

Windsor Shades is now the head of navigation. Above this the river rapidly shoals to a very small stream, winding its way through a heavy growth of cypress and other timber. The public interests hardly warrant the improvement of above Windsor Shades to the same depth as below, at the present time. In order to estimate its cost, even, a detailed survey of the entire 7 miles of river to Forge Bridges would be necessary. Two appropriations have been made, as follows: June 18, 1878, \$5,000; March 3, 1879, \$1,000.

The following are the estimated statistics of trade:

Seventy-five thousand cords wood, at \$3 per cord; 5,000,000 feet timber, at \$10 per thousand; 75,000 railroad ties, at \$35 per thousand.

Merchandise, valued at.....	\$150,000
Grain, vegetables, &c., valued at	20,000
Lime, fertilizers, &c., valued at	10,000
Fish, valued at.....	15,000

Seven hundred sail-vessels per year. One steamboat one trip per week.

For the completion of the work, \$9,000 will be required.

The nearest port of entry is Richmond, Va., where the collections for the fiscal year were \$15,030.62.

Money statement.

July 1, 1878, amount available.....	\$5,000 00
Amount appropriated by act approved March 3, 1879.....	1,000 00
	<hr/>
July 1, 1879, amount expended during fiscal year.....	\$6,000 00
	4,982 38
	<hr/>
July 1, 1879, amount available.....	1,017 62
	<hr/>
Amount (estimated) required for completion of existing project	9,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	9,000 00

G 12.

IMPROVEMENT OF BLACKWATER RIVER, VIRGINIA.

HISTORY OF OPERATIONS.

A survey of Blackwater River, Virginia, was directed by the act of appropriation for rivers and harbors, approved June 23, 1874, and this duty was assigned to me by the Chief of Engineers, July 9, 1874. A survey of the river was made and a report upon the same with an estimate of the cost of improvement made March 3, 1875 (Report of Chief of Engineers for 1875, Part II, page 161).

The part of the river used for navigation lies between Franklin, Va., on the Seaboard and Roanoke Railroad, and the mouth of the river, some 13 miles below, where it unites with the Nottoway to form the Chowan River, which empties into Albemarle Sound.

Several lines of steamers ply between Franklin and ports on Albemarle Sound and Roanoke River, and a large amount of cotton and other freight is thus forwarded by rail from Franklin to Norfolk.

The width of the river varies from 100 to 275 feet, and its depth from 8 to 38 feet. It is a sluggish stream flowing for the most part through cypress swamps with dense undergrowth.

The obstructions to navigation were found to be a sharp bend called George's Bend, around which steamers were obliged to warp, and which

it was proposed to improve by dredging, and also snags, piles, overhanging trees, &c., the most serious difficulty encountered by steamers, and which it was proposed to remove. The estimated cost of the improvement was \$14,850.

IMPROVEMENT.

The act approved June 18, 1878, appropriated \$5,000 for this improvement. As this amount was not sufficient to undertake the dredging, it was proposed in the project submitted to the Chief of Engineers, June 27, 1878, to apply the appropriation to the removal of snags, logs, and overhanging trees, and to do this work by hired labor and the purchase of the necessary materials in open market. This project having been approved, preparations for the work were made early in the present fiscal year.

As the work of removing snags would only last through one season, it was not deemed advisable to build a derrick-boat, and authority was therefore asked to hire one for such a period as these operations might last. An examination of the lighters of this class about Norfolk and Portsmouth was made, and the only one adapted to the purpose which could be procured at a moderate rate was a steam-derrick lighter, which was hired at the rate of \$250 per month, including the services of an engine-man. This was towed to Blackwater River in August, a force organized, and active operations commenced August 30, 1878, at Franklin. Only such snags as were in the channel of the river were removed, so as to meet the immediate wants of navigation at the least cost. The work progressed favorably until September 5, when the boom was broken in raising a large snag 52 feet long and 4 feet in diameter, which had been in the same place for 15 years. A new boom was made, and the work resumed on the 7th. At the close of work, September 12, the lighter grounded on a cypress knee. The bottom planking, as appeared from subsequent examination, had become very rotten, so that a hole was broken through by the knee and the derrick-boat immediately sank. The owner was notified, and after some delay a wrecking firm in Norfolk sent a vessel and appliances and raised the boat, which was repaired.

Operations were resumed September 25 and continued until the completion of the snagging, December 18. The snag-boat went over the entire length of the river from Franklin to the mouth, and all the snags found in the channel were removed. The number of snags removed was 1,223. The number of overhanging trees removed was 144.

