

the valley. Besides the county buildings, it contains 3 churches, 6 stores, 1 hotel blacksmith-shop, 2 carriage-shops, shoe and harness shops, &c.

The initial point of the survey was taken on the right bank of the river, directly back of the court-house, from which transit and level lines were run to the river. Here we crossed to the left bank. The river is 150 feet wide. The channel is on the right side and is 3 feet deep.

Reddie's River.—At 1,700 feet Reddie's River enters from the north. One mile from the Yadkin on Reddie's River is Dr. Hackett's saw-mill.

Gordon's Ford Shoal.—At 2,210 feet is Gordon's Ford Shoal. The ford is not in use. The shoal consists of gravel, small bowlders, and submerged logs. Length, 300 feet; fall, 0.44 foot; depth, 1.2 feet. Thence there is good navigation 620 feet to Finley's Ford Shoal. An open bridge for carriages and foot passengers was located here, but was washed away by the flood of September, 1878.

Finley's Ford Shoal.—This shoal, like the preceding one, is composed of gravel, loose stones, and drift. Length, 440 feet; fall, 1.72 feet; depth, 0.6 foot. In low-water a bar shows near the middle of the river. Thence 1,900 feet to Blair's Island the depth is sufficient.

Blair's Island Shoal.—The island is high and cultivated. The best channel is on the left. The bottom is gravel. At the head of the island the depth is 1.8 to 2 feet for 400 feet. Near the foot is an old fish-dam and a deposit of sand and gravel below, shoaling the water to 0.6 of a foot for 130 feet. At 580 feet from the head on the left bank, a large overhanging birch should be removed. The water runs swiftly to the foot of the island. Length of shoal, 1,700 feet; fall, 3.44 feet. Thence 820 feet the depth is sufficient. Here a high point of rock is 0.6 of a foot below the surface. Thence there is good water 1,740 feet to High Rock and Buckeye Shoals.

High Rock and Buckeye Shoals.—Length of shoals, 4,722 feet; fall, 3.63 feet. Rock and gravel bottom. Depth, 1.4 to 3.7 feet. Sixteen hundred feet below is a sand bar, recently formed and probably temporary. Length, 150 feet; depth, 2 feet. Twenty-two hundred feet further on, is another short bar below a branch on the right. Depth, 2 feet. Thence 1,200 feet is a bar at the mouth of Mulberry Creek. Length, 700 feet; depth, 1.5 to 2.8 feet.

Mulberry Creek rises in the northern part of Wilkes County, and forms a magnificent water-power in its course to the Yadkin. One and one-half miles from the Yadkin, on Mulberry Creek, is the saw-mill of Charles Hunt. The natural fall at the mill is 9.1 feet in a distance of 200 feet, and it is capable of being made 30 feet. On either side a rocky bluff comes to the water. From Mulberry Creek to Hunt's Islands' Shoal, 570 feet, there is good water. Fall from Wilkesborough to this point, 14.55 feet.

Hunt's Islands' Shoal.—At the upper island, the channel is on the right. The bottom is gravel until the foot of the island is reached; here a ridge of rock about 6 feet wide runs from the right bank to the island. The current is very swift. Soundings were obtained on the rock by shooting the passage (50 feet wide) several times in succession, drawing the boats up by means of a rope from the bank. Just below the rock, the water is deep. From this point the best channel is along the left bank, that to the right of the second and third islands being shallow and swift. At the time of the examination of this shoal the water was 0.8 foot high, and muddy. Length of shoal, 2,600 feet; fall, 2.75 feet; depth, 1.6 to 8 feet. Thence to Reynolds' Island, 1.11 miles, the depth ranges from 2.9 to 16 feet, and the fall is 2.01 feet.

Reynolds' Island.—The natural channel is on the right; 200 feet below the head of the island is a snag with drift. The water is shallow in several places, ranging from 1.7 to 4.5 feet. Twenty-one hundred feet below the head of the island is an old fish-dam, which should be removed. Length of shoal, 1,880 feet; fall, 2.16 feet. Thence 1,100 feet a sand bar shoals the water to 2.2 feet for 150 feet. Thence there is good navigation 4,900 feet, to Staylor's Ford Shoal.

Staylor's Ford Shoal.—Length of shoal, 540 feet; fall, 1.7 feet; depth, 1.7 to 4 feet. Rock bottom, covered with gravel. Thence for 5,800 feet there are several gravel bars shoaling the water to 1.5 to 2.2 feet, and at 1,300 feet below Staylor's Ford Shoal appearing above the surface in the middle of the river. The channel is along the right bank. Fall in this 5,800 feet is 3.15 feet. Thence 750 feet, to Parke's Ledge, good navigation is found.

Parke's Ledge.—Here the rock appears above the surface in several places. The best location for a channel is toward the right bank. The depth ranges from 1.8 to 4.2 feet; length, 400 feet; fall, 0.43 foot. Thence good water 520 feet to Parke's Ford Shoal is found.

Parke's Ford Shoal.—The bottom is composed of rock and bowlders. Length of shoal, 150 feet; fall, 0.4 foot; depth, 1.8 to 2.8 feet. Thence 900 feet the depth is sufficient. Here a gravel bar shoals the water to 2.4 feet for about 100 feet. Thence there is good navigation 2,070 feet to Fish Trap Shoal.

Fish Trap Shoal.—An old fish-dam obstructs navigation. The bottom is rock and gravel. Length of shoal 1,480 feet; fall, 1.36 feet; depth, 1.4 to 6 feet. Thence there is good navigation 2,020 feet. Here a gravel bar 75 feet in length shoals the depth to

2.4 feet. At 800 feet below this point another bar 50 feet in length occurs; depth, 2.3 feet. Thence 3,770 feet to Reeves' Island at Roaring River the depth ranges from 3 to 5 feet, and the width 150 to 180 feet.

Roaring River.—From Wilkesborough to Roaring River is 10.94 miles, and the fall is 34.23 feet. Half a mile north of the Yadkin on Roaring River is the saw and grist mill of Richard Reeves. The mail-route from Elkin to Roaring River and Dellaplane crosses the Yadkin at this point.

Reeves' Island and Fish-Dam.—At Reeves' Island nearly all the water runs in the right channel, giving a depth of 2.5 to 5 feet; 1,600 feet below the head of the island is an old fish-dam belonging to Messrs. Foot & Reeves. The fall here is .76 foot in 86 feet. From the head to the foot of the island is 2,700 feet and the fall is 3.86 feet. The water runs swiftly the whole distance. Thence good navigation exists for 2,240 feet to a rocky shoal with fish-dam and bowlders. Length of shoal, 600 feet; fall, .89 foot; depth, 2 feet and upwards. Thence there is good navigation 1,780 feet to Greenwood's Island.

