8

(no 36.)

6111
U. S. C. & G. SURVEY
LIBRARY
AND
ARCHIVES
No. 13248.
Shelf 173
Case

Notes on the Coast of the United States

by A. D. Bache, Sup'dt: U.S.C. Survey.

Section V. Coast of South Carolina.

Rare Book
VK
982
.S6
B3
1861

(With 8 Maps)

June. 1861.

Note. This Memoir was prepared by C.O. Boutelle Esq. Assistant U.S.C. Survey, and revised by Prof. A.D. Bache, Sup'dt, assisted by Capt: C.P. Patterson, Hydrog. Inspector, and Prof. W.P. Trowbridge, Assist: U.S.C. Survey

#6 1 of 2

National Oceanic and Atmospheric Administration

Notes on the Coast of the United States

ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages
Faded or light ink
Binding intrudes into the text

This has been a co-operative project between the NOAA Central Library, the Office of Coast Survey, NOS and the NOAA Climate Database Modernization Program. This project includes the imaging of the full text of each document. To view the original documents, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or www.reference@nodc.noaa.gov.

LASON
Imaging Contractor
12200 Kiln Court
Beltsville, MD 20704-1387
April 20, 2004

This Book is the Property of the
U. S. COAST AND GEODETIC SURVEY,
and must be carried on Book Inventory
if not returned before the Expiration
of the Calendar Year.

Winyah Bay is the outlet of the Pedee and Waccamaw Rivers, on both of which larg quan-
-tities of rice are raised. Light draught steam-
-ers and schooners ascend both these rivers, bring-
-ing cotton, rice, lumber and naval stores to George-
-town and Charleston.

Georgetown is situated upon the Sampit creek, at the head of Winyah Bay, and about 13 miles from the sea. It is a small town, having several steam sawmills, but of no great commercial im-
-portance. Between ten and eleven feet may be carried in at high water (at low, seven feet) over Georgetown Bar. (See Coast Survey Chart B). The channel is narrow and dangerous for strangers, and even for Pilots if the buoys are removed. The chart gives sailing directions for entering.

Six miles southwest of Georgetown Bar is North Santee River, the northern outlet of the Santee river. This is the chief passage used by vessels carrying rice from the Santee to Charleston.

Vessels drawing seven and eight feet of water may go in and come out, within two hours of high water. There is an inland boat passage from North Santee River to Winyah Bay, through "Musquito creek", but it is intricate and very little

used. The Santee has two other outlets, viz. "South Santee" and "Alligator Creek,", but neither is much used. The first is about two miles, and the latter about five miles, south of North Santee Bar.

Vessels drawing not more than four and a half feet can come out of the Santee through Alligator Creek at the "Horns", pass inside of Cape and Raccoon Islands, traverse Bull's Bay, and go inside all the way to Charlestown. Very few white men know the entire route, but many negroes do. There are six "divides" or places where the tides part or meet, between Cape Roman and Charleston Harbor. Of these, four run dry at low water, and the other two are encumbered with mud and oyster banks. In the Spring and Summer there is very little trade by water with the Santee district. The rice crop has been carried to market, and there is nothing else offering as freight. A few vessels pass George-town Bar including passenger steamers to and from Charleston.

Bull's Bay (Chart C)

The next locality of importance is Bull's Bay; Its L.H. is 12 miles S.W. by W.½W. from Cape Roman and 30 from Winyah Bay. The sailing directions for entering this noble harbor of refuge are from the Coast Survey —

Chart, Report of 1859. ~~15~~ 20 feet may be carried in at ordinary high water, or 15 feet at low.

Sailing Directions. when in 6¼ fathoms water bring Bull's Bay Light House to bear N.W. by W. ½ W. Stand in on this course, leaving the Bar Buoy one cable's length on the Starboard hand, until in 3¼ fathoms water; then follow the beach round until off the mouth of the Creek, and anchor in 3½ fathoms water, muddy bottom. This is a safe anchorage, and the channel way is clearly marked by the breakers on either hand.

Fifteen feet can be carried across the Bar at mean low water.

The Courses and Bearings are Magnetic.

Tides

Corrected Establishment	VII.H XVI.M
Rise of Highest Tide observed above the plane of reference	7. 4 ft.
Fall of Lowest Tide do. below do. do.	1. 9
Fall of Mean Low Water of Spring Tides below do.	0. 4
Height of Mean Low Water of Neap Tides above do.	0. 5
Mean Rise and Fall of Tides	4. 8
Mean do of Spring Tides	5. 7
Mean do of Neap Tides	3. 7
Mean duration of Rise } Reckoning from the middle of one	6h. 20m
Mean do of Fall } Stand to the middle of the next	6. 06
Mean do of Stand	0. 30

Light Houses

Name	Lat. North	Long. West from Greenw. Obsy. in arc	Long. West from Greenw. Obsy. in time	fixed or revolving	interval of flash	Height above level of sea	Distance visible in naut. miles
Cape Roman Lt. Ho.	33° 01′ 06″.6	79° 22′ 11″.9	5h 17m 28s.8	revolving	1m 00s	150 ft.	18.5
Bull's Island " "	32° 55′ 18″.3	79° 33′ 43″.6	5h 18m 14s.9	fixed		35 "	11.1

It is probable that these lights are not now in operation.

The Bluff at the entrance is high and wooded, and might be easily and strongly fortified. Batteries erected to defend the entrance may, however, be attacked in the rear, by landing upon Bull's Island, about three miles south of the North East Bluff, and marching northerly along the beach to within a mile of the Light House, where a wood-road near a fence passes directly to the rear of the entire range of sand hills commanding the entrance.

Good water may be obtained on the island, and timber may be cut for constructing a wharf for a coaling station if one is needed. The position of Bull's Island renders it easily defensible, and there is no other "fast land" (except the small sand Key called Bird Island) from which it can be attacked.

