Memoir III.

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Notes on the Coast of the United States

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by A. D. Bache, Sup't. U.S.C. Survey.

Section III. { James River. Va.
York River. Va.
Rappahannock River. Va.

(With 10 Maps)

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Note. — These Memoirs were prepared by Prof: A. D. Bache, Sup't. assisted by Capt. C. P. Patterson, Hydrog: Inspector, and Prof: W. P. Trowbridge, Assist U.S.C. Survey.

National Oceanic and Atmospheric Administration

Notes on the Coast of the United States

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James River.

Charts (P & Q.)

This River joins the Bay in Hampton Roads between Pig Pt on the south and Newport News Pt on the north. The average width of the River from the mouth to Pt of Shoals Light house, a distance of fourteen miles, is three and a half miles. Thence to Jaines town Island a distance of fourteen miles, the average width is two miles and a quarter widening out to three and a quarter miles in Cobham Bay abreast of Jamestown Island contracting to a mile at the west end of the Island and six miles above, opposite mouth of the Chickahominy river, widening to three miles, and a mile beyond contracting to one mile and a quarter at the lower end of Sandy Point plantation. Thence to City Point the junction of the Appomattox River; a distance of twenty three miles, the average width is from one half to three quarters of a mile, contracting at points to one quarter and one fifth of a mile. City Point is the head of ship navigation and distant from Richmond thirty two nautical miles. Above this Point the river rapidly contracts in width to an average of one sixth of a mile, with a very crooked course for twenty miles, the land at one point, the neck of Farrar's island being less than four hundred and fifty yards across, the two points being distant by the river eight miles. The general direction of the river from the mouth to Richmond is N.W. Richmond the Capitol of the State of Virginia and the county town of Henrico Co is at the first falls on this River and the head of tide water, as also of sloop and steamboat navigation, eight feet water can be taken up at nearly all stages of the river. The level of the basin is ninety six and a half feet above mean tide level of the ocean. It is the centre of the manufacturing interests and railway systems of the State. It is distant by the river from City Point 32 nautical (37 statute) miles, from Jamestown 66 nautical (76 statute) miles; from Pt of Shoals 88

nautical (101 statute) miles ; from Hampton Roads 104 nautical (121 statute) miles. It is distant by rail road from Petersburg twenty three statute miles and distant by rail road through Fredericksburg from Aquia Cr. on the Potomac (forty miles from Washington) seventy five statute miles Two rail roads connect it with the south western part of the state through to Tennessee, and with the northern and middle parts of the state. There is no other town upon the river, it being generally bordered by farms and plantations. Tributaries. Nansemond River is the first tributary on the south or right bank, it joins the river at its mouth directly opposite Newport News Point. Pig Point being common to both the James River and it. Up this eight feet can be taken fifteen miles to Suffolk.

Suffolk the county town of Nansemond Co is a Station of the Norfolk & Petersburg Rail road (twenty two miles from Norfolk) and also of the Portsmouth & Weldon railroad (seventeen miles from Portsmouth) is at the head of sloop navigation. Franklin station Va about forty miles from Portsmouth on the Portsmouth & Weldon rail road, is upon Blackwater a deep but narrow tributary to the Chowan river North Carolina, navigated by small boats which ply to Edenton and Plymouth. Suffolk is connected by a canal with Drummond Lake, and this by a feeder in the Dismal Swamp Canal, leading to Elizabeth City, N.C. and by the Pasquotank with Albemarle Sound.

Chucatuck Creek joins the Nansemond at its mouth and has a channel of five feet leading into it. Pagan Creek, or river, comes in seven miles above the Nansemond and has a channel of eight feet to Smithfield the principal town of Isle of Wight Co connecting with Suffolk by the county road ten miles and a half, and with Petersburg thirty miles. This is the only considerable town between Suffolk and Petersburg. On the north, or left

bank Warwick Creek enters the river nine miles above Newport's News Pt and seven feet can be taken into its mouth. Skiff's Creek eight miles above Warwick creek is the boundary between "Warwick" and "James City" Counties. Lawn's Creek on the left bank, opposite the last is the boundary between the "Isle of Wight" and "Surry" Counties.

Chickahominy River is the principal tributary on the north or left bank below Richmond. It is navigable for sloops for eight miles and eleven feet can be taken into its mouth. It joins the river between Piney Grove Point and Clay Bluff thirty nine miles above the mouth and runs up the country about midway between and parallel to the James and York Rivers, beyond Richmond, and within five miles of that place. This river is the boundary between "James City" and "Charles City" counties

The Appomattox River, is the largest and most important stream, joining the James River below Richmond, and comes into that river thirty seven miles below this place. Petersburg in Dinwiddie Co, one of the most important and flourishing towns in the State, is on this river ten miles above its mouth at City Point, and four feet water can be taken up to it at low water. It is the centre of a rail road system scarcely inferior to that of Richmond itself, connecting directly with Norfolk, Richmond, the west and south and also with City Point the head of ship navigation on James River. Port Walthal four miles above City Point, on the left, or north bank of the Appomattox, is the general landing for coal to which fifteen feet can be carried at low water. There are many small creeks emptying into James River, with channels of but two to four feet, leading up one to three miles.

