek below the bridge, the distance is 1.1941 miles, having a depth of cutting about 8 feet to high water mark in Brunswick harbor.

From F to G, a distance of 2.0312 miles, the line is along the creek and crossing it several times, with a depth of about 6 feet to high water.

From G to J on the Altamaha, the distance is 6.3733 miles with a mean depth of 12 feet to high water through the swamp, and through the deep cutting at the north end, the depth, for about 1.14113 miles is 22 feet. From the deep cut through the rice fields to the Altamaha, is 0.5445 miles, and one foot above high water in Brunswick harbor.

Form, depth, and dimensions of Canal.

Before any calculation can be made as to the cost, the kind of navigation and the general uses of the canal must first be determined. The object of the canal is to open the trade of the Altamaha with the harbor of Brunswick, where no trade or boat at present is ever seen, and seldom any kind of vessels but the smallest coasting craft. The boats in use on the river are 21 feet wide, and 80 or 90 long, and some, I am told, are 115 in length. These boats carry down the river to Darien from various parts of the Altamaha and its branches, from 500 to 700 bales of cotton in bags of about 300 pounds each. Two kinds of steamboats are also employed ; one 35 feet wide between the outside of the wheels which are used for towing two boats loaded with cotton, one on each side, but seldom take other loading up or down the river except passengers. They often proceed below

Darien with their cotton to ships which load at Doby Island 12 miles below, and sometimes even proceed to Savannah. The other kind of steamboats have a wheel in the stern, and are about 20 feet wide. These carry cotton on board and sometimes take a boat in tow. Cotton is the descending freight principally, but grain, rice, and other produce is occasionally added. The ascending freight is equal or superior to that which descends, consisting of iron, West India and European goods, manufactures and other articles, carried up for distribution in various directions through an extensive country. There are about 130,000 bales of cotton brought down the river annually, and it is increasing.

Besides these agricultural products there is a quantity of timber, plank and scantling, brought down the river on rafts from the interior of Georgia, which will greatly increase when it can be carried by the canal to foreign ships in Brunswick harbor, where it may be immediately shipped.

I propose, therefore, to make the canal six feet deep below ordinary high water in Brunswick harbor, and depend upon the tide for a constant supply, and admit none from the Altamaha, which is always fresh. During floods it is very turbid, will have a tendency to render the immediate country unhealthy, and will, in process of time, fill the canal with silt. In winter, when the water in the swamp will naturally be most abundant, it may all be turned into the canal, and even in the driest season the canal may thus effectually become a drain for a small part, instead of Gibson's creek, and the health of this part of the country be secured from the sickness and fevers which prevail near these fresh water swamps. The level of the canal may be raised one or two feet in the spring tides, above common high water, which will facilitate the navigation.

Giving a depth of 6 feet, making the bottom 35 feet wide, and the slopes 1.5 feet base to 1 foot rise, leaves the breadth at the surface of the water 53 feet, which is sufficient for the boats now in use on the river to pass each other. A boat 80 feet long and 21 feet wide, drawing $2\frac{1}{2}$ feet, displaces 113 tons of salt water at 63 lbs. the cubic foot, and with a load of 600 bales of cotton at 300 lbs. each, it will weigh a little over 80 tons, thus leaving 33 tons for the weight of the boat and other loading. At the depth of $2\frac{1}{2}$ feet, two such boats with perpendicular sides will pass each other with a space of 3.5 feet to spare. This kind of boat

has not upright sides, but they are rounded inwards, and perhaps draw a little more than $2\frac{1}{2}$ feet of water, but may pass easily.

The tow path to be 12 feet wide, which in common inland navigation is generally made a foot above the water of the canal and sometimes more, but here I would wish it sufficiently below the surface of the ground to make a clear and smooth path, leaving it three or even five feet above the surface of the canal. The tow path should be on the east side, that it may be extended on the bank of Academy creek quite to the town of Brunswick.

Locks.

A lock will be necessary at each end. They should be 23 feet wide and 100 long in the clear, with counter guard gates to prevent the river at one end, and the tide at the other, ever entering the canal, whenever either rises above its level. When I was there in February, 1836, there was but a few inches difference between the level of the Altamaha and high water in Brunswick harbor. But sometimes in freshes the river rises three or four feet above the tide in the harbor, and if not prevented by guard gates, the water will have admission into the canal, which it is important to prevent.

A similar lock will be necessary at the south end. This should have counter guard gates also, but for reasons a little different from those which require them at the Altamaha. They are, that during the spring tides, when they flow over the marshes, the tide rushing in through the locks will produce such a current as to injure the banks and impede very much the navigation to the south; but there is no objection to this water entering the canal as it is salt. When the current prevails from the river, the same takes place, and boats going to the north are obstructed, besides the fresh water of the river will always tend to render that of the canal more brackish. For which reasons I would prevent a current from the river, at all times, especially in the last months of summer, and any strong current from the Brunswick end.

I would recommend a sluice for supplying the canal, to be constructed at the head of Gibson's creek, near the road, which will be about 4 miles from the south end, and 8 from the north, and lead the drain of the swamp nearly all through the

Six-mile creek. At Gibson's creek is a favorable point for forming it with gates that shall open when the tide rises above the surface of the canal, and shut when the tides fall below. The current may be here regulated at will, and it will distribute itself in either direction much better than if admitted at the end.

The depth of the lock must depend upon the height of the tides. The ordinary neap tides in Brunswick harbor are about 8 feet. During spring tides it rises probably 3 feet higher, and falls feet 3 lower, making 14 feet, and adding 1 foot to the height and 1 to the depth, makes 16 feet for the depth of the lock. At the Altamaha the freshes rise 2 or 3 feet above the tide at Brunswick, and the river falls in dry seasons about 6 feet below, which gives a depth of 14 feet for the lock. The depth of the lock at the river will be therefore 14 and at Brunswick 16 feet.

Estimate of Cost.

The 1st section is 1.1524 miles from D to V of 7 feet deep below the surface of the marsh, which, on the dimensions and slopes before given, produces a cross section of 318.5 square feet; and for a mile is $= \frac{318.5 \times 5280}{27} = 62655$ cubic yards, at 15 cents per yard, makes \$9,398 25, and per 1.1524 miles is $=$ \$10.-830 00.

The 2d section is from V to E 2.0833 miles. This section may be carried along the creek, cutting off the angles and straightening the bends, and making a towing path next the bluff, and forming a dike on the sea side, as well as on the first section, to defend the canal at all times against the tide. It will cost probably \$4000 a mile, and will be preferable on account of economy, to the forming a canal along the line as surveyed—2.0833 miles at \$4000 a mile, is \$8333,20.

The 3d section is 1.1941 miles from E to F with an excavation 14 feet deep, and a tow path 12 wide, and 4 feet deep at 15 cents the cubic yard, $=$ \$24,405 50,

and for 1.1941 miles is,	-	-	-	-	\$29,142 36
a bridge at \$500,	-	-	-	-	500 00

\$29,642 36

This survey was carried along the ground which appeared

the lowest, but before it is adopted, I would recommend a trial on the dotted line, as represented on the plan, which will be shorter and make the navigation more direct and convenient.