Greenwood's Island.—The channel is on the right and the depth is sufficient except near the foot, where gravel and detached rock are within 2 feet of the surface for 150 feet. From the head to the foot of the island is 1,900 feet; fall, 1.18 feet. At a point 1,000 feet below the island a gravel bar 50 feet in length shoals the water to 23 feet. Thence 4,020 feet to Adams' Island there are no obstructions to navigation. Distance from Wilkesborough to Adams' Island 13.7 miles; fall, 44.33 feet.

Adam's Island.—Both channels were examined. In the right, which is the better one, the depth ranges from 2.4 to 3.7 feet. The bottom is gravel. From the head to the foot of the island is 1,600 feet and the fall is 1.6 feet. Thence good navigation is found for 4,800 feet to Hickerson's Island.

Hickerson's Island, No. 1.—The main channel is on the right, and is sufficiently wide and deep. An overhanging willow tree near the head of the island on the right bank should be removed. From the head to the foot of the island is 1,200 feet, and the fall is .86 foot. Thence good water is found for 800 feet to Harrill's Island.

Harrill's Island and Fish-Dam.—The water runs swiftly in both channels, but the left has the better depth and is wider than the right; 600 feet below the head of the island is a fish-dam. The depth immediately above the dam is 2.8 feet, and below 3.8 feet. Fall from the head of the rapid to a point just below the dam is 1.86 feet. Two snags at the left bank above the dam should be removed. Thence for 4,880 feet to Hickerson's Island, No. 2, the only obstructions to navigation are 3 snags.

Hickerson's Island, No. 2.—Both channels were examined. The left is the better for improvement. At the head of the island is an old fish-dam which must be removed. Toward the foot is a gravel shoal 350 feet long. Depth on the shoal 0.9 to 2.7 feet. From the head of the island to the foot of the shoal is 1,400 feet; fall, 1.36 feet. The fall at the fish-dam is .65 in 300 feet. Thence 1.33 miles to Gwynn's Island there is good navigation, the depth ranging from 3 to 12 feet, and the width 160 to 200 feet.

Gwynn's Island.—Gwynn's Island is low and sandy, supporting a few willow bushes. The left channel is crooked and shallow and receives the wash from the island in high-water. The depth in the right channel and to the foot of the shoal, below the island, is 2 to 3.6 feet. Length 800 feet, fall, 0.90 foot. A short distance below the island are two snags to be removed. Thence there is good navigation 1 mile to the residence of Mr. James Gwynn. Here is an old fish-dam which should be removed. A large rock shows at this point in the middle of the river; the channel on either side is sufficiently wide and deep. Thence there are no obstructions for 1.3 miles to

Sayles' Ford.—Here a gravel bar 150 feet in length shoals the water to 2.3 feet. Thence 1,060 feet to Swan Creek Shoal good navigation exists.

Swan Creek Shoal.—On this shoal a dam extends the full width of the river, originally built (it is stated) for boats to pass through, but now used by Messrs. Greenwood & Harris for a fish-dam. The best channel is on the left. Depth on the shoal, 1.7 to 5.5 feet; length, 3,160 feet; fall, 5.40 feet; rock bottom. Thence 1.01 miles to

Little Elkin Shoal.—The depth ranges from 2.6 to 6.9 feet. There are two old fish-dams in this shoal, one below the other. The best channel is about on a line with the traps. Length of shoal, 800 feet; fall, 2.16 feet; depth, 2 to 3 feet. Gravel bottom was found by the sounder, but the contour of the bottom indicates rock; 900 feet below is a gravel bar at

Wilcox's Ford.—Length, 100 feet; depth, 1.7 to 2.4 feet. Thence 2,800 feet the depth is sufficient. Here the depth is 2.4 feet, and from this point, 1.57 miles to Elkin and Jonesville Bridge, the depth is 2.2 to 5 feet and the fall 5.44 feet. The bottom is gravel and detached rock. At 2,800 feet above the bridge an old fish-dam obstructs navigation. Just above the bridge the current is rapid. A fish-dam extends nearly the full width of the river. Gravel has accumulated below the dam on the right. The fall in 550 feet is 1.86 feet.

Elkin Toll Bridge.—This bridge is an inclosed wooden structure, single span, 235 feet long, 18 feet wide, and 25 feet in the clear above low-water. The Elkin River,

which enters a few rods above the bridge, rises in the Blue Ridge, and forms a very excellent water-power.

Elkin.—Elkin is a busy manufacturing town, containing 1 cotton-mill, woolen-mill, several flour-mills, saw-mill, stores, carriage-shop, blacksmith-shop, post-office, church, and private residences. Quite an extensive trade centers here. The town is finely located, one-fourth of a mile from the river, on the southern slope of the high ground overlooking the valley.

Jonesville.—Jonesville is a farm village on the right bank of the river, immediately opposite Elkin. From Elkin bridge there is good navigation 4,600 feet to

Town Creek Shoal.—Length of shoal, 1,000 feet; depth, 2 to 2.8 feet; fall, 0.81 foot; gravel bottom. Thence 4,600 feet to

Greenwood's Creek Shoal.—The depth is sufficient. Rock bottom. The best location for an improved channel is through the right wing of the old fish-dam, near the right bank. Length of shoal, 470 feet; fall, 1.28 feet; depth, 1.8 to 3 feet. Thence 1,840 feet to

Morrison Shoal.—The least depth is 2.8 feet. The bottom is covered with detached rocks. Rock bottom. The ledge appears above the surface in the middle of the river. Depth, 1.8 to 4 feet; length, 280 feet; fall, 0.18 foot. Thence there is good navigation 1,800 feet to

Tumbling Falls.—Rock bottom. Depth, 0.6 to 4.3 feet. In 200 feet the fall is 1.61 feet; then deep water is found for 700 feet with fall of 0.55 to Tumbling Shoal.

Tumbling Shoal.—Length, 1,770 feet; fall, 1.87 feet; depth, 1 to 8.7 feet. Toward the foot is a fish-dam; best water on the left. Thence 1.24 miles good navigation is found. Here are remains of an old fish-dam. The only improvement needed is the removal of a few detached rocks on the right, parts of the old dam. Thence 1.12 miles to Hurt's Ledge there is good navigation; 2,000 feet above Hurt's Ledge is Reeve's Ferry.