Sailing Directions.

(See Lights, Beacons Buoys)

Entering the mouth of the river from Hampton Roads on a range of S.E. angle of Fort Monroe just open to southward of Light house, bring Newport News Pt to bear N. by W. with four fathoms water blue mud, the course in is N. W½ W. giving the point a berth of one third of a mile, and deepening the water to ten fathoms soft bottom in the distance of a mile: the course is then N.W. shoaling gradually to four and three fathoms and a half in a distance of two miles. This course leads to the entrance of the channel to the Nd of White Shoals in six fathoms water. White Shoal (upon which there is a Light house) divides the river into two channels, that to the northward being the deepest; 4¾ fathoms being the least depth and averaging half a mile in width, keep the course N.W. giving the Light house a berth of one third of a mile to the southward, when it bears S. by E. haul in gradually to the South bank of the channel and track it along into the main channel. At the mouth of the channel to the southward of the shoals is a bar over which seventeen ft. can be carried at low water. To enter this channel, when one and a half mile from White Shoal Light house, haul in to the southward with the Light house two points to the starboard bow and track the south bank until the Light house bears N. by W. when haul in for it, deepening the water to 3½ fathoms, and giving the Light house a berth of three or four hundred yards, when a course of W.N.W. will lead up the channel four miles to lower end of Burnett's Bay, then haul up to W½ S. for two miles and a quarter, then a course of N.W. by N. one and a half miles will lead up abreast of Point of Shoals Light house in from five to eight fathoms water, and the channel a little over a quarter of a mile wide. The average width of the channel from the mouth to Burnett's Bay is one mile except where divided by W. Shoal.

The line of deepest water from Newport News Point leads nearly parallel to the shore about one third of a mile distant for two miles, when it gradually leaves the shore for a mile where it is three quarters of a mile distant. It then runs directly for the Light house on White Shoal until within a mile where it drops to the northward running close in to the north bank of the channel half a mile from the Light house and one mile and a half from the shore. It continues near the north bank of the north channel until the two channels meet when it runs in the mid channel nearly up to Point of Shoals Light house. From Point of Shoals Lighthouse the course is N. by E. for two miles, then N. ½ E. four miles to a position one third of a mile above Deep Water Lighthouse, which pass close to the starboard hand and mid-way between Skiff's Creek to the northward & eastward and Lawn's Creek to the southward and westward. Just above this to the Nd and westward of Hog Island is a middle ground, the deepest channel lying to the northward — to pass through this channel, which runs nearly in a semi-circle around Hog Island, track the south bank around until abreast of Allen's Wharf on the north shore, when drop off into mid channel half way between the north point of Hog Island and the marsh of Archershape Creek in from five to seven fathoms water, soft bottom. Then the course is S. W. by W. one mile and three quarters leading thro' the channel over the bar between Hog and Jamestown Islands with fifteen feet least water at low water, and to the northward of a middle ground with three feet water upon it, separating it from a crooked channel to the southward having thirteen feet water in it.

From the last position off Jamestown Island the course up the river is N. W ¼ N. three miles until Back River bears E. ½ S. with from five to eight fathoms water, when the course is W. ¼ S. keeping Smithville Point open on the starboard bow five miles. This course and distance leads over two bars, the lower with

seventeen feet on it, one mile long, and the upper one eighteen feet, - as you pass the upper bar and drop into twenty feet water, within a mile of Smithville Point, haul up N.W ¾ W. and run five miles up abreast the wharf on the lower Clarendon plantations, just below the mouth of Chipponk Creek is from six to six and a half fathoms water, soft bottom. From this last position keep the middle of the river for six miles, passing Kennon's marsh in the bend of the river and upper Brandon plantation, then give the north shore a berth, till up to the next point on the starboard hand where the channel is steep to on each side. From this point keep the middle of the river for one mile and a half, when, close in with the eastern shore and continue on a N. by E course towards Queen's Creek until abreast of the Pt of Flowery de Hundred, when haul gradually around to the westward giving the point a berth of from 400 to 600 yards, when past the Point and abreast of Swynard's wharf on the north shore, the course is S. W. by W. one and a half mile, taking you close in to the south shore, which keep aboard until up to Maycox's wharf when stand W. by N. one mile up to lower buoy on Harrison's Bar. From the lower end of Harrison's Bar to City Point the channel is very narrow and crooked, and can only be followed by the Buoys or with a chart on a large scale.

Dangers. See Lights. Beacons &c.