The work remaining to be done under the original plan is the improvement of the channel at George's Bend by widening the river or making a cut-off across the upper point.

G 13.

IMPROVEMENT OF STAUNTON RIVER, VIRGINIA.

In the accompanying report of an examination of the Staunton River, dated January 22, 1879, and made in accordance with the provisions of the river and harbor act of June 18, 1878, and to which reference is respectfully made, will be found a description of the river and an approximate estimate of the cost of improving it for 3-foot steamboat navigation. The part of the river proposed to be improved is between Roanoke Station, at the crossing of the Richmond and Danville Railroad and Brook

Neal, some 30 miles above. The work required is the removal of gravel bars, the excavation of channels through shoals of ledge and detached rock, and the improvement of the navigation by wing-dam. The estimate was made subject to such revision as may be needed when detailed surveys of the obstructions have been made, and amounts to \$35,160.

An appropriation of \$5,000 was made for the improvement March 3, 1879. It is proposed to execute the work by hired labor. When the funds are available the requisite surveys will be made, a derrick-boat built, and the removal of the obstructions commenced.

For the completion of the work \$30,000 will be required, and it is recommended that \$15,000 be appropriated for the fiscal year ending June 30, 1881.

The extent of commerce and navigation of the river is stated in the report upon the survey.

Money statement.

Amount appropriated by act approved March 3, 1879.....	\$5,000 00
July 1, 1879, amount available	5,000 00

Amount (estimated) required for completion of existing project.....	30,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	15,000 00

EXAMINATION OF STAUNTON RIVER FROM ROANOKE DEPOT TO BROOK NEAL, VIRGINIA.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., January 22, 1879.

GENERAL: The act of appropriation for the improvement of rivers and harbors, approved June 18, 1878, authorized the examination of the Staunton River, Virginia, between Brook Neal and Roanoke Station, on the Richmond and Danville Railroad.

The following report is founded upon a personal examination made last November, and is, I think, a fair approximation to a correct estimate of the character and cost of the work required.

GENERAL DESCRIPTION.

The principal source of the river is in Bedford County, Virginia, not far from the Peaks of Otter. Its entire length is nearly 200 miles. Descending 1,000 feet in the first 20 miles, it flows between Campbell and Charlotte Counties on the north, and Pittsylvania and Halifax on the south, and enters Mecklenburgh County 8 miles above Clarksville.

From Smith's Gap, in the mountains, to Clarksville, the distance is 112 miles, and the fall 322.61 feet, according to an old survey.

Above Brook Neal the rocky obstruction and rapid descent would make improvement difficult and expensive. Below Roanoke Station the principal obstruction is found at Tally's Falls, where the channel is shallow and irregular, but may be improved. My examination and estimate were limited to that portion of the river between Brook Neal and Roanoke Station.

NATURE AND EXTENT OF COMMERCE AND NAVIGATION.

The navigation between Brook Neal and Roanoke is, at present, carried on by a small steamboat and batteaux. The batteaux float down

the river with the current, and are pushed up-stream by the aid of poles. Since the introduction of steam, freight has increased tenfold; and it is believed, by those interested, that if a permanent navigation of 2 or 3 feet can be obtained, the increase of trade will be much greater; and produce, which is now hauled 40 or 50 miles over muddy roads, would find a more convenient channel to market. The river flows through a fertile region, which is believed to be the best tobacco-land in the State of Virginia. All the produce of this section is forwarded to the port of Richmond by the Richmond and Danville Railroad, and swells the aggregate of the domestic and foreign trade of that city. The average amount of freight carried by the steamer which plies between Brook Neal and Roanoke Depot during the last two years was 1,421,000 pounds per year. The small steamer above mentioned was built for Mr. Charles Bruce, who has a large tobacco plantation on the river, and who has also expended about \$10,000 in improving the navigation. The steamer is well adapted to the purpose, but is obliged to lie up during low-water, on account of the obstructions, which then begin to be dangerous. It may be useful to mention the dimensions of this boat, which have been kindly furnished by Captain Rodgers: length, 70 feet; breadth of beam, 16 feet; boiler, 35 horse-power; engine, 30 horse-power; diameter of cylinder, 8 inches; stroke, 3 feet; diameter of wheel, 9 feet; boiler, 16 feet long, 42 inches diameter; tubes, 3 inches diameter, with 3-inch water-spaces; tonnage, 40 tons; draft, 14 inches loaded.

FLOODS.