The 4th section from F to G is 2.0312 miles, at an average depth of 12 feet, and with a path 12 wide and two deep $= \frac{660 \times 5280}{27} =$
 129066 yds. at 15 cts., is \$19359 90, and for 2.0312 miles,
 \$39,323 82
 a bridge at \$800 800 00

 \$40,123 82

The 5th section from G to S through the swamps has the mean depth of 18 feet for 4.4165 miles, which $= \frac{1116 \times 5280}{27} =$ 218,240 cubic yards, at 15 cents, is \$32,736 a mile, and 4.4165 miles,
 \$144,578 54
 a tow path to be 6 feet below the surface of the swamp,
 and 12 wide, is $\frac{12 \times 6 \times 5280}{27} =$ 14080 yards, at 15 cents, is \$2,112 a mile, and for 4.4165 miles, 9,327 64
 two accomodation bridges on this section at \$300, 600 00

 \$154,506 18

The 6th section is through the deep excavation from S to T, 1.4110 miles, and the average depth is 28 feet $= \frac{2156 \times 5280}{27} =$ 421-618 yards, at 15 cents a yard, = \$63,242 per mile, and 1.4110 miles,
 \$89,234 46
 a tow path 12 wide and 8 feet deep $= \frac{12 \times 8 \times 5280}{27} =$
 18,773 cubic yards, at 15 cents a yard, is \$2,815,
 and for 1.4110 miles, 3,971 96
 two accomodation bridges at the roads at \$1000, 2,000 00

 \$95,206 42

The 7th section is from the deep cut at T, across the swamp and rice field to the river Altamaha at J, 0.5445 miles, and with an average depth of 7 feet $= \frac{318.5 \times 2875}{27} =$ 33,914 cubic yards, at 15 cents a yard,
 \$5,087 14

The locks to be of brick or stone, but in that climate, good, hard burned bricks are very well, and will make better work than stone, as it is commonly laid. The best way of laying brick for

this purpose is, in the chamber of the lock, to build up from the bottom a pier of stone work every 10 or 12 feet, rounded and projecting a little in front of the bricks, to protect them from injury, and in the wing walls at both ends, to lay a horizontal course about 2 or 3 feet above each other, to secure the bricks from violence when the boats approach in either direction. This process is often adopted in England and Holland where stones are difficult to procure. The gate quoins and coping should also be stone.

The four walls of the locks will be about 640 feet long, on a mean height of 14 feet, and about 6 feet average thickness. A thousand of bricks will lay 40 cubic feet, and $\frac{640 \times 14 \times 6}{40} = 1344$ thousand, which, at \$15 a thousand, laid in cement, is \$20,145 for both locks. The mitre sills, coping and gate quoins to be of stone, and the gates may be of iron, nearly or quite as cheap as of wood. The floor to be of timber and plank, under the whole lock with sheet piling, and with a reversed arch of two two courses of brick in the chamber of each. These may all make \$10,000, or 15,000 for each.

Recapitulation.

The 1st Section	1.1524 miles,	from D to V,	\$10,830 00
2d	2.0833	V to E,	8,333 20
3d	1.1941	E to F,	29,642 36
4th	2.0312	F to G,	40,123 82
5th	4.4165	G to S,	154,506 18
6th	1.4110	S to T,	95,206 42
7th	0.5445	T to J,	5,087 14
		Two locks, \$15,000,	\$30,000 00
			\$373,729 12
		Contingencies, 20 per cent.,	74,745 82
			\$448,474 94
	12.8330 miles,		

In the above estimate I have added 20 per cent. for contingencies, which is much more than is usually allowed in such cases, but I have included nothing for Engineer's services. I have supposed the whole canal to have slopes of one foot and a half base, to one rise, upon the condition that the excavation was

sand, and that it would not stand upon a less slope. But in many parts the soil is compact clay, or hard earth, that most of it will stand on a much less slope, and in others, the banks may be laid with timber cut in the line of canal and hewed on two sides, so as to make firm work with sufficient ties laying back into the bank. A defence may thus be made 6 or 8 feet high, and even higher on the side opposite the path, which will save a great deal in excavation alone. Various expedients may thus be used to lessen the cost.

Some indications of quick sand appear at the edge of the upland by Messrs. Grants, and even in the margin of their fields adjoining. It appears about level with the river, but how deep is not yet ascertained. There is no difficulty in founding the locks, and piling seems unnecessary.

With great respect,

Your ob't servant,

L. BALDWIN.

TO THOMAS BUTLER KING, Esq.,

Treasurer of the Brunswick Canal

and Rail-Road Company, Georgia.

RESOLVES

Authorizing the Governor to appoint three Commissioners from the middle counties of the State, to examine the Port and Railroad of Brunswick, &c.

WHEREAS it is of the first importance to the people, that all the commercial advantages of the State should be developed and brought into action with agriculture ;—And whereas, it has long been represented that the port of Brunswick is calculated, by nature, to promote the best interest of one-third of the population of Georgia ;—And whereas, for the purpose of procuring more official *data* and information upon a subject of such (vital) importance, for the use of the Legislature :

Be it resolved, That His Excellency the Governor be, and he is hereby authorized and required to appoint three fit and proper persons for the middle counties of this State, whose duty shall be to go and examine the commercial advantages of the port of Brunswick, and the Rail-road avenue to the Altamaha, and report thereon, upon oath, whether or not it would be advisable for the State to render any aid in opening Brunswick to the interior ; and that the Governor do communicate the said report to the next Legislature, together with his views upon the subject.

Resolved further, That the aforesaid Commissioners be allowed a reasonable compensation for their time and expenses, for a trip to Brunswick and back, and that the Governor pay the same out of the contingent fund.

Agreed to December 17th, 1832.

ASBURY HULL, *Speaker*.

In SENATE, concurred in, Dec. 20th, 1832.

THOMAS STOCKS, *President*.

Attest,

I. L. HARRIS, *Secretary*.

Approved, Dec. 21st, 1832.

WILSON LUMPKIN, *Governor*.

R E P O R T .

Of JOHN G. POLHILL, HUGH LAWSON, and MOSES FORT,
Commissioners appointed to examine the Port and Rail-road
of Brunswick, &c.

MILLEDGEVILLE, 17TH JULY, 1833.

*To the Honorable Senate and House of Representatives of the
State of Georgia.*

GENTLEMEN :—The Commissioners appointed by his Excellency the Governor, in conformity with a Resolution of your body of the 17th of December, “To go and examine the commercial advantages of the Port of Brunswick and the Rail-road avenue to the Altamaha, and report thereon upon oath, whether or not it would be advisable for the State to render any aid in opening Brunswick to the interior,” proceeded early in the month of June last to execute the duties of their commission, and beg leave to submit the following Report.

The town of Brunswick is situated on the north branch or arm of Turtle river, near the centre of our sea coast, about eight miles from St. Simons light house, just above the 31st degree of north latitude, in the county of Glynn, about 13 miles from St. Simons bar. The site of the town is a beautiful bluff of close sand, the soil is perfectly dry and very eligible for a large city, being elevated from 8 to 12 feet above high water, and extending itself up and down the river for upwards of two miles, affording a delightful situation for a town of the largest extent. The beauty of its location—its splendid river, and circumjacent islands, make it altogether the handsomest site we have seen on our coast for the erection of a commercial emporium and naval depot. Though this splendid sheet of water is called Turtle river, yet, from its width, its great depth and its length, it may more properly be called an inlet or arm of the sea, which extends about 20

or 25 miles into the interior. The entrance from the ocean is between St. Simons Island on the north, and Jekyll Island on the south. This inlet between the islands is about a mile in width. The bar over which ships enter it from the ocean, is about five miles from the light-house on the south of St. Simons, and is, from all that we can learn, the best and the safest on the southern coast, with the exception perhaps of Norfolk in Virginia. Besides having had access to the report of a survey made by Lieut. Stockton, under the authority of the United States, we took soundings ourselves under the pilotage of experienced men who had been many years well acquainted with the coast, and especially with St. Simons bar. The experienced officer who made the survey alluded to, has set down the average depth of the bar at 16 feet at dead low water, and ascertained the rise of the tide to be, on an average, about 6 feet, giving 22 feet at high water; stating at the same time that he was not satisfied that he had found the best water.