Upon the point of the of the bank making out 3 miles to the N.d and W.d from Barrel Point, and 4 miles W.S.W. from Fishing Point and midway between Newport News Point and Pig Point, being about 2 miles from each, there is but 5 feet of water, the channel being steep to with 4 fathoms water — on the same side 1¼ miles further up there is but 3 feet and ¾ miles beyond are banks bare at low water. 1½ miles from shore and lying in a line of Newport News Point with two clumps of trees on edge

of the marsh between Ragged River and Fishing Point. Nasseway Shoal is the name of the great bank which extends over a mile out to the N.d and E.d of Fishing Point and runs along the shore to Pagan river. This shoal to the N.d & E.d of Fishing Point is fringed for a distance of a mile with a series of banks bare at low water, with the channel steep to in 3 to 4 fathoms. Between there and Day's Point this bank is very much broken and the south shore should not be approached within 1½ miles until past "White Shoal." — Upon the north shore, as the bank leaves the shore, it gets more ragged and broken forming a number of bare banks and shallow knolls upon the edge, like that upon the south bank, very dangerous of approach. Brown's Shoal, the first and largest of these bare banks, lies about 4 miles above Newport News Point, at right angles to the shore and is ½ a mile long. Between Brown's Shoal and Warwick River the bank is from 1 to 1½ miles wide, with several bare banks, and many shoal lumps both along the edge of the channel and over the shoal. On a line between White Shoal Lighthouse and Blunt Point, ⅓ mile from the former is a Spot of but 4 feet water on the edge of the channel which is steep to with from 5 to 7 fathoms water. White Shoal lies directly in mid-river between Pagan river on the S.W. and Nest's Creek on the N.E. and has many bare spots, upon the lowermost of which is a Lighthouse. To a depth of 12 feet, this shoal is 1¼ miles long and ⅓ mile wide and divides the river into two channels, with 4¾ fathoms in the one to the northward and 17 feet over the Bar at the entrance to that to the S.d Point of Shoals. Between Warwick river and Mulberry Point, forming a base, the north bank makes out to the S.d and W.d, into Burnett's Bay for the distance of 4 miles from the north shore on the S.W. point of which bank is the Point of Shoals Lighthouse. The channel runs around the southern

edge of this bank. The whole of this immense bank is broken up into a multitude of bare banks, shallow knolls and deep holes. From opposite Point of Shoals Light house, to the N.d and E.d of Hog Island, the the south bank gradually makes out to 1½ miles in width, with many shallow knolls near the edge of the channel, one of which with but 3 feet water runs out from the S.E. corner of Hog Id directly towards Deep Water Lighthouse to Archershape (sometimes called Powhatan Cr.) the north bank runs from 1¼ miles in width off Skiffs Cr. to ⅓ mile off the former. There is a shoal on this bank with from 1 to 6 feet lying off ¾ of a mile from Grove's wharf on the edge of the channel.

There is a channel of 11 feet inside this shoal, leading up to Grove's Wh.f and through the bank. To the N.d and E.d of Hog Island there is a Shoal 3 miles long, ¾ mile wide in the middle and tapering to a point at each end, with from 5 to 12 feet water, and dividing the river into two channels, that to the N.d having 19½ feet, and that to the S.d 15 feet water.

The bank off north point of Hog island makes out ½ mile. In mid river between Hog and Jamestown Islands, at the lower entrance of Cobham Bay, lies a shoal 1½ miles long, by ½ mile in the middle, and tapering to a point at each end with 12 to 13 feet water, dividing the river into two channels. The shoal in Cobham bay with but 3 to 6 feet upon it, fills the entire bay with a narrow channel around it of 7 feet close in shore. A shoal of 6 feet runs out from Starks Creek towards Church Point to the edge of the channel and within ½ mile of the latter. A Bank makes out from Chickahominy river ½ miles extending from Dancing Point towards Back River 4 miles, and from Piney Grove Pt, the entrance of the Chickahominy river, towards Swan's point 2½ miles, with from 6 to 12 feet, the channel lies to the S.d of this bank, at from ½ to ¾ mile from the shore. There is a channel of 14 feet to the N.d of this bank leading into Chickahominy river. A shoal with from 1 to 4 ft.

on the edge makes out from Chipponk Creek running along a line from end of Wharf on Claremont plantation, to that on Lower Brandon plantation with a narrow channel of 7 feet, leading through it up the creek near the lower wharf. A Bank makes out from the E.d just below Flowery de Hundred point with but 3 feet on it, to mid channel. The channel leading along the left or E.n shore. Also ¾ a mile above this point a shoal makes out with 3 to 12 feet, with a narrow, crooked channel with 3½ fathoms close in to shore. From the lower end of Harrison's bar (over which 14 feet can be taken) to City Point, the river is crowded with shoals and bare banks, through which the channel is crooked and narrow.

Position of Light houses James R.

Name	Latitude	Longitude	
		In arc	In time
White Shoal (approximate)	37° 01′.4	76° 31′.5	5h 06m 0
Point of Shoals do	37° 03′.8	76° 39′.2	5 06 36.8
Deep Water do	37° 08′.2	76° 38′.0	5 06 32.0
Jordan's Point	37° 18′ 43″	77° 13′ 06″	5 08 52.4

Magnetic Variation.

At Old Point Comfort	1° 27 West
At Richmond	0 27 "
At Petersburg	0.48 "

Tide Table.

Locality	Mean interval, time between Moons transit & time of high water	Mean Rise & Fall	Mean rise & fall of Spring Tides	Mean rise & fall of Neap Tides	Mean duration Of Rise	Mean duration Of Fall
Newport News Pt	9h 9m	2ft.5	3ft.4	1ft.7.	6h. 3m	6h. 18m
City Point	2 11	2.8	3.0	2.5	5.14	6.58
Curl's Neck	3 31	3.2	3.0	2.8	5.32	6.54
Richmond	4 28	2.9	3.4	2.3	4.53	7.31
Petersburg	4 45	2.			4.57	7.35

Beacons, Buoys &c.
of James River and its Tributaries.

