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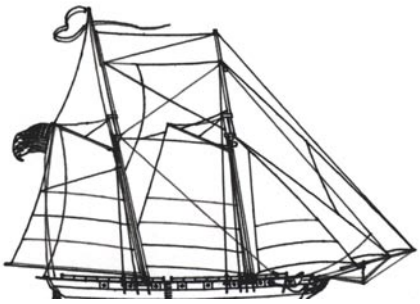

USS SHARK

OFFICIAL QUARTERLY PUBLICATION OF THE KEY WEST MARITIME HISTORICAL SOCIETY

Scurvy
The Loathsome Disease

By Thomas Neil Knowles

During the summer of 1864, the wife of the post surgeon at Fort Jefferson in the Dry Tortugas made the following entry in her journal.

My husband now took the entire medical charge of the prisoners; his sympathies were aroused when he treated them during the illness of the regimental doctor, and he found them in a terrible condition from the effects of scurvy. His first inspection occupied five hours, and every corner of their quarters and every man was examined. He found nearly two hundred with the loathsome disease, many too ill to rally.

The term "loathsome" is aptly applied to a disease that does terrible things to the human body. William Hutchinson, an 18th Century British seaman, contracted scurvy on his first voyage (1738-1739). The gruesome details of his affliction were still vividly etched in his mind when he wrote his memoirs 50 years later.

... my armpits and hams grew black but did not swell, and I pined away to a weak, helpless condition, with my teeth all loose, and my upper and lower gums swelled and clotted together like a jelly, and they bled to that degree that I was obliged to lie with my mouth hanging over the side of my hammock, to let the blood run out, and to keep it from clotting so as to choke me ...

Fort Jefferson 1861. Photo credit: Monroe County Library.

Scurvy has stalked mankind ever since the human species evolved, but the disease became a major maritime problem in the 15th Century when extended voyages began to be undertaken for exploration, trade, and far-ranging military missions. For almost four hundred years the "loathsome disease" inflicted staggering losses on crews regardless of age or race. According to author Stephen Bown, scurvy killed more sailors than all battles, storms and other diseases combined from the 15th to the mid-19th centuries. The Portugese explorer Vasco da Gama lost two thirds of his crew on a voyage to India in 1499. Magellan lost more than 80 per cent of his crew while crossing the Pacific in 1520. Commodore George Anson commanded a squadron of five British men-of-war carrying 2,000 men when he left England in 1740 to attack Spanish shipping in the Pacific. Three years and nine months later when Anson returned to England, his squadron had been reduced to one ship and 1,300 of its men had died, most of them

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Soceity News

By John Viele

A three-dimensional model, or diorama, of the Key West waterfront as it looked in the 1850s has been completed and installed in the Custom House museum. In the 1850s, Key West was the second largest city in Florida and a major seaport for traffic passing through the Straits of Florida. It was also a time when the wreck-salvaging industry was at its peak and other maritime pursuits such as fishing, sponging, turtling, ship building and repair, and ship supply employed hundreds of Key West citizens.

The diorama is a joint project of the Key West Maritime Historical Society and the Key West Art and Historical Society. It cost $18,000, half of which came from the Maritime Society treasury and the other half from a matching grant provided by the state as a result of a grant application written by Claudia Pennington, Executive Director of the Key West Art and Historical Society.

The project was born a little over two years ago when, at a Maritime Society board meeting attended by Claudia Pennington, John Viele proposed making a model based on an 1855 perspective view of Key West. Claudia Pennington volunteered to write a grant, to include the diorama in a display at the Custom House, and to provide a display case.

Board members John Viele, Don Lowe, and Bill McKinley did the research and layout for the model and supervised its production. Rebecca Fuller, RAF Models and Displays, Winston Salem, North Carolina, constructed the model and her mother, Carolyn Fuller of Key West, painted the background. Dan Gallagher of Grassy Key, made the ship and boat models.

The diorama will be part of a major exhibit of Key West history at the Custom House covering the period 1822 to 1940 and called "In Their Own Words." As this is written, the exhibit is still under preparation.

Lectures

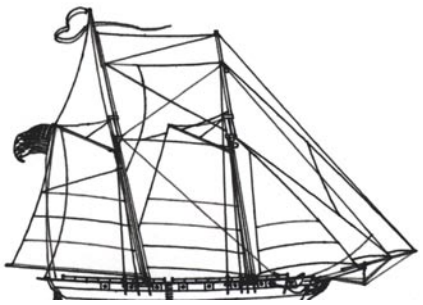
PT Boats-January 30. Kelly George, captain of the PT728, now a Key West excursion boat, and his first mate, Jason, gave a most interesting talk and slide show on the history and operations of PT boats.