Hurt's Ledge.—This is a rough, rocky place, the rocks coming above the surface in the middle of the river for one-third its width. Probably the best channel for improvement would be on the left of the rocks. Length, 360 feet; fall, 0.89; depth, 1.3 to 4 feet. Thence there is good navigation to Mitchel's Island Shoal, 2,180 feet.

Mitchel's Island Shoal.—In the upper part of the shoal the best water is on the left, bearing to the right when half-way down, and on the right at the foot of the island and below. At the foot of the shoal are two old fish-dams. Length of shoal, 2,740 feet; fall, 4 feet; depth, 1 to 5 feet. The bottom is gravel and bowlders. Thence 5,500 feet, to Woodruff's Fish-Trap Shoal, there is fair navigation; the bottom for part of the distance is irregular, and it may be necessary to remove some high points.

Woodruff's Fish-Trap Shoal.—In the upper part of the shoal the fall is rapid; the best water is toward the right bank; near the foot is a fish-dam extending nearly across the river; here the best channel is toward the left. Length of shoal, 1,800 feet; fall, 4.55 feet; depth in the best channel, 2 to 4 feet, rock bottom. Thence there is good navigation 1.01 miles to a point 1,000 feet below Birch and Jones' Ferry. Here a row of rocks extends from the left bank to within 70 feet of the right bank. The water above and below is deep, and 3.8 feet and upwards in the channel to the right of the rocks. The fall is slight, and no improvement is required. Thence 2,000 feet to the Devil's Staircase there is good navigation. For 1.61 miles the descent is rapid, with short stretches of deep water between the high points of rock. There are two old fish-dams on the shoal; irregular rock bottom; depth ranging from 1 to 13 feet; fall, 11.18 feet.

Thence there is good navigation 1,940 feet. Here two fish-dams extend the full width of the river, obstructing navigation.

Thence 4,300 feet there is a large rock in the middle of the river, about half a foot below the surface. Thence 1,200 feet, to the shoal at Fish River, the depth is sufficient.

Fish River Shoal.—Bottom very irregular, stratified rock; depth in best channel, 2.3 to 5.8 feet; length, 300 feet; fall, 0.08. For 600 feet below Fish River there is good water; thence the bottom is very irregular, the depth ranging from 2 to 5 feet; 1,700 feet below Fish River is an old fish-dam, and, on the left, rocks appear above the surface; 1,200 feet further on are the remains of more fish-dams and many projecting points of rock. From this point to the "Seven Islands," so called, the depth in the best channel ranges from 2.1 to 7 feet; the bottom is rock and very irregular. From Fish River to the Seven Islands the distance is 2.11 miles, and the fall is 6.16 feet. In the small channels to the left the bottom is gravel, and the depth is 0.6 to 1.5 feet. In the main channel many rocks show above the surface; depth between the rocks, 1.8 to 4.8 feet. The water runs swiftly 2,630 feet; fall, 4.02 feet. Thence 3,450 feet, to Bohannon's grist-mill, the irregular bottom continues, but there are no rocks above the surface and the best channel ranges from 2 to 5 feet in depth; fall, 2.44 feet.

Bohannon's Mill.—The mill is on the right and receives its water-power from Fall Creek. At this point the river descends rapidly, and a great number of rocks show above the surface. To Bohannon's Island is 1,500 feet, and the fall is 3.25 feet.

Bohannon's Island.—Both channels are very rough, rocky, and swift. The right is

the wider, and probably better for improvement. At the head of the island the fall is 0.61 feet in 100 feet. From the head of the island to Overfield's Ferry, at Rockford, is 1,600 feet, and the fall is 3.07 feet. Width at ferry, 420 feet.

Rockford.—Rockford, on the left bank of the river, is the old county-town of Surry County. The village contains 3 stores, post-office, hotel, school-house, and a few private residences. Previous to the removal of the county-seat to Dobson, this was a flourishing village; now the signs of decay are apparent on every hand, and the old court-house stands silent and deserted, a grim reminder of the busy past.

On the right, 2 miles distant, is Richmond Hill, the seat of the late Judge Pearson's law school. For 1,500 feet below Overfield's Ferry the best water is toward the right, ranging from 2 to 3.5 feet in depth; thence is a long gravel shoal, underlaid with rock, with a channel 1.5 to 3.5 feet deep, at the end of which is a fish-dam with deep water and rock bottom. From Overfield's Ferry to the foot of the shoal is 4,500 feet and the fall is 8.38 feet. Thence 2.01 miles to Foster's Upper Shoal, 1,500 feet below Double Creek, a channel of sufficient width and depth may be selected. The bottom generally is rock, very irregular; the depth in the best channel from 2.8 to 10 feet.

Foster's Upper Shoal.—In the upper part of this shoal an old fish-dam extends nearly across the river, and the ledge shows above the surface in many places. Depth, 1.8 to 5.6 feet; length, 4,570 feet; fall, 3.37 feet. Thence there is good navigation, 1,600 feet, to Foster's Lower Shoal. Length of shoal, 1,260 feet; fall, 0.61 foot; depth, 2.3 to 5.5 feet; rock bottom. Thence good navigation, 2,500 feet, to Lime Rock Shoal. On the right is Lime Rock, 169 feet in height. Lime was once burned here; the old kilns may still be seen.

Lime Rock Shoal.—Rock bottom; fish-dams in several places with sharp falls. The shoal extends 2.59 miles, to Merrimon's Ferry. Fall, 12.88 feet; depth, 1.7 to 6.6 feet.

Siloam.—On the left bank half a mile from the river is the village of Siloam, containing saw and grist mill, tobacco factory and store, property of R. E. and M. C. Reeves; post-office and several farm-houses. The mill on Hogan's Creek has a turbine wheel and circular saw, and facilities for sawing large timber. From Merrimon's Ferry, 2,800 feet, to Reeves' Fish-Trap Shoal, there is good navigation.

Reeves' Fish-Trap Shoal.—The dam extends from the right bank to a point 30 feet from the left bank and is built on the rock. Length of shoal, 600 feet; fall, 1.66 feet; depth, 1.8 to 4 feet. Thence to Ararat River is 1,400 feet, and the navigation is good.

Ararat River.—Ararat River rises in Patrick County, Virginia, and has fine bottom lands along its banks. It is 100 feet wide at its entrance into the Yadkin. Good navigation continues 3,000 feet. At this point the bottom is rock, very rough, rising nearly to the surface and then showing depth of 4 to 6 feet.

A channel 2 feet and more in depth may be selected by crossing from side to side. This kind of navigation continues 2.88 miles to the head of Bean Shoals. The fall in this distance is 5.95 feet. The distance from Wilkesborough to the head of Bean Shoals, measured on the axis of the river, is 53.6 miles, and the fall is 167.01 feet.