The very direct entrance to this Harbor also renders it peculiarly valuable as a harbor of refuge for smaller vessels, especially during the "Hurricane months".

No point North of Charleston may be made so useful:- it is entirely <u>healthy</u> during the Summer and Autumn, - so perfectly healthy and easy of access that the authorities of Charleston have recommended it as a quarantine ground during their Strangers' (or Yellow) fever Months.

From Bull's Bay to Charleston Main Bar is 22 miles. Between the two Harbors are four Inlets viz. -

(1) <u>Price's Inlet</u> between Bull's and Capers' Islands;
(2) <u>Capers' Inlet</u> between Capers' and Dewees' Islands;
(3) <u>Dewees' Inlet</u> between Dewees' and Long Islands;
(4) <u>Breach Inlet</u> between Long and Sullivan's Islands;

None of these have any commerce and no vessel enters them. But Dewees' Inlet has seven feet at low water, or twelve feet at mean high water, and an excellent anchorage in four fathoms on the inside.

Two buoys, black and red, marked the entrance in 1858. They were put down by the Hydrographic party under Lieut. Comdg. Maffitt. Dewees' Inlet may be useful as a harbor for light draught vessels.

A deep Creek, navigable at low water for boats to Station "Fuller" enters Dewees' Inlet ~~(See Progress Sketch A)~~. From "Fuller" to Mt Pleasant Station is nine miles. Hobcaw Point is in the rear of Fort Moultrie and Castle Pinckney and the City of Charleston. The points are connected for the most part by a well-travelled road, in a pine forest.

Charleston Harbor

The Coast Survey Chart (D) shows all the direct approaches to the city. The first Inlet South of the harbor is Light House Inlet" between Morris and Folly Islands. Boats entering here can pull on the inside southerly to Stono River, and northerly to Charleston Harbor near Fort Sumter.

The printed Map of Charleston Harbor, James Island, and Stono River, made from surveys under Major Hartman Bache, U.S. Top. Engineers, and published by the government in 1825, gives a very accurate delineation of these Creeks, and of the other water passages across James Island, through "Newtown Cut" and "Wappoo Creek". The latter is the usual inland route southerly from Charleston, and will become of great importance to the trade of Charleston when its harbor is obstructed. Steamers drawing from four to six feet (of which eight were owned in Charleston a year ago) may go at the proper times of tide, from Charleston to to North Edisto River, in five hours. Leaving Charleston an hour before high water they carry a flood tide with them up to the "divide" at "Church Flats," where the tide entering at North Edisto meets that entering at Stono.

It is needful to reach this point at or near high water, which is here about three hours later than at the mouths of the inlets. The Steamer going through Church Flats at high water, takes the ebb tide through

"New Cut" and "Wadmelaw Sound" into North Edisto. This portion of the passage is especially intricate and requires skilful pilotage. It is also so far inland as to be unhealthy at night after June 1st.

Stono Bar

Stono Bar had about eight feet at low water upon it in 1856. The channel is narrow and crooked up to "Bird Key" but from that point there is plenty of water for vessels drawing ten or twelve feet, all the way up the river to Wappoo Creek or "Elliott's Cut", four miles west of Charleston.

Just after passing "Bird Key" in entering, Folly Island River opens to the right. Good water may be procured about two miles up the river at Campbell's on Folly Island. Campbell is a Scotchman and the only inhabitant of the Island. About two miles up the river from "Bird Key", Kiawah river opens to the westward. This is navigable for about four miles, with an average depth of three fathoms At high water boats pass through an artificial Cut at the Haulover into Bohicket Creek and North Edisto River.

The depths of water in Stono River given upon Major Bache's Chart were generally correct in 1854 and 1855, and there was no difficulty then in sailing by the Chart. There are probably two batteries defending the entrance to Stono River – one on Folly Island, near the S. W. end, and one on Cole's Island.

Stono Breakers are seven miles S. W. by W. from Charleston Bar

They form a salient point in sailing along the Coast, and generally show in moderate weather. The entrance in 1854 was South of and near the outermost breaker. See Coast Survey Chart A "Cape Roman to Tybee."
The small inlet between Seabrook's Island and Kiawah will admit a boat at high water, but is of no practical use.
North Edisto River (Chart F.) is eighteen miles S. & W. of Charleston Bar and is the first inlet of any value in a commercial point of view South of Charleston. It has more water than Charleston Bar - thirteen feet at mean low water, or nineteen feet at high water. The entrance is very direct, and vessels drawing not over twelve feet may enter safely on a single range. A black bar buoy has been placed to mark the main entrance. But the chart and headlands with the lead are all that are required to enter. Vessels entering at North Edisto can send their cargoes to Charleston by steamers through the inland passage before described. The Islands on either side of the river are wholly devoted to the culture of Sea Island Cotton. There is a large wharf about three miles from the sea-shore at the place called Legaré's house upon the chart. Opposite is Bohicket Creek, three miles up which is the village of Rockville, a summer residence for the planters of Wadmelaw and John's Island. Water may be obtained at either of these places. The inlet has no commerce proper. The shores on either side of the entrance are wooded and

easily defended, and the islands are populous.

There are two small inlets between North and South Edisto Rivers. Neither are of importance. Between them upon the sea shore is the village of Edingsville the summer residence of the Edisto planters. There is deep water quite near the shore abreast of this village. (see chart).

South Edisto River is Edisto River proper, North Edisto being the outlet of Wadmelaw Sound, and the Dawhoo, while the Edisto is a long river sending very large amounts of lumber from its head waters to Charleston. It is navigable for vessels drawing nine feet of water up to Governor Aikens' rice plantation at Jehossee where it communicates with North Edisto river through the Dawhoo.