Underwater Archaeology-February 22. Dr. Jeff Royal, Achaeological Director of the RPM Nautical Foundation presented a discussion of underwater archaeological projects in the Mediterranean that he participated in.

Boyhood Days in Old Key West-March 27. Key West native, Don Lowe, described life in Key West during his elementary and high school years. This was during the time when Key West had gone bankrupt, eighty percent of the residents were on relief, and a Federal Administrator, Julius Stone, had been appointed to run the city.

New Members

Dean Barnes, Kingston, NY; Phillip D. Bostwick, Boston, MA; Tom & Kitty Clements, Key West; Michael & Suzanne Gribik, Key West; Peter & Mallory Haffenreffer, Portland, ME; Bob & Trudy Hahn, Key West; Janet E.S. Hart, Williamsburg, VA; Jeff Kelly, Ramrod Key; Susie MacNelly, Flint Hill, VA; Quincy Perkins, Key West; Judith & James Roberts, Lewes, DE; L. Ben Roberts, Wellington, FL; Dave Sloan, Key West Susan Stover, Sarasota, FL.

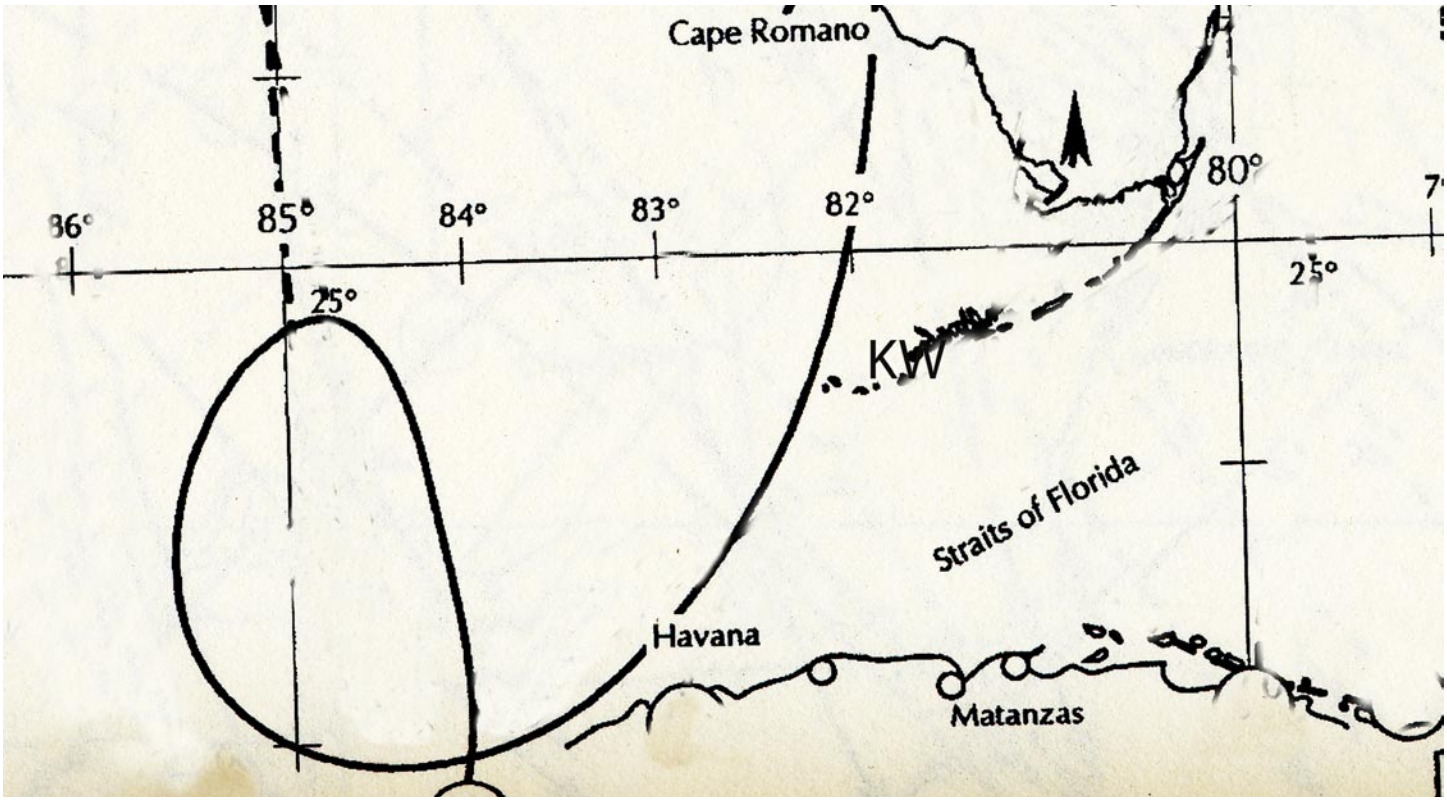


The Florida Keys Sea Heritage Journal is published quarterly. Subscription is available through membership. The art on the masthead, the USS Shark, was drawn by Bill Muir.