Bean Shoals.—The most rapid descent in these shoals is between the head of the shoals and a point 1,000 feet below the head of the large island. The fall in this distance, 5,300 feet, is 16.88 feet. The greatest fall is 1.34 feet in a distance of 100 feet; at another point the fall is 1.38 feet in a distance of 200 feet. The depth in the best channel ranges from 0.8 to 4 feet. At the island the best channel is on the right, and, with the exception of a high ridge of rock near the foot of the island, the depth is 2 to 3 feet. The fall from the last point to which the fall was given to the foot of the island, a distance of 3,370 feet, is 5.17 feet.

At Little Bean Shoals Creek, 1,800 feet above the foot of the island, an old fish-dam obstructs navigation. From the foot of the island to Sycamore Ford, which is considered the foot of Bean Shoals, the distance is 2.46 miles, and the fall is 17.12 feet.

The depth in the best channel is 1 to 4.5 feet; 4,400 feet below the island are two ridges of rock, each shoaling the water to 1 foot in depth; the fall at the first is 1.83 feet in a distance of 200 feet. These are the only sharp falls that occur in this part of the shoals. Length of shoals is 4.12 miles; fall, 39.17 feet, or an average fall of 9.51 feet per mile. The bottom is stratified rock, very ragged, rising in sharp points and ridges at right angle to the river's axis, forming at some points natural dams nearly the full width of the river. Especially is this the case in that part of the shoals above the islands. Large rocks, projections from the ledge, show several feet above the surface in many places. The two large islands are high and cultivated. On the right, just above the islands, is Marten's grist-mill, operated by an undershot wheel; the water is supplied from the Yadkin by a short wing-dam. In 1830 to 1835 the Yadkin Navigation Company did considerable work at these shoals with a view to rendering the river navigable. A dam was built at the head of the shoals and a canal commenced along the northern side of the river. The only trace of the dam now to be seen is the abutment at the entrance to the canal. The canal was completed for a little more than a mile from the head of the shoals and was 15 to 45 feet wide at the bottom. Where the cliff forms one wall, the minimum width is 15 feet. At 2,000 feet from the head of the canal are the ruins of a guard lock 12 feet wide. The canal walls are of earth except along the foot of the cliffs. Here a very good retaining wall was

built of stone quarried on the spot. The upper wall, 700 feet in length, was built of headers and stretchers neatly pinned with small stone and is in good condition. The outer face has a batter of $2\frac{1}{4}$ to the foot rise. The inner face was left rough and covered with gravel and earth. No cement was used in its construction. The dimensions are: height, 6 to 20 feet, top width 2.5 feet, bottom width, about 7 feet. The lower wall, about 400 feet in length, is of the same general character, but in some places has been torn down to obtain stone for the construction of fish-dams. The canal has been filled in by the floods, and where it runs through the woods is overgrown with trees and bushes. No water flows through it.

Little Yadkin.—Just below Sycamore Ford the Little Yadkin comes in from the north. A quarter of a mile up from its mouth it is 55 feet wide and 2 feet deep.

Sycamore Ford Shoal.—Eight hundred feet below Sycamore Ford is a gravel shoal and fish-dam. Length, 500 feet; fall, 1.5 feet; depth, 2.3 to 3.2 feet. Thence, 1.9 miles to Hauser's Island Shoal, 400 feet below Hauser's Ferry there is good navigation.

Velocity Observations.—One mile below Sycamore Ford, opposite the plantation of Mr. Poindexter, velocity observations were taken, showing the discharge of the river at this point to be 13,344 gallons per second.

Hauser's Island Shoal.—Both channels were examined. The left is better for improvement. Gravel bottom, with fish-dam; length of shoal, 760 feet; fall, 1.36 feet; depth, 2.3 to 5 feet. Thence good navigation is found for 1.52 miles. From this point for a distance of 1.83 miles, to the head of Shore's Island, the water runs swiftly. There are fish-dams in two places and a number of snags which obstruct navigation. The depth ranges from 2 to 7.5 feet; rock and gravel bottom; fall, 7.73 feet.

Shore's Island.—The three channels were examined. That on the right is the widest and best for improvement; the depth, 2.6 to 3.3 feet; gravel bottom. From the head to the foot of the island the distance is 2,800 feet and the fall 0.88 feet. Thence 1.57 miles, to the rapids at Glenn's old mill-dam, the depth is 2.3 to 4.7 feet and the fall is 6.18 feet; the bottom is gravel most of the distance; rock was found in a few places.

Fifteen hundred feet above Glenn's dam a ridge of rock extends the full width of the river, rising above the surface in two places; the channel is 100 feet or more in width; depth on the rock, 2.6 to 3.1 feet.

Glenn's Mill-Dam Rapid.—The old dam extends the full width of the river and was constructed of timbers and planks, filled in with stone. It is broken through in two places and the fall, 2.95 feet, is distributed over a distance of 400 feet. The depth on the rock is 2.3 feet. The old grist-mill on the right was operated by an undershot wheel supplied with water by a wing-dam extending two-thirds the width of the river. The mill is not in operation and is falling to pieces. From the mill there is swift water for a distance of 1,600 feet, to Glenn's old fish-dams. The fall in this distance is 2 feet and the depth 2.2 to 5 feet; rock bottom.

Thence for a distance of half a mile, to Glenn's Ferry, there is good navigation. The river at this point is 350 feet in width. The mail-route from Winston to Red Plains, Richmond Hill, and Rockford crosses here. Thence good navigation 2,870 feet to

Meadow Branch Shoal.—There are fish-dams here the full width of the river. Length of shoal, 1,900 feet; fall, 2.01 feet; depth, 1.4 to 4.3 feet; rock bottom. Thence there is good navigation 1,750 feet to Conrad's Ferry. A road from Winston to Yadkinsville crosses here. Good navigation continues for 2,700 feet. At this point is a shoal with fish-dams the full width of the river; rock bottom; depth 1.7 to 5 feet; length, 300 feet; fall, 0.70. Thence good navigation is found 2,740 feet to Briar Branch Shoal.

Briar Branch Shoal.—The bottom is of rock and uneven, but a channel may be selected 3 feet and more in depth. Length 2,900 feet; fall, 0.86 foot. Thence there is good navigation 3,300 feet. At this point a sand bar 80 feet in length shoals the water to 2.4 feet. Thence there is good navigation 1.48 miles to Jones's mill-dam.