The object of Congress in ordering this survey having been the establishment of a naval depot on Turtle river, it is to be presumed that the officer made this report with a view to the strict safety of our ships of war, and therefore preferred being rather under than over the depth of water. We draw this conclusion from the fact, that we found the sounding on the bar to be generally about 18 feet at as near low water as we could judge; our shallowest sounding was 17 feet, but we found more water on the same track. As we found Stockton's report very accurate in every respect, and as he had spent some time in the survey, we conclude that the water on the bar may be set down at from 16 to 17 feet at low water, and 22 to 23 at high water—striking at a medium between his survey and our soundings. The pilots and coasting captains on board the vessel we employed in this service seemed to be of opinion that there was still deeper water, as they stated that they would risk their nautical skill and reputation, in undertaking to bring the largest class of merchant ships, trading to the south, across this bar at any time of tide. An experienced pilot, whose services we had engaged, assured us that he had been intimately acquainted with this bar for about twenty-three years, and that its breadth and depth had not varied the least in that time. We judge the extent of the bar, across it, to be about a quarter of a mile, and from half to three quarters in

width, between the north and the south breakers, to be navigable for large vessels. One of the great excellencies of the bar is, that ships can pass over it in a direct course with a favorable wind, and if the wind should be ahead, she has a plenty of room for beating up. Mr. King, the intelligent and enlightened Senator of Glynn, who lives immediately on St. Simons sound, assured us, that it was by no means a rare occurrence for ships of heavy burden, entirely unacquainted with the bar, and without a pilot, to put into the sound in stress of weather for safety, and that this is done at night as well as in the day. This we consider as the most conclusive evidence of the superior excellence and perfect safety of this bar, and the protection afforded to ships that run into the sound in bad weather. Of the entire safety and excellence of this bar for the navigation of ships, drawing from 20 to 21 feet of water, we can therefore speak in terms of the highest approbation.

We account for the unvarying depth of this bar, from the great weight and depth of water which at every ebb tide sets out of Turtle river to the ocean. In coming in from sea, immediately after crossing the bar, the soundings gave us from five to ten fathoms, and this depth was retained with but little variation, till we reached within half or three quarters of a mile of Brunswick. We are informed by navigators, that the river continues unusually deep, almost to its very source. From these facts, we conclude that the bar will always retain its present depth, for there is no cause visible to us, or to be drawn by inference from the character of the river, to produce any variations in the tide or changes in the bar. In the most of our other rivers which penetrate into the mountainous country of the interior, the great inundations frequently happening carry down immense quantities of sand and alluvial soil, which are continually shifting the channel, and affecting the depth and location of the navigable waters, where they empty into the ocean. Hence it is, that there is so much danger, delay and expense attending the ascent to our other sea ports. We think we may confidently say, that the bountiful hand of nature has entirely exempted the port of Brunswick and its noble stream, and will continue in all future time to exempt them, from these difficulties and obstructions to their navigation.

When you approach within half a mile of the town, there is a

small salt marsh island which divides the river into the northern and eastern branches, the main channel running southward of this island. Between Brandy Point on this island, and Dennis's Folly on the Brunswick shore, there is an *inner* bar, upon which there is about twelve feet at low water, and, as the tide rises ten feet, it gives the same depth of water that we find on the outer bar, with this advantage, that the bottom being soft mud creates no damage to ships and may be very easily deepened if it were necessary. But no such necessity exists, as any ship that crosses the outer bar can run over this at high water, and find the best anchorage near the bluff along the whole extent of the town, in from *twenty to forty* feet water at the lowest time of tide. This we ascertained from careful soundings at low water, and after having finished the soundings for ourselves, ascertained that Stockton's report and diagrams confirmed our own survey.

From the fact that we crossed the outer bar thirteen miles from town, and beat up against a very light breeze to Brunswick in about three hours, we can state safely, that a vessel may pass in or out, from the bar to the town, with the wind from any direction, and with a fair good breeze, can reach the wharves, and get to sea from them, in less than two hours. The width of the river and the channel affords an opportunity for making long tacks, which are very desirable in beating up or down a river or strait. The vessel once in port, we consider her entirely sheltered from any gale or storm, short of the most violent hurricane or tornado, such as would be dangerous on land as well as on the water. The harbor is completely *land-locked* by a beautiful crescent or semicircle of islands stretching along the southern branch of the river, and preventing the heavy swell of the ocean from affecting the water in the harbor. In addition to this, an extensive salt marsh stretches along to the east of Brunswick, which also acts as a protection from heavy swells in the sound and the ocean. The course of the river itself turning nearly south immediately around the north point of Jekyl, with that island on the south and the Brunswick promontory on the north, acts as a protection to the port; the river making a sudden turn towards Brunswick at a point of high ground known as Dennis's Folly. All this will be more apparent to your honorable body by a reference to a map of Brunswick, its port, its environs, and the position and course of the rail-road, which we have ordered

to be carefully drafted, after a very correct model, (with a few alterations indicated by us) by the county surveyor, to be submitted as a part of this report.

In the southern and principal branch of the river is the outer harbor. In this harbor, the whole navy of our country might ride, with perfect safety, in seven fathoms water, and moor within a mile of the town.

In regard to health, we consider Brunswick superior to any sea port on the southern coast. Its high and dry bluff, the total absence of lagunes, swamps of stagnant fresh water and rice fields—its broad sheet of clear ocean water, almost as salt as the sea, and its pure sea breeze setting in regularly from the ocean, make it not only a delightful situation in summer, (as we experienced it to be,) but give the strongest assurance of the health and comfort of seamen and navigators, and of the inhabitants of the town. We found wells of water as good as could be expected in so low a latitude. Though not very cool, we believe it to be pure, and that which we found in town was better than the wells in the immediate vicinity. The extensive salt marshes are overflowed at every tide with pure salt water, and are not considered at all injurious to health. The sea breeze sweeps delightfully over them, and we found some of the most healthy families in the vicinity living immediately upon their edge.

Brunswick may be so protected by fortifications as to become entirely inaccessible to any naval force that might attempt to approach it. The inlet between St. Simons and Jekyl Island being but a mile wide, might be defended by forts on both sides, so as to cut off any naval armament that might attempt to enter it. Should an enemy's ship succeed in passing this strait, there are other points for defence, on Cedar hammock, the firm marsh on the opposite side, on Dennis's Folly, and on Brandy Point—all well calculated for the strongest and most effectual fortifications. Whether, therefore, we regard the "commercial advantages of the port of Brunswick," in reference to the water on the bar and in the river,—in reference to the short time in which a ship of large draft may sail in or out of port, against or with the wind,—in reference to the excellence of the anchorage in port, and her entire safety from storms while there,—whether we view them in reference to the health, convenience and beauty of locality; or in reference to their capability of being made impregnable to

an enemy—your Commissioners regard them as of a very superior order ; and with this opinion, formed from accurate inspection and personal examination, we feel constrained to say, that it is highly “ *advisable for the state to render aid in opening Brunswick to the interior ;*” and this aid ought, for the benefit of the state and its inhabitants, to be rendered *efficiently and promptly*.

Of the “rail-road avenue to the Altamaha,” we can speak in terms equally unequivocal and equally favorable. The distance of this avenue is but eleven miles and a few chains from river to river. From the Altamaha swamp to the bluff at Brunswick, its location is as fine and beautiful for such an improvement as can be found in any part of the Union. Its course is over a campaign country, so level that its inequalities are scarcely perceptible to the naked eye. It lies over a pine barren flat, of close, compact, sandy foundation from river to river, and when once completed and settled, the Commissioners are of opinion that it will be as firm and hard, and as well adapted to rail-road operations, and as little liable to injury from any causes as could be selected in the state. There is but one curve in the whole route, and that very gradual, to avoid the point of a bay swamp, which would have increased the labor and expense to have run through it. From this curve, a shade tree of ordinary height, on the bluff at Brunswick, is distinctly visible to the naked eye, along the avenue, at the distance of eight miles or upwards ; and it will require but little additional labor and skill to render the foundation, now almost completed, a dead level the entire distance from the Altamaha to Brunswick. This foundation has been thrown up by the superintendent, with a becoming regard to the public service, and in a style which does credit to his skill and industry. As far as completed, it is a road of the first order for horses and carriages, and is daily becoming firmer and better from use. About the middle of June, when we examined it, the foundation was thrown up about two thirds of the way, the avenue cut the whole distance, and the superintendent expected to complete it in two or three months. Nothing will then remain to be done, but to prepare it for the reception of the rails. In the immediate vicinity of the entire route, there is an abundance of the best cypress and live oak for the wood work. The heaviest job in its completion will be the junction of the rail-road with the Altamaha, though this is by no means a serious one. It

may be united either with Rail-road creek, or with the river itself, or with Six-mile creek ; the latter we think the most eligible, as this creek is wide and deep enough for up country boats, and enters the river in a deep bight, which renders it very convenient for boats to enter. In either route, the distance will be rather over half a mile, and may be either excavated to the fine bluff by a canal and basin, or the road be extended through the swamp, which is there a rice field in cultivation. Before it enters the ocean, the Altamaha divides itself into four branches ; on the southern branch, which from examination and information we found to be the deepest and best for navigating boats, the rail-road will end.