The Dawhoo is navigable for steamers drawing not more than six feet at all times of tide. It is very crooked and requires a pilot, or a boat to sound ahead.

Fourteen feet at low water may be carried into South Edisto (see chart of St Helena Sound G) and good anchorage may be had inside, in five fathoms water. But the anchorage under Otter Island in St. Helena Sound is a better and healthier one. No vessels enter South Edisto and its true capacity is little known.

St. Helena Sound chart G is one of the principal harbors of South Carolina, and is especially adapted to the use of the blockading squadron. Two anchorages are healthy throughout the whole summer. These are near Otter Island

and Hunting Island respectively.

The Coast Survey Chart of St. Helena Sound, shews the several entrances thereto. An inspection of the dotted lines drawn upon the accompanying chart will shew that sixteen feet at mean low water, or twenty two feet at mean high water, may be carried in at this channel. Four buoys will be required to mark this channel up to the anchorages.

Sailing Directions. To enter St. Helena by the East Channel.

When in not less than four fathoms, bring the North point of Hunting Island, and the Light Boat to bear W. ¼ S. (W.), this course made good will strike the bar buoys, both of which must be left 20 yards on the Starboard hand.

When up with the Light Boat, steer N.W. ¼ N. (N. 59° 30' W.) 2 ⅔ nautical miles, or until the North point of Hunting Island bears S. W. by S. ½ S. (S. 31° W.) when if bound into the Ashepoo River, steer N.W. ¼ N. (N. 45° 20' W.), if bound up the Sound, steer W.N.W. (N. 65° 20' W.)

If bound into Morgan's River.— When abreast the Light Boat continue the course W. ¼ S. (W.) Crossing at shoal bank with 12 feet water upon it, when in six fathoms steer N.W. ½ N. (N 37° 30' W.) until the North point of Hunting Island bears S.S.W. ¼ W. (S. 27° 30' W.) when follow the course W.N.W. (N. 65° W.) for one and a half miles, and stand in for Morgan's River, W. ½ N. (N. 80° 15' W.) There is 8 feet in the East channel at mean low water.

To enter St. Helena Sound by the Southeast channel. Bring the S. W.

point of Big Bay Island to bear N.N.W. (N. 18° 40' W.). The east clump of woods on Morgan's Island and the Light Boat in range and bearing N.W. by W. ½ W. (N. 60° 20' W.) the North point of Hunting Island bearing W. by N. ¼ N. (N. 73° 30' W.) steer W. ¼ N. (N. 85° W.) one and ¾ miles up to the black Buoy on the bar, which leave on the Port hand and steer N.W. by W. ¼ W. (N. 56° 30' W.) for the Red Buoy, which leave 20 yards on the Starboard hand and steer N.W. by N. (N. 30° W.) for the Light Boat. When up with the Light Boat proceed as before di--rected. 13 feet can be carried through this channel at mean low water.

<u>To enter St. Helena Sound by the South Channel</u>. In five fathoms water bing the North point of Hunting Island to bear N. W. ¾ W. (N. 50° W.) the N. E. point of Prentiss Island W. ½ S. (W 1° 20' S.) The Light Boat N. W. by N. (N. 30° W.) when steer W. (N 86° 10' W.) 3 and ¼ miles, when the North point of Hunting Island bears N.W. by N. (N. 29° 30' W.) steer N. by W. ¾ W. (N. 16° 40' W.) 2 miles, and when the Light boat bears N. by E. ¼ E. (N. 18° 20' E.) and Hunting Island point N.W. ½ N. (N 35° 20' W.) change the course to N.N.W. ½ W. (N. 24° 20 W.) 3 and ¼ miles, Hunting Island point bearing W. by S. ¼ S. (S. 88° 45' W.) steer W. ¾ N. (N. 77° 40' W.) 1 mile, when anchor at will in 4 or 5 fathoms water. If bound into Morgan's river, follow the directions previously given, until the Light Boat bears N by E. ¼ E. (N. 18° 20' E.) follow this course for 1 and ½ miles to mid channel, thence the course is N.N.W. ½ W. (N 24° 40 W) 1 and ½ miles when the Light Boat should bear due East. Then follow the directions

previously given for the East Channel.
Seventeen feet at mean low water can be carried through the South Channel.
The Shoals of St Helena Bar extend six miles to seaward. The land is low and difficult to distinguish. The Sound is full of shoals and no stranger should attempt its navigation without a pilot. After the prevalence of a strong N. westerly wind the bar is usually two and three feet less than the general average.

Tides

Corrected Establishment	VII.H. VIII.M.
Rise of Highest Tide observed above the plane of reference	8.0 ft.
Fall of Lowest Tide do below do do	2.3
Fall of Mean Low Water of Spring Tides below do	0.7
Height of Mean Low Water of Neap Tides above do	0.8
Mean Rise and Fall of Tides	5.9
Mean do of Spring Tides	7.4
Mean do of Neap Tides	4.4
Mean duration of Rise } Reckoning from the middle of one	6h. 13m.
Mean do of Fall } Stand to the middle of the next	6.12
Mean do of Stand	0.23
Latitude of Hunting Island Station △	32° 24′ 34″.6
Longitude of do west from Greenwich Obsy. in arc }	80° 24′ 39″.2
Longitude of do do in time }	5h. 21m. 38s.6
Variation of the Magnetic needle at Light Vessel (1857)	2° 58′ E.

Position of Light Vessel (at Ebb tide, in May 1851)

Latitude - - - - - -	32° 24′ 44″
Longitude, in arc	80° 21′ 31″
Longitude, in time	5h. 21m. 26s.

The light ship occupied a point on the "Combahee shoal" near Otter Island, and a large Light House which shew-ed a flashing Light has been built on Hunting Island. The position of both Light House and Boat are on the Chart. A Beacon Light on a white frame stands East of the Light House, and gives the range for entering the East or "Slue" Channel at night. This Channel has about seven feet at low water, and is used by the rice vessels and steamers of light draught.