Editor: Lynda Hambright
Production:Tom Hambright

Letters and articles are welcome. Please write to: Editor, Florida Keys Sea Heritage Journal, KWMHS, P.O. Box 695, Key West, FL 33041.

Hurricanes



Track of the 1910 Hurricane. Photo credit: Monroe County Library

Since Wilma we have been asked when was the last time the eastern end of the Island flooded. We had some flooding during Donna in 1960 and Isabel in 1965 but not extensive as Wilma. Since the eastern end of the Island was unpopulated before World War II we can only guess, since no records have been found. The following two letters from H.B. Boyer, head of the Key West Weather Bureau, to C.G. Bailey, Monroe County Engineer, reports on the Hurricanes of 1909, 1910, 1919 and 1926. He reported in the 1910 Hurricane that the flood waters extended up Eaton Street to near Whitehead Street. The storm moved from the southwest similar to Wilma and would have almost assuredly flooded the eastern of the Island. TH & LH.

August 18, 1929

Mr. C.G. Bailey,
County Engineer,
Monroe County,
Key West, Fla.

Dear Mr. Bailey:

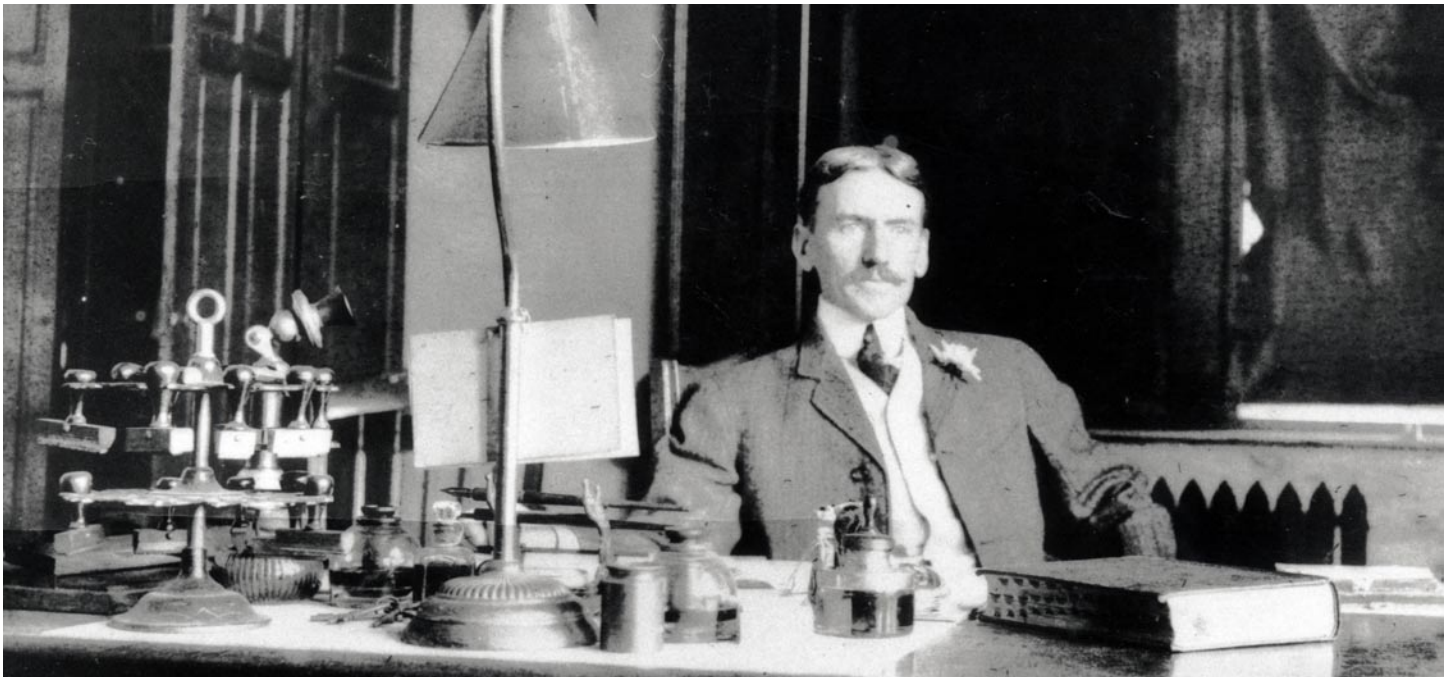
With reference to your letter of August 14, 1929, relative to hurricanes in this vicinity:

