

THE STEAMSHIP SAVANNAH.

(From corrected drawing by C. B. Hudson, made under the direction of Capt. J. W. Collins, of the U. S. Commission of Fish and Fisheries.)

THE LOG OF THE SAVANNAH.

By J. ELFRETH WATKINS,

Curator of the Section of Transportation and Engineering, U. S. National Museum.

The first voyages of a steamship across the Atlantic were made in 1819, by the *Savannah*, an American vessel carrying the American flag and manned by an American crew.

It seems eminently proper to preserve an authentic record of the events connected therewith in our national archives, particularly since the original log-book of these voyages is in the collection of the U. S. National Museum.

So far as is known, no reliable drawings of the *Savannah* are in existence. A lithograph, faulty in many of the details of hull, sails, and rigging, has been the basis of all previous illustrations of this historic vessel.

In view of this fact a corrected drawing (Plate CLI) based upon early descriptions of the vessel, together with such details of construction as are extant, has been made by Mr. C. B. Hudson, under the supervision of Capt. J. W. Collins, of the U. S. Commission of Fish and Fisheries, and Curator of the Section of Naval Architecture in the National Museum, whose familiarity with the history of naval architecture and the construction of sailing vessels, contemporary with the *Savannah*, has enabled him to correct many errors and supply the deficiencies in the original lithograph.

The following notes, explanatory of certain technicalities in the drawing, have been furnished by Captain Collins:

The history of the *Savannah* shows that she was designed, originally, for a sailing ship; that her construction was already well advanced when it was determined to make a steamship of her, and that she was rigged as a sailing vessel, steam apparently being considered chiefly auxiliary, to be used principally in calms or with light or head winds. The contemporaneous lithograph and all other illustrations of this famous vessel represent her as a full-rigged ship, with, however, no sails loftier than topgallant sails; with her mainmast and foremast more widely separated than on ships designed for sail alone, and having a round stern.

The sailing ships of that period were usually rigged very loftily, commonly carrying royals, while the almost universal type of stern was square. Nevertheless, it is reasonable to suppose that those having charge of the rig and equipment of the

Savannah may have felt that lofty light sails, which could be used only in moderate winds, would not be necessary on a ship having steam as an auxiliary motive power, and that her stern was round is by no means impossible. Therefore, not having any authority for changing these details, they have been represented as in the original lithograph; the relative positions of the masts, smokestack, and wheels are also retained.

In all details of hull and rig, with the exception of those mentioned, the effort has been to produce a ship of the period when the *Savannah* was built, and special attention has been given to the details of sails and rigging, points in which all illustrations of this ship, previously extant, were markedly erroneous and unsatisfactory.

The ship is represented close hauled on the starboard tack, in a fresh breeze, with her paddle-wheels in motion. She is rising on the slope of an Atlantic swell, leaning well over to the breeze, while the yeastly wave curling away from her bow, and sweeping in foam along her sides, indicates that she is moving at a good speed. The fore-topgallant sail has just been clewed up and two seamen are seen climbing the rigging to furl the canvas, while in the distance another ship is in sight, running before the wind with square yards.

It is to be regretted that no drawings or detailed description of the engines, machinery, or wheels are to be found.

In collecting the data* for this report I have been greatly aided by Mrs. Delia Rogers Seely, wife of Col. F. A. Seely, examiner in the U. S. Patent Office, who is a grand-daughter of Capt. Moses Rogers, the commander of the *Savannah*.

* For this compilation, in addition to a number of clippings from newspapers of the day, which had been carefully preserved in the last pages of the log book by the descendants of Captain Rogers, the following authorities have been consulted:

Chronological History of the Origin and Development of Steam Navigation. George Henry Preble, U. S. Navy, Philadelphia, Hamersley & Co. 1833.

A History of Naval Architecture. John Fincham, London. Whittaker & Co. 1851.

The Mechanic's Magazine to 1853.

London Athenæum.

A Description and Draft of a new Invented Machine for Carrying Vessels or Ships out of or into any Harbor, Port, or River, against Wind and Tide, or in a Calm, etc. By Jonathan Hulls, London, printed for the author, 1737. (Reprint by Spon, 1873.)

A short Treatise on the Application of Steam whereby is clearly shown from Actual Experiments that Steam may be Applied to Propel Boats or Vessels. By James Rumsey, of Berkley County, Virginia. Philadelphia. Joseph James, 1788.

The Original Steamboat Supported, or a Reply to James Rumsey's Pamphlet, showing the true Priority of John Fitch and the false datings of James Rumsey. Philadelphia. Zachariah Poulson, jr. 1788.

The Log Book of the *Savannah*. H. Carrington Bolton. Harper's Magazine, February, 1877.

Early Atlantic Steam Navigation and the Cruise of the *Savannah*. Eustace B. Rogers, U. S. Navy, Ballou's Magazine, February, 1883.

Ocean Steamers, by Thomas Dykes, Fortnightly Review, May, 1886.

The Development of the Steamship, Commander F. E. Chadwick, U. S. Navy, Scribner's Magazine, May, 1887.

Early Clyde Built Steamers. Paper by W. J. Millar, C. E., Transactions of Institution of Engineers and Ship Builders in Scotland. 1880.

The History of Paddle Wheel Steam Navigation, Henry Sandham. Proceedings Institution Mechanical Engineers, March, 1885.

PROJECTS AND EXPERIMENTS.

To navigate the ocean by a vessel propelled by steam was the dream of many inventors years before a successful steamboat had been put in service.* Although Papin's and Savery's experiments, in the seventeenth century, had been devoted to perfecting stationary engines for raising water from the mines, in addition to the proposal of the former "to apply this power to draw water or ore from mines, and to discharge iron bullets to a great distance," he also states that the power can be used † "to propel ships against the wind" by an arrangement of paddle-wheels, which he describes. It does not appear, however, that he ever attempted to construct even an experimental steamboat. Nor does it appear that Savery, who constructed several pumping engines, made a commercial success of any of them. Although he in 1696 obtained a patent "for rowing ships with greater ease and expedition than had hitherto been done by any other," and in 1698 stated that he still "believed steam might be made useful to ships," his ideas took no tangible form.

John Barrow, under-secretary of the English admiralty, in his autobiography states: "There can be no doubt that Jonathan Hulls (1737) was the real inventor of the steamboat." Hulls, in a pamphlet published in 1737, gives detailed drawings and a full description of the manner of applying the power of steam to drive a stern-wheel tow-boat, with wheels similar in design to those on the boats now in use on the Ohio River. This was the first practical proposition in the history of steam navigation, and so thoroughly did Hulls understand the subject, that the mechanic of to-day could build the steam machinery for a boat upon his plans that would go against the stream on most American rivers. He proposed to use the type of engine which Newcomen, profiting by the experiments of Papin and Savery, had greatly improved. Although Hulls' plans were so ably drawn, it does not appear that he constructed a boat. It was not until after Watt (who began to improve the steam-engine where Newcomen left off), a half century later, met with success in perfecting the stationary engine—a success which demonstrated that he was the most prolific inventor of the age—

* Opinions eighteen years before and sixteen years after the first transatlantic voyage of the steamship *Sarannah* :

"This, sir, whether I bring it to perfection or not, will be the mode of crossing the Atlantic in time, for packets and armed vessels." (Extract from letter written in 1791, by John Fitch to David Rittenhouse, the Philadelphia astronomer, in which he solicited a loan to complete the steamboat, with which he had been experimenting in the Delaware River.)

"As to the project, which is announced in the newspapers, of making a voyage direct from New York to Liverpool (by steamship), it is, I have no hesitation in saying, perfectly chimerical, and they might as well talk of making a voyage from New York or Liverpool to the moon." (Dr. Dionysius Lardner, author of *Lardner's Encyclopedia*, in a lecture at Liverpool, December, 1835.)

† *Dissertationum De Novis Quibusdam Machinis*, by Dionysius Papin, Marburg, 1695.

that Fitch, Rumsey, Stevens, Fulton, Livingston, Millar, Symington, and others conducted the experiments that have formed the basis of the claims for each, that he was the original inventor of the steamboat.

The history of steamboat invention since 1785 has been so frequently written, and the claims of the friends of these rival inventors have been so fully discussed, that it is not necessary to enter into the details of the controversies, which in past years were carried on with considerable ardor.

It will be of interest to review briefly, in chronological order, the events of importance in the history of steam navigation after,

Jonathan Hulls,
With his patent skulls,
Invented a machine,
To go against wind with steam;
But he being an ass,
Couldn't bring it to pass,
And so was ashamed to be seen.*

The scope of this article requires that reference shall only be made to those inventors who, by drawings, models, or by the actual construction of machines, demonstrated that they had practical ideas.

In the "*Annales des Arts et Manufactures*," Paris, 1803, are several drawings† to illustrate a machine, contrived by Daniel Bournoulli, 1753, to drive "vaness" on each side of the vessel and in the stern "set at an angle of 60 degrees with the keel of the vessel." These, he says, "can be moved by men aboard the vessels or by steam-engines, or on rivers by horses placed in the barges."

In 1783 the Marquis de Jouffroy, whose labors in the latter part of the last century furnish the ground for the claim that the invention of the steamboat should properly be credited to the French nation, designed a steamboat 400 metres long, to contain a steam-engine with a horizontal cylinder geared by a rack to a shaft on which were paddle wheels.

A print of this boat, made by M. Jamont from the original drawing, is preserved in the English patent office library. It bears the title "*Plan et Profil du Bateau a Vapeur, Execute par Marquis de Jouffroy a Lyon, 1783.*"

In the U. S. National Museum is preserved a portion of the chain-gearing of the machinery of a boat which was constructed by James Rumsey, and exhibited by him to Gen. George Washington, at Berkeley Springs, Virginia, in 1784. The certificate given to him by Washington, under date September 7, 1784, contains the statement "that the

* Doggerel sung by the boys of Campden in Gloucestershire, Hulls' native town. See Notes and Queries, vol. III, series I.