As to the cost of this work, we have only such data as will enable us to approximate a reasonable estimate. We have addressed the Agent of the Charleston rail-road, for accurate information from experience, but not having received an answer, we deem it our duty not to delay our report, as these matters are within the reach of every member of your body ; and the distance is so small as not to make the cost a matter of very great moment. We understand that the first estimate of the Charleston rail-road was \$5,000 per mile, and that the actual cost has been found to fall short of the estimate. As the location of the route for the Brunswick rail-road is so favorable, and as the foundation will soon be completed by the public hands, we should think it would be a safe calculation to set down the utmost cost at \$5,000 per mile, including labor already bestowed by the hands, or that it could not exceed from \$50,000 to \$70,000, including the cost of all the labor, materials, engine, cars and warehouses. We think this a high limit for the cost, but that it would be a trifling sum compared with the immense advantages that would result to the state from the completion of the work, even should the state assume the entire expense ; but this will not be necessary, as individuals have already subscribed for stock.

The distance from the Altamaha to Brunswick, and vice versa, may be performed with ease by the engine and loaded cars in one hour. By a proper construction of the ends of the route, a boat load of cotton might be soon placed into the cars, and be taken to Brunswick in one trip, while other cars might be ready to return immediately with freight of merchandize for the boat. In this way but little delay would be occasioned. We consider this

process much cheaper and more expeditious than loading a boat by drays from one of our warehouses at any distance from the boat landing. As by the charter not more than *twenty-five* per cent. can be demanded for any one year upon the amount of capital invested, should the project succeed, the cost of transportation would not probably exceed from $12\frac{1}{2}$ to 25 cents per bale upon cotton, and so in proportion for goods—for we believe that all the cotton-growing country in reach of the Oconee, Ocmulgee and Altamaha, would go to Brunswick. We are therefore of opinion, that the great advantages to be derived from this work, by the extensive region of fertile territory, and the dense, industrious and growing population that trade and will be induced to trade upon these rivers, render it advisable for the state to give prompt and efficient aid in completing this rail-road, so as to connect Brunswick with the interior of the state.

Perhaps the letter of our duty is discharged in giving these facts, and the opinions founded upon them. But we feel, in common with our fellow-citizens, so strongly the great importance of building upon our sea coast a commercial town, for the sale and exportation of our products, and the importation of those supplies of merchandize yearly consumed among us, and now essential to our prosperity and comfort, that we believe a more extensive view of this important subject to fall within the range of our official functions. Indeed, we should consider our commission but half accomplished, did we fail, at this momentous crisis of our commercial relations, to spread before your body those powerful considerations that form the very basis of the opinions we have already submitted. Our state is second to but one or two of her sister states, in her internal wealth and resources. Possessing almost every variety of soil and climate from the mountains to the sea coast, with corresponding varieties of mineral, vegetable and agricultural wealth, she may vie in these respects with the most favored states, of the most highly favored nation upon earth. All that our people have to do, to place us by the side of Ohio, Pennsylvania and New York in internal improvements, is to arouse from our torpor, and direct our energies aright. Your Commissioners can say, upon the solemn appeal they have made, in submitting this report, that they do not believe that there is in the United States, so small a work of internal improvement as the contemplated rail-road, fraught with consequen-

ces so important and so beneficial to the same extent of country and the same amount of active and industrious population.

The first and most important inquiry for the people of Georgia is : Have we within our own State, an *outlet* for our immensely valuable productions, and an *inlet* for the foreign necessaries and luxuries of life, that may be made to vie with the large sea ports in other States ? that may enable us to command the *highest prices* for the *former*, and obtain the *latter* at the *cheapest* rate to the planter and the farmer ? Your Commissioners do not hesitate to answer this question for the people of Georgia in the affirmative. In the town of Brunswick, properly connected with the interior, we could have a commercial emporium that might rival any on the Atlantic coast, south of Baltimore. The only obstacle now existing to the connexion of this noble port with the heart of Georgia, and with the great wealth and the densest population of the State, is the narrow slip of land, of little over *eleven* miles, between Turtle river and the Altamaha ; and this obstacle, we have already stated, can, in our opinion, be overcome by the trifling sum of from \$50,000 to \$70,000. But suppose it should cost \$100,000, the expenditure is a trifle in comparison with the immense advantages it would yield, not only to the treasury of the State, but to the great body of the people.

The next question is : *How is the importance of opening the Port of Brunswick, to be demonstrated ?* The answer is ready, and the various considerations connected with it, of the most momentous importance to the prosperity and independence of the State. But look at the map of your State, and it will be seen by a single glance of the eye, that our noble rivers the Oconee, the Ocmulgee and the Altamaha, penetrate the very heart of the State from the Ocean to the Mountains. On these rivers and their tributaries, and within the range of their trade and influence, will be seen nearly half the number of our counties, containing the richest soil, and yielding the most extensive supplies of cotton, corn, sugar, flour, rice, stock and lumber to be found in any equal extent of the Southern States ; containing the largest and most growing population, with a rich and new country every day gaining in resources. The trade that goes down these rivers would be derived from an extent of country nearly three hundred miles in length, and from fifty to one hundred miles in breadth. To all these people and this extensive district, the benefits of Bruns-

wick would be brought, should it be fostered as it might be. That we have the facilities for the immediate creation of such a market, yet that we *have not* such a market, must be matter of the deepest regret and most humbling reflection to your honorable body, and to our people at large. That the immense product of our soil yearly descending our rivers, and transported in wagons, should pass by the wharves of Darien and Savannah to go to Charleston, in another State, at a heavy expense, and our supplies returned by the same circuitous and expensive route, must be humbling to the State pride and the patriotism of every true hearted Georgian ; while in the opinion of your Commissioners, the amount of wealth that would be retained at home, would in one year compensate us for the whole expense of setting this road in operation, and opening the Port of Brunswick to the interior. Georgia at this moment presents the spectacle of a robust man, rich in the vital fluid, submitting to have the veins of both arms opened, and bleeding to death ; while, by the exertion of his own strength and energy, he might save himself from destruction. Savannah we fear is prostrated by the completion of the Charleston rail-road to Augusta. Our produce already goes by her wharves, because the farmer and the merchant can get better bargains in a foreign market. All the produce on that noble river, which goes to Augusta, is eventually destined to Charleston. On the other side of our State, the rich country along the Chattahoochee is draining its products into Florida. While we are thus losing the advantages of our trade on both sides of the State, the *body* of the State is perishing, or finding a scanty subsistence abroad, for the want of that commercial nourishment at home which the resources of the State and the capital of wealthy individuals in it are amply sufficient to supply. Under this state of things, for the want of our manly and vigorous exertion, we shall soon become like North Carolina, tributary to our sister states.