Jones's Mill-Dam.—Jones's lumber and grist mill, operated by a turbine wheel, is on the left bank. The dam is built of stone, logs, brush, and drift-wood, and extends the full width of the river. The fall at the dam is 2.56 feet. The right channel is shallow and swift, and near the foot of the island a ledge shows above the surface; 1,000 feet below the mill is Jones's and Conrad's Chain Ferry.

Thence there is good navigation 1,000 feet to a gravel bar 50 feet in length; depth on the bar 2.3 feet. Thence there is good navigation 4,100 feet to Shallow Ford Shoal.

Shallow Ford Shoal.—At the ford the river is 1,000 feet wide. Below the ford, on the right, is the grist-mill of Bittings & Carvers, operated by an undershot wheel; the wing-dam extends about half the width of the river. The best water is to the left of the dam. At the foot of the shoal is an old fish-dam. Length of shoal 5,560 feet; fall, 7.89 feet; depth, 1.6 to 4.8 feet; rock and gravel bottom. The mail-route from Winston to Huntsville and Yadkinville crosses at Shallow Ford.

Huntsville.—On the right, three-quarters of a mile distant, is the village of Huntsville, consisting of two stores, a tobacco warehouse, blacksmith-shop, post-office, and a few dwellings.

Sheek's Shoal.—From Shallow Ford Shoal there is good navigation 3.21 miles to Sheek's Shoal. The stone from an old fish-dam is scattered on the bottom. The best

channel is on the left; depth, 2.4 to 4.7 feet. Length of shoal, 500 feet; fall, 0.84 feet. On the right are the ruins of Sheek's old mill. Thence good navigation 3.16 miles to Langenhour and Neason's, formerly Douthet's mill-dam.

Langenhour's and Neason's Grist-Mill.—The mill, which is the best on the river, is on the left bank, and is operated by two turbine wheels. The dam is substantially built of hewn oak timbers, covered with plank, and filled in with stone. The bents are in the form of an isosceles triangle, with the acute angle upstream, and are about 6 feet apart. The foundation is rock. The dam extends the full length of the river. The fall at the dam is 4.57 feet. Thence there is good navigation 2,900 feet to a gravel bar, 200 feet in length. Depth on the bar is 2.6 feet. At 500 feet below this bar a ridge of rock shoals the depth to 1.6 for 150 feet.

Thence there is good navigation 4,660 feet. At this point, on the left, rock shows 3 feet above the surface. There is an old fish-dam on the ledge. The water on the right is 3 feet and more in depth. The right wing of the dam should be removed to give sufficient width to the channel. Length of shoal, 500 feet; fall, 0.43 feet. Thence there is good navigation 3,800 feet to a point 3,600 feet above Hall's Ferry.

Shoal above Hall's Ferry.—Here a ridge of rock extends the full width of the river, appearing above the surface in the middle of the stream. The depth on the rock ranges from two or three-tenths of a foot to 3.3 feet. The best channel is on the right, about 18 feet in width and 2.5 to 3.3 feet in depth. Length of shoal, 600 feet; fall, 0.23 feet. Thence there is good navigation 3,500 feet to Hall's Ferry Shoal, 500 feet below Hall's Ferry. At the ferry the river is 360 feet wide. The road from Winston, via Clemmonsville, to Fulton and Statesville, crosses at this point. Winston is $13\frac{1}{2}$ miles distant.

Clemmonsville is $2\frac{1}{2}$ miles from the river, on the left, and is a flourishing village of 250 inhabitants, containing 2 churches, several stores, post-office, high school, and the tannery of Strupe & Son, doing a very good business.

Hall's Ferry Shoal.—In this shoal are 2 old fish-dams, extending the full width of the river. The bottom is rock, and for 200 feet the high points appear above the surface in many places. The depth between the rocks is sufficient. Length of shoal, 850 feet; fall, 1.41 feet. Thence good navigation is found for 3,944 feet to Clouse's Upper Shoal.

Clouse's Upper Shoal.—Here large rocks appear several feet above the surface. The bottom is rock. The best channel is along the left bank until about half-way through the shoal, and then along the axis. Sixty years ago there was a bridge across here resting on the rocks. It was carried away by a flood. Clouse's old mill-dam is in a dilapidated condition. It extends the full width of the river, and is a low dam constructed of stone and brush. The mill, situated on the left bank, was destroyed by fire during the civil war. Length of shoal, 2,730 feet; fall, 2.51 feet; depth 2.5 to 4.7 feet. Thence there is good navigation 2,800 feet to Clouse's Lower Shoal.

Clouse's Lower Shoal.—Here the best channel is on the left, large rocks, parts of the ledge, showing from the right bank half the width of the river. Depth, 2.2 to 5.5 feet; length, 3,600 feet; fall, 2.37 feet. Thence there is good navigation 4,300 feet to Eckel's Shoal, 400 feet below Idol's Chain Ferry.

Eckel's Shoal and Douthet's saw-mill.—The small channel to the right of the island is shallow and swift, ending in rapids, below the island, so rough that it was impossible to take soundings there. Rocks project above the surface. The water at the time of the survey appeared to be 2.5 to 3 feet deep in the rapids, and the gauge was 1.7 feet above low-water. At the foot of the falls, on the left, is Douthet's saw-mill, a small affair, not in operation. A wing-dam supplies the water to an undershot wheel. The dam is built of joist and plank inclined up stream and resting against the rock. It extends about one-third the distance across the river to the ledge as it shows above the water. The rock under the dam appears to be a narrow ridge. At the end of the dam in the river it is 30 to 40 feet wide. The best location for a channel seems to be about one-third the distance across from the left bank. From the head of the shoal to the dam at the mill is 1,600 feet, and the fall to that point is 1.22 feet. Fall at the dam, 2.64 feet. Thence there is good navigation 2,200 feet. Here a rapid occurs.

Mill Branch Rapid.—A large rock shows 60 feet out from the left bank. Least depth found, 3.3 feet; length, 700 feet; fall, 0.98 foot. Thence there is good navigation for 1,200 feet. Here a narrow ridge of rocks shoals the water to 2 feet. Thence good navigation is found 1.39 miles to Bailey's Chain Ferry, the depth ranging from 3.4 to 14.4 feet. The mail-route from Winston to Advance and Fulton crosses here. On the right, one-half mile from the river, is Bailey's whisky distillery, and 2 miles distant is the village of Advance. The river at this point is 380 feet wide. Thence there is excellent navigation 1.1 miles to March's Pole Ferry. One thousand six hundred feet below this ferry, at the mouth of Muddy Creek, a sand and gravel bar 300 feet long shoals the depth from 2.3 to 2.8 feet. Thence 2,420 feet, to the head of the rapid at Grimes's mill-dam, there are no obstructions.