The Shoals in St Helena Sound are long and narrow, with deep regular channels between them. A mass of irregular shoals extends southerly from Fenwick and Otter Islands, filling the entire space between South Edisto River and the Sound.

These shoals break off the sea in Easterly Storms, and give comparatively smooth water in the Sound.

The Ashepoo, Combahee, Bull, Coosaw, Morgan Island and Hunting Island Rivers all empty into the Sound.

The Ashepoo enters the Sound at Otter Island. Here a good anchorage in four and a half fathoms may be had at the point marked upon the Chart. The anchorage is safe in all weathers, is perfectly healthy, and can only be attacked

from Otter Island.

An equally healthy and safe anchorage may be had in six fathoms in the main sound, at a point two miles distant from Otter and Morgan Islands. (see chart O.)

If an anchorage secure from all probable molestations from the land is required, none could do better than this upon the whole Coast of South Carolina. Neither in crossing the Bar, nor going up the Sound to the anchorage, is a vessel within two miles of land. There are a few clumps of trees on both Otter and Morgan Islands, which might afford a cover, but it is not at all probable that either of them have been or will be fortified.

Vessels drawing nine feet of water may ascend the Ashepoo about twelve miles above the anchorage at Otter Island, and fill with fresh water from the River, on the last of the ebb. Seven miles above the anchorage, at a sharp angle of the river, is the Mouth of "Musquito Creek", which connects with South Edisto through "Bull's Cut".

The light draught steamers referred to as plying on the inland passage from Charleston South, go through this "Cut" at high water, and go down the Ashepoo, crossing the Combahee Bank, through a slue channel marked by three small buoys, (see chart), and thence up the Coosaw, to Beaufort and Port Royal Ferry. Steamers drawing over five feet cannot go this way, but must go outside of Otter Island.

St Helena Sound extends six miles above the six fathoms anchorage to the point of junction of the Combahee and Coosaw Rivers. The Combahee is navigable for vessels drawing ten feet of water for some twenty miles up. It is one of the finest rice growing regions in the State. Fresh water may be had from the river, on the ebb, about ten miles up. There is a boat-connection with the Ashepoo at "Bythewood" Station.

The Coosaw River is broader and shoaler than the Combahee. This river forms a part of the inland navigation from Charleston. Steamers drawing eight or nine feet of water, like the Cecile and Everglade, run outside from Charleston to St Helena Sound, and entering the Sound by the "Slue Channel" if the tide will admit, proceed up the Coosaw River to its junction with Beaufort River at the "Brickyard", and thence down to Beaufort on the way inside for Savannah and Florida. A Steamer of the same draught may continue up Coosaw River to its head near "Port Royal Ferry", and thence through "Whale Branch" into Broad River and Port Royal Bay. ~~(See my sketch of Dn.)~~

Vessels bound up the Coosaw may enter Morgan River by the sailing lines on the Chart and thence up that River to "Parrot Creek" through which is a fifteen feet channel connecting Morgan and Coosaw Rivers (Chart)

~~I come now to~~ The "South Channel" into St Helena Sound, (See Chart G). ~~This~~ has seventeen feet at low, or twenty three feet at high water. Four buoys would be required to mark

it, up to an anchorage in five fathoms within half a mile of the N.E. point of Hunting Island and near the new Light House. This anchorage is healthy throughout the year, as is this part of the Island. The island is about six miles long, with an average width of little more than half a mile. It is wooded and has many Deer upon it, being used as a "game preserve". Johnson's Creek (see chart G) runs close to the shore having a narrow channel with fifteen feet least water in it. A fine coaling Station might be made here with plenty of timber at hand to build a short wharf, and a good natural position for one, near the mouth of a small creek.

Vessels drawing ten feet of water may go inside from Hunting Island to "Port Royal Bay", coming into the latter through "Station Creek." Three divides or points of meeting of opposing tides occur. The channel is generally bold, but intricate and requires a pilot. Many wooded hummocks and one large house must be passed within pistol shot.

There are four inlets between St. Helena Sound and Port Royal Bay. These are Fripp's Inlet, Skull Inlet, Pritchard's Inlet, and Trenchard's Inlet. No vessels enter any of them, but light draught vessels may enter Fripp's and Trenchard's Inlets if necessary. (See Chart of St Helena Sound G for entrance to Fripp's, and Charts of Port Royal Bay, H ~~and I~~, for entrance to Trenchard's). It will be seen that about ten feet at high water may be carried into

one, and about thirteen feet into the other.

Morgan River may be entered from sea by any of the channels by vessels drawing not more than twelve feet water. Vessels of large draught should enter by the South Channel, and proceed according to the directions on the chart, or by the broken line; leaving the "Dry Breaker" as it is called, upon the Starboard hand, close aboard, in entering.

In April 1860 there was certainly as much water as the Chart shews. Continuing up Morgan River, Egg Bank, a small sand key having great numbers of wild sea-fowls upon it, is passed upon the port hand, and next, on the same side, the eastern end of St Helena Island, at the "Point" plantation of Thomas Ashton Coffin, Esq. At his house commences a public road called the sea-side road, which extends 13 miles to Port Royal Bay at "Land's End".

Two miles from Mr Coffin's, a road diverges to the right to Ladies' Island and Beaufort (distant eleven miles). On either side of both roads are Gentlemen's residences and sea-Island Cotton plantations.

Continuing up Morgan River, Morgan and Coosaw Islands are upon the North side. Between them is Parrot Creek before referred to, as connecting Morgan and Coosaw Rivers. Opposite Parrot Creek is "Village Creek", leading to a village on a Bluff, forming the Summer residences of the St. Helena Planters. Four fathoms may be carried up to "Dathaw Island" on the Southerly side of the Island.