Our system of internal improvement has been radically defective. Instead of directing our operations to one important point on the sea coast, we have been working from village to village, and carrying our improvements *across* the State ; thus giving facilities to the passage of our produce into other markets. By some central operation, we should approximate the ship to the plough, and bring the mountains to the ocean. We have the

means of avoiding this suicidal policy, by a very trifling improvement. The navigation of the three rivers already mentioned, is open to the heart of the State, to Hawkinsville, Milledgeville, and Macon ; and these towns draw the trade from near the mountains. Connect the navigation of these rivers with Brunswick, where the ship can at all seasons approach, and the merchant and planter of the interior can find a good market for sale and purchase, and our failing commerce would in a great measure revive and begin to flourish. It is by such means that South Carolina has fostered Charleston, till having absorbed the commerce of her whole State, she is now draining Georgia of hers. Let us learn a lesson from her example. From seventy to eighty thousand bales of cotton annually descend the Altamaha, besides other productions. These will increase as our fertile lands are opened, and our population becomes more numerous ; and our cotton, corn, wheat, lumber, bacon, and stock of various kinds, will seek the best and nearest market on our coast, if such an one is to be found. In return for these products, very extensive supplies are, and will continue to be brought up these rivers. The greater part of these products are now sent to Charleston and New York, and our goods purchased in the same markets. The advantages of all these transactions might, in the opinion of the Commissioners, be saved to Georgia, by a sea port of our own—and we are confident that Brunswick holds out the strongest inducements for such a saving of our resources. Our capital might be kept at home—our merchants might annually save large amounts of freights, commissions, exchange, insurance, storage, travelling expenses, and *time*—a very important item in the account current of every man of business. The merchants being enabled to save this expenditure, could afford to give better prices for produce, and sell their goods at cheaper rates, and on more accommodating terms ; while the farmer and planter would be the great gainers in the end. It would keep wealth at home, diffuse its comforts more generally, and increase the revenues of our treasury. The merchant could obtain supplies of articles just when there is a demand for them, and know when he could calculate on receiving them. He could bring his goods into market much sooner after he had made his purchase, and of course be sooner able to pay for them, and better able to afford accommodation to

his customers. The price of our lands would be increased, and all our productions find a more ready market.

Such are the facilities and advantages that might, in the opinion of the Commissioners, be afforded to the people of Georgia, by opening the Port of Brunswick to the interior, by connecting it with the Altamaha. This would in time, induce further and more extensive improvements. Trade might, in time be brought from the isthmus of Florida, from Tennessee, Kentucky and Ohio—for the northern roads and canals are chained by the ice in winter, and the dangers of navigating the Gulf of Mexico, render an eligible and accessible port on the Atlantic, far preferable to any on the southern coast of Florida. There is no reason why goods should not be bought as cheap at Brunswick, and produce command as high a price as at Charleston or New Orleans. The ship can as readily come to Brunswick from Liverpool, Bordeaux, and the East and West Indies, as to New York and Charleston. Why should the freight be higher, or the goods dearer? There would be no delay in running in, and putting out to sea, and no heavy river charges, and no loss of time to increase the price of merchandize, sold by the importer and the wholesale dealer.

Open the Port of Brunswick to the interior, and the enterprize of seamen will soon bring the ships there: and your cotton, your grain, your sugar, and every other article of home production will go there, and the merchant of large capital will soon find it to his interest to invest it in Brunswick. The commerce of these rivers, and the trade of the whole interior of Georgia, belong, *by nature*, to some sea-port on our coast. Let the most eligible, and the best be selected. Let no sectional jealousy impede the enterprize. Such a sea-port, we think, Brunswick might be made, being decidedly of opinion, that it affords advantages for a large commercial city, if not superior, at least equal, in *every respect*, to any on the southern Atlantic coast of the United States, and decidedly superior to any in Georgia.

Georgia has not a moment to lose in redeeming her own commercial character—in saving to her treasury—to her merchants—to the whole agricultural, professional, and mechanical industry of the State, the great blessings to be derived from her ample resources. Patriotism, state pride, pecuniary interest, all de-

mand, that the great wealth of one of the finest portions of the world, should be so marshalled as to increase our own domestic prosperity and happiness, by cultivating the means which the bountiful hand of indulgent Providence has placed so entirely within our reach and under our control.

All which is respectfully submitted by the Commissioners.

JOHN G. POLHILL,
HUGH LAWSON,
MOSES FORT.

GEORGIA, BALDWIN COUNTY.

From the facts and considerations stated in the foregoing Report together with the information derived from sources the most authentic, within their reach, John G. Polhill, Hugh Lawson, and Moses Fort, on oath say, that they are decidedly of opinion, that it is advisable for the State of Georgia to render immediate aid in opening the Port of Brunswick to the interior of the State.

JOHN G. POLHILL,
HUGH LAWSON,
MOSES FORT.

Sworn, affirmed to, and subscribed before me, this 18th July,
1833.

B. P. STUBBS, J. P.

A N A C T

To amend and consolidate the Acts granting chartered rights and privileges to William B. Davis, Urbanus Dart and their associates, to establish a Company to construct a Canal or Rail-road, or both, from the Altamaha to Turtle river, in Glynn county, or to Brunswick, passed 20th December, 1826, and the 14th of December, 1830.

Be it enacted by the Senate and House of Representatives of the State of Georgia in General Assembly met, and it is hereby enacted by the authority of the same, That Thomas Butler King, Stephen C. King and William W. Hazard, and their associates and successors, be, and they are hereby incorporated, with vested powers, rights and privileges as a body politic, by the name and style of the "Brunswick Canal and Rail-road Company."

SEC. 2. *And be it further enacted, That it shall and may be lawful for the said company to create a stock to the amount of two hundred thousand dollars, to be increased, if necessary, one third, for the purpose of carrying the said canal and rail-road into full effect ; that is to say, they are authorized and empowered to cause books of subscription to be opened at such places and in such manner as they may deem most conducive to the obtainment of the stock required.*

SEC. 3. *And be it further enacted, That the capital stock of the said company shall consist of two thousand shares, of one hundred dollars each,—but the number of shares may be increased one third ; and that upon subscribing to the aforesaid stock the subscribers shall pay the sum of five dollars upon each share.*

SECT. 4. *And be it further enacted, That all amounts paid in by the stockholders shall be deposited in one of the incorporated banks in the city of Savannah ; and before the State or the officers of the Central Bank of Georgia shall pay any amount on the stock authorized to be subscribed for by any existing law of*

this State, or any law which may hereafter be passed, the certificate of the cashier of the bank in which the same may be deposited shall be produced to them, that the same amount on each share has been paid and deposited in said bank by the individual stockholders as is demanded of the State or Central Bank.

SEC. 5. *And be it further enacted,* That the individual property of the said company shall stand pledged to the State for the amount which shall be subscribed and paid in by the State, (should the State authorize any subscription,) and that all amounts subscribed and paid in by the State and said stockholders shall be applied to the objects contemplated by this act: *Provided,* that nothing in this section shall be so construed as to hold the individual property of any stockholder or director liable for the application of any part of said fund which was or may be paid in at a time that he was not a stockholder or director.

SEC. 6. *And be it further enacted,* That the said company, by the name and style aforesaid, shall be capable in law as a body politic, and as such may sue and be sued, answer and be answered unto, defend and be defended, in all courts of the State of Georgia, or any place whatsoever, having competent jurisdiction over any matter, dispute or transaction touching the business affairs or well being of the said company; and that the stockholders may appoint or elect five members annually, who shall constitute and form a Board under the name and style of the "President and Directors of the Brunswick Canal and Rail-road Company," who shall be competent to make all necessary by-laws, rules and regulations they may deem most conducive to the good order, faith and harmonious government of the said company; *Provided,* such by-laws, rules and regulations be not repugnant to the Constitution and laws of this State or of the United States.

SEC. 7. *And be it further enacted,* That the aforesaid company shall be allowed seven years, from and after the twentieth day of December, eighteen hundred and thirty-seven, in addition to the time allowed by the above last recited act, to complete their canal or rail-road, or both; and the said company shall be entitled, and they are hereby empowered, to demand and collect, by way of freight or toll, on all goods, wares, merchandize and productions of the country, or upon all rafts of lumber, logs or ranging timber, steam or other boats, and cars or vehicles of any description, conveyed through said canal, or over and upon said

rail-road, such rates of toll or freight as the Board of Directors of the said company may find necessary to adopt from time to time in their regulations of toll: *Provided*, that during any twelve months together the net amount shall not exceed twenty-five per cent. per annum upon the aggregate amount of money they shall have actually expended in making, constructing and keeping in good repair the said canal or rail-road, or both; to ascertain which, the aforesaid Board shall cause two accurate sets of books to be kept, one for the canal, and the other for the rail-road, showing the amount of stock paid in for each, and also all the expenditures and cost of each, together with all the repairs and income of tolls and freight of each; which books shall always be liable to the inspection of a committee appointed by the Legislature, to the end that the said company shall not abuse the remunerating privilege of this act.