Number	Name of Station	Color	Kind of mark in feet	Prominent objects & bearings from buoys.		General remarks	Depth L.W. Spr. tides Feet
	White Shoals L.H	Red & White	Screw P.	Day's Pt buoy Newport News	W.N.W S.E ¾ E	Shows at low water. Leave light on starboard hand going up.	
1	Day's Point	Black	Spar 29	Glover's Bluff Day's Pt beacon White Sh. L.H.	W. ¼ N. W x N ½ N. E.S.E.	Soft bottom	18
	Day's Pt beacon	Red	1st Staff (red cage)	Day's Pt buoy	E by S ½ S	Shoal visible at low water.	
3	Glover's Bluff	Black	Spar 26	Day's Pt Rock landing Glover's B. beac[n]	S.E. W by S ½ S S.E by S.	Alter to clear point of shoals north[d]	20

....	Point of Shoals L.H.	Red & White	Ir. screw Pile	Harden's Bl.f B.y Deep W.r L.H	N½E. NE½E	Shoal seen at L.W. A turning point. Leave L.H. to starboard. Berth 70 yds	
5	Harden's Bluff	Black	spar 26	Up. bluff Bur. wells Hayden's Bl.f Deep W.r L.H. Pt of Sh.ls L.H.	S.W.by S N.W. NbyE¼E S½W.	Soft bottom.	18
7	Lower Lyon's Cr.	Black	spar 25	Hog I. Point Lyon's Cr. Deep W.r L.H.	N.N.W. W by S E by N½N	Soft bottom.	12½
....	Deep W.r Sh.ls L.H.	Red & White	Ir. Screw piles.	L.t Lyon's Cr. B.y Pt Shoals L.H.	W by S½S S by W½W	Seen at L.W.r Leave Light on starboard hand. Berth 80 yds.	
9	Up. Lyon's Creek	Black	spar 26	Deep W. L.H. Harden's bl.f Hog I. Point	S E by S½S S by W N.W. by N	Soft bottom.	15
2	Tree Bell	Red	spar 30	Hog I. Point Grove's Wh.f	W½S. N.E.	Sticky bottom. Dangerous shoal Soundings very abrupt.	20
....	Hog I.d Swash	Black White vertical	spar 26	Up.r part Hog I Grove Wharf Farm H. Hog I	W.N.W E.N.E W.S.W.	Soft bottom	15
11	Hog I.d Point	Black	spar 32	Cottage Creek Hog I. Point Low.r Goose hill middle buoy	N½W S.E by S S.S.W½W.	Extent of shoal out good distance Soundings abrupt 6 to 3 fathoms and the to 6 feet. Sticky	20
13	Low.r Point Goose hill Middle	Black	spar 30	Hog I. Point House Hog I Goose hill low.r	E½N. S E½S W by N½N	bottom. It marks lower point of Goose hill middle	21
....	Lower or entrance Buoy to Goose hill Swash Channel	Black White vertical	spar 30	Goose hill Pt Hog I. Point Middle buoy Goose H. Sw. Ch.	W by N½N N.E by E½E S.W½S.	Not in general use for large vessels, being lumpy and hard. Run by these 3 buoys avoiding lumps & finding deeper water than Ship Ch.l	15½
....	Mid. Goose hill Channel (Swash)	Black White vertical	spar 28	Hog I. Point Goose hill Pt Buoy Up. Goose hill middle	E by N½N N.W by W N.E½N.	same as above orth, entrance to Swash Chan.l	15½
....	Upper Goose hill swash channel	Black White vertical	spar 28	Hog I. Point Goose hill Pt Mid. Goose hill channel	E by N½N N.W by W NE½N	as above for Lower Buoy &c	15½