The floods reach a height of 30 to 40 feet above low-water. The freshest of November, 1877, was the highest ever known, and carried away tobacco-houses, and destroyed a large amount of the crop; the largest trees were prostrated; but where the bottoms were wide, a rich alluvial deposit of 6 inches was left upon the surface. From such floods the banks, which are from 20 to 25 feet high, afford no protection.

CHARACTER OF THE PROPOSED IMPROVEMENT.

From Brook Neal to Roanoke Station, where the railroad crosses the river, the distance, as nearly as I can learn, is 30 miles, and the total descent 58 feet, or at the rate of 1.93 feet per mile. The navigation is obstructed by an irregular channel through rapids, where the river flows over ledges or among detached rock. Considerable obstruction was at one time caused by fish-traps, but this part of the river has been improved, and most of them have been removed. The depth of water over these bars in ordinary stages varies from 1 to 2 feet, and in the intervening slackwater the depth is in some places more than 10 feet, but generally ranges from 4 to 5 feet. The width of the river varies from 400 to 500 feet. In making channels through the ledges, the level at low-water is reduced not only in the cut but in the natural pool above, and this effect must be compensated by lateral walls and spur-dams.

It is proposed to improve the channel so as to give from 2½ to 3 feet at low-water. The work required will consist in the construction of lateral and spur dams of cribwork or stone, of rock-excavation through ledges, and dredging several gravel-bars. These operations will be distributed along the line of improvement nearly as stated below. Before the work is begun a careful instrumental survey of each bar should be made, the cost of which has been included in the contingencies of the estimate.

The excavating and dredging should be completed, and the change in

the surface and depth resulting therefrom should be determined, before the dams are begun. The lowest dam down the stream should be finished before the next above, and this order should be followed throughout the course, so that the effect of the dam may be exactly known and adjusted to the required depth.

The only exception to this rule might be made when the trade of the river required immediate relief. As I have stated, the exact amount of work at each point cannot be accurately given without a more careful instrumental survey; but from my inspection, I think the amount required will be nearly as in the subjoined estimate.

Table of distances, localities, and estimates.

Distance from Brook Neal.		Localities.	Estimates.
Miles.	Intermediate distances.		
0	0	Brook Neal	
3	3	White Rock Falls	\$6,000 00
3 1/2	3 1/2	Buster Rapid	4,000 00
3 3/4	3 3/4	Wilston Henry Rapid	2,500 00
8 1/2	5 1/4	Kirkpatrick Rapid	2,500 00
8 3/4	5 1/4	Sycamore Point Rapid	
9 1/2	1	Cole's Ferry Sluice	2,500 00
10		Michel's	
10 1/2		Rice's Falls	2,500 00
10 3/4		Dennis Rapid	
11 1/4		High Rock Rapid	
14 1/4	2	Edmonds Rapid	2,000 00
15 1/4	2	Carrington's Rapid	
20 1/4	5	Hawk Mountain Falls	1,800 00
22 1/4	2	Edmonds Shoals	1,600 00
23 1/4	1	Morton Ferry	1,500 00
25 1/4	2	Watkins Rock Rapids	1,400 00
26 1/2	1	Clark's Island Rapids	
27	1	Clark's Ferry Rapids	1,000 00
30	3	Roanoke Station Railroad Bridge	5,860 00
		Contingencies 20 per cent	
		Total	35,160 00

The larger part of the freight transported on the river is tobacco, which pays a direct tax to government; and in order to get it to market planters have, at their own expense, attempted to improve the river; but the danger of navigation is still so great that the steamer has sometimes been sunk in attempting to pass down the river at low-water.

A profile of the river accompanies this report.

Very respectfully, your obedient servant,

S. T. ABERT,
United States Civil Engineer.

Brig. Gen. A. A. HUMPHREYS,
Chief of Engineers, U. S. A.

G 14.

IMPROVEMENT OF ROANOKE RIVER, VIRGINIA.

No funds have been available for this work during the last fiscal year, and nothing has been done. The history of previous operations is briefly as follows:

A survey of the Roanoke below Weldon was made in 1870-'71 under

the direction of Major William P. Craighill, Corps of Engineers, whose report is contained in the report of the Chief of Engineers for 1872, page 726. The survey showed that from the mouth of the river to Indian Highland Bar, a distance of 65 miles, 10 feet (a sufficient depth) could be carried at low-water, and that the only improvement required here was the removal of a few wrecks. Above Indian Highland to Weldon, a distance of 55 miles, the river was found to be obstructed by numerous bars, so that not more than 2 1/2 to 3 feet could be carried at low-water.