† See Tome, xx p., 329.

discovery is of vast importance and may be of the greatest usefulness in our inland navigation."

Admiral Preble, in his valuable "History of Steam Navigation," states that, "the boiler and machinery for Rumsey's steamboat were made at the Catoclin Iron Furnace, in Frederick County, Maryland, then owned by Johnson Brothers."

Although Joseph Bramah, of London, took out a patent in May, 1785, for a vessel with a propeller in the stern, which he describes as "a wheel with inclined fans or wings, similar to the fly of the smoke-jack or the vertical sails of a windmill," an examination of the drawings attached to his patent shows clearly that he could not have put his invention into practice by working his wheels by steam.

To John Fitch, who from 1783 to 1791 experimented with steam on several boats in the vicinity of Philadelphia, the credit is due in constructing the first steamboat that carried passengers and merchandise for pay.

A copy of the Federal Gazette and Philadelphia Daily Advertiser, July 26, 1790, is preserved in the U. S. National Museum, and contains the following advertisement:

THE

STEAMBOAT

Sets out to-morrow morning, at ten o'clock, from Arch-street ferry, in order to take passengers for Burlington, Bristol, Bordentown, and Trenton, and return next day.
Philad., July 26, 1790.

Under date of August 26, 1791, the first patents issued by the Government of the United States for steamboats were issued simultaneously to John Fitch, Nathan Read, James Rumsey, and John Stevens.

Read had as early as 1789 exhibited to a committee of the American Academy of Arts and Sciences a model of his steamboat with paddle wheels, which he designed to connect with a high-pressure engine.

John Stevens's experiments took a wider range than those of any of his predecessors, and embraced both the paddle wheel and the screw propeller.

His ideas were not visionary or chimerical, and he finally reduced them to practice. Although he, in common with all other projectors, suffered on account of not being able to obtain the services of competent workmen, he succeeded in practically applying steam to the propeller. The original engine which he designed and constructed (1804), was the first steam engine to drive a screw propeller successfully, and is preserved in the museum of the Stevens Institute, at Hoboken, New Jersey.

During the last years of the eighteenth century many experimental steamboats were constructed on both sides of the water. The more worthy of note were those built by Elijah Ormsbee and Samuel Morley, both citizens of Connecticut, in 1794, and by Chancellor Livingston, who, in 1797, assisted by the elder Brunell, afterwards engi-

neer of the Thames Tunnel, built a steamboat on the Hudson, which was partially successful.

During the early years of the present century invention was very active.

The improvements in the stationary engine had been carried forward so rapidly as to give great hope to those whose dream it was to drive a boat surely and safely against wind and tide.

Symington was experimenting on the Forth and Clyde Canal in England in 1802. In 1803 Fulton launched his experimental steamboat, built on a large scale, on the Seine below Paris. In 1804 John Stevens propelled his boat, driven by twin-screws geared to a steam-engine, from the battery in New York across the Hudson River to Castle Point, Hoboken, at a speed of six miles an hour, and in 1806 he constructed a pirogue fifty feet long, which developed considerable speed.

But all these attempts may be regarded as experiments—more or less successful—for it was not until 1807 that the success of Fulton with the *Clermont* and John Stevens with the *Phoenix* demonstrated to American capitalists that the steam-engine could be practically and economically applied to navigation.

Bell, who followed a few months later, was equally successful in English waters.

EARLY STEAM VESSELS.

The news of Fulton's success on the Hudson soon spread to all parts of the globe and attracted the attention of men in every department of public life.

Statesmen saw that the invention would revolutionize commerce, while it foreshadowed great possibilities for national development. Soldiers and sailors knew that the sailing frigate must soon be replaced by a craft driven by steam-power, and that new modes of warfare must shortly follow the introduction of the steamboat on inland waters.

New water routes not hitherto navigable by sailing vessels were speedily opened and capital sought investment in steamboat property.

In 1809 the first steamboat on the St. Lawrence was launched; this was followed by a second in 1813.

In 1811 the *New Orleans* the first steamboat for service on Western waters was launched at Pittsburgh.

In 1812 the *Comet*, the first steamboat on the Clyde, was launched, and, strangely enough, a steamboat was built in Batavia the same year for use in India.

In 1813 a steamer was launched at Manchester, and another at Bristol.

In March, 1814, the Congress of the United States passed a law authorizing the President to cause to be equipped "one or more steam floating batteries for the defense of the waters of the United States," and on October 18 of the same year the first war steamship, designed by

Fulton and bearing his name, was launched at Brown's ship-yard in New York City.

In 1815 the pioneer of the fleet of steamers, soon after built to run between Liverpool and various ports of the English, Irish, and Scotch coasts, was launched on the Clyde, arriving safely in the Mersey, after calling at the Isle of Man. This was followed by several other boats for the same service during the next three or four years.

In 1815 there were five steamers on the Thames. By 1816 eight steamboats had been built to run on the Hudson and five or six on the Delaware.

In 1817 the first steamboat ran from New York to Newport, and the same year the first steamboat was put in service in Boston Harbor.

In 1818 steam navigation was inaugurated on Lake Erie, and in the same year the first steamboat was launched in Russia and steam tug-boats were introduced on the Mersey.

This was the condition of steam navigation when the *Savannah*, the first ship equipped to be driven across the Atlantic by steam, stood upon the stocks at New York, in August, 1818, waiting to be launched.

THE OCEAN NAVIGATED BY STEAM.

It is conceded by all writers familiar with the subject that the *Phœnix*, built by Robert L. Stevens in conjunction with his father John Stevens, of Hoboken, New Jersey, was the first steam vessel to brave the dangers of the ocean.* This was in 1808, when the vessel went around from New York to Philadelphia by sea, navigating the Atlantic from Sandy Hook to Cape May. This boat did service on the Delaware River for many years, being an important link in the route from Philadelphia to New York.

THE STEAMSHIP "SAVANNAH."

The *Savannah* was a full-rigged ship of 350 tons burthen and was built at Corlear's Hook, New York, by Francis Fickett. At first she was intended to be used as a sailing packet between New York and Havre, France. The keel was laid in 1818, and the vessel was launched August 22 of the same year.

While the *Savannah* stood upon the stocks she attracted the attention of Capt. Moses Rogers, who had been associated with Fulton and Stevens in commanding several of the early steamboats. It was through his exertions that Scarborough & Isaacs, a wealthy shipping firm in Savannah, were induced to purchase the vessel and fit her with engines with a view of giving to that city, which was then one of the most im-

* Scott Russell thus alludes to this event: "Robert L. Stevens is probably the man to whom, of all others, America owes the greatest share of its present highly improved steam navigation. His father was associated with Livingston in his experiments previous to the connection of the latter with Fulton, and persevered in his experiments during Livingston's absence in France. Undisputedly he is the pioneer of steam navigation on the open seas."

portant American seaports, the credit of being the first to inaugurate a transatlantic steamship line.

The *Savannah* was equipped with one inclined, direct-acting, low-pressure engine of 90 horse-power, the diameter of the cylinder being forty inches and the stroke five feet. Her engine was built by Stephen Vail* at Speedwell Iron Works, near Morristown, New Jersey. The boilers were built at Elizabeth, New Jersey, by Daniel Dod. The paddle side wheels consisted of eight radial arms, held in place by one flange, and were arranged to close together like a fan. They were furnished with a series of joints so that they could be detached from the shaft and taken in on deck when storm or other circumstances required it. Her shaft had a peculiar joint at each end arranged for the purpose. The wheelhouse was made of canvas, stretched over an iron rim. It is unfortunate that no detailed drawing or accurate description of the wheel or machinery is in existence. The vessel carried seventy-five tons of coal and twenty-five cords of wood. The total cost was about \$50,000, including engines and all rigging.

An account book containing a record of the original charges made against the *Savannah* for machinery, etc., by the proprietors of the Speedwell Iron Works, is now in the possession of Mr. John Lidgerwood, of No. 26 Liberty street, New York City.

I had the privilege of examining this interesting relic a short time since. The following is a transcript of the account:

Steam Ship of Savannah, Dr.

1818.		
August	1	To paid Enos Bonnel 8 dollars for carting a cellender from E. Town.....
	27	To boaring a 40-inch cellender, 5 feet 5 inches into it, and it proved bad, and cast- ing of sinking head, \$100-00
October	28	To paid carman three dollars for carting the air pump from E. Town.....
Nov'br	6	To two lbs. of candles at 1s 8d.....
	5	To one peston rod, at 420 lbs. before it was turned, at 1s. 6d., 18c
		One air-pump rod at 205 lbs. before it was turned at 1s. 6d
	11	To boaring a 40½-inch cellinder, 5-foot stroke at 4,200, 3 hundred at, say, 4707, at 5c.....
	17	To boaring one air pump 5-foot stroke, at 17, 2, at, say, 1,974 lbs. at 5c
		To one load of pine stuff for patrons as per bill, \$14, 12½ carting, \$3
		To lengthening the peston rod with 98 pounds of iron after it was part turned there being a mistake in the draft that Mr. Dod had made and sub- mitted to me, \$22.37½
		Lengthening air-pump rod as the peston rod 8 inches with 30 pounds of iron and work to do it \$8.62½
	22	To carting air pump to E. Town.....
		To one patron the pillow block to rest on, on the outside of the ship
		One large pillow-block patron
		One brass patron for do.....
		To Wm. Daglish, 2 days with patrons for the ship at 24s.....
		Carting patrons to E. Town poin t.....
		To paid for carting 2 centers from Dod's and 12 flanges for the water wheels..

*Afterwards distinguished for his connection with Morse in the invention of the telegraph.

Steam Ship of Savannah, Dr.—Continued.