The Creek separating Dathaw from St Helena Island connects at its head with "Cowan Creek" leading into Beau--fort River, and separating St. Helena from Ladies' Island. Boats pass by this route from Beaufort to St. Helena Sound. The road to Beaufort referred to above passes over a bridge across this Creek, at the plantation of the late Mrs Gen. Eustis. Ladies' Island at the head of Morgan River, is little more than a mile wide, with the town of Beaufort upon the opposite shore of Beaufort River. A road leads from Mr. McKee's plan--tation at the head of Morgan River, across to the bluff opposite Beaufort. ~~(See my Sketch of &c.)~~.

Port Royal Bay

The chart is published in the U.S. Report for 1859, shews the bay itself. It is the finest Harbor South of the Chesapeake.

Sailing Directions. — To enter by the East Channel — when in four fathoms water with the west end of the tall woods on St. Michael's Head bearing N. by W. ½ W. and Hilton Head W.N.W., stand in W ½ S. which course made good will carry 17 feet mean low water over the bar. — As soon as the south end of Parry Island opens to the westward of Bay Point, the course is on that range until past Fishing Rip Shoal when the course is N.W. ½ W. to anchorage — The Channel up Beaufort River runs within ¼ mile of Phillip's Isl.

To enter by the Southeast channel. — when in five and a half fathoms water, with the Bluff point of Hilton Head bearing N.W. by W. and the west end of the tall woods on St Michael's Head N. by W., the course over the bar is W. by N. for two miles, between the S.E. breakers on the N. and the breakers on Martin's Industry on the S. keeping pretty close to the former, carrying not less than nineteen feet water at mean low water. When inside the S.E. breakers, with the S. end of Parry Island just open to the westward of Bay Point the course is N.N.W. five miles, until the S. point of Parry Island is on with edge of Bay Point, which will take you in between the North breakers and bank, always shewing plainly, and the East end of Fishing Rip. The course is then N.W. ½ W. to anchorage in from three to eight fathoms water, soft bottom. — The anchorage is two miles wide by four long.

To enter by the South Channel – when in eight fathoms water bring Hilton Head to bear N.N.W. ¼ W., and steer in on this course for two miles nearly, after getting less than eight fathoms water – and until nearly in a line between the breakers, on Martin's Industry and South Breakers with five fathoms water. The course is then N. by E. ¼ E. for 1¾ miles pretty close in to Martin's Industry, in three and three quarter fathoms water, and the channel ¼ mile wide, with Hilton Head bearing N.W. by N. The course is then North 2¾ miles, when follow the directions given for S.E. channel.

Nineteen feet can be taken through this channel at mean low water.

Fishing Rip Shoal –

– lies diagonally in nearly mid channel, with its western end 1¼ miles E. by N. from Hilton Head, running E.S.E. 1¼ miles, with a breadth of not more than 300 yards, and having eight feet water on it at low water. Elliott's house just open to the Northward of the beach, leads in mid channel between this shoal and Joiner's Bank – and the South end of Parry Island on with edge of Bay Point leads in mid way between its East end and North Breakers.

Tides

	H.	H.
Corrected Establishment – Mouth of Station Creek.	VII.	XVII.
Rise of Highest Tide observed above the plane of reference	8.6 ft.	
Fall of Lowest Tide do. below do.	2.0	
Fall of Mean Low Water of Spring Tides below do.	0.9	

Height of Mean Low Water of Neap Tides above plane of ref.	0.6 ft.
Mean Rise and Fall of Tides	6.5
Mean do. of Spring Tides	7.3
Mean do. of Neap Tides	5.3
Mean duration of Rise } Reckoning from the middle of one	6h. 2m.
Mean do. of Fall } Stand to the middle of the next	6.15
Mean do. of Stand	0.18

Lat. of Port Royal Astronom. Station	32° 17′ 44.″3
Long. of do. do. W. from Greenw. Obsy., in arc	80° 38′ 22.″8
Long. of do. do. do. in time	5h 22m 33s.5
Variation of the Magnetic Needle in Jan. 1859	3° 04′ E.
Present annual decrease 1¾′	

<u>The Light Ship</u> off <u>Martin's Industry</u>, at the entrance of the Channel has been removed, and the buoys have possibly been taken up. They were first put down in 1859 to facilitate the entrance of the U.S. Frigate "Brooklyn". The narrowest and shoalest portion of the Bar is so far out from the headlands, that a conspicuous mark is needed, and very large buoys with a flag-pole or basket beacon should be placed outside, if the Light Ship is taken away. Difficulty was found from the great distances apart (nearly three miles) of the buoys as first placed; and buoys should be placed at the points marked upon the accompanying chart II, if the port is to be used. It is probable that the

entrance to this Harbor has been fortified on both sides, and especially at Bay Point. This point may be approached in the rear, by landing at Pritchard's Inlet - next east of Trenchard's Inlet - near high water, and pulling through the Creek ~~shown on the sketch of An A~~ ~~ts~~ connecting this inlet with Trenchard's. Then pulling down Trenchard's Inlet to a point near "Luce" Station and thence passing along the beach and through the woods to Bay Point.

On the Hilton Head side it is more difficult to approach from the rear. The entrance is nearly two and a half miles wide, and water enough for the largest frigate is to be found within a quarter of a mile of Bay Point shore. The entrance to Port Royal Bay once made safe, the whole navy can ride at anchor in the Bay, which is perfectly healthy and secure.

At Bay Point are a number of rough houses where the planters resort for a short "maroon" during the summer months. "Station Creek" opens to the Eastward, and may be recognised by a small cluster of palmettos at its mouth. It is the Western end of the inland passage before referred to as running from "Hunting Island", on St. Helena Sound, near, and parallel to the sea beach. Here Beaufort River joins the Bay.