October, 1909: This storm originated in the Western Caribbean Sea and was of small diameter. It crossed western Cuba on the 10th, moved Northeastward, its center passing a short distance to the southward of Key West, and disappeared over the northern portion of the Bahama Islands into the Atlantic Ocean. Winds of hurricane force (75 miles an hour or over) lasted approximately 4 hours - from about 9 a.m. to about 1 p.m. At first the wind was from the northeast, but at 11:40 a.m. it suddenly shifted to northwest, thus indicating the proximity of the center.

The maximum velocity (for 5 minutes) was 83 miles an hour from the northeast at 10:05 a.m. with an extreme of 94 miles an hour. The lowest barometric reading was 28.50 inches at 11:40 a.m. At Sand Key the lowest reading was 28.36 inches which was believed to be the lowest atmospheric pressure ever observed in the United States up to that time. No record is kept of the height of the tide, but I found a notation to the effect that "the tide rose into the streets in the northern part of the city."

October, 1910: Moving north ward from the western portion of the Caribbean Sea this hurricane crossed extreme western Cuba on the 14th. It passed northward some distance to the west of Key West and on the 15th and 16th circled in the southeastern portion of the Gulf Mexico forming a loop. On the

(Continued on page 4)



H.B. Boyer Head of the Key West Weather Bureau from 1911 to 1931.

(Hurriance from page 3)

morning of the 17th the center was slightly west of Havana and during the early part of the afternoon passed northward again a very short distance to the west of Key West. Strong winds and gales from the east and southeast were practically continuous at Key West from mid-day of the 13th to the forenoon of the 17th when, with the approach of the center of the hurricane, the wind, east and southeast, attained full gale force. The wires connecting the recording instruments were broken at 12:30 p.m. in a wind of 72 miles an hour, and thence on the force was estimated. The maximum effect of the hurricane was felt between 3 and 4 p.m. when the wind-velocity was estimated at 100 miles an hour from the south, with gusts of 110 miles an hour: at the same time the wind-direction veered from southeast to southwest. Winds of gale to hurricane force lasted about 30 hours.

The lowest barometric reading was 28.47 inches at 3:20 p.m. on the 17th.

Tide unusually high, water extending up Eaton to near Whitehead St.

September, 1919:- This storm apparently developed north of Santo Domingo about the 6th, moved slightly north of west, the vortex passing to the south of Key West about 30 miles distant between midnight of the 9th and 1 a.m. of the 10, crossed the Gulf of Mexico and entered the coast of Texas near Corpus Christi.

Winds of gale force and over, from the northeast, east, southeast, prevailed at Key West about 35 hours on the 9th and 10th. The recording instrument was blown away at 7:30 p.m. on the 9th in gusts of 76 to 80 miles an hour; thence on the velocities were estimated. The storm attained its greatest intensity about 1 a.m. on the 10th when the force of the wind was estimated at 110 miles an hour with gusts of 120 to 125 miles an hour.

While the lowest barometric reading, 28.81 inches, was not as low as that recorded in 1909 and 1910, the violence of the hurricane was much greater as the barometric gradient was much steeper - Key West 28.81 inches, Sand Key 28.36 inches, showing a gradient of practically one half an inch in 8 miles.

The tide rose and filled the Weather Bureau basement to a depth of about 3 feet. Insofar as storm tides are concerned those attending the storm of October, 1910, were undoubtedly the highest, and it is believed reliable data as to height may be obtained at the U.S. Naval Station.