1818.			
De'ber	2	To 6 peston bolts and nuts, at 38 lbs. at 1s. 6d	\$7. 12
		To one crosshead, at 602, 1s. 8d	112. 88
		To one center patron for wheels with the core boxes made of your stuff (Deglish, 10 days, at 20s.; Soul Greenesen, 9 days, at 16s.)	43. 00
		To carting patrons to E. Town	1. 50
	4	To one stuffing-box patron	2. 00
	7	To turning crosshead by Egleston 2 days	8. 00
			\$38. 35

Capt'n Moses Rogers, Cr.

1818.			
De'ber	2	Steamship Dr. bro't up	\$838. 35
		Amount bro't up from page 13	25. 00
		To turning peston rod a draw filing	15. 00
		To drilling cellender head on flange	3. 00
		To drilling peston for the bolt of the cover, 6 holes, 4½ deep, 1½ diameter of hard iron (done by Shomen & Noah)	6. 00
		To morticeing socket for peston	3. 00
		To reaming and fitting holes in cover	2. 50
		To reaming peston socket	2. 50
		To chipping boxes and fitting the nuts to peston and tapping them and cutting the bolts	6. 00
		To one rist for crank turned the length of it, out 101 lbs., at 2s	25. 25
	6	To 52½-inch bolts, 389 lbs., 20 cents	77. 80
		16 large bolts for water-wheel arms, at 331 lbs., at 20 cents	66. 20
	12	To 42 water-wheel arms, at 5,934 lbs., at 20 cents, at \$1,186.80	1,186. 80
	16	To 1 lb. of candles, at 1s. 8d 20
		4 nail casks at 37½ cents	1. 50
		Carting and freight of 2-2-0 of cement, at 2s 62½
	26	To one socket for air pump peston rod, at 65, at 2s	16. 25
		To one strap on crosshead to peston rod, at 56, at 3s	21. 00
		To altering the bolts for water wheel arms, \$10-00	10. 00
1819.			
Jan'y	2	To 7 pair of smith's tongs, at 10s	2. 75
		2 hand hammers, at 10s	2. 50
		2 hand punches, at 6s	1. 50
			2,320. 23

Steam Ship of Savannah, Dr.

1819.		
Jan'y 2	Brought over	\$2, 320. 23
	To one large brace for drilling	3. 00
	One set-hammer	1. 00
	Two splitting chisels, at 6s	1. 50
	One tail-screw for drill	2. 50
	81 lbs. of links and hooks, at 1s. 6d	15. 19
	8 large screw bolts for to hold down pedestals, at 6d at 2s	16. 00
	4 gibs and one knee for piston rods, at 6s	3. 00
	1 chipping hammer	1. 00
	One sledge at 13 lbs., at 1s. 6d	2. 43
	1 chalk line 15
	1 iron square, 4s., one steel do 8s.	1. 50
	Paid carman and freight of tools	1. 00
	To David Shanon, 10 days at fitting brasses, knees to connecting-rod, at 18s	22. 50
	Files and chisels for do., 40s	5. 00
	Noah Johnson, 7 days at cutting screws and chipping as above, at 12s	10. 50
	Dennis Dooley, 8 days at do., at 16s	16. 00
	Robert Newell, 4 days at do., at 16s	8. 00
	Wank, cutting screws, 4 days, at 12s	6. 00
	Jabez Walsey, 7 days, cleaning castings, at 12s	10. 50
	Jack, 6 days, cleaning, do., at 10s	7. 50
	John N. Egelston, 4 days, at turning and fitting stuffing box and bolts, at 16s ..	8. 00
	To 1/4 a chaldron of coals to work for the ship in N. York - \$8.25	8. 25
	To 10 bushels had by Capt'n Rodgers at E. Town, at 4s	5. 00
23	To one bush. batrons 50
	To 8 screw swiffls for water wheels arms at \$10.00	80. 00
	One vacuum gauge	12. 50
	One steam gauge	7. 50
	6 screw bolts and nuts for piston cover bolts turned at 37 lbs., at 2s. 6d	11. 56
	12 cellender cover bolts and nuts (bolts turned) at 31 lbs., at 2s. 6d	9. 68
	2 socket wrenches at 21 lbs., at 2s.	5. 25
	2 slat bolts for stuffing box of Hollanders turned at 15 lb., at 2s. 6d	4. 69
	One long pair of stocks, taps, and dies complete	45. 00
	One less do. with taps and dies	30. 00
		\$2, 682. 43

Steam Ship of Savannah, Dr.

1819.	Bro't up from opposite page	\$2, 682. 43
Jan. 29	To one half chaldron of coals of Vambusing, at \$16.50	8. 25
	To one key to carry bolts 37 1/2
Feb. 4	To Samuel Carson 10 days at drawing and other things, at \$4	40. 00
	To 8 gauge cocks, at 12s	12. 00
	2 oil cocks, at 24s	6. 00
17	To p'd Shubal Trowbridge for sundry casting to Speedwell from El'z'thtown and from Speedwell to E. town	7. 27
	To do for do, do, do tons 4. 7. 3. 18, at \$3	13. 17
	To 1 connecting rod, wt. 968 lbs., at 27	242. 00
	To 40 screw bolts, at 4s.	20. 00
	To 40 clasps with double nuts, at 6s	30. 00
	To 1 nail cog, 3s 38
		3, 061. 88
	Add error	2. 34
		3, 064. 22

Steam Ship of Savannah, Dr.—Continued.

1819.			
Feb. 25	To 44 days' work by David Shannen, blacksmithing in N. York for the ship, at 15s.....		\$82.50
	To 31 days, by Ira Arnold, blacksmithing in N. York for the ship, at 12s.....		51.00
	To 49½ days, by William Daglish, on board the ship, at 18s.....		111.94
	To 38 days, by Marvin Nugent, on board the ship, at 14s.....		66.50
	To 2½ chaldron coal of Van Bussing, in New York.....		16.50
	To freight of cillender p. corolls boat.....		5.00
	To cartage by Dalglish.....		.50
	To sundries from I. G. Purson & Brothers, amt. viz :		
1819.			
Jan. 6	20 lbs. cast steel, at 2s. 3d.....	5.63	
11	1. 0. 10 iron, 40s.....	5.45	
	1. 3. 5 do, 48s.....	10.77	
	Steel.....	2.27	
27	4. 1. 14 iron, 40s.....	21.88	
	13 lbs. cast steel, 2s. 3d.....	3.66	
Feb'y 1	8. 0. 4 iron, 40s.....	40.18	
	1. 1. 10 do, 42s.....	7.31	
20	3. 1. 7 round iron do, 42s.....	17.40	
	To 6 days by Noah Johnson in New York.....		114.55
			9.00
			\$3,521.71

Dr. Steam Ship of Savannah.

	To amt brought over.....		\$3,521.71
	Deduct carting of sundries charge in this acc't which is not yet done.....		20.12
	Carting \$20.12 not included.....		\$3,501.59
March 28	To 26 days' work done by D. Shonen, at 15s.....		48.75
	16 days' work done by I. Arnold, at 12s.....		24.00
	Paid carman for riding iron, &c.....		3.12½
	40 doubled boulds for paddles, at 6s.....		30.00
	Box for do and cartage.....		1.00
	2 1.18 of iron at 40s., had March 4th.....	12.40	
	3.17 of D rd, 48s.....	5.41	
	2 1.28 of Do id 48s., had March 13th.....	10.18	
	Cartage of the last to ship.....	.63	
	This iron was had of J. G. Persons & Brothers.....		17.45
	To paid Benjamin Sefield for carting from white hall to the steamship, 25s.....		3.12½
	To paid Wm. Dalglish for carting one load of patrons to yards in Dublin.....		.62½
	To 18 days' work done by Wm. Dalglish on board of the steamship at Elizabeth town, in December, 1818, and omitted in my ac. rendered in February, at 18s.....		40.50
	To ½ chaldron of coals, and carting had of John Vanbusting, 1s.....		7.75
May 4	To paid James P. Allaire for sundries p. bill p. order of Capt. Rodgers.....		15.78
			\$202.91½

Contra, Cr.

1819.			
Feb. 26	By Pott & McKinnies note, at 60 days.....		\$1,750.80
	Do. do. at 90 days.....		1,777.04
	In full p. rec't when paid.....		\$3,527.84
	Deduct for discount.....		26.25
			\$3,501.59

In addition to the engines the vessel carried the same complement of spars and sails as a sailing ship of that period, with the exception of royal-masts and royals.* The hull and rigging were constructed under the direction of Stevens Rogers, afterwards sailing master of the vessel.

The most important difference noticeable in her rig, so far as can be determined by engravings extant, is that her mainmast stood considerably farther aft than it would have been placed on a ship intended to be propelled only by sails. This modification of the rig was doubtless made to obtain more space between the foremast and the mainmast, so that the boilers, engines, and coal bunkers could be located nearly in the middle of the ship and still be forward of the mainmast.

The cabin space was divided into three saloons, handsomely furnished with imported carpets, curtains, and hangings, and decorated with mirrors.

The state rooms were large and commodious; the interior effect of the decorations resembling those of a pleasure yacht more than a steam packet. After the vessel was launched there was considerable delay in completing the engines and machinery, which were of unusual size. Several boilers were discarded before one was found that would stand the tests made by Capt. Moses Rogers, and it was not until very late in the winter of 1818-'19 that the machinery was in working order.

TRIAL TRIP.

The New York Mercantile Advertiser, March 27, 1819, contains the following:

By an advertisement in this day's paper it will be seen that the new and elegant steamship *Savannah* is to leave our harbor to-morrow. Who would have had the courage 20 years ago to hazard a prediction that in the year 1819 a ship of 300 tons burden would be built in the port of New York to navigate the Atlantic propelled by steam? Such, however, is the fact. With admiring hundreds have we repeatedly viewed this prodigy, and can also bear witness to the wonderful celerity with which she is moved through the water. On Monday last a trial was made of her speed, and although there was at no time more than an inch of steam upon her, and for the greater part not a half inch, with a strong wind and tide ahead, she went within a mile of the anchoring ground at Staten Island and returned to Fly Market Wharf in 1 hour and 50 minutes. When it is considered that she is calculated to bear 20 inches of steam and that her machinery is entirely new, it must be evident that she will with ease pass any of the steamboats upon our waters.