15	Swan Point	Black	spar 28	Swan point	W.S.W	Hard, soundings abrupt:	
				Jamestown Ch.h	E½S.	Vessels avoid southd of buoy	
				Coke's house	N.by E		
...	Do. 2nd Shoal	Black	Spar 26	Swan Point	S.E by S	Sticky. Channel narrow	16
	Water Channel	& White		Jamestown Ch	E by S½S	Up Sn Chanl Buoy close to star-	
		vertical		Dancing Pt	W by N	board. Up the Nn berth 100 yds	
17	Brown's Shoal	Black	Spar 35	Dancing Pt	W by N½N	Soft bottom	18
				Jamestown Ch.	E½S		
4	Dancing Point	Red	spar 34	Dancing Pt	N by W	soft. „	18
				Claremont	WNW		
				Sandy Pt	N.W.		
6	Buckler's Point	Red	spar 28	Windmill Pt	E	hard „	17
				Bird's Pt	W by N		
				Rice's landing	S.by W½W		
19	Scroggin's Pt	Black	spar 28	Scroggin's Pt	S.W.	soft „	15
				Bird's Pt	NW by N½N		
				Jordan's Pt L.H	W by N¼N		
8	North Lump	Red	spar 28	Berkley House	NE by N	Pass near to the buoy	14
				Jordan L.H.	W½N		
				Harrison Bar buoy	W½N	hard „ Channel narrow	
21	Harrison's Bar	Black	Inn Can 2d summer Spar in winter	Berkley house	N.E½N	Pass near to the buoy. do.	14
				Jordan L.H	W¾N		
				North lump By	S E by E	hard bottom	
10	Upper Bar Buoy	Red	spar 28	Berkley house	NE by E½E	Soft „	16
				Jordan L H.	W½N		
				N. Lump buoy	S E by E		
23	Jordan's Pt middle	Black	spar 28	L.H. Jordan's Pt	W by N	soft „	17
				Scroggin's Pt	E by S½E		
12	1st in bend between	Upper (Red)	spar 28	Berkley house	E	soft „	16
	Bar buoy and Jordan Pt			Harrison Bar By	S E by E		
				Jordan's L H	W by S		
14	2d in bend between	Upr (Red)	spar 32	Jordan's L.H.	S W	soft „	18
	Bar buoy and Jordan Pt			City Point	W by S		
16	3d in bend nearly oppo-		spar 30	Jordan's L.H.	S.W	soft „	16
	site Jordan's Pt	Red		City Point	W½S		
				Birds Point	E		
25	Jordan's Pt Spit	Black	Iron Can (summer) spar (winter)	Jordan's L.H.	E½S	soft „	16
				City Point	W½S		
				Epp's Id Point	W½N		

....	Jordan's Pt L.H.	White	Light on dwelling	Harrisons Br buoy	E¾S	soft bottom - Sides of house white - roof red - Lantern black	
18	Epps's Slue, lower entrance	Red	spar 36	City Point	W½S	soft bottom	21
				Jordan's L.H.	E½S		
20	Epps' Slue, upper entrance	Red	Iron Num 2d (Summer) spar in (Winter)	Depot, City Pt	W½S	soft "	20
				Upper Pt Epps I	WNW		
				Jordan's L.H.	E½S		
27	Right of City Pt	Black	spar 36	Jordan's L.H.	ENE	sticky "	18
				Point of Epps I.	NW½W		
				Depot. City Pt	WbyN		
29	2d Buoy in Right of City Point	Black	spar 36	Jordan's L.H.	EbyN½N	sticky "	18
				City Point	NWbyW		
22	Point of Epps Id Middle	Red	Iron Num 2d Summer Spar in Winter	Jordan's L.H.	ENE	soft "	18
				Depot, City Pt	W¾N		
				Point of Epps I	NWbyW ½W		
24	Turn of Middle to Bermuda hund d	Red	Iron Num 2d Summer Spar in winter	Cox's Point	SbyW½W	soft "	20
				Shirley's Pt	NNE		
				Bermuda Hund. d	NbyE		
31	Trent's Reach 1st	Black	spar 22	Mill rock	WSW	hard "	11
26	Buoy " 2d	Red	spar 22	Mill rock	SWbyW	hard "	11
28	Buoy " 3d	Red	spar 22	Mill rock	SWbyW	hard "	11
30	Richmond bar low.	Red	spar 24	State house	NNW	hard "	12
32	" 2d buoy	Red	spar 22	State house	NNW	hard "	10
34	" 3d buoy	Red	spar 24	State house	NNW	hard "	12
33	Good's Rocks	Black	I'can 3d Spar Winter	State house	NbyW	hard "	15
35	Rocks near Richmond	Black	I'n buoy Summer Spar in Winter	Wh Rat Rockets	N	hard "	12
				State house	N.WbyN		

Channel of the Appomattox River Va

2	Mouth of the river Appomattox	Red	spar 23 R	Cox's Point	SbyE	sticky bottom	13
				Middle buoy	SW½W		
				Bermuda hund.	NbyE½E		
1	Middle buoy	Black	spar 24	Cox's Point	S½E	channel very narrow	13
				Bermuda hund.	E¾N		
4	Upper buoy	Red	spar 22	Cox's Point	SE¾E	channel very narrow	14
				Bermuda hund	NEbyN		
				Buoy mouth river	EbyN½N		

York River Va

Charts D & S & T & T'.

From Cape Henry to the eastern extremity of York River Spit is eighteen miles, and thence to the line joining Too's Point and Monday's Point is eight miles. Thence to Yorktown narrows is six miles. Thence to West Point at the junction of the Pamunky and Mattapony rivers which form the York River is twenty one and a half miles. York River entrance is in Latitude 37° 15 N. Longitude 76° 23 W. The general course from the mouth to Yorktown narrows is E.S.E. and thence to West Point N.W. The Richmond and York River rail road crosses the Pamunky at White house above Indian Island about fifteen and a half miles by water and 12½ miles by rail road N. and W. of West Point. The distance by rail road from West Point to Richmond is thirty eight miles. The shortest distance from Richmond to the Pamunky is twelve and a half miles and to the Mattapony twenty and a half miles. The Chickahominy, a tributary of the James River, lies between these rivers and Richmond four miles from the city. The Rail road to Aquia creek crosses the South Anna river, the southern branch of the Pamunky, about 57 miles by the river above West Point at Chesterfield, and North Anna about six miles north of this, about four miles north of the South Anna crossing is the junction with the Virginia Central Railroad, branching at Gordonsville north to Alexandria and south to Charlotteville and Lynchburg. The width of the York River at the mouth is two miles and one eighth which suddenly contracts to seven eighths of a mile at Yorktown. It widens again to two miles at King's Creek, then gradually narrows for eight miles between Moody's Wharf and Purtun's Island to three miles above Yorktown between which and West Point the width is irregular, the least being at Terrapin Point five miles above Moody's Wharf and three miles