SEC. 8. *And be it further enacted*, That the Board of Directors of the aforesaid company shall have power to select and take, or receive as donation, such strip or strips of land from the Altamaha to Turtle river, or their branches, and of such width and shape as they may deem necessary for the construction, accommodation, and protection of their canal or rail-road, or both; and in case of disagreement between the owner or owners and the Board of Directors of the aforesaid company, in regard to the damages or price of the necessary strip or strips of land required for the purposes aforesaid, it may and shall be lawful for the company to appoint two competent and disinterested freeholders, and the owner or owners of such land shall appoint two competent and disinterested freeholders, all of whom shall be sworn by a magistrate, or one of the Justices of the Inferior Court, to do equal justice between the parties; and they shall then proceed upon the premises as a committee of arbitration and appraisement; and they shall make their award of valuation of damages in writing, to be approved and signed by them, or a majority of them, which amount the said company shall pay unto the owner or owners of such strip or strips of land in lawful money, and the fee simple right thereof shall vest in the said company forever; and the award shall be recorded in the office of the clerk of the Superior and Inferior Courts of Glynn county, in the same manner as deeds.

In case the committee aforesaid cannot agree upon the amount

of damage and valuation, they shall choose a fifth man, who shall be sworn as aforesaid, and be added to said committee ; and in case either party be dissatisfied with the award of said committee of arbitration, they shall have the right of appeal to a special jury, to be tried at the term of the Superior Court of Glynn county next thereafter held in said county ; and the decision, in which way soever finally thus made by the said jury, shall vest in the Brunswick Canal and Rail-road Company the fee-simple of the strip or strips of land in question ; and in the other party a judgment for the value thereof thus ascertained and determined.

SEC. 9. *And be it further enacted,* That no canal or rail-road shall be permitted hereafter to be cut or constructed between the Altamaha and Turtle rivers, or their branches, and Brunswick, within twenty miles of the route or routes the aforesaid company may select, without their consent.

SEC. 10. *And be it further enacted,* That the said company shall build good substantial bridges across their canal or rail-road wherever they may cross a public road or way ; and the stock of the aforesaid company shall be exempt from all taxes, duties, and impositions whatever, unless it be such a tax and no more as is now imposed on bank stock in this State.

SEC. 11. *And be it further enacted,* That no stockholder of the said company shall be eligible as a director unless he shall hold at least ten shares of the stock in his own right, or as administrator, executor, or guardian : the Board shall be competent at all times to call an extra meeting of the stockholders, when by them deemed necessary ; and the Directors shall choose one of their own body as President, who, together with the Director, shall be entitled to and receive such compensation for their services as may be allowed by the owners and lawful representatives of a majority of shares of the capital stock of the institution, to be determined by ballot or otherwise at the annual regular meeting of the stockholders ; and in all cases the stockholders shall be allowed to vote either in person or by proxy,—that is to say, any stockholder who may be absent at any meeting as aforesaid may authorize, by power of attorney under seal, any other person to vote for him, her or them.

SEC. 12. *And be it further enacted,* That the number of votes of each stockholder, administrator, executor, or guardian shall be according to the number of shares he, she, or they shall

hold—that is to say, each share to be entitled to one vote. The Board to be competent to appoint and fix the salaries of a Secretary and Treasurer, and as many clerks, agents, engineers, and laborers as they may deem necessary and expedient to despatch the business of the said company.

SEC. 13. *And be it further enacted,* That the Board of Directors shall have power to call in such ratio, from time to time, of the subscription of stock upon the books of said company, by way of instalments, as they may deem necessary for the prompt progress and execution of the work ; first giving notice to the stockholders respectively sixty days previous to the time required for the payment of such instalment ; and in case any stockholder should refuse to pay his, her, or their instalments, when called on in manner aforesaid, it shall be lawful for the Board to declare such shares of stock forfeited to the use and benefit of the company ; but the defaulting party shall have the right of appeal to the stockholders at their next regular meeting thereafter, and by the consent of the owners and representatives of two-thirds of the capital stock of the institution the previous instalments which may have been paid upon the shares so forfeited may be refunded, and the said shares offered by the Board for resubscription, as if the same had never been subscribed for.

SEC. 14. *And be it further enacted,* That if any person or persons shall wilfully and maliciously damage, injure or obstruct, or in any manner destroy, or shall wilfully and maliciously cause, or aid and assist, or counsel or advise, any other person or persons to destroy, or in any manner to hurt, damage, injure or obstruct the aforesaid canal or rail-road, or any bridge or other appurtenance connected therewith, or any vehicle, edifice, right or privilege granted by this act, and constructed for use under the authority thereof, such person or persons so offending shall be liable to be indicted, and, on conviction thereof, shall be imprisoned at hard labor in the penitentiary, at the discretion of the court, not less than four years, and shall be further liable to pay all damage and expenses of rebuilding or repairing the same, the one-half of which shall be paid by the company to the informer.

SEC. 15. *And be it further enacted,* That the shares of stock of the aforesaid Brunswick Canal and Rail-road Company shall be taken, considered and held in law as real estate, and may

be sold and transferred upon the books of the company by scrip, or assigned and bequeathed by the proprietors thereof as such.

SEC. 16. *And be it further enacted,* That any subscriber of stock in the aforesaid company shall have the right to subscribe for shares in the rail-road or the canal separately and distinctly, or conjointly in both, as he, she or they may choose at the time of subscribing; and their certificates and scrips of stock shall be issued and entered upon the books of the company, and kept accordingly; and the dividends shall be declared by the Board of Directors upon the nett income of the rail-road and the canal also separately and distinctly from the two sets of books, as directed by the fifth section of this act.

SEC. 17. *And be it further enacted,* That, with the consent and petition of the grantees, William B. Davis, Urbanus Dart, and their associates, the two recited acts in the preamble of this act be, and the same are hereby repealed.

THOMAS GLASCOCK,
Speaker of the House of Representatives.

JACOB WOOD,
President of the Senate.

ASSENTED TO, 20TH DEC., 1834.

WILSON LUMPKIN, *Governor.*

A N A C T

To aid and assist the opening the Port of Brunswick to the central and interior of Georgia.

WHEREAS, It is due to the people of the middle and western counties of this State, that the Legislature should grant equal aid and encouragement to their agricultural and commercial prosperity—

Be it enacted by the Senate and House of Representatives of the State of Georgia, in General assembly met, and it is hereby enacted by the authority of the same, That the President of the Central Bank be, and he is hereby authorized and required immediately after the passage of this act, to subscribe, in the name of the said Central Bank, on account and for the benefit of the State, for five hundred shares, at one hundred dollars each, of the capital stock of the Brunswick Canal and Rail-road Company.

SEC. 2. *And be it further enacted,* That the President and Directors of the Central Bank be, and they are hereby authorized and required to pay the instalments on the aforesaid five hundred shares of stock, out of any moneys in the said bank on the part of the State, as they may be called for on the part of the individual stockholders of the aforesaid Canal and rail-road Company,—all laws or parts of laws in relation to the said Central Bank to the contrary notwithstanding : *Provided,* that the Commissioners or Board of Directors of the said Canal and Rail-road Company shall exhibit a certificâte that the individual stockholders, on their part, shall have first paid their instalments when called for, agreeable to the terms of the act of incorporation.

SEC. 3. *And be it further enacted,* That John Rawles and H. H. Tarver be, and they are hereby appointed Directors, and empowered to represent the above interest of the State at the

Board of Directors of the aforesaid company, and to hold their office for three years from and after the passage of this act ; and that thereafter two Directors shall be elected annually by the General Assembly, in joint ballot, to represent the State as aforesaid.