Her cabin is finished in elegant style and is fitted up in the most tasty manner. There are thirty-two berths, all of which are state rooms. The cabin for ladies is entirely distinct from that intended for gentlemen, and is admirably calculated to afford that retirement which is so rarely found on board of passenger ships.

THE OFFICERS AND CREW OF THE SAVANNAH.

Moses Rogers, the captain (Pl. CLII), and Stevens Rogers, the first officer (or sailing-master, as he was called), although bearing the same surname, were not related by ties of blood. They were, however, brothers-in-law, the latter having married a sister of the former.

* See explanatory note by Captain Collins on p. 611.



MOSES ROGERS, CAPTAIN OF THE SAVANNAH.

(From a photograph of the miniature made in Russia in 1819, while the vessel was in the port of St. Petersburg.)

The experiment of crossing the ocean in a steam vessel was deemed so hazardous that no crew could be shipped in New York Harbor, where it was predicted that the vessel would be a "steam coffin;" and sailing-master Rogers was compelled to visit New London, Connecticut, where he was only able to obtain a crew from the fact that both the captain and sailing-master were well known to many seafaring men of that locality, who had confidence in their ability to command and navigate the ship successfully.

MOSES ROGERS, CAPTAIN OF THE SAVANNAH.

Moses Rogers was born in New London, Connecticut, in 1779. From his early boyhood he showed great fondness for boats and ships, and had learned to manage a sailboat at a very early age. When he was twenty-one years old he commanded a sailing packet on Long Island Sound, and five years later he became interested in the experiments of Fulton and Stevens, who were each then building steamboats. It has been frequently stated that he commanded the *Clermont*, the first successful steamboat on the Hudson, but the many published accounts of the early voyages of that celebrated steamboat contain no mention of his name. But during the eventful career of this boat she was commanded by several captains, and it is not improbable that Mr. Fulton availed himself of his services, at least for a time.

In 1808 he commanded the *Phoenix*, built by John Stevens and his son, Robert Livingston Stevens, when it made the memorable voyage from Sandy Hook to Cape May, on its way from New York to Philadelphia. This was the first time that a steam vessel ever braved the dangers of the ocean.

In the handsome oil painting of the *Phoenix*, which is now preserved in the private gallery of the late Edwin A. Stevens, a brother of Robert L. Stevens, at Castle Point, Hoboken, New Jersey, the name *Moses Rogers* is painted in bold letters across the paddle box. This custom was not uncommon in the early days when the name of the captain was as well known as that of the craft he commanded.

In 1813 Moses Rogers commanded the *Eagle* on her first voyage between New York and Baltimore, and he was associated with the owners of the *New Jersey* in 1816, when regular biweekly voyages were inaugurated between those ports.

Captain Rogers was a man whose opinions were sought by steamboat owners and constructors. He was highly respected by the traveling public, whose entire confidence he possessed. The executive ability which he displayed while in command of his vessels made him greatly admired by those who trusted their lives in his hands. The tact which he exhibited while in foreign ports made him popular with all classes.

During his cruise in foreign waters he was the recipient of many valuable presents. The King of Sweden gave him "a stone and muller."

The Emperor of Russia presented him with a gold watch,* which is referred to as "three times as big as common watches and an excellent timekeeper."

While the *Savannah* was lying at Stockholm, Captain Rogers made the acquaintance of Lord Lynedock,† a British nobleman, who accompanied him in his voyage to St. Petersburg.

During the voyage Lord Lynedock was so much pleased to find that only fifteen minutes was required to bring the vessel from steam to canvas that he exclaimed, "I blame no man born in the United States for being proud of his country; were I a young man I'd go there myself."

At the end of the voyage he presented Captain Rogers with a massive solid silver coffee urn (Pl. CLIII), bearing the inscription:

Presented to Captain Moses Rogers
of the Steamship Savannah,
Being the first steam vessel
That had crossed the Atlantic
By

Sir Thomas Graham, Lord Lynedock,
A Passenger from Stockholm to
St. Petersburg,
Sept. 15, 1819.

This kettle has been carefully preserved by the descendants of Captain Rogers, who have recently deposited it in the U. S. National Museum.

From the 28th of March, 1819, when the *Savannah* left the port of New York, until the 16th of December of the same year, when the vessel after visiting many foreign ports returned to Washington, Captain Rogers was in constant command. It was his boast that during this voyage of many thousand miles, "neither screw, bolt, nor rope yarn parted, although he experienced very rough weather." Owing to circumstances related elsewhere his connection with the *Savannah* ceased early in 1820, when he immediately formed a connection with the company operating the steamboat line plying between Georgetown, South Carolina, and Cheraw. He superintended the construction of the *Pee Dee* in 1820, and while in command of her died at Georgetown, South Carolina, October 15, 1821, aged forty-two years. The Georgetown "Intelligencer" contained the following obituary notice:

Departed this life on Thursday, the 15th instant (October, 1821), in Georgetown, South Carolina, Capt. Moses Rogers, a native of New London, Connecticut, aged about 42 years. His remains were committed to the tomb in the burial ground of the Baptist church, attended by a large concourse of citizens of the town and neighbor-

* Some years ago a Southern paper made the statement that this watch was in the possession of Mr. Buhler, of West Baton Rouge, Louisiana.

† Thomas Graham, Lord Lynedock, was born in Perthshire, England, 1749. Entered the British army 1780. Rose to the rank of general. Served under Sir John Moore. Commanded at the battle of Baropa, 1811, and at the battle of Varuna. In 1813 took San Sebastian. Raised to the peerage 1819. Died 1843.



SOLID SILVER COFFEE URN.

(Presented to Capt. Moses Rogers, September 15, 1819, by Sir Thomas Graham, Lord Lynedock, who was a passenger on the Savannah during the voyage from Stockholm to St. Petersburg.)

hood, who were anxious to pay this last sad tribute to the memory of one whose death they esteem a public loss.

Captain Rogers was for some time actively and usefully engaged on the North River in the earliest experiments which were made in the application of steam to the purposes of navigation. He afterwards commanded the steamship *Savannah*, the first steam vessel, we believe, that ever navigated the ocean, and certainly the only one which ever crossed the Atlantic. The *Savannah*, under the direction of this skillful and enterprising commander, passed in perfect safety to England and from thence to Stockholm and St. Petersburg and back to the United States, thus fully demonstrating the benefits which might arise from the application of steam to the general purposes of maritime navigation. In 1820 he was engaged by a respectable company to take charge of the steamboat *Pee Dee*, which plies between this town and Cheraw. That he fully and satisfactorily performed the duties incumbent on him in this station the universal grief which pervades our community fully testifies.

Captain Rogers had lately returned from a visit to his family in Philadelphia, and was on his first voyage from Cheraw to this place when he was attacked by that fell disease (produced by his devotedness to his business) which has at once deprived society of an energetic, industrious, and enterprising citizen, and his family of an affectionate husband and most tender parent.

STEVENS ROGERS, SAILING-MASTER OF THE SAVANNAH.

Stevens Rogers was born at New London, Connecticut, in 1789; he had been associated with Moses Rogers in the management of sailing vessels and steamboats before he was called upon to superintend the construction of the hull and to design the rigging of the *Savannah*, in 1818.

He rendered valuable assistance to Capt. Moses Rogers in the memorable voyages of the *Savannah*—every word of the record of which, in the log book, being in his handwriting.

He outlived almost all of his contemporaries, and during a long and busy life, which terminated only two days before the fiftieth anniversary of the date of the launch of the *Savannah*, he saw the transatlantic steamship service, in which he was a pioneer, thoroughly established.

Born soon after the close of the Revolution, he remembered the death and burial of Washington, and was acquainted with the sailing vessels in our Navy during the war of 1812. He saw the first steam warship,* and lived to see all the navies of the world twice reconstructed: first, when steam power revolutionized naval architecture; and again, when iron armament was applied to battle ships.

He read the story of the conflict between the *Monitor* and *Merrimac*, and after living through three wars he saw his country finally at peace with itself and all the world—a peace which the ocean steamship has done more to perpetuate than all the standing armies of the universe.

The following newspaper notices of the events that brought his life to a close give evidence of the high estimation in which he was held during a lifetime of nearly four score years:

[New London Star, August 26, 1868.]

The funeral services of Capt. Stevens Rogers took place on Sunday afternoon, Union and Brainard Lodges, Free and Accepted Masons, escorted the remains from the residence of the deceased to the First Baptist Church, where the funeral sermon was

* *Fulton* the first, launched at New York, 29th Oct., 1814, "to mount 30 long 32-pounders and 2 100-pounders (Columbiads)."

preached by Rev. Mr. Burdick, of Westerly. The church was filled to its utmost capacity, and hundreds were unable to gain admittance. At the close of the exercises in the church the lid of the coffin was raised, and large numbers availed themselves of the opportunity to look for the last time upon the well-known features of the deceased. The funeral procession included the Masons to the number of 200, about 50 carriages, and several hundred on foot, among whom were many of our most prominent citizens. State street from the church to the court-house was lined with spectators. The remains were interred in Cedar Grove cemetery, and the beautiful Masonic service was performed at the grave under the direction of Rev. J. C. Waldo, chaplain of Union Lodge. An exceedingly interesting sketch of the life of Captain Rogers will be found elsewhere, over a signature well known to our readers.

OBITUARY.*

Capt. Stevens Rogers, who died suddenly in this city August 20, 1868, deserves a more than casual notice from his contemporaries. A large part of his life was devoted to sea-faring pursuits, which he had followed in the various forms of coasting trade and ocean voyages, by sail and by steam, acquiring the reputation of a skillful and experienced navigator. His connection with the early attempts of ocean steam navigation demand for him an honorable place in the record of American seamanship.