Vessels drawing twelve feet water may go up to the wharves at Beaufort at all times of tide. Those of

larger draught run much risk of grounding at low water, in going higher up than to Archer's or Battery Creek, where is good anchorage in four fathoms.

The town of Beaufort is upon Port Royal Island. It has no commercial importance, and is inhabited chiefly in summer by the planters from the surrounding country.— It has two large shops or "Stores" and many smaller ones, and is a general depôt for supplies to the plantations of Port Royal Island. It has many fine residences, occupied only in the summer, when its population numbers about two thousand. At other periods of the year its population is little more than five hundred. A Battery of eight guns, it is said, has been erected at the Eastern end of the town.

About a mile above Station Creek, excellent water may be obtained at the Station "Port Royal" Sand's End, St. Helena Island. It may be readily recognised by the tripod and scaffold, close to Capt. Dan. Jenkins' house, the first house on the Island ascending the river. Water may also be had at Bay Point, by sinking casks. A wharf for a coaling Station may be made at Bay Point, just above the mouth of a little Creek, which may be bridged, (See Chart H). A short causeway over the marsh would be required. Timber for constructing a wharf may be cut within a quarter of a mile of the site. The woods directly back of the sea-beach upon

Bay Point, consist chiefly of Pine interspersed with Chinquapin and Live Oak. Portions of the Island are clear and open. Near the beach there are many clumps of Myrtle bushes, matted together with Jackvines and Cherokee roses. The Island is generally a healthy one, wherever the sea breeze can reach.

On the Eastern side of Beaufort River, about four miles above Station Creek - is "Cowan Creek", separating St Helena Island from Ladies' Island, and forming the connection with St. Helena Sound, by way of Morgan River, before referred to. Steamers drawing ten feet of water may go up this Creek about two and a half miles, as far as Mr. Capers' plantation, on the St Helena side, where excellent water may be had, with a good landing place for boats. Water may also be obtained at every plantation along the shore, and can always be had by sinking wells from six to ten feet deep. The Coast Survey Parties have been supplied in that way whenever it has been needed, as at the Edisto Base.

On the Western side of Beaufort River is "Parry Island", separating that river from Broad River,. It is about five miles long, by two and a half miles broad, and is devoted to the culture of Sea Island Cotton. There are four proprietors, of whom two reside on the Island, viz. Dr. J. H. Means and Stephen Elliott, Jr. - Their houses are on the Broad River shore, and the

first landing at low water upon the island is at Mr. Elliott's which is the second house. Opposite Dr. Means are flats running dry at low water, and extending one and a half miles below the southernmost part of the island. A buoy in ten feet water marked the southern end of the shoal last year. Broad River is navigable up to the Charleston and Savannah Railroad Station at Pocotaligo. Above Parry Island is "Port Royal Island" on which Beaufort is situated. Steamers and sailing vessels entering at St. Helena pass around that Island and enter Broad River by way of Port Royal Ferry and "Whale Branch" ~~(See Sketch A)~~ Port Royal is one of the wealthiest of the Sea Islands, and is devoted to the culture of Sea Island Cotton.

Steamers coming through "Whale Branch" do not necessarily come down Broad River into Port Royal Bay when bound southerly, but may pass through a narrow passage having nine feet at low water, between Lemon and Daw Islands, (See Chart) and going down the "Chechessee" River, enter "Skull creek" as shown upon the chart. Daw Island belongs to Stephen Elliott, Jr. of Parry Island. A small portion of it is cultivated.

Very deep water may be carried from Port Royal Bay up Chechessee River to Foot Point on the Colleton River, (see chart H). This was surveyed in 1859 with reference to a naval depôt and coaling Station at Foot Point.

The entrance to Chechessee River is between two shoals, and a buoy should be placed upon the northern one, if any use is made of the inland passage to Savannah through Skull Creek. Thirteen feet may be carried through this creek into Calibogue Sound (chart A.) at high water. The shoalest part of the creek is at the "divide" or meeting of the tides near the western end of the Creek, or head of Calibogue Sound.

Hilton Head Island extends from Port Royal Bay to Calibogue Sound, and is devoted to the culture of Sea Island Cotton. The Daskin Bank and interior shoals (see chart of Sea Coast of So. Ca. F.) so effectually break off the sea that a landing may be effected upon the exterior of the Island in all moderate weather. A tolerably deep channel runs along the shore inside the outer breakers. During and just after the prevalence of westerly gales there is from one to two feet less water on all the bars along the South Carolina Coast than the charts indicate, and about as much more water may be found during and after strong winds from North-East around to South-East. The latter winds generally cause the heaviest sea.

Those sites are healthiest along the sea board where there is a direct exposure to the "sea-breeze". Points close to the sea-shore, sheltered from this wind, will often be unhealthy, while others, with a southern exposure, six to eight miles distant therefrom will be

perfectly healthy during Summer and Fall.

Fresh-water

In addition to those already mentioned in this Memoir, the following notes of localities where fresh-water may be procured are communicated by Assistants and Sub-Assistants of the Coast Survey.

The water is fresh, as a general rule, at from 6 to 10 miles up in the Rivers of So. Car., but nearer the mouths at low tide. On all the islands near the sea, drinkable water may be procured by sinking casks, above high water mark, in sandy localities where there is little or no vegetable matter.

(C. O. Boutelle, Assist. C. S.)

Water to be had on North and South Islands at mouth of Winyah Bay. It is fresh enough for cooking where Sampit Creek joins the Pedee and Waccamaw Rivers; and probably further down.

(C. O. Boutelle, Assist. C. S.)

Water to be had on Cedar Island at the mouth of Santee River; the fresh water comes nearer the mouth of this river than in most others of South Carolina.

(C. O. Boutelle, Assist. C. S.)

Also at Cape Roman Light House.