October 1926: The center of this hurricane, moving in a northwesterly direction, passed directly over Miami about 6 a.m. on the 18th. No damage resulted at Key West as the wind, from the northeast, north and northwest, did not exceed a whole gale - 62 miles an hour for 5 minutes with an extreme (one minute) of 74 miles an hour. Winds of gale force lasted 11 hours.

The lowest atmospheric pressure was 29.48 inches at 1 p.m. on the 18th.

There was no appreciable storm tide.

Respectfully H.B. Boyer
Meteorologist.

United States Department of Agriculture Weather Bureau

Key West, Fla.,
October 10, 1929.

Mr. C.G. Bailey,
Engineer, Monroe County,
Key West, Fla.

Dear Sir:

With reference to your letter of the 4th instant relative to the tropical storm of September 28th:

This storm was first detected as a mere disturbance several hundred miles to the north of Porto Rico on September 18, and until the 25th presented no problem insofar as Key West was concerned as, apparently, it was moving toward the coast of Florida far to the northward of this place.

But on the morning of the 26th it was clearly seen that from its position over the extreme northern portion of the Bahama Islands on the 25 it had turned southwestward and was then center near Andros Island, approximately 175 miles due east of Key West.

On the 27th, at 8 a.m., the center of the storm was 150 miles east of Key West with every evidence of a westward movement which, if persisted in, would involve Key West. At this time the local pressure was 29.74 inches, wind N 12 miles an hour. At 12 noon, barometer 29.76 inches and falling, wind N 14 miles an hour, weather clear. Realizing the menace contained in a westward course the public were warned at 12: 30 p.m. to make everything secure. With the wind steady from the N and freshening slowly and weather overcast, pressure was stationary from 2 p.m. when the barometer began to fall. Midnight, barometer 29.67 inches and falling moderately fast, wind steady N 20 miles an hour and freshening, weather overcast.

September 28th, 1 a.m., barometer 29.64 inches and falling moderately fast, wind 23 miles an hour and steady N, weather overcast. At 1:30 a.m. the center of the storm was 110 miles east of Key West and apparently very slightly north of its position at 8 a.m. on the 27th. This encouraged my belief that the storm's track was curving to the north of west. Wind began to be gusty about 3 a.m., and at 6 a.m. the barometer read 29.55 inches and falling, weather overcast, wind N 28 miles an hour and gusty. Between 5 and 6 a.m. there was unmistakable evidence that the wind would back and that the center would cross the line of the Keys and enter the Gulf of Mexico some distance to the north of Key West. This information was immediately made public as such a course relieved the local situation greatly.

Barometer at 6 a.m. 29.52 inches and falling rather rapidly. Weather overcast, wind NNW 30 miles an hour and increasing and squally; 8 a.m., barometer 29.46 inches and falling rapidly, wind NW 42 miles an hour and squally, weather overcast and threatening. Center of storm approximately 70 miles east-northeast of Key West and moving northwestward. Rain set in at 8:10 a.m. Throughout the forenoon wind NW and steadly, increased from gale force to a whole gale with heavy gusts, barometer falling rapidly and continuous rain which, driven by heavy winds, appeared excessively heavy but was actually only moderate in character. At 12 noon, barometer 29.24 inches and falling rapidly, continuous rain, wind NW 58 miles an hour with heavy gusts. At this time the center was approximately 65 miles to the northeast of Key West close to the Florida Keys which were crossed shortly thereafter. The barometric descent was checked at 1 p.m. when pressure was 29.25 inches, wind NW, blowing a whole gale and increasing, with heavy squalls and a driving rain.

Wind backed from NW to W at 1:52 p.m.; heavy gusts and continuous driving rain. During the period from 1 p.m. to about 3:30 p.m. the barometer fell .08 inch to 29.21 inches, the minimum reading, and then began to increase. And during the same interval the wind increased with heavy gusts and in "sheets," until between 3:30 and 3:35 when the maximum velocity of 66 miles an hour was recorded. During a heavy gust one mile was recorded a the rate of 72 miles an hour. Apparently the center of the storm crossed the Keys at or about Upper Matecumbe.

Following the time of least pressure, 3:30 p.m., the barometer rose rapidly, the rate of ascent equally the rate of decent, the wind maintained its westerly direction with heavy squalls, while the rain perceptibly lessened and ended at 7:05 p.m. At 7:20 p.m. the wind backed to SW and had diminished in force to 50 miles an hour, the gusts becoming weaker and occurring at longer intervals. At 8 p.m., barometer 29.38 inches and rising rapidly, and by midnight had risen to 29.55 inches, while the wind, still SW, had diminished to 30 miles an hour.