He was born at New London (Great Neck), upon the border of Long Island Sound, February 13, 1789, and began at an early age to follow the seas. As if to seal himself for that business he had, when a young man, the figure of a ship stamped so indelibly upon his arm that even in his old age it had the distinct outline of a recent draft. He married the sister of Capt. Moses Rogers, of Groton, and was connected with that enterprising mariner in his various experimental steam excursions. He was with him in the *Phœnix*, which went from New York to Philadelphia in 1809; in the *Eagle*, which went to Baltimore in 1713, and in the *New Jersey* to Baltimore in 1816, all propelled by steam.

The voyage of the steamship *Savannah* from Savannah to Liverpool was made in 1819. This was the first attempt to cross the ocean by steam. Capt. Moses Rogers was the commander and Capt. Stevens Rogers was the sailing master.

The voyage was accomplished in 22 days, of which 14 were without the use of canvas, sails being used a portion of the time to save the consumption of fuel. When the vessel arrived off Cape Clear she was telegraphed to Liverpool as a vessel on fire, and a cutter was sent from Cork to her relief. Great was the surprise and admiration when the gallant ship entered the harbor of Liverpool under bare poles, belching forth smoke, yet uninjured.

From Liverpool the *Savannah* went to Copenhagen and through the Baltic Sea to Stockholm and St. Petersburg. At these places she was visited and admired and her crew feasted and praised by kings and nobles as well as the populace. The sailing master received almost as much notice and applause as the commander.

Lord Lyndock, an English nobleman, who was then on his travels in the north of Europe, took passage in the steamer from Stockholm to St. Petersburg, and was so well satisfied with the intelligence of the sailing master that he kept by his side for hours together conversing with him. Before parting he presented him with a gold snuffbox, chased and ornamented, with the following inscription engraved on the inside of the lid: "Presented by Sir Thomas Graham, Lord Lyndock, to Stevens Rogers, sailing master of the steamship *Savannah*, at St. Petersburg, October 10, 1818."

The return voyage of the *Savannah* occupied 25 days. Capt. Stevens Rogers afterwards commanded the brig *Park*, and subsequently was in the coasting line upon Long Island Sound. In 1850 he was appointed to office in the custom-house at New London as inspector, and still later for several years was collector of the city taxes.

* For the *Star* of August 26, 1868.

He was one of the oldest Freemasons in the town, a devoted member of the fraternity, and always a conspicuous figure in the processions. The image of his stately form, clothed in the emblematic garb of the society, with the great Bible borne in his outspread hands, as at funerals and other Masonic exhibitions, will long dwell in the memory of many of our citizens. His funeral took place on the 23d instant. A long array of Masons accompanied the remains to the cemetery, with mournful music and evergreen memorials, testifying their respect for their departed brother.

F. M. C.

Over his remains in the cemetery at New London a marble tombstone (Pl. CLIV) has been erected, containing on one side a representation in bas-relief of the *Savannah* under steam; upon the other is the following inscription:

The voyage of the steamship *Savannah* from Savannah to Liverpool was made in 1819.

This was the first attempt to cross the ocean by steam, Capt. Moses Rogers being commander and Capt. Stevens Rogers, his brother-in-law, navigator, both natives of New London.

From Liverpool the *Savannah* went to Copenhagen, and through the Baltic Sea to Stockholm and St. Petersburg; at these places she was visited and admired by kings, nobles, and the people.

Her machinery was constructed under the skillful direction of Capt. Moses Rogers, who was familiar and identified with Fulton. He died of yellow fever at Georgetown, South Carolina, November 15, 1822, aged 42 years.

The following is an extract from an account of the arrival of the *Savannah* in England that was communicated by Sailing Master Stevens Rogers to the "New London (Connecticut) Gazette," in 1838, after the inauguration of regular transatlantic steamship travel by the *Sirius* and *Great Western*:

She was seen from the telegraph station at Cape Clear, on the southern coast of Ireland, and reported as a ship on fire. The admiral, who lay in the cove of Cork, dispatched one of the King's cutters to her relief. But great was their wonder at their inability, with all sail in a fast vessel, to come up with a ship under bare poles. After several shots were fired from the cutter the engine was stopped, and the surprise of her crew at the mistake they had made, as well as their curiosity to see the singular yankee craft, can be easily imagined. They asked permission to go on board, and were much gratified by the inspection of this naval novelty. On approaching Liverpool hundreds of people came off in boats to see her. She was compelled to lay outside the bar till the tide should serve for her to go in. During this time she had her colors all flying, when a boat from a British sloop-of-war came alongside and hailed. The sailing master was on deck at the time and answered. The officer of the boat asked him, "Where is your master?" to which he gave the laconic reply, "I have no master, sir." "Where's your captain, then?" "He's below; do you wish to see him?" "I do, sir." The captain, who was then below, on being called, asked what he wanted, to which he answered, "Why do you wear that penant, sir." "Because my country allows me to, sir." "My commander thinks it was done to insult him, and if you don't take it down he will send a force that will do it." Captain Rogers then exclaimed to the engineer, "Get the hot-water engine ready." Although there was no such machine on board the vessel, it had the desired effect, and John Bull was glad to paddle off as fast as possible. On approaching the city the shipping piers and roofs of houses were thronged with persons cheering the adventurous craft.

Several naval officers, noblemen, and merchants from London came down to visit her, and were very curious to ascertain her speed, destination, etc. As it was soon after Jerome Bonaparte had offered a large reward to anyone who would succeed in taking his brother from St. Helena, it was suspected that that was the object of the *Savannah*. After remaining 25 days in Liverpool, during which time she was visited by thousands of people of all rank, and her officers were treated with marked attention, she left for Copenhagen, at which place she arrived in safety, where she excited similar curiosity. She proceeded thence to Stockholm, in Sweden, where she was visited by the royal family, the foreign ministers, naval officers, the nobility, and others, who, by invitation of Mr. Hughes, the American minister, dined on board, and took an excursion among the neighboring islands, with which they were much delighted.

Lord Lyndock, of England, who was then on a tour through the north of Europe, by invitation of our minister took passage on board of the *Savannah* for St. Petersburg, which place she reached in due time. Here she was visited, by the invitation of our minister at that court, by several noblemen and military and naval officers, who also tested her superior qualities by a trip to Cronstadt. Her officers received several valuable presents of plate, etc., and we have now before us a superb gold snuffbox, which was presented to her sailing master, Capt. Stevens Rogers, by Lord Lyndock. She sailed from St. Petersburg to Copenhagen, and then to Arendal, in Norway, whence she returned to Savannah, where, after a passage of about 25 days, she arrived in safety—being the first steam vessel that ever crossed the Atlantic—and after performing a voyage highly creditable to American ingenuity and enterprise.

She used Liverpool coal for fuel, of which she took 75 tons, as well as 25 cords of wood for kindling. She had no freight, and only used her engine when not able to go at the rate of 4 knots with her sails. By the great fire in Savannah her owners were compelled to sell her, and she was purchased to run as a packet between that place and New York, whither she was bound, under charge of Capt. Nathaniel Holdredge, now master of the Liverpool packet ship *United States*, when she was lost on the south side of Long Island.

A more detailed account of the voyages is given in the notes from the log book, which follows:

NOTES FROM THE LOG BOOK OF THE SAVANNAH AND THE NEWSPAPERS OF THE DAY.

The log book of the *Savannah* (Pl. CLV) is composed of twenty-four sheets of thick brown paper, eleven inches by fourteen, stitched through and through the middle fold, and attached to a coarse cover of sail-cloth bearing the inscription:

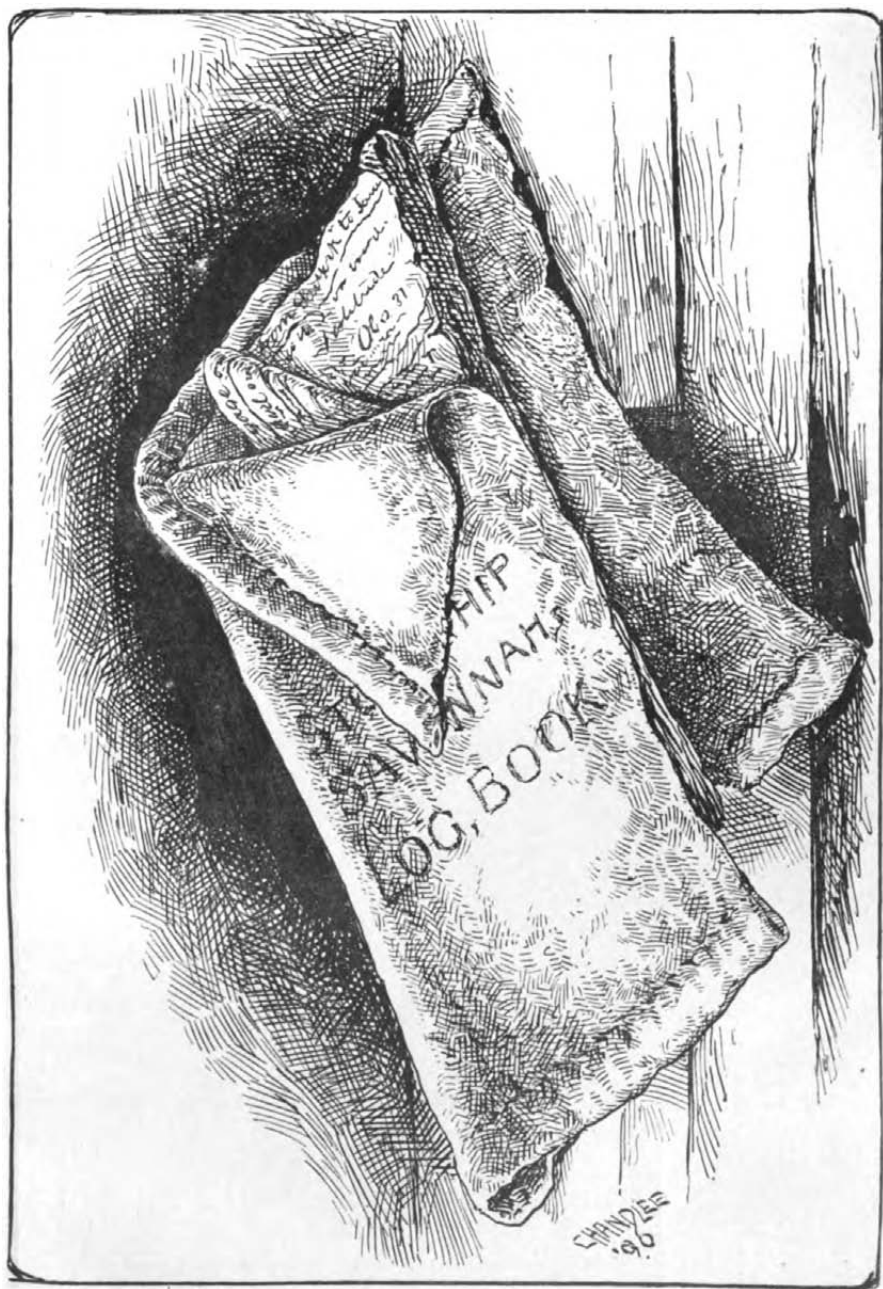
STEAMSHIP
SAVANNAH'S
LOG BOOK.