(C. O. Boutelle, Assist. C. S.)

Good water to be had by going up a Creek into Bull's Island, Bull's Bay, on the port-hand entering, and

near the anchorage. Also on Dewees' Island, at Hazleton's house and at Roberts' house.

(C. O. Boutelle, Assist. C. S.)

On Stono Island, at Vanderhorst's summerhouse and at Legaréville.

(F. F. Nes, Sub. Assist. C. S.)

North Edisto River: the water is fresh at 7 or 8 miles up: water to be had at Rockville Village, on Bohicket Creek.

(Geo. D. Wise, Assist. C. S.)

South Edisto River: fresh at Overseer's summerhouse on Jehossee Island, 12 miles above the mouth. In freshets is found a mile lower down: at spring-tides the salt water goes three miles further up.

(C. O. Boutelle, Assist. C. S.)

St. Helena Sound: at the mouth, on Hunting Island, at Mr. Coffin's, and on Morgan's Island at Mr. Fripp's.

(C. O. Boutelle, Assist. C. S.)

Port Royal Entrance: on Hilton Head Island is a spring, near the first house on the port-hand going in.

(F. F. Nes, Sub. Assist. C. S.)

Broad River: no fresh water below Pocotaligo Creek.

(C. O. Boutelle, Assist. C. S.)

fresh on half ebb, two miles above Whale Branch.

(W. S. Edwards, Sub. Assist. C. S.)

Lights and Beacons

Georgetown Light House — On the south end of North Island, east side of the entrance to the Pedee river and to the harbor of Georgetown — One fixed light — 85 feet above sea — visible fourteen nautical miles — tower white.

Fort Point Light House — On Fort Point — one fixed light — 34 feet above sea — visible 11 nautical miles — tower white.

Cape Roman Light House on Raccoon Key — about six miles from the extremity of the shoals off the cape, and ten miles southwest of the entrance to the Santee River — one light revolving, interval of flash one minute — 150 feet above sea — visible 23 nautical miles (or 17 nautical miles outside of the shoals off Cape Roman) — tower brick color. The old tower stands near the new one. Its elevation is 65 feet, and it is painted with red and white horizontal stripes.

Bull's Bay Light House on north end of Bull's island, 25 miles northeast of Charleston. — One fixed light — 35 feet above sea — visible 11 nautical miles — of a brick color. the light is on the Keeper's dwelling — back ground woods.

Rattlesnake Shoal Light-vessel, placed off the Rattlesnake shoal, and opposite the north end of Sullivan's island, in six fathoms water — two fixed lights — 44 feet above sea — visible 12 nautical miles. The hull is white;

masts, yellow; topmasts, black: with two oval day-marks painted black. Magnetic bearings from vessel to Rattlesnake Shoals, N.W. 2½ miles; outer bar of north channel, W. 4½ miles—also a bell and horn for fog-signal.

Charleston Light House on Morris island, and on west side of Ship channel into Charleston harbor. One fixed light—133 feet above sea—visible twenty nautical miles—tower painted white. This light and the beacon in front are used as a range for crossing the bar of the main channel.

Charleston Beacon in front of the main light, has one fixed light—50 feet above sea—visible 10 nautical miles—painted red.

Sullivan's Island Beacons give the channel range, leading from the main Ship Channel to the harbor: the N. light (fixed) is 50 feet, and the S. light (fixed) 45 feet above the sea—visible twelve nautical miles—the beacons are painted brown.

Fort Sumter Light in Charleston Harbor—One fixed light—57 feet above sea—visible ten nautical miles—color brick.

Castle Pinckney Light in Charleston harbor—One fixed red light—50 feet above sea—visible ten nautical miles—painted yellow.

Battery Beacon, on eastern end of Charleston battery, forms with Fort Sumter Light a range to enter the north

channel leading into Charleston harbor - lighted by gas - One fixed light - 45 feet above sea - the shaft is iron, bronzed.

Hunting Island Lighthouse on the north point of Hunting island, and west side of entrance to St. Helena Sound. - One light revolving - interval of flash 30 seconds - 108 feet above sea - visible seventeen nautical miles - tower painted red and white - ranges with the beacon.

Hunting Island Beacon, in range with main light, has one fixed light - 39 feet above sea - painted white.

The main light, beacon, and outer buoy of the slough or northern channel are all in range. Direction of the range by compass from seaward S. 77° W. - Magnetic variation 3° E.

Combahee Bank Light-vessel off the point of Combahee shoal, St. Helena Sound - One fixed light - 30 feet above sea - visible ten nautical miles - painted white. also a bell and horn for fog-signal, - the bell rung and horn sounded alternately every five minutes in foggy weather.

Note - It is probable that these Lights have been extinguished and the Buoys removed.

List of observed Magnetic Variations on the Atlantic Coast between Virginia and Florida.