The mill (saw and grist) is on the left bank, and is operated by an undershot wheel, the water supplied by a wing-dam extending about three-fourths the distance across from the left bank. Between the right bank and the end of the dam the depth is 2 to

3.4 feet. The current is very swift. From the head to the foot of the rapid is 800 feet, and the fall is 0.81 foot; 700 feet below is Ellis's Chain Ferry. Thence for 3,400 feet there is excellent navigation. Here a high point of rock is 1.8 feet below the surface. Thence good navigation is found for 1.53 miles to a point about 1,300 feet above Hartley's mill. Here a ridge of rock is within 2.3 feet of the surface. Thence to Hartley's mill-dam the depth is sufficient. The mill is on the left—undershot wheel; water supplied by a low wing-dam extending nearly the full width of the river, and built on rock foundation. The best location for a channel is toward the left, as the water on the right above the island is shallow. The fall at the time of the survey was distributed over about 1,000 feet, and was 1.3 feet. A short distance below the mill rock shoals the water to 2.3 feet for about 300 feet. At 3,000 feet below the mill a ridge of rock shoals the water to 2.1 feet. Thence there is good navigation 2,200 feet to the head of the island below Peeble's Ferry. Here a gravel bar 300 feet long shoals the water to 1.7 feet in depth. At the foot of the island is another short bar. Least depth here, 1.9 feet. A snag shows above the water about one-third the distance across from the left bank. Thence there is good navigation to the shoal at Peeble's grist-mill, 1,600 feet. The mill is on the right bank of the river—undershot wheel; low wing-dam about one-third the distance across from the right bank; length of shoal, 700 feet; fall, 0.59 foot; depth, 1.4 to 2.6 feet; rock bottom. About 600 feet below the mill a short gravel bar is within 2.5 feet of the surface. Thence excellent navigation exists for 4,740 feet, to Fulton Ferry, at the town of Fulton, a small village containing saw and grist mill of Mr. Haynes, on Haynes's Creek, country store, drug-store, post-office, and one-half a dozen houses. Good navigation continues 3,540 feet to a rock shoal. Length of shoal, 500 feet; depth, 2.4 to 5 feet; fall, 0.08 foot. Thence there is good navigation 1,440 feet; then swift water 900 feet along Meadow Island. The depth is sufficient. Fall in the rapid, 0.58 foot. Thence there is excellent navigation 1.41 miles to Oakes's Ferry. Below the ferry the water runs swiftly 1,400 feet.

Oakes's Ferry Rapid.—A channel of sufficient width and depth may be found along the right bank; fall, 0.73. Thence there is good water 4,370 feet to the head of the shoal opposite the Hairston property at Swicegood's grist-mill.

Swicegood's mill.—The mill is on the left bank of the river—undershot wheel; wing-dam extending nearly to the right bank, and a fish-dam between that and the bank. Below the dam the river is full of rocks, except on the left, where the improved channel should be located.

From the head to the foot of the rapid is 1,700 feet, and the fall is 2.19 feet. Thence 1,100 feet is a gravel bar 350 feet long; depth, 2.5 to 4 feet; fall, 0.52. One thousand six hundred feet below is a short gravel bar, probably overlaid with rock; depth, 2.4 feet. Thence there is good navigation 4,500 feet to Hairston's Ferry. Total fall to this point, 309 feet. Good navigation continues 3.16 miles; depth, ranging from 3 to 16 feet; width, 300 to 400 feet. Fall in this distance, 3.55 feet.

Big Rock Shoal.—Here a short shoal is encountered. Rock bottom; best channel along left bank; large rock in middle of river; depth, 2.2 to 4.6 feet; length, 680 feet; fall, 0.34 foot. Thence there is good navigation 1,900 feet to Barne's Fish-Trap Shoal. The old dam and trap should be removed; length, 1,400 feet; fall, 0.42; depth, 2.2 to 4 feet; rock bottom. Thence good navigation is found for 1.36 miles to—

Dutchman Island.—Here are two short gravel bars; depth, 2.6 feet. Below the island the channel is along the left bank. Thence there is good navigation 2.06 miles. Here a short rapid is encountered; length, 700 feet; fall, 0.75. There are remains of an old fish-dam, which should be removed. Best channel on the right. Thence good navigation 3.95 miles to—

Motley's Shoal at Boone Ford; length of shoal, 1,300 feet; fall, 0.99 feet; depth, 1.1 to 5 feet; rock bottom. Thence the required depth is found with no sharp falls for 2.22 miles. At this point a rocky bluff on the left and high bank on the right confine the river to about 350 feet in width. The fall in 600 feet is 1.48 feet; depth, 3.2 to 4.7 feet. Thence there is good navigation 4,300 feet to Hannah's Ferry, at the junction of the Yadkin and South Yadkin.

South Yadkin River.—Here the river is 600 feet wide and 12 feet deep. Total fall to this point from Wilkesborough, 331.2 feet; distance, 117.23 miles. Just above its mouth the South Yadkin is 150 feet wide and 6 feet deep. Thence 2.64 miles to Sower's Ferry is one of the finest stretches of water on the river, ranging from 5 to 16 feet in depth. Here the river is about 800 feet wide. Thence to the Western North Carolina Railroad bridge the depth is sufficient; distance, 1.98 miles; fall, 3.68 feet. From a point 3,000 feet above the bridge the water runs swiftly to and below the bridge; fall in the 3,000 feet, 2.14 feet. Between the two northern piers of the old bridge, 1,100 feet above the railroad bridge, the water is deep. Distance from Wilkesborough to the Western North Carolina Railroad bridge, measured along the axis of the river, 121.98 miles; fall, 337.28 feet. The river at the Western North Carolina Railroad bridge is 500 feet wide, and the level notes show the bridge to be 24.6 feet in the clear above low-water. From the bridge to the ferry below the depth is 4 to 16 feet.