Only fifty-two of the ninety-six pages are written upon. A fac-simile of two of them is shown in Pl. CLVI.

I.—VOYAGE FROM NEW YORK TO SAVANNAH, GEORGIA.

We find that the vessel "got under way for sea with the crew on board" at 10 a. m.,* Sunday, March 28, 1819, and that the pilot left the ship off Sandy Hook Light three hours later, "with fresh breezes at NW."

*It should be remembered that sea time begins 12 hours later than calendar time. On shipboard the log is kept by calendar time in port and by sea time at sea.



LOG BOOK OF THE SAVANNAH.

(Drawn from the original, deposited in the U. S. National Museum.)

As nothing is said about getting up steam it is assumed that the sails only were used. At 4 p. m. Sailing Master Rogers states, "with fresh breezes and clear" the "Hilands of Never Sink bore N. b. W. 6 leagues distant, from which I take my departure." Thus, seventy-two years ago, the sailing master of the pioneer transatlantic steamship, with a little crew of daring seamen, made the first record in a vessel's log book of the day and hour when he last saw land in New York Harbor as he took his departure for a distant port. This event is in the memory of some men who have lived to know that in the year 1888 there left New York Harbor for transatlantic ports 1,320 steamships, carrying 147,329 passengers and over 3,500,000 tons of freight, while there arrived at the same port 480,451 passengers and over 3,000,000 tons of freight.

At 11 o'clock on the following morning, the master records the fact that they "got the steam up and it came on to blow fresh; we took the wheels in on deck in 30 minutes." This peculiar performance of taking in the wheels during a storm, through fear of having them washed away, or damaged, was unique. In the published records of steam navigation no allusion is made to any other vessel with the wheels similarly constructed, either before or since the *Savannah* went to sea. The arrangement was, without doubt, made by the direction of Moses Rogers, who in 1808, while taking the *Phoenix* from Sandy Hook to Cape May (en route from New York to Philadelphia), was compelled to run that steamboat through Barnegat Inlet into the bay and up on the beach, in order that the wheels, which had been damaged by a storm, could be repaired.

By examining the log book of the *Savannah* it will be noticed steam was seldom used except in calm weather, or when it was desired to show the power of the engine of the vessel.

On the 3d of April, the weather being calm and pleasant, the log states at 3 p. m., "stowed the wheels and started the wheels, *fird* all sail."

But the run under steam was of short duration, as the fore and aft sails were unfurled at 5 o'clock the next morning, and the crew at "8 a. m. folded up the wheels and stowed the wheels." During the whole voyage, from New York to Savannah, we find that the engine was running:

	Hours.
March 29	4
From April 2, 3 p. m., to April 3, 8 a. m.	17
From April 3, 6 p. m., to April 4, 8 a. m.	14
From April 5, 10 p. m., to April 6, 4 a. m.	10
	<hr/> 41½

The vessel came to anchor at 4 a. m. April 6, eight days fifteen hours (207 hours), from Sandy Hook Light.

The *Savannah* "Georgian" of Wednesday, April 7, 1819, states:

The elegant steamship *Savannah* arrived here about 5 o'clock yesterday evening. The bank of the river was lined by a large concourse of citizens, who saluted her

with shouts during her progress before the city. She was also saluted by a discharge from the revenue-cutter *Dallas*. Her appearance inspires instant confidence in her security. It is evident that her wheels can be unshipped in a few minutes, so as to place her precisely in the condition of any other vessel in case of a storm and rough sea. Our city will be indebted to the enterprise of her owners for the honor of first crossing the Atlantic Ocean in a vessel propelled by steam.

II.—IN THE HARBOR OF SAVANNAH AND A ROUND TRIP TO CHARLESTON.

After the vessel was tied to the wharf at Savannah, April 6, nothing important seems to have transpired on board, "all hands being employed in ship's duty," until Wednesday, the 14th, when the wheels were put on, and "at 10 a. m. got the steam up and started from Savannah for Charleston; at 1 p. m., blowing fresh, come to anchor off Tybee Light." There the vessel remained until 7 o'clock next morning, when she weighed anchor, "got steam on," and came to anchor at 8 p. m. four leagues from Charleston Light, and "let the steam off." At 6 o'clock next morning, after the pilot came aboard, they "got steam on," and "at 11 a. m. hold to the wharf at Charleston and made fast." This trip was made with the hope that the President of the United States, who was visiting Charleston, might be persuaded to proceed to Savannah with the ship on the return trip. Here the vessel remained until the 30th, when, at 10 a. m., she got under way, with steam, arriving at the wharf at Savannah, 1 o'clock the next afternoon, twenty-seven hours out.

With the exception of "taking in cole" on May 7 and 8, nothing important seems to have occurred while in port until Tuesday, the 11th, when "President of the United States, James Munroe and suit, came on board of the ship at 8 a. m. to go to Tybee light-house; at 8 a. m. got the steam up and started with the steam; at half past 10 a. m. anchored at Tybee; at 11 a. m. got under way with steam for town again at 8 a. m., held to the wharf and made fast."

This must have been a gala day for Captain Rogers and his crew, since the pleasure of the occasion was heightened by propitious weather, the faithful chronicler recording in the log book that the day began with "light breezes at N. W. and clear." President Monroe was at that time making a tour of the Atlantic States, inspecting arsenals, fortifications, and public works. A writer describing this tour states: "In every point of view the journey was auspicious. Party lines seemed about to disappear and the country to return to its long past state of union. The President was not backward in his assurance of strong desire on his part that such should be the case."

That his wishes were gratified* in this respect may be inferred from the fact that in 1820 his reelection was practically unanimous, as he received 231 out of the 232 electoral votes cast. His famous message of December 2, 1823, in which he advocated the policy of not interfering

* In 1819 Spain ceded East and West Florida and the adjacent islands to the United States.

with the powers of the Old World, nor permitting the Old World to interfere with the New, was the foundation of what has gone into history as the "Monroe Doctrine." To a statesman of such broad views, the establishment of a Transatlantic steamship line between Savannah and Liverpool, by an American company, was indeed an important matter, and the success of the trial trip to Tybee Light and return must to him have been gratifying in the extreme.

The President was greatly pleased with the machinery of the *Savannah*, and expressed the desire that when the vessel returned from foreign ports she be brought to Washington for the inspection of Government officials and Congressmen, with a view to her purchase for coasting service off the coast of Florida, where Cuban pirates were giving great annoyance to American shipping.

The President seems to have had a namesake on board, for the next day while the crew was taking in wood, the "log" tells us that "Daniel Claypit cut his left thumb off, the doctor done it up, and then bled James Monroe;" as the sailing master spelled the President's name Munroe, it was probably not a relative of his excellency who was bled.

On Saturday, May 15, we find that "a heavy thunder squall rose from the N.W. and broke the *Savannah* and two other ships adrift: Broke the paddles adrift and beat the arms."

After cutting one man's thumb off; bleeding another, and bending the ship's arms, by a storm, it was to be hoped that no further record of accidents would be found in the "log" while in port. But, alas, such was not the case. On Thursday, May 20, we find, "about 2 a. m., John Weston, coming on board from the shore, fell off the plank and was drowned; at 10 a. m. caught John Weston with a boat hook and jury was held over him; braught in axcerdental deth; took him on board and put him in a coffin."

Thus the first seaman of a Transatlantic steamer that was drowned lost his life by falling from a plank while the vessel was in port.

This accident caused a delay in the date of sailing, for the "Georgian" of Wednesday, May 19, 1819, states: "We are requested to state that the steamship *Savannah*, Captain Rogers, will, without fail, proceed direct to Liverpool to-morrow; 20th inst. Passengers, if any offer, can be well accommodated." Notwithstanding this notice the vessel remained in port during unlucky Friday, "all hands employed in ship's duty."

III.—VOYAGE FROM SAVANNAH TO LIVERPOOL.

Under date Saturday, May 22, 1819, Sailing Master Rogers writes, at "7 a. m. got steam up, winded ship, and hove up the anchor, and at 9 a. m. started with the steam from Savannah." Feeling satisfied with what the ship had accomplished during a nine days' voyage along the shore, Capt. Moses Rogers was willing to risk his own fortunes and the

interests of his employers in making the crucial test of the vessel's ability to cross the ocean. And after remaining at Tybee light for several hours, the log book states: "At 5 a. m. (Monday, May 24), got under way of Tybee light, and put to sea with steam and sails. At 6 a. m. left the pilot. At 8 a. m. took off the wheels in 20 minutes."