and a quarter below West Point and opposite to Dudley's Ferry. The channel between the eighteen feet curves, which at the entrance is one and three quarter miles wide, narrows before reaching Terrapin Point to about one quarter of of a mile. The depths at each five miles from York Spit in fathoms are 6, 5½, 6¾, 7¼, 5½, 3¾, 3½, 3½, the bar at Goff's Point has eighteen feet on it and then 3½ occurs again. Thirteen feet can be carried to West Point.

Islands.

The entrance of York River is marked by broken patches of Marsh and and Islands not marked with names on the ordinary maps. Two very small ones on the northern side of the entrance are known as Hog island and Ellen's island. About two miles above Gloucester Point, and about a mile apart and near the north shore are several groups known as the Mumfort islands, Carmine islands, and Catlett's islands. Purtan's Island, nine miles further up and directly opposite to Moody's wharf, is cut off from the north shore by Adam's creek. A small indentation at the lower end of the island is called Purtan Bay.

Sailing Directions.

The sailing lines for entering York River are given in the chart as follows. In six fathoms water bring the Light Boat off York Spit to bear N by W½W (N 20°W) which will be in range with New Point Comfort, then stand in for the mouth of the river on a N.W. by W. (N 57°W) course leaving the black buoy on York Spit three quarters of a mile to the starboard hand. In eight fathoms water, with Too's Pt bearing S.W. by S. (S. 32°W) steer W. by S. ¼ S. (S. 74°W). The best water is found in the middle of the river.

Above Yorktown the chart is the best guide. The shoals are generally attached to the shore, the channel following one other shore according to the shape of the river. One mile above Moody's wharf the shoal from the southern (right) bank makes out eight tenths of a mile and there is just above this a detached shoal nearly in mid channel with but seventeen feet on the upper end and three eighths of a mile long. The cleanest channel is on the north side of this Shoal. The great bar off Goff's Point is made by the sudden widening of the river and the consequent deposit from the two rivers forming the York. At the Yorktown narrows the depth is thirteen and a half and fourteen fathoms. By the aid of the buoys properly placed the navigation is easy, but it is known that many of these have been purposely displaced of late. **Bottoms.** Sand and mud constitute the bottom at the entrance. York Spit is hard. The Pocosin flats less hard. Within the river the bottom is blue mud and sand.

Magnetic Variation.

At York Spit Light Vessel 1857 1° 28′ West

Tides.

Corrected Establishment VIII^{H} XXXIX^{M} (approx) at entrance

Mean rise and fall of tides (approx) 2·4 feet

Beacons & Buoys, York R.

N° in order	Name of Station	Color	Kind of mark	Bearings of Prominent objects from buoy or beacon		General remarks	Depth at L.W. of Spring tides
....	York spit L. Vessel	Cream	2 masts 1 light	New Pt L. house	N.W by N½N.	Off end of spit.	24
				Back R.L. house	S.W by S ½ S		
				Too's Point	W½N		
1	Pocosin Flats	Black	2d Iron Can	Back R.L. house	S by E	Soft bottom.	20
				New Pt L. house	N by E½ E		
				Too's Pt trees	W by N½ N		
2	Elbow of York spit	Red	2d Iron Nun	New Pt L. house	N.E by N½N	Soft bottom. Should not pass	42
				Back R.L. house	S by E	to N.d of buoy, soundings ab-	
				Too's Point	W	-rupt 7 fath. to 10 ft within 50 yds	
3	Off Too's Point	Black	2d Iron Can	Too's Point	W S W	soft bottom.	39
				New Pt L. house	N E ½ N		
				York Spit L.H.	E by S½S		
4	Green Pt Flats	Red	ft Spar 28	Green point	N.E.	soft bottom.	18
				Gloucester Pt	S.E		
				Blundering Pt	N.N.E		
6	Page's Rocks	Red	ft Spar 33	Gloucester Pt	S E ½ S	soft bottom.	22
				Low Pt Popatank	N W ½ N		
				Roseville Bk H.	N E by N		
5	E. end of Middle off Aberdeen C.	Black	ft Spar 32	Roseville Bk H	E by N	soft bottom.	20
				Barren point	N W by N½N		
				Scimminure Cr	S S.W		
8	Bellview mud Flats	Red	ft Spar 30	Mt Holly banks	S.W	soft bottom.	18
				Bellview	N½W		
				Purten Id	S E ½ S		

Note. (May 1861) It is uncertain whether any of the lights, beacons or buoys are now in their places.

Rappahannock River V.a

Charts U,V,W,X,Y,Z.

The Light Vessel off Windmill Point, at the extremity of Rappahannock Spit, which marked the entrance to this River and made it safe, has recently been removed in contravention of the authority of the United States.