A condensed statement of the facts obtained by the survey party is given in the following table:

Locality.	Distance from Wilkesborough.	Least depth.	Length of shoal.	Fall.	Greatest fall observed.	Total fall.	Remarks.
Gordon's Ford shoal.....	0.4	1.2	300	0.44	0.7 in 120.....	1.16	Gravel, bowlders, and submerged logs.
Finley's Ford shoal.....	0.7	0.6	440	1.72	0.7 in 120.....	3.38	Gravel, bowlders, and drift-wood.
Bar Island shoal.....	1.48	0.6	1,700	3.44	.....	7.86	Gravel bottom; fish-dam; overhanging tree; left channel.
High Point.....	1.64	0.9	.....	.....	.....	8.38	Rocks.
High Rock and Buckeye shoals.....	2.88	1.4	4,722	3.63	1.48 in 955.....	13.38	Rock and gravel bottom.
Sand bar.....	3.15	2.0	150	.....	.....	13.49	Temporary bar.
Do.....	3.53	2.0	700	.....	.....	14.17	Sand and gravel bottom.
Bar at Mulberry Creek.....	3.9	1.3	2,600	2.75	1.07 in 400.....	17.30	Gravel bottom generally; ridge of rock; swift place.
Hunt's Island shoal.....	4.45	1.0	1,880	2.16	1.46 in 940.....	21.74	Gravel shoal; fish-dam and snag.
Reynolds' Island shoal.....	6.25	1.3	150	.....	.....	25.64	Rock bottom covered with gravel.
Staylor's Ford shoal.....	6.26	1.7	540	1.70	0.94 in 40.....	28.70	Rock bottom.
Gravel bars.....	8.4	1.5	5,800	3.13	0.45 in 300.....	30.26	Do.
Parkes' Ledge.....	8.6	1.8	150	0.40	.....	32.00	Rock and gravel bottom; fish-dam.
Parkes' Ford shoal.....	8.8	1.8	100	.....	.....	34.23	Right channel, old fish-dam; rock and gravel bottom.
Gravel bar.....	8.9	2.4	1,480	1.36	0.7 in 700.....	38.09	Rock bottom; fish-dam.
Fish-trap shoal.....	9.6	1.4	75	.....	.....	39.74	Bowlders and gravel shoal; the depth 2 feet for 150 feet near the foot.
Gravel bar.....	10.03	2.4	50	.....	.....	42.52	Gravel bottom; right channel.
Do.....	10.2	2.3	2,700	3.86	0.74 in 86.....	48.91	Right channel; gravel bottom.
Roaring River.....	10.94	2.7	600	0.89	.....	51.14	Fish-dam and gravel shoal.
Reeves Island and fish-dam.....	11.50	2.0	1,900	1.18	0.65 in 300.....	53.67	Right channel; gravel shoal.
Rocky shoal and fish-dam.....	12.0	2.0	50	.....	.....	56.58	Stone should be removed.
Greenwood's Island.....	12.7	2.0	1,600	1.60	.....	66.98	Gravel bar.
Gravel bar.....	12.9	2.3	1,200	0.86	.....	68.55	Fish-dam; rock bottom.
Adams Island.....	14.0	2.4	1,200	1.86	3.09 in 1,000.....	70.60	Fish-dams; bottom gravel on rock.
Hickerson's Island No. 1.....	15.14	3.0	600	1.86	1.06 in 150.....	71.42	Gravel bar.
Harrill's Island rapid and fish-dam.....	15.4	2.5	1,400	1.36	.....	77.63	Fish-dam; gravel bottom.
Hickerson's Island No. 2.....	16.6	0.9	1,800	0.90	1.24 in 320.....	81.88	Fish-dam; rock bottom.
Gwynn's Island shoal.....	18.1	2.0	150	.....	.....	82.68	Rock bottom; ledge in middle of river.
Old fish-dam.....	19.1	2.0	280	0.18	.....	84.74	Rock bottom.
Sayle's Ford.....	20.4	2.3	1,770	1.87	1.94 in 740.....	87.16	Rock bottom; fish-dam.
Swan Creek shoal.....	21.24	1.7	.....	.....	.....	88.69	Remove a few detached rocks.
Little Elkin shoal.....	22.43	2.0	350	0.59	.....	.....	.....
Wilcox's Ford.....	22.64	1.7	550	1.81	.....	.....	.....
Elkin Bridge shoal.....	24.79	1.8	1,000	0.81	.....	.....	.....
Town Creek shoal.....	25.87	2.0	470	0.18	.....	.....	.....
Greenwood's Creek shoal.....	26.84	1.8	280	0.18	.....	.....	.....
Morrison's shoal.....	27.24	1.8	200	1.61	.....	.....	.....
Tumbling falls.....	27.62	0.6	.....	.....	.....	.....	.....
Tumbling shoal.....	28.10	1.8	.....	.....	.....	.....	.....
Old fish-dam.....	28.37	.....	.....	.....	.....	.....	.....