It was proposed to improve this part of the river by means of training-dikes so as to secure and maintain a low-water depth of 5 feet, the estimated cost of which was \$269,000. The first appropriation of \$20,000 was made March 3, 1871. Contracts were entered into during 1871 for the removal of wrecks near Plymouth and of rocks near Weldon. A snag-boat was also fitted up and the removal of snags and similar obstructions commenced. An appropriation of \$10,000 was made June 10, 1872, and one of the same amount March 3, 1873.

In June, 1873, a second contract was made for the removal of wrecks. The rock-work at Weldon remained, however, incomplete at the close of that year. A second snag-boat was built and put in operation in 1874, going over the entire river for the second time. The snags and overhanging trees were removed from several cut-offs, effecting an important saving in distance. The removal of wrecks was completed at the close of the year ending June 30, 1874, but work under the contract for removing the rocks at Weldon had not been finished. Up to this date the operations had been confined to the removal of wrecks, snags, rafts, overhanging trees, logs, and the rocks near Weldon.

The work was transferred to my charge by Colonel Craighill in July, 1874.

A survey was made of Indian Highland Bar, and proposals for the construction of dikes invited. The first proposals were too high, and were rejected; others invited, and the work finally let at \$2.95 per linear foot. Work was commenced October 15, 1875, and only completed after long delays from floods. The snag-boats were repaired in 1875, and removed all snags which then obstructed the channel. Surveys were made of several bars during the same year. Work on the river was brought to a close during the year ending June 30, 1877, and no appropriations have been made since June 23, 1874. The dikes at Indian Highland proved successful in removing the bar at this point, but a slide at McRea's Landing somewhat endangered its permanency. For correcting this defect and removing snags, I would recommend the appropriation of \$5,000.

The following are the dates and amounts of the several appropriations:

March 3, 1871	.....	\$20,000
June 10, 1872	.....	10,000
March 3, 1873	.....	10,000
June 23, 1874	.....	5,000

For the completion of the work \$222,000 will be required.

The attached letter from Mr. Charles G. Manning, collector at Edenton, N. C., gives the statistics of trade for the past year:

Money statement.

Amount (estimated) required for completion of existing project	.....	\$222,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881	.....	5,000 00

COMMERCIAL STATISTICS.

CUSTOM-HOUSE, EDENTON, N. C.,
Collector's Office, July 5, 1879.

SIR: In compliance with your request per letter of June 27, 1879, I make the following report relating to the trade of Roanoke River, North Carolina, and its tributaries, viz:

The amount of imports from northern ports landed at Plymouth and other places on the Roanoke River and its tributaries, including fertilizers, \$1,500,000; amount of products, including lumber of all kinds, cotton and other products, and the fisheries, about \$2,500,000.

Receipts in the customs district on account of customs for the fiscal year ending June 30, 1879	\$260 00
Receipts on account of Marine Hospital dues	763 56
Total amount	1,023 56

Total tonnage employed in carrying on the above trade, about 2,000,000 tons.
As far as I can learn there seems to be a very general demand on the part of steamboat owners and others interested for the completion of the improvement on said river at the present time, and as early as practicable.

Very respectfully,

CHARLES G. MANNING,
Collector.

S. T. ABERT, Esq.,
United States Civil Engineer.

G 15.

IMPROVEMENT OF PERQUIMANS RIVER, NORTH CAROLINA.

The removal of the logs, stumps, &c., which obstructed the navigation of this river at Hertford was authorized by the river and harbor act of August 14, 1876, which appropriated \$2,500 for the improvement. This sum did not, however, become available until May 1, 1877.

Active operations were commenced in June, 1877, with a snag-boat and hired labor. A description of the work and the method of removing the stumps will be found in the last annual report (report of Chief of Engineers for 1878, Part I, page 538), to which I would respectfully refer. Seventy-nine stumps were removed together with cypress knees and logs, with the aid of giant powder, the charges being fired from a bateau. The work was completed September 22, 1878. No further appropriations are required.

The work is in the collection-district of Edenton. The collections during the last year were \$1,023.56.

Money statement.

July 1, 1878, amount available	\$587 24
July 1, 1879, amount expended during fiscal year	360 00
July 1, 1879, amount available	227 24

G 16.

IMPROVEMENT OF YADKIN RIVER, NORTH CAROLINA.