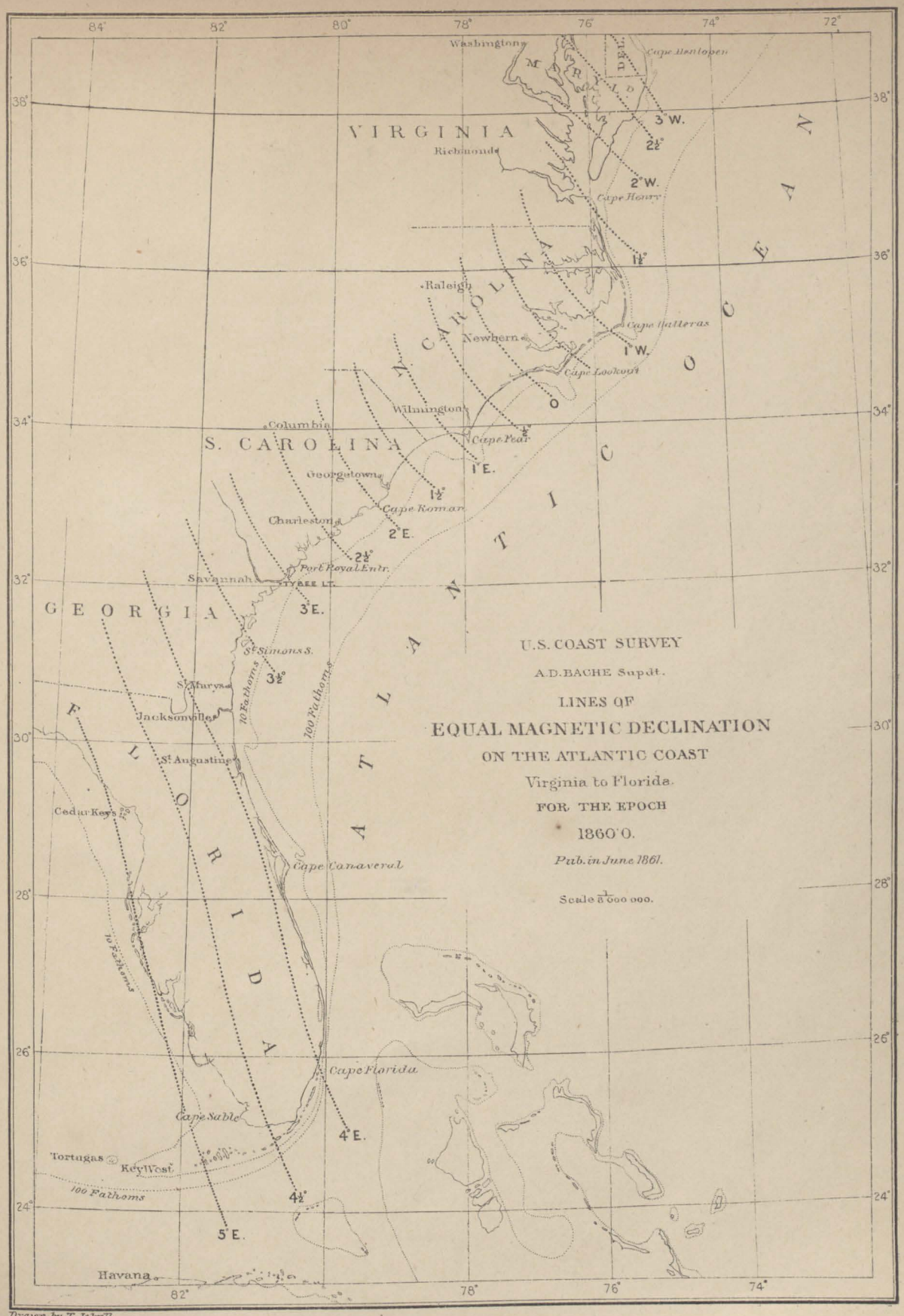
The observations are all of recent date, and were made by parties of the U. S. Coast Survey. The variation has been brought up to Jan. 1, 1860, by means of the known secular change.

The accompanying Map shows the lines of Equal Magnetic Variation for the epoch stated.

Latitudes and Longitudes

	Latitude	Longitude W. of Greenwich	Time
Georgetown Lt. House	33° 13′ 20″	79° 10′ 53″	5h 16m 44s
Fort Point Lt. House	33° 21′ 17″	79° 12′ 20″	5h 16m 49s
Cape Roman Lt. House	33° 01′ 07″	79° 22′ 12″	5h 17m 29s
Bull's Bay Lt. House	32° 55′ 18″	79° 33′ 44″	5h 18m 15s
Rattle-snake Shoal Lt. Vessel	32° 44′ 09″	79° 43′ 35″	5h 18m 54s
Charleston Lt. House	32° 41′ 55″	79° 52′ 29″	5h 19m 30s
Charleston Beacon			
Sullivan's Island N. Beacon	32° 46′ 51″	79° 51′ 16″	5h 19m 25s
Sullivan's Island S. Beacon	32° 45′ 29″	79° 51′ 11″	5h 19m 25s
Fort Sumter Light	32° 45′ 08″	79° 52′ 15″	5h 19m 29s
Castle Pinckney Light	32° 46′ 25″	79° 54′ 27″	5h 19m 38s
Battery Beacon			
Hunting Island Lt. House	32° 24′ 14″	80° 24′ 45″	5h 21m 39s
Hunting Island Beacon			
Combahee Bank Lt. Vessel			

No.	Locality	Lat.		Long. W. of Grw.		Magnetic Variation 1860	
1	Richmond	37°	32′	77°	26′	0°	23′ W.
2	Petersburg	37	14	77	23	0	46 "
3	Cape Charles	37	07	75	58	1	43 "
4	Cape Henry	36	56	76	00	1	36 "
5	Old Point Comfort	37	00	76	18	1	23 "
6	Norfolk	36	51	76	17	1	44 "
7	Shellbanks	36	03	75	44	2	17 "
8	Stevenson's Point	36	06	76	11	2	12 "
9	Bodies Island	35	47	75	32	1	46 "
10	Raleigh	35	47	78	38	0	30 E.
11	Wilmington	34	14	77	56	1	00 "
12	Smithville	33	55	78	01	0	37 "
13	Columbia	34	00	81	02	2	47 "
14	Georgetown	33	22	79	12	1	52 "
15	Breach Inlet	32	46	79	49	1	49 "
16	Edisto, East Base	32	33	80	10	2	30 "
17	Port Royal	32	18	80	38	3	02 "
18	Tybee	32	02	80	51	3	19 "
19	Savannah	32	05	81	05	3	24 "
20	Fernandina	30	41	81	28	3	58 "
21	Macon	32	50	83	38	4	28 "



Drawn by T. Jekyll.