Locality.	Distance from Wilkesboro, Miles.	Least depth. Feet.	Length of shoal. Feet.	Fall. Feet.	Greatest fall observed. Feet.	Total fall. Feet.	Remarks.
Hunt's Ledges.....	30.57	1.3	360	0.89	0.87 in 280	90.28	Rock bottom.
Mitchell's Island shoal.....	31.32	1.1	2,740	4.00	.....	94.61	Bottom gravel and bowlders; fish-dams.
Woodruff's fish-trap shoal.....	32.94	2.0	1,800	4.55	.....	101.14	Fish-dam; sharp fall; rock bottom.
Devil's Steep, base and Long shoal.....	35.99	1.0	1.61 miles.	11.18	3.57 in 1,170	112.21	Rock bottom; two old fish-dams.
Two old fish-dams.....	36.85	.....	.....	.....	.....	112.27	.....
Large rock below the surface.....	37.1	2.3	300	0.08	.....	113.0	Channel on either side.
Fish-dam.....	37.42	.....	.....	.....	.....	113.96	Bottom, stratified rock.
Do.....	37.72	.....	.....	.....	.....	114.49	Rock bottom.
Seven Islands shoal.....	40.4	1.8	2,630	4.02	.....	123.18	Do.
Bobannan's mill.....	40.71	2.0	3,450	2.44	.....	125.62	Rock's above surface.
Bobannan's Island.....	41.00	1.6	1,500	3.25	.....	128.87	Irregular rock bottom; grist-mill on Fall Creek.
Overfield's Ferry at Rockford.....	41.30	0.6	1,600	3.07	0.61 in 100	131.94	Right channel; rock above surface.
Shoal below Rockford.....	42.16	1.5	4,500	8.38	2.31 in 440	140.32	Right channel; rock above surface.
Foster's upper shoal.....	45.04	1.8	4,570	3.37	.....	146.37	Rugged rock bottom; fish-dams.
Foster's lower shoal.....	45.58	2.3	1,200	0.61	.....	147.31	Rock bottom.
Lime Rock shoal.....	48.68	1.7	2.59 miles.	10.62	1.64 in 300	158.06	Rock bottom; fish-dams in several places.
Reeve's fish-trap shoal.....	49.32	1.8	600	1.66	.....	160.32	Rock bottom; fish-dam.
Head of Bean shoal.....	53.06	.....	.....	.....	.....	167.01	.....
Foot of Bean shoal.....	54.55	.....	.....	.....	.....	.....	.....
End of proposed canal.....	57.18	.....	7,900	21.0	.....	206.18	Three locks, 7 feet lift.
Sycamore Ford shoal.....	57.42	2.3	13,870	18.17	.....	208.08	Rock bottom, very irregular; total fall Bean shoal, 39.17.
Hansner's Island shoal.....	59.50	2.3	700	1.5	.....	213.80	Gravel bottom; fish-dams.
Shoal above Shore's Island.....	62.73	2.0	1.83 miles.	7.73	1.02 in 600	224.77	Left channel; gravel bottom; fish-dam.
Shore's Island.....	63.24	2.6	2,800	0.88	.....	225.65	Rock and gravel bottom; fish-dams.
Glenn's Island.....	65.20	2.3	1,600	2.0	.....	234.78	Right channel; gravel bottom.
Glenn's fish-trap shoal.....	66.63	1.4	1,900	0.70	.....	240.32	Dike broken through; mill not in operation; rock bottom.
Meadow Branch shoal.....	67.52	1.7	300	0.70	.....	240.32	Old fish-dams; rock bottom.
Fish-dam Branch shoal.....	68.61	3.0	2,900	0.86	.....	242.63	Fish-dams; rock bottom.
Briar Branch shoal.....	69.24	2.4	80	*2.56	.....	246.08	Do.
Sand bar.....	70.72	.....	.....	.....	.....	.....	Rock bottom; no improvement required.
Jones's mill-dam.....	.....	.....	.....	.....	.....	.....	Mill on left bank; undershot wheel; dam built of stone and logs, brush, &c., full width of river.
Gravel bar.....	72.99	2.3	50	7.89	.....	255.97	.....
Shallow Ford shoal.....	76.29	2.4	500	0.84	.....	260.39	Rock and gravel bottom; Bitings & Carver's grist-mill on the right bank; undershot wheel; wing-dam half the width of the river.
Sheek's shoal.....	79.45	2.6	200	*4.57	.....	267.10	Fish-dam; gravel bottom.
Langenhour & Neason's dam.....	.....	.....	.....	.....	.....	.....	Grist-mill on the left bank; two turbine wheels; substantial wood and stone dam, full width of the river; rock foundation.
Gravel bar.....	80.03	.....	.....	.....	.....	.....	.....

* Vertical.

Ridge of rock.....	80.15	1.0	150	0.43	.....	269.47	Rocks above surface on the left, channel on the right; remove right wing of old fish-dam.
Shoal and fish-dam.....	81.17	3.0	500	.....	.....	269.73	Rock bottom; channel on right 18 feet wide and 2.5 to 3.3 feet deep.
Shoal above Hall's Ferry.....	82.01	1.9	600	0.23	.....	271.70	Rocky shoal; fish-dams and high points to remove.
Hall's Ferry shoal.....	82.97	2.4	850	1.41	.....	274.74	Rocky shoal; Clouse's old mill-dam.
Clouse's upper shoal.....	84.15	2.5	2,730	2.51	.....	277.68	Rock bottom.
Clouse's lower shoal.....	85.38	2.2	3,600	2.37	0.35 in 400	282.16	Rock bottom; wing-dam; mill on left; undershot wheel.
Beloid's shoal and Douthett's saw-mill.....	86.50	3.4	1,600	3.86	2.04, vertical	283.94	No improvement required.
Mill Branch rapid.....	87.08	2.0	1,700	0.98	.....	284.40	Deposit from Muddy Creek.
Ridge of rock.....	87.52	2.0	.....	.....	.....	284.40	Grist and saw mill; wing-dam; channel between dam and right bank may be improved.
Bailey's Ferry.....	88.94	2.3	300	.....	.....	286.97	Rock bottom.
Sand and gravel bar.....	90.35	2.0	800	0.81	.....	289.15	Grist-mill; wing-dam; rock bottom.
Grimes's mill-dam rapid.....	91.03	.....	.....	.....	.....	.....	.....
A high point.....	91.82	1.8	.....	.....	.....	.....	.....
Ridge of rock.....	93.36	2.3	75	.....	.....	.....	.....
Hartley's mill shoal.....	93.70	1.5	1,000	1.30	.....	294.03	Grist-mill; wing-dam; rock bottom.
Ridge of rock.....	94.20	2.1	200	.....	.....	.....	.....
Gravel bar below Peeble's Ferry.....	94.64	1.7	300	.....	.....	.....	.....
Gravel bar.....	95.02	1.9	50	.....	.....	296.58	Snag on the bar.
Deeble's mill shoal.....	95.48	1.4	700	0.50	.....	298.01	Grist-mill; wing-dam; rock bottom.
Rocky shoal.....	97.28	2.4	500	0.08	.....	300.47	.....
Rapid at Meadow Island.....	97.73	2.0	900	0.58	.....	301.30	Gravel bottom.
Oakes's Ferry rapid.....	99.42	2.9	1,400	0.73	.....	303.83	Grist-mill; mill and fish dams full width of river.
Swicegood's mill shoal.....	100.59	2.0	1,700	2.19	.....	306.61	Grist-mill; mill and fish dams full width of river.
Gravel bar.....	100.88	2.5	330	0.52	.....	307.65	Short bar, probably underlaid with rock.
Do.....	101.23	2.4	.....	.....	.....	308.28	.....
Hastron's Ferry.....	102.10	.....	.....	.....	.....	309.00	.....
Big Rock shoal.....	105.42	2.2	680	0.34	.....	312.89	Rock bottom; large rock in middle of river.
Barnes's fish-trap shoal.....	106.15	2.2	1,900	0.42	.....	315.55	Old fish-dam; rock bottom.
Dutchman Island bars.....	107.53	2.6	50	.....	.....	317.77	Gravel bottom.
Rapid.....	109.87	3.0	700	0.75	.....	322.52	Old fish-dam to remove.
Motley's shoal at Boone Ford.....	114.08	1.1	1,300	0.99	.....	323.47	Rock bottom.
Rapid.....	116.41	3.2	600	1.48	.....	331.65	Do.
Hannah's Ferry and South Yarkin.....	117.23	.....	.....	.....	.....	331.20	River 600 feet wide.
Sower's Ferry.....	120.00	.....	.....	.....	.....	333.55	.....
W. N. C. Railroad bridge.....	121.98	.....	.....	.....	.....	337.28	24.6 feet in the clear above low-water.