The river and harbor act approved March 3, 1879, appropriated \$20,000 for the improvement of the Yadkin River, North Carolina. A survey

was made in October and November, 1878, between Wilkesborough, N. C., and the bridge of the Western North Carolina Railroad near Salisbury, N. C., in accordance with the requirements of the act of June 18, 1878, and a report upon the same submitted May 12, 1879. To this report I would respectfully refer for a detailed description of the river and estimate of the cost of improving it.

For convenience the river has been divided into three sections, viz:

Section I. From Wilkesborough to the head of Bean's Shoals.

Section II. Bean's Shoals.

Section III. From the foot of Bean's Shoals to the Western North Carolina Railroad bridge near Salisbury.

Section I.—The distance from Wilkesborough to the head of Bean's Shoals is 53 miles, and the average descent is 3.15 feet per mile. The navigation is obstructed by numerous shoals formed of gravel and rock, but may be improved for bateau navigation by the removal of these obstructions and the construction of wing-dams at a cost of \$39,130. The improvement for steam navigation will require locks and dams as well as excavation, and will cost \$223,206.95.

Section II. *Bean's Shoals.*—This is the most serious obstruction met in the river. Its entire length is 4.12 miles and fall 39.17 feet. It can be improved, however, so as to be ascended by bateaus at cost of \$23,971. For steam navigation a canal and three locks will be required, which will cost \$139,774.45.

Section III.—This section between the foot of Bean's Shoals and the railroad bridge, a distance of 64½ miles, has an average fall of 2.02 feet per mile, and can be improved for steamboat navigation by wing-dams and excavation at a cost of \$81,671.85, or for bateau navigation at a cost of \$39,291.60. Reference is requested to the report on this survey for the details of the above estimates. It is proposed to apply the appropriation of \$20,000 made March 3, 1879, to the commencement of the improvement of section III for steamboat navigation, by the excavation of rock and gravel bars and the construction of wing-dams by hired labor.

Preliminary to the commencement of active operations, however, several mill-dams referred to in the report upon the survey will have to be removed. There seems to be no reason or doubt that with the co-operation of the citizens interested in the improvement the necessary right of way can be secured.

The commercial statistics are contained in the report upon the survey.

For the completion of the present project \$62,000 will be required.

Money statement.

Amount appropriated by act approved March 3, 1879	\$20,000 00
July 1, 1879, amount available	20,000 00
Amount (estimated) required for completion of existing project	62,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	40,000 00

SURVEY OF YADKIN RIVER, NORTH CAROLINA, BETWEEN THE BRIDGE ON THE NORTH CAROLINA RAILROAD AND WILKESBOROUGH.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., May 12, 1879.

GENERAL: I have the honor to submit the following report upon a survey of the Yadkin River, North Carolina, "between the bridge on

the North Carolina Railroad and Wilkesborough," provided for by the act of appropriation for rivers and harbors approved June 18, 1878, and assigned to me by your letter of July 8, 1878.

The Yadkin River rises in Caldwell County, North Carolina, at the foot of the Blue Ridge, between Watauga Gap and Blowing Rock. Its general course is southeast, flowing through fine alluvial bottom-lands and through remarkably picturesque rapids called the Narrows; it empties into the Atlantic at Georgetown, S. C. In the last State it takes the name of the Great Pee Dee, and is navigable for steamers 120 miles from its mouth.

The part of the river to which the following report is limited extends from Wilkesborough, in Wilkes County, N. C., to within 5 miles of Salisbury, in Rowan County, N. C.

FLOODS.

The stage of the river at the time of commencing the survey was 4 inches above low-water, and no floods occurred until November 26, when the survey had proceeded as far as Clouse's Shoal, 84 miles from Wilkesborough. At this point, November 27, the river rose 10.1 feet above low-water. The next flood, December 2, rose at Bailey's Ferry 12.4 feet above low-water.

The third flood occurred December 11, when the river at Motley's plantation, 3 miles above the mouth of the South Yadkin, was 9.7 feet above low-water. The flood of September, 1878, was the highest ever experienced at Wilkesborough, rising 23 feet above low-water.

The high-water mark at Langenhour & Neason's mill is 22.9 feet above low-water. Ordinary floods subside in from 36 to 48 hours. Twenty-five years ago high floods rarely occurred. Their frequent occurrence at the present day is probably due to the clearing of the hillsides and the removal of obstructions from the river and its numerous tributaries.

AGRICULTURE.