During the storm the wind maintained a velocity of 40 miles an hour and above for 14 hours, and 60 miles an hour and above for 4 ½ hours.

Respectfully,

H.B. Boyer,
Meteorologist.

Hackley's Diary

William Hackley practiced law in Key West from 1829 to 1857. He kept a diary for part of the time he was in Key West. Here is the diary for part of August and September 1855.

Thursday, August 9. Rose at 4 and walked up the beach and across by the Salt Pond. At 8:15 a.m. barometer 29.65, thermometer 87, wind southeast 4, clouds 3. A Spanish Woman living near us says that she will nurse the baby three times a day. Paid James Filor for a pair of shoes $3.00 and gave him a pair belonging to Major William H. Chase, but two small $5.00, they cost $7.50 in Charleston. Bought a barrel of flour from Bowne & Curry which proves to be sour and I will have to send it back, price is twelve dollars.

Friday, August 10. Rose at 4 and walked to the Salt Pond, returned and bathed. At 8:30 a.m. barometer 29.60, thermometer 86.5, wind southeast 2, clouds 3. Purchased from L.M. Shaffer a canister of solidified milk containing 12 pounds for $4.50. Sent the barrel of flour back and could not find a sweet barrel at Bowne & Curry. Bought one from William Wall for $12.00. Read the Law magazine. The flour I got from Wall is also sour, there is none sweet in town.

Saturday, August 11. Rose at 4:35 and walked on the beach, returned and bathed. At 8:30 a.m. barometer 29.61, thermometer 86, wind southeast 5, clouds 3. Read Law magazine. Went to a singing with Matilda.

Sunday, August 12. Rose at 4:10 and walked on the beach, returned and bathed. At 8:40 a.m. barometer 29.63, thermometer 87, wind east southeast 2, clouds 2. Asa Tift, Charles Tift, Felix Senac, John Baldwin, Fernando Moreno and Stephen Mallory came to the office to work dividing Government documents. They got through with a good many. Walked to the Fort with the children. They are getting on very fast, all the underground work is done and the walls all round are the height of the first casemate. Matilda went to church twice and dined at Alexander Patterson's. The babe not very well.

Monday, August 13. Rose at 4:20 having altered the alarm, four being to early. Walked on the beach and returned and bathed. At 9 a.m. barometer 29.63, thermometer 86, wind east southeast 3, clouds 7. Squalls all around, a little rain fell about 8 a.m. and larger quantity close by as we got only the edge of the squall. Read Law magazine. Took two gall pills for oppression of the chest.

Tuesday, August 14. Woke at 5 and found that it was raining and did not walk. Bathed. At 8:30 a.m. barometer 29.55, thermometer 88.5, wind east 3, clouds 6. The pain in my chest still continued, caused by indigestion from eating a Mush Melon yesterday morning which has brought on a spell of dyspepsia. Took a gall pill before breakfast. Yesterday gave Babe some Gin for wind and pain and think I will use it instead of the usual carminatives. P.M. Siesta.

Wednesday, August 15. Rose at 4:20 and walked on the beach, returned and bathed. At 9:45 a.m. barometer 29.48, thermometer 87.5, wind northeast 6, clouds 5. A Turtle came up last night but I could not find the eggs not having my finding rod with me. Got for $4.00 a half a ticket in the Havana Lottery for the draw on August 29. The schooner **Ella** came in about 11 with the mail but not having stopped at Savannah she brought but a few newspapers. P.M. Downtown and packed 8 bags of Public Documents. At 5 p.m. barometer 29.43, thermometer 86, wind northeast, raining all afternoon. Paid $3.00 for one half cord of wood and $.25 for hauling. Received a Treasury Draft for $130.00 being the amount of my accounts sent on by the first boat in July. The schooner **Ella** sailed for Havana about 6 p.m.

Thursday, August 16. Rose at 4:25 and walked on the beach, returned and bathed. At 8:30 a.m. barometer 29.52, thermometer 84, wind southeast 3, clouds 4. Paid Robert P. Campbell's bill to July 1, $120.00. Wrote to Solicitor of the Treasury dating the letter July 31 reporting the filing of a claim for duties in the case of Thomas Bennet & other vs. the brig **El Tevere**. Wrote the Treasurer of the U.S. acknowledging receipt of the warrant for $130.00. Read papers, remained at home all afternoon. Matilda had a sick headache.

Friday, August 17. Rose at 4