Windmill Point is in Latitude 37° 35' N. Longitude 76° 17' W. and the spit extends four and a tenth miles from it. The entrance from Chesapeake Bay is between Rappahannock Spit and Stingray Point Shoal, on which last there are rocks marked upon the chart with but two feet of water on them. From the mouth of the river between Windmill Point and Stingray Point shoal to Fredericksburg Rail-road bridge is ninety two nautical miles. Curratoman river is the only important tributary of the Rappahannock and it is rather an arm of the river itself with small streams coming in at the head of the creek. From the entrance of the Rappahannock to Curratoman Creek is ten miles: to Urbanna Creek on the south (right) bank is fourteen and a half miles; thence to Tappahannock, also on the south bank, twenty three miles: thence to Occupacia Creek, a tributary from the south, six miles and a half: thence to Port Tobacco six and a half miles: to Camden one mile: to Port Royal four miles: thence to Fredericksburg twenty six miles and a half.

There the bridge of the Rail road from Richmond to Aquia Creek crosses the river, and, about one mile above, the bridge of the turnpike road from Orange Court house. On this road is a remarkable stretch across Orange County of straight road for twenty miles. The Rappahannock is three miles and one eighth wide between Stingray Point

on the south and Windmill Point on the north. It is very irregular in its width, the narrow parts, in ascending, being as follows: Grey's Point (south shore) to near Cherry Point (north shore) one mile and six tenths wide: Circus Pt (north shore) one mile and three eighths: opposite Accakeek Point seven eighths of a mile. At a low marshy point on the south shore, two miles and a half above Tappahannock, it is five eighths of a mile wide, and at a similar point a mile below Occupacia Creek the width is four tenths of a mile.

The river begins to take a meandering course above Tappahannock but above Occupacia creek there is a decided change in the width and in the frequent and extended meanderings of the stream, though this creek is not an important affluent. At the point just above Occupacia creek the width is about three tenths of a mile: at Smith's wharf (north side) it is two tenths: at Saunder's wharf (south side) thirteen hundredths: at Brisco mines one tenth, and so on to six hundredths of a mile near Fredericksburg.

The river runs between high banks from Fredericksburg down to a point below Port Royal, or frequently one bank is high and the other low & marshy.

Depths.

There is no proper bar at the river entrance, four fathoms and three quarters being the least water on the sailing line at the entrance. The channel deepens to twelve and a half fathoms and then decreases again. The depth between Grey's Point and Cherry Point is seven and a half fathoms on the sailing line. Off Curratoman river, from twelve and a quarter to fourteen fathoms: off Urbana creek seven fathoms: off Tappahannock three fathoms, but the river is obstructed by shoals. Off Occupacia creek the depth is 3 fathoms, and in the narrow parts, the river retains this depth or in-

creases it, only losing in the extraordinary enlargements which occur at intervals as high up as Nanzatico on the north shore. Above it is obstructed by bars, and the deep water only shows itself in deep holes. Steamboats drawing six feet ply upon the Rappahannock between Fredericksburg and Baltimore.

Dangers.

Give Rappahannock Spit a wide berth in entering, the Light Vessel having been removed. It is probable that the buoys have been removed or their places purposely changed so as to mislead the navigator. A Shoal with seven and a half and nine feet off the Punch Bowl six tenths of a mile from the south shore. Just above this two Shoals on the opposite side of the channel and rather over a mile from the shore (left bank) the lower with eleven feet, and the upper with twelve and a half upon it. A twelve feet Spot of Farnham's creek in Latitude 37°49'N. The vicinity of Bowler's ledge (Sheet V) which was marked by a Light boat and buoy is very foul ground. Above it there is a clean but very narrow channel to the bar between Accaceek and Lowry's Point which closes the navigation for eighteen feet and over at low water (19½ feet at high water). Opposite to Lowry's point is a Shoal dry at low water, and a half a mile above a bar of seventeen and a half feet. The eighteen feet curve disappears except in deep holes and the channel shoals to eleven and a half, to eleven, nine, and seven and a half feet; the twelve feet curve nearly disappearing until the river narrows. Sheet (W) shows quite a deep and wide channel with not less than seventeen feet.

On Sheet X just above Port Micon is a Spot with fifteen and a half in the line of best water; one just below the Devil's Elbow of eighteen, and one above of seventeen feet. Above the Devil's Elbow is a bar of fifteen feet. This depth can be carried to the bar below Long Point which has fourteen and a half feet upon it. No more than eight feet can be carried above Long Point and Port Tobacco, the river again deepening as it contracts. A wreck lies off Nanzatico in deep water and is dangerous. Eight feet can be carried as high nearly as Haugh's creek, then six and a half to above Moss creek (Chart Y) At Castle's Ferry (Chart Z) there is a bar of five feet. and Spottswood bar has but four feet least water. At Deep Run is a bar with but three feet and half on it.

Bottoms.

Off the entrance of the Rappahannock is blue mud close up to the Spit which is hard. At the river mouth is sand and grey mud, but chiefly hard sand, occasionally with shells (Sheet U). Hard sand predominates with occasionally grey or black mud or a mixture of the two.