From the slopes of the Blue Ridge on the north, the Brushy Mountains on the south, and the valley between, nearly everything compassed by the wants of man may be produced. The Blue Ridge country is especially adapted to grazing. In cereals, grasses, and garden vegetables the broad bottom-lands of the valley are exceedingly productive. Lands which have been cultivated for one hundred consecutive years, producing corn and wheat, are more productive to-day than ever, and that, too, with no fertilizers except the deposits of floods. The flood of September, 1878, covered the bottom-lands of Wilkes County with a rich sediment 2 to 10 inches in depth. The yield of bottom-land per acre is: of corn, 40 to 70 bushels; of wheat, 15 to 30 bushels. Tobacco is grown quite extensively on the high ground adjoining the bottom-lands above the flood limits. The quality is fine and the yield per acre is good. The Brushy Mountain region is especially noted for its fruits. Apples, pears, peaches, plums, quinces, grapes, berries, &c., are produced. Early fruits are raised here, and some varieties of apples produce two crops annually. Cotton is raised to some extent, and some good fields were noticed. Davidson County land is well adapted to cotton culture.

The following, compiled from statistics furnished by the department of agriculture at Raleigh, and information obtained from prominent citizens and large land-owners, is a fair estimate of the annual products

of the more important crops in the seven counties bordering on the Yadkin where the survey was made:

Wheat.	Corn.	Potatoes.		Oats.	Sorghum.	Tobacco.	Fruit.		Butter.
		Sweet.	Irish.				Green.	Dried.	
<i>Bushels.</i> 535,000	<i>Bushels.</i> 2,073,000	<i>Bushels.</i> 94,000	<i>Bushels.</i> 70,000	<i>Bushels.</i> 387,000	<i>Gallons.</i> 133,000	<i>Pounds.</i> 2,046,000	<i>Bushels.</i> 695,000	<i>Pounds.</i> 1,498,000	<i>Pounds.</i> 575,700

The quantities, however, are largely in excess of the amount which would become tributary to the trade of the river in its improved condition, which, assuming that the river will drain an area of 10 miles upon each side, would be as follows:

Wheat.	Corn.	Oats.	Potatoes.		Sorghum.	Tobacco.	Fruit.		Butter.
			Sweet.	Irish.			Green.	Dried.	
<i>Bushels.</i> 165,000	<i>Bushels.</i> 962,000	<i>Bushels.</i> 109,000	<i>Bushels.</i> 30,000	<i>Bushels.</i> 24,000	<i>Gallons.</i> 51,000	<i>Pounds.</i> 731,000	<i>Bushels.</i> 215,000	<i>Pounds.</i> 487,000	<i>Pounds.</i> 269,000

MANUFACTURES.

The manufacturing interests of that part of the valley where the survey was made are chiefly at Elkin, Surry County, on the Elkin River. The cotton-mill of the Elkin Manufacturing Company employs about 40 hands, has a capacity of 1,000 spindles, and consumes 250 to 300 bales of cotton annually, producing cotton yarns and sheetings.

The Elkin Valley woolen-mill employs 12 hands, and manufactures woolen yarns, jeans, and cassimeres. There are flour-mills in connection with the cotton and woolen mills. The Elkin River furnishes an abundant and never-failing water supply; labor is cheap, and the locality healthy.

At Siloam, Surry County, one-half mile from the river, on Hogan's Creek, are the tobacco factory, saw and grist mills of R. E. and M. C. Reeves, employing 20 hands.

There are a large number of saw and grist mills scattered throughout the valley; and on the Yadkin, or in the immediate vicinity, on streams emptying into the Yadkin, between Wilkesborough and Salisbury, are 18 saw and grist mills. On the left, below Huntsville, Yadkin County, is the celebrated whisky distillery of Joseph Williams, and at Elbaville, Davie County, near Bailey's Ferry, is the distillery of Alexander Bailey. A great many creeks and small rivers rising in the northern part of North Carolina or Virginia take their courses southerly to the Yadkin, forming most excellent water-powers.

The forests abound in such timbers as ash, several varieties of oak, cedar, cherry, chestnut, hickory, locust, several varieties of pine, poplar, white and black walnut in great abundance, and many other varieties, offering great attractions to furniture manufacturers and workers of wood generally.

The following description is from the journal of Mr. S. W. Evans, assistant engineer:

MEMORANDA OF A SURVEY OF THE YADKIN RIVER FROM WILKESBOROUGH, WILKES COUNTY, TO SALISBURY, ROWAN COUNTY, NORTH CAROLINA.

Wilkesborough is the county town of Wilkes County, and is one of the oldest towns in the State. Population, 300. It is pleasantly situated on a high bluff overlooking