Captain Rogers's care of the wheels may be explained from his desire that the vessel should reach Liverpool without damage to them or the machinery, which had been constructed under his supervision.

The following is an extract from the "Georgian," Thursday, June 24, 1819:

Captain Livingston, of the schooner *Contract*, who arrived at Newburyport on the 5th instant, sighted on the 29th of May, latitude 27.30, longitude 70, a vessel ahead to eastward, from which he saw volumes of smoke issuing. Judging it to be a vessel on fire, stood for her in order to afford relief; "but" (observes Captain Livingston) "found she went faster with fire and smoke than we possibly could with all sail set." It was then discovered that what we supposed a vessel on fire was nothing less than a steamboat crossing the western ocean, laying her course, as we judge, for Europe; a proud monument of Yankee skill and enterprise. Success to her.

The log book of the *Pluto* contains the following passage:

JUNE 2, 1819. Clear weather, smooth sea, latitude 42 degrees, longitude 50 degrees.* Spoke and passed the elegant steamship 8 days out from Savannah to Petersburg, by way of Liverpool. She passed us at the rate of 9 or 10 knots, and the captain informed us she worked remarkably well, and the greatest compliment we could bestow was to give her three cheers, as the happiest effort of mechanical genius that ever appeared on the western ocean.

June 17th, at noon, the *Savannah* was overhauled and boarded off the coast of Ireland by the king's cutter, *Kite*, whose crew, seeing the smoke rising from the stack of the *Savannah*, thought the vessel was afire. The London "Times" of June 30, 1819, alluding to this event, says:

The *Savannah*, a steam vessel recently arrived at Liverpool from America—the first vessel of the kind which ever crossed the Atlantic—was chased the whole day off the coast of Ireland by the *Kite*, revenue cruiser, on the Cork station, which mistook her for a ship on fire.

Under date June 18 we find the melancholy announcement, at "4 p. m. Cork bore west b. S. 5 leagues distant." At "2 a. m. calm; no cole to git up steam." This must have been a great disappointment to Captain Rogers, who doubtless wished to run up the English Channel under steam. Under the circumstances, however, we find that "with all sails set to the best advantage," at 2 p. m. (Sunday, June 20, 1819), the *Savannah* "hove too off the bar for the tide to rise." At "5 p. m. shipped the wheels, fird the sails, and running to the river Mercer at 6 p. m., came to anchor off Liverpool with the small bower anchor;" twenty-nine days eleven hours from Savannah, during which time the vessel had run under steam eighty hours.

*About 69 miles due south from the southern point of the Grand Bank of Newfoundland.

The following table shows the number of hours the engines were at work during the voyage from Savannah to Liverpool.

Got steam up.	Shut steam off.	Hours.
May 30, 8 a. m.	May 30, 6 p. m.	10
June 1, 8 a. m.	June 2, 2 a. m.	18
June 6, 8 a. m.	June 6, 12 p. m.	16
June 9, 8 a. m.	June 9, 12 m.	4
June 11, 10 a. m.	June 11, 12 p. m.	14
June 16, 8 p. m.	June 17, 2 p. m.	18
		80

Marwade's "English Commercial Report," June 22, 1819, thus records the arrival of the *Savannah* at Liverpool:

Among the arrivals yesterday at this port we were particularly gratified and astonished by the novel sight of a fine steamship which came around at 7:30 p. m. without the assistance of a single sheet, in a style which displayed the power and advantage of the application of steam to vessels of the largest size, being 350 tons burden. She is called the *Savannah*, Captain Rogers, and sailed from Savannah (Georgia, United States), the 26th of May and arrived in the channel five days since. During her passage she worked the engine 18 days. Her model is beautiful and the accommodations for passengers elegant and complete. She is the first ship on this construction that has undertaken a voyage across the Atlantic.

The following is a communication from the American minister at London to Hon. John Quincy Adams, the Secretary of State:

[Official dispatch No. 76. From the U. S. Minister Richard Rush to the Department of State.]

LONDON, July 3, 1819.

SIR: On the 20th of last month arrived at Liverpool from the United States the steamer *Savannah*, Captain Rogers, being the first vessel of this description that has ever crossed the seas, and having excited equal admiration and astonishment as she entered the port under the power of her steam.

She is a fine ship, of 320 tons burden, and exhibits in her construction no less than she has done in her navigation across the Atlantic, a signal triumph of American enterprise and skill upon the ocean.

Lloyd's List reports the arrival of the *Savannah* at Liverpool on the 20th of June, 1819, bound to St. Petersburg; and in "Gore's Annals of Liverpool" this American steamer's arrival is recorded among "remarkable events."

Nile's New York Register, August 21, contains this paragraph:

The steamship *Savannah*, Capt. Moses Rogers, the first that ever crossed the Atlantic, arrived at Liverpool in 25 days from Savannah, all well, to the great astonishment of the people at that place. She worked her engine 18 days.

A correspondent of the Charlotte City "Gazette" writes from Norfolk, August 10, 1819:

I have received no shipping list by this arrival, but an article of great importance in the steam world (if I may use the expression) is contained in the Cork paper of the 19th of June. It is no less than the arrival at Kinsale, in 21 days, of the steam-

ship *Savannah*, from Savannah, laden with cotton and passengers. She put in for supplies, would remain for a day or two, and then proceed for Liverpool. Previous to her putting in she was chased by a cutter under the impression that she was a ship on fire. No further particulars are stated.

IV.—IN THE PORT OF LIVERPOOL.

During the twenty-five days that the *Savannah* remained in the port of Liverpool, she was visited by officers of the navy and army and many persons of rank and influence. The crew was engaged in scraping and painting the vessel; "all hands employed in sundry jobs of ship's duty" being the usual daily entry in the log book. On the 16th of July a supply of coal was put aboard, and on Sunday, the 18th, the engineer "got steam up and started the wheels." On Monday, the 19th, Captain Rogers appears to have had some difficulty in getting his crew on board the ship, having to send an officer ashore after "James Bruce and John Smith to get them on board; they would not come; the watchman put them in the boat; John Smith tried to knock Mr. Blackman overboard," and was finally put in irons. On July 21 the *Savannah* weighed anchor and dropped down the Mersey, bound for St. Petersburg.

V.—LIVERPOOL TO ST. PETERSBURG.

On the 23d of July the vessel got under way with a full head of steam; she appears to have had a pleasant passage, arriving at Elsinore on the 9th of August. Here she remained in quarantine until August 14, when she sailed for Stockholm, reaching that city on the 22d. On the 28th, six days after her arrival, it is recorded in the log that at noon "His Royal Highness Prince of Sweden and Norway visited the ship." On the 1st of September an excursion in the adjacent waters was arranged by Captain Rogers and Mr. Hughes, the American minister, whose wife and many foreign ministers to the Swedish court, nobles, and prominent citizens were included in the party.

Seaman John Smith does not seem to have profited by his experience, in spending the last two days in irons that the ship was in Liverpool harbor, for we find that on the 3d of September while at Stockholm "John Smith and Henry Wanripe took the ship's boat and went ashore without liberty and got drunk." What punishment was meted to them for this offense is not stated.

On the 5th of September the *Savannah* left Stockholm, arriving at Cronstadt on the 9th and at St. Petersburg on the 13th. On three days, September 18, 21, and 22, the *Savannah* was maneuvered under steam in the harbor of St. Petersburg, having on board many of the royal family, Russian nobles, officers, and foreign ministers.

From Liverpool to St. Petersburg steam was used more continuously than on any former voyage, as will be seen in the table below.

Hours under steam from Liverpool to St. Petersburg.

Got steam up.	Shut steam off.	Hours.
July 23, 1 p. m	12 p. m	11
July 26, 8 a. m	July 28, 12 m	52
July 31, 11 a. m	Aug. 1, 9 a. m	22
Aug. 8, 12 m	Aug. 9, 12 p. m	36
Aug. 15, 12 m	Aug. 15, 9 p. m	9
Aug. 18, 12 m	Aug. 20, 4 p. m	52
Aug. 21, 12 m	Aug. 22, 8 p. m	32
Sept. 5, 10 a. m	Sept. 5, 8 p. m	10
Sept. 8, 12 m	Sept. 8, 12 p. m	12
Sept. 9, 7 a. m	Sept. 9, 9 a. m	2
Sept. 15, 10 a. m	Sept. 15, 11 a. m	1
		239

About ted days out of thirty-three.

While the ship lay at Stockholm and St. Petersburg, Captain Rogers was in negotiation, on several occasions, for the sale of the vessel to the Swedish and Russian governments, but as the terms offered were not satisfactory to him, he concluded to bring the *Savannah* back to America.

On the 27th and 28th of September the log book records "all hands employed taking in coal" for the homeward journey.

The ship sailed on the 29th for Cronstadt harbor, where, after experiencing rough weather, during which she lost a hawser and an anchor, she finally, on the 10th of October, "at 9 a. m. got under way with steam past the gard ship laying off Croustadt, then took in the wheels and set sail (for Savannah) in company with about eighty sail of shipping."

VI.—VOYAGE FROM ST. PETERSBURG TO SAVANNAH.

The voyage from St. Petersburg to Savannah seems to have been unmarked by any incident of importance. October 17 the vessel touched at Copenhagen and the "captain went on shore and cleared the ship." On the 22d the record shows that the vessel "took a pilot on board, who took the ship into anchor in the harbor of Arendale on the coast of Norway."

The homeward passage was a stormy one; heavy winds, rough sea, gales and storms being almost daily noted in the log.

The engines were not used during any part of the return trip until the 30th of November (the fortieth day after leaving Arendale, Norway), when Captain Rogers "took on a pilot inside the bar," and "At 10 a. m. anchored in the Savannah River and fird sails on the finde tide, got under way with steam and went up and anchored off the town."