THOMAS GLASCOCK,
Speaker of the House of Representatives.

JACOB WOOD,
President of the Senate.

ASSENTED TO, 20TH DEC., 1834.

WILSON LUMPKIN, *Governor.*

NAVY YARD SOUTH OF CHESAPEAKE BAY.

LETTER FROM THE SECRETARY OF THE NAVY TRANSMITTING

A copy of the Report of the Commissioners charged with the examination of Harbors south of Chesapeake Bay, with a view to the establishment of a Navy Yard.

NAVY DEPARTMENT, FEBRUARY 1, 1837.

SIR :—In compliance with a Resolution of the House of Representatives of the 28th ultimo, I have the honor to transmit, herewith, a copy of the Report of the Commissioners charged with the examination of Ports and Harbors south of the Chesapeake Bay, with a view to their comparative advantages for the establishment of a Navy Yard.

I am, with great respect, your obedient servant,

M. DICKERSON,

Secretary of the Navy.

To the Honorable the SPEAKER
of the House of Representatives.

The undersigned Commissioners under a Resolution of the Senate of the United States, "To survey and examine Ports south of the Chesapeake, with a view to their comparative facilities and advantages for the establishment of a Navy Yard," have the honor to report :

That they have given to the subject all the reflection which its national importance demands ; have personally inspected the several ports whose draught of water gave claim to public attention ; and have maturely weighed their relative pretensions to the favorable consideration of the Government.

The undersigned arriving at a preference for a particular port, have discarded all prejudice of a local or sectional nature and have solely been influenced by a strict regard of the public good. As a basis for their decision, they have looked for fundamental principles, and have been guided by the great desiderata in a naval

establishment on shore. They may be classed under the following heads, and obtain value in the order in which they stand, viz :

1. Sufficient depth of water to permit free access, at any state of tide, for the heaviest class of ships of war.
2. Defence by land and by water.
3. Resources and supplies of every kind for the speedy equipment of fleets.
4. Salubrity at every season of the year.
5. Ample supply of fresh water.
6. Facility of wharfing and docking.

As no port south of the Chesapeake possesses all these advantages, (and, indeed, there is but one in the whole Union which does possess them,) it has become the duty of the undersigned, by the resolution of the Senate, to designate that one which seemed to them to have the greater number of approximating qualifications.

Charleston, S. C.

The port of Charleston, being the first in magnitude and also first in the order of inspection, claimed their primary attention. This harbor has been repeatedly surveyed, and recently by competent officers of the United States army. The chart projected by them has been tested by the undersigned, and the result proved its essential accuracy ; from which, together with a naval survey in 1825, and valuable information obtained from experienced pilots and other sources, it would seem to be established that the mouth of the harbor is the main obstacle to its present usefulness as a naval station ; for, being deficient in depth of water, no vessels larger than sloops of war can pass, and they only at high tides, and with a smooth sea.

This bar, which is of sand, forms an almost continuous chain of breakers running nearly parallel with the coast, for nine or ten miles. The tides and freshets of the river have broken through this barrier, and four channels have been formed for the discharge of the waters. Three of them are now incapable of being navigated by large vessels, and the fourth, the main channel, is liable to great changes, from heavy gales. Within twenty years it has been entirely removed from its former site. It is displaced by more than half a mile ; and where formerly passed in security ships of 17 and 18 feet draught of water, now rolls a dangerous breaker. The undersigned, in contemplating the possible obliteration of the present ship channel by the deposite of some future gale, do not regard it as a lasting injury to the port ; for they believe that a new, more convenient, and, perhaps, deeper channel may be effected, by obstructions in the tide-way, which shall guide to a given point on the bar the vast and swift column of water composing its freshets and ebb. Such is observed to

be the action presented by the fortification now being erected in the river, which has already, though very incomplete and not very extensive, caused in the opinion of pilots, the overfall of the channel to be considerably deepened. The effect of so much power, directed on such an easily moved substance of this bar, when aided by dredging machines, cannot be questioned. The noble harbor within, sufficient in every respect to accommodate a large fleet and of the heaviest draught, the great seat of Southern wealth and Southern commerce, all seem to bespeak for it a generous expenditure of the national treasure. But these speculations, whether true or otherwise, belong to the engineer, whose knowledge of currents and their effects will have due weight in such a contingency. Charleston is now considered accessible with a draught of $17\frac{1}{2}$ feet, but with the aid of steam, a good tide, and smooth water, a ship drawing $18\frac{1}{2}$ feet may be safely conducted. The average rise of the tide is 6 feet, which is increased or diminished by the violence and duration of the seaward or landward winds, and this rise and exterior influence is applicable to all the harbors of the Carolinas and Georgia. There can be no difficulty in obtaining eligible sites for a navy yard, whenever it may be resolved to establish one in Charleston.

Beaufort, S. C.

This harbor was surveyed by Lieutenant Stockton in 1828. His report has been tested by soundings and observation, and its general correctness ascertained. The arm of the sea which enters between Hunting and Hilton's islands is known as Port Royal sound. It is sufficiently deep and capacious to accommodate the largest fleets, but, like all the ports south of the Chesapeake, labors under the disadvantages of having a bar placed at its entrance. From the bar to Beaufort the distance is about 18 miles. A better position for a navy yard can be found in the vicinity of Beaufort than at the town. The bar has an average depth of 17 feet, which permits, with a full tide, the passage of a frigate. Beaufort is placed in the line of internal navigation between Charleston and Savannah, and hence, if blockaded by an enemy by sea, has a safe and speedy transport of supplies. The absence of a fresh water river and marshes seems to assure as great a degree of health as in any of the Southern harbors.

Savannah, Georgia.

The bar at the north of the Savannah river is the deepest and most accessible of any on the Southern coast. The average depth is 19 feet at low water; and hence, with a full tide, a frig-

ate may pass in safety. But although thus favored at the entrance, these advantages are soon lost in ascending the river. The first point of effectual defence, salubrity, and locality of a navy yard, is Cockspar island, situated within five miles of the bar, and two miles within the river; but a frigate cannot reach this point, by reason of an extensive sand-bank half a mile below it, on which but 14 feet, at low water, can be obtained. In ascending still farther up, the shoals are frequent, and of less draught of water; and the river at first brackish, becomes fresh; and hence, in so low a latitude, and surrounded by marshes, is unhealthy in summer.

Darien, Georgia.

Merchant ships of heavy burden can enter the port of Darien; but it is unsuitable to naval purposes, by reason of its unfavorable locality, being surrounded by swamps and morasses and on account of its being placed on a fresh water river, which, in so low a latitude, must cause unhealthiness. The port of Darien can have no greater pretension than the ingress of a sloop of war; and, hence, cannot compete with the deeper harbor in the same State.

Brunswick, Georgia.