On Sheet W the bottom is sandy sometimes and hard, or muddy & soft. The same character applies generally to Sheet X but at the Devil's elbow hard clay appears. Sheets X,Y,Z, give bottoms sometimes hard, sometimes soft: as a rule the deep water overlies soft bottom and the bars are hard, but with many exceptions. Lights Windmill Pt Light vessel on the north side of the entrance to Rappahannock R 4 miles E.S.E½E from Windmill Pt— 4½ from Stingray Pt E. by N.½N. is of straw color, with light 34 feet above sea level. Visible 11 nautical miles. Fog bell. Probably not now operating.

Beacons & Buoys marking Rappahannock River Va

No. in Order	Name' Station	Color	Marks Buoys	Bearings of prominent objects from buoys &c		General remarks	Depths at L.W. of spring tides
	Stingray I.H	White	screw pile				
1	Sturgeon C.Bar	Black	spar 32 ft	Windmill Pt	N.E by E ½ E	Sticky bottom Important to large Vessels	21
				Stingray Pt	S.E. ¾ E.	for safe anchorage - Leaving on stand up to good lee	
3	Punch bowl Pt Br	Black	spar 28	Punch bowl Pt	S.W.	When up to this, steer for Tapley B buoy. Cross bar	18
				Dove's Pt	S.S.E.	in 19 feet, leaving Tapley buoy on Starboard hand	
				Maratico poplars	NW by N		
2	Tapley's Pt Bar	Red	spar 26	Punch bowl Pt	S E ½ S	Bar makes out half way across river. Sticky.	19
				Maratico	N ¾ E		
5	Low.r Jones' Pt Br	Black	spar 27	Lower Jones Pt	S W by S	Water shoals suddenly 25 to 10 feet Sticky.	25
				Maratico	E N E		
4	Dumpling Rcks	Red	spar 26	Bowler's	W by N ½ N	Buoy on edge of Dumpling Rocks ¾ mile below	15
				Suggett's Pt	N W by N ½ N	the buoy on Corner Rock or L. Boat Station.	
				Jones' Pt	S E by S		
6	Corner Rock & L. Boat Station	Red	spar 28	West view	N N E ½ E	Fog bell on boat. Buoy used when Boat is off the	16½
				Bowler's	W by N	station. Appreach with berth of 30 yds. Hard.	
				Peach Pt	E		
7	Bowler's Rock	Black	spar 29	Akee Pt	N W by N ½ N	Soundings change quickly 4 fathoms to 8 feet.	20
				Bowlers	W	No vessels should go inside of buoy: in Shore	
				Light boat	E S E	are extensive Oyster "Rocks". Soft.	
8	Ross Rocks	Red	spar 38	Jones' Pt	W N W	Dangerous oyster bank shoaling from 4 fathoms	22
				Lowry's Pt	S	to 8 feet. Sticky.	
9	Up.r Jones' Pt bar	Black	spar 29	Tappahannock	N W by W ½ W	Vessels reaching this can haul up for Tappa-	16½
				Jones' Pt	S W by S	hannock thus clearing Mangorite marsh soft	
10	Mangorite Msh	Red	spar 26	Tappahannock	W by N ½ N	Marks shoal which makes off from marsh	18
				Marshall's ferry	N W by N	Jones Pt S E by S ½ S	
12	Naylor's Hole east bank	Red	spar 18	Gwinfield Pt	N W	Soft	12
				Cat Pt creek	N by E		
				Tappahannock	S		
11	Naylor's Hole west bank	Black	spar 18	Cat Pt Creek ferry	N E ½ N	Soft	12
				Gwinfield Pt	N W ½ W		
				Tappahannock	S by E		
14	Mulberry Id bar	Red	spar 20	Pt Msh Mulberry Id	E by N	Sticky. Bar makes out ⅔ across river	12
				Gwinfield farm ho.	S by E		
13	Blind Pt in Gum Bottom Reach	Black	spar 35	Poplars, marl bank	N W ¾ N	Sticky. Bar makes out ½ across river	20
				Blind Pt	S W by W	Sounding change from 3 fathoms to 5 feet	
16	Green Bay Pt	Red	spar 38	Green Bay Pt	N E by E	Soft. At turning point up or down the river.	21
				Goose creek	S ½ E		
				Liberty hill Poplars	S W ¾ S		
18	Middle Ground Port Tobago Rch	Red	spar 21	Long Pt	W by N ¾ N	Sticky. At turning point up or down river	13
				Liberty hill Poplars	S S.W		
20	L.r end Port Royal Reach	Red	spar 21	Poplar Pt	W ½ N	Sticky. Flat makes out ⅔ across river.	13
				Port Conway Whf	N W ½ N		

Taken from official publications of the Light house Board

Tides.

At the mouth of the Piankatank near the mouth of the Rappahannock

the Establishment is	X^{h} V^{m}
Mean rise and fall	1.3
Spring tide	1.9
Neap tide	0.7
Mean duration of rise	5.^{h} 51^{m}
Mean duration of fall	6.^{h} 36^{m}

At Tappahannock the Establishment is —^{H} XLII^{m} *Mean rise and fall* 1·6 ft