Thus the *Savannah* safely and triumphantly returned to her home

port, six months and eight days from the date she had sailed upon the first transatlantic steamship voyage; and thus by American mercantile enterprise, mechanical ingenuity, and courageous seamanship, the first step was successfully completed in the undertaking which marked an important epoch in the world's progress, opened the way for more intimate relations between distant countries, and inaugurated the revolution in methods of ocean transportation which followed within two decades.

The ship remained at Savannah until the 3d of December, when she sailed for Washington. At 8 p. m. on the 14th of December she arrived at the mouth of the Potomac River. The 15th and 16th were consumed in coming up the river under steam and "at 6 p. m. hald to the wharf at Washington and made fast," the voyage closing with a performance of Frank Smith (possibly a relation of John's), who, the log states, "damd and swore at the captain and struck him two or three times, and then Smith was put in irons."

LOSS OF THE SAVANNAH.

The remainder of the history of the *Savannah* can be briefly told.

The great fire in Savannah in January, 1820, brought pecuniary embarrassment upon her owners, who, failing in their efforts to sell the vessel to the Government, were compelled to dispose of her elsewhere. Her engines were removed and sold to the Allaire Iron Works, of New York City, for \$1,600, and put to other uses.

In the great Crystal Palace exhibition of 1856, the 40-inch cylinder was exhibited as an historical relic in connection with the log book.

After the vessel was divested of her engines, she ran between New York and Savannah, as a sailing packet, for several years, under command of Capt. Nathan Holdredge. She ran ashore on Long Island and went to pieces in 1822, a few months after the death of her commander.

Thus the first experiment (for it may be called an experiment, as the *Savannah* never carried a single passenger or pound of freight for pay while she was a steamship) in transatlantic steam navigation ended like many other experiments before and since, in financial disaster to the original projectors. This failure postponed, but fortunately did not prevent, the final success of the project.

In justice the names of those who furnished the means for this experiment, and who suffered financial loss because its success did not lead to the immediate fulfillment of their hopes, should not be forgotten.

Thirty-seven years afterward (1856) the files of Congress show that Mrs. Taylor, then almost three score and ten years old, filed a petition in which she states:

Your petitioner is the only surviving child of the late William Scarborough, of Savannah, Georgia, who, being an energetic and enterprising man of great mechanical genius, caused to be constructed in the years 1818-'19, with his own means and those of every friend he could enlist in the effort, the first steamer that ever crossed the Atlantic, the *Savannah*, of Savannah, Georgia, Capt. Moses Rogers, of New London, Connecticut, commanding.

For details of this voyage she refers to the sworn statement of Capt. Stevens Rogers, the sailing-master, "and prays that they will grant her some pecuniary acknowledgment, etc."

At New London, Connecticut, May 2, 1856, Capt. Stevens Rogers swore that he is aged 68 years; that he was the sailing-master of the steamship *Savannah* on her trial trip to Liverpool. Copenhagen, St. Petersburg, etc., and that:

Said steamship was built in New York in the year 1818, the builders being Fickett & Crocker. She was designed for a Havre packet, and was purchased by William Scarborough, of Savannah, and was named at his suggestion *The Savannah*, he having told me that in his opinion the ocean would be navigated by steam, and he intended his own State and city should have the credit of sending the first steamer across the Atlantic. Her castings were made in New York, and her boilers at Elizabethtown, New Jersey, by Daniel Dodge. She left New York under canvas, and arrived at Savannah in the early part of May, 1819. President Monroe was then in Charleston, South Carolina, and Mr. Scarborough directed us to go there and give the President an invitation to come to Savannah on the steamship. The President declined, because the people of Charleston did not want him to leave their State in a Georgia conveyance, but said that he would visit us at Savannah. So we returned. A few days after we got back the President arrived, and came on board the vessel with his suite and several naval officers and citizens. The vessel was navigated by steam, and we proceeded down the river on an excursion. The President dined on board, and expressed himself greatly pleased with the vessel, and told Mr. Scarborough that when she came back from her trip across the Atlantic to bring the vessel around to Washington, for he thought there was no doubt the Government would purchase her, and employ her as a cruiser upon the coast of Cuba.

We sailed from Savannah for Liverpool on the 26th of May, 1819. Moses Rogers, my brother-in-law, was master and engineer. I was sailing master and Mr. Blackman was third officer. We made the port of Liverpool in 22 days after leaving Savannah, 14 of the 22 under steam. The only reason why the whole voyage was not performed by steam was the fear of the fuel giving out. Off Cape Clear the admiral at Cork dispatched a ship to our relief, supposing we were on fire. At Liverpool we caused a great deal of excitement, and suspicion of having some design to release Napoleon from St. Helena. From Liverpool we proceed to Copenhagen, and thence to Stockholm. At both places the *Savannah* excited great curiosity; at the latter place she was visited by the royal family, our minister, Mr. Hughes, and Lord Lynedoch.

Lord L. went with us to St. Petersburg. On the passage he desired us to bring the vessel from steam to canvas. He held his watch and noted the time—15 minutes. He was so delighted that he exclaimed, "I blame no man born in the United States for being proud of his country; and were I a young man I'd go there myself." The Emperor of Russia came on board at Cronstadt, and was much pleased with the vessel, and presented Captain Rogers with 2 iron chairs (one of which is now in the garden of Mr. Dunning, at Savannah). Stevens Rogers then states that he has in his possession a gold snuff-box presented to him by Lord Lynedoch—to Stevens Rogers, sailing-master of the steamship *Savannah*, at St. Petersburg, October 10, 1819.

The petition of Mrs. Taylor to Congress for aid was not successful. Neither officers nor owners received any recognition of their services, and no attempt has ever been made by the General Government to perpetuate the memories nor to preserve the history of the pioneer voyages of the *Savannah* and her courageous crew.

After the *Savannah's* voyages no attempt was made by a vessel to cross the Atlantic under steam for several years,

Steamboat-owners confined themselves to voyages along the coast and to near ports on adjacent islands.

The matter, however, was frequently broached in the public prints and many projects were mentioned.

THE SECOND STEAM VESSEL TO CROSS THE ATLANTIC.

In 1827, 8 years after the return of the *Savannah* to America, a company composed of merchants from Amsterdam and Rotterdam was formed to inaugurate steam navigation with the Dutch West Indies. The steamship *Curacoa*,* 350 tons, was constructed for the company on the Clyde, and made the initial trip successfully, sailing from Antwerp August 12, 1828. This voyage was repeated during the year, but the line was not a commercial success.

THE THIRD TRANSATLANTIC STEAMSHIP.

The *Royal William*, 360 tons, 160 feet long, 44 feet beam, schooner-rigged, was built at Quebec in 1831 and engined at Montreal. The following year she crossed the Atlantic and arrived safely in London. There she attracted the attention of the agents of the Spanish Government, who purchased her, changing her name to *Isabella II*.

She was the first Spanish war vessel.

Such was the condition of affairs when, in 1833, Dr. Junius Smith, an American who had resided for 30 years in London, entered with enthusiasm upon the scheme of establishing a steamship line between England and New York. After much arduous labor the British and American Steam Navigation Company was capitalized at £1,000,000, the subscription books being opened in July, 1836.

The stock was rapidly subscribed, and a few months later a contract was entered into for a steam frigate of 1,700 tons burthen, to have two engines of 225 horse-power each, at a cost of about £60,000.

The firm who was to engine the vessel, however, failed, and a new contract was entered into with Robert Napier, of Glasgow, which resulted in the completion of the 2,400 tons steamship *British Queen*, in the spring of 1839—a twelvemonth later than the first steamship ordered was expected to be delivered.

In the meantime the *City of Kingston*, the fourth steamship to cross the Atlantic, had arrived in New York from Cork, Ireland, 2d April, 1838; and the *Great Western*, a 1,300-ton steamship, with 200 horse-power engine, designed by Brunell, the celebrated engineer, had been constructed and launched by the Great Western Railway, of England, at a cost of about £50,000.

The British and American Line being anxious to be foremost in the field, leased the *Sirius*, a 700-ton ship, and had her hastily overhauled for a transatlantic trip. The *Sirius* sailed from Cork at 10 o'clock on

* The same burthen as the *Savannah*.

the morning of April 4, 1838; and the *Great Western* left Bristol, the same port from which the Cabots sailed years before, at 2 o'clock in the afternoon of the 7th of the same month.

The story of the first steamship race across the Atlantic half a century ago is a tame affair compared with the weekly trials of speed by the numerous 5,000-ton "Ocean Greyhounds" now running weekly between the two hemispheres; and upon which hundreds of tons of coal are burned to reduce the record by a few minutes. Nevertheless, both continents were electrified by the accounts of the preparations for this trial of speed, and citizens of all classes eagerly watched the results. On the 23d of April, 1838, both vessels arrived at Sandy Hook, the *Sirius* preceding the *Great Western* by a few hours.

Commenting upon this event, the "Atheneum" pays this glowing tribute to the American people:

The generous and enthusiastic welcome with which the officers of the *Sirius* and *Great Western* were received in New York does honor to the Americans; every possible testimony of respect and hearty good will and good wishes were shown to them; not a whisper of regret was heard at the time that the great enterprise had been attempted by British skill; they were welcomed as brothers by men who saw only in this event the revolution which had been at once effected in the commercial, and we may say in the social, relations of the two countries, an event which will form an epoch in the history of civilization itself, which tends to unite in the bonds of enduring fellowship the greatest nations of the earth allied by language common, by literature, by interest, and by blood, and offers to both a guarantee a thousand times more binding than all the treaties that were ever penned for the preservation of that honorable peace which now gladdens and enriches them.*

Under these happy auspices and within twenty years of the pioneer voyages of the steamship *Savannah*, the era of transatlantic steam navigation was fully inaugurated.

* The Atheneum, May 26, 1838.