The waters forming the port of Brunswick are generally designated as Turtle river; but, properly speaking, it is an arm of the sea, which, entering between the islands of Jekyl and St. Simon's, flows into the interior for upwards of 20 miles, forming a wide, deep and swift column. As no fresh water river empties into this basin, it is always salt, free from freshets and alluvial deposits; and hence, from an early period of time, no change whatever has been perceptible in the soundings or general character of the port. From the large islands of St. Simon's and Jekyl, (which are distant from each other about one mile,) and running seaward for about six miles, are found jutting two extensive sand-pits. At low water portions of them are laid bare; and unless the sea is unusually smooth, they form, in nearly their whole extent, lines of continuous breakers. Between these lines of surf lies the channel, which in 3-4ths of a mile wide in the spit-heads, and which enlarges to a mile soon after entering. Between the spit-heads we found 22 feet at low water. Proceeding towards the land, by traversing the whole breadth of the channel, the soundings gradually shoaled to 18 feet, which is the least draught of water found in the channel-way. About one mile within the spit-heads, is the "middle ground," which is a bank of sand resting on the southern or Jekyl spit, and jutting

into the channel-way some 200 fathoms ; but leaving a sufficiently wide 18 feet passage towards the St. Simon's or northern spit, for a large ship even with an adverse wind ; the middle ground has but 14 feet at low water. Entering still further up, the soundings gradually grow deeper, so that when between the islands it has obtained a depth of 12 fathoms. The vessel is now in safety. On the right of St. Simon's sound, which, together with similar water courses still further north, affords a safe internal navigation to steamboats and craft to Savannah and Charleston. To the left is the arm of the sea, (called the Turtle river,) from which, by Jekyl and Cumberland sounds, is a southern internal navigation as far as St. Mary's. The course from sea to the mouth of the harbor is nearly west north-west, keeping the northern breakers on board ; the channel then runs south a d south-westerly, and, making a short turn to the north-west, we arrive at the town of Brunswick—insignificant at present, but destined, we believe, through her rail-road and canal, to future importance. A shoal of soft mud, close to and below the town, on which but 12 feet can be found at low water, seems to indicate some other point in the harbor as a more suitable position for a navy yard. We believe Bythe's island, on the opposite shore, to be the most eligible. It contains some hundred acres, covered with timber, and every way convenient for wharves, docks, &c., and for a nursery of the live oak ; it is distant from Brunswick two miles, and has bold water to within a few fathoms of the shore. There is no doubt that the port may be strongly fortified. The islands of St. Simon's and Jekyl present suitable positions for extensive works ; and a sand shoal two miles within and in the centre of the river (dry at low water,) affords a third basis for powerful defence, and steam batteries will complete the whole. The average rise of the tide is six feet, which gives, at high water, on the bar, 24 feet ; sufficient for a frigate. It is deemed healthy ; and the absence of a fresh water river, or fresh water swamps, seem to justify the opinion.

St. Mary's, Georgia.

The harbor of St. Mary's, on the south frontier of Georgia, has a bar very similar to that of Charleston in its general features and depth of water ; it is subject to the same vicissitudes from great gales. In 20 years the ship channel has been forced to the southward ; and the site of the passage, where formerly passed the largest sloop of war in the navy, is now filled up to eight feet. Under the most favorable circumstances of wind and tide, the present ship channel may be stated at 14 feet at low water ; the average rise of the tide is six feet. The localities are unfavorable for the establishment of a navy yard ; and, re-

garding the harbor in every light, we feel compelled to express an opinion adversely of St. Mary's as a port suitable for naval purposes.

Key West, and the Tortugas.

Circumstances beyond our control, and known to the Department, have prevented an extension of our survey to Key West and the Tortugas ; but our knowledge of those places, obtained in the course of service, justifies us in pronouncing an opinion adverse to them for the establishment of a navy yard.

Key West is but a small island, distant from the main ; and the Tortugas, a cluster of islands still smaller. The one can have but limited resources ; the other, none whatever, not even fresh water. Being *islands* and incapable of succor in the presence of a superior force, they must eventually fall, when cut off from supplies. The more valuable either might become by the establishment of a navy yard, the more it would invite attack from a powerful enemy. Their position is no doubt commanding, but we deem them not worthy of greater value, when *fortified* than to afford a rendezvous to our cruisers, and to give shelter and protection to them when pressed by a pursuing enemy.

The Comparison.

The undersigned, in obedience to a Resolution of the Senate, have arrived at the point where they are directed to report on "the comparative advantages and facilities of ports south of the Chesapeake, for the establishment of a navy yard." Depth of water and easy access being objects of the first consideration, they are of opinion that the ports of Charleston, Darien, and St. Mary's, being deficient in depth of water to permit the entrance of a larger ship than a sloop of war, are unfit to compete with the frigate harbors of Beaufort, Savannah and Brunswick.

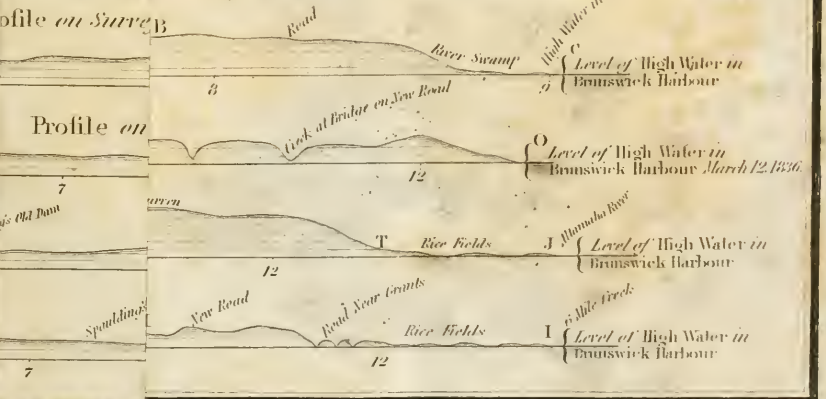
The preference is narrowed down to one of these ; and having duly weighed their relative pretensions, we have no hesitation in preferring Brunswick. Beaufort must yield to her in the essential points of depth of water, easy access, and capability of defence. Savannah must give way, for her easier access and greater depth of water on the bar cannot be carried up the river to a site safe from the sea and an enemy, and applicable to the establishment of a navy yard.

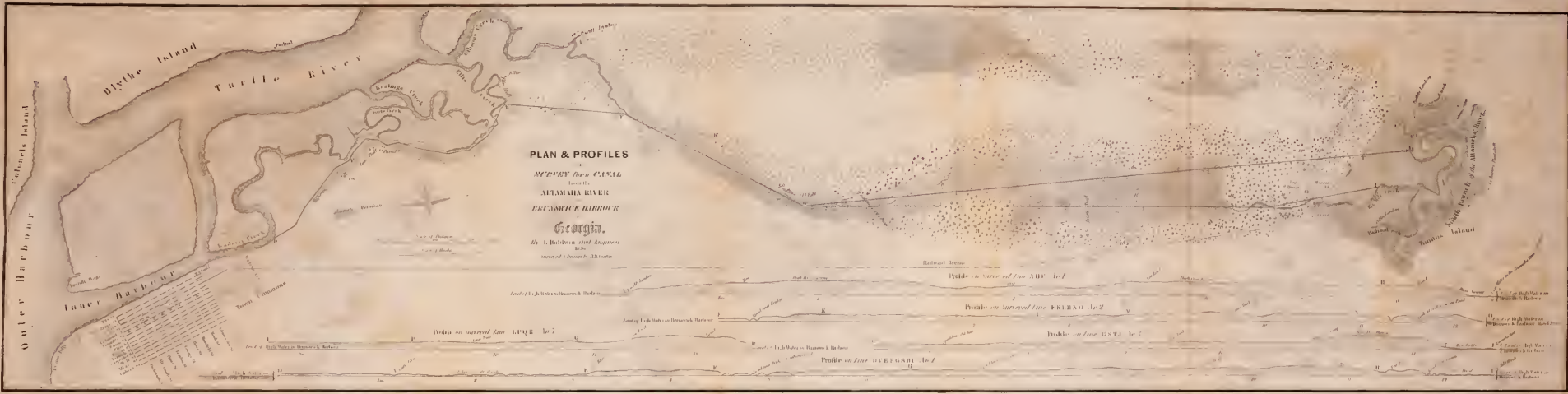
If a frigate could but reach Cockspur island, the opinion expressed in favor of Brunswick might be recalled. Brunswick is the most southern frigate harbor on the Atlantic seaboard. Placed near the *great outlet* of the commerce of the West In-

dies and Gulf of Mexico, her position in a state of maritime warfare would be invaluable, since the navigating interests of an enemy must pass by her door. All which is respectfully submitted.

M. T. WOOLSEY,
ALEXR. CLAXTON,
E. R. SHUBRICK.

December 20, 1836.





PLAN & PROFILES

NEWBY TURN CANAL
 FROM THE
ALTAHAMA RIVER
BRITAINWICK HARBOUR
Georgia.

By J. Baldwin *Civil Engineer*
 1836
 Survey of 1835 by J. S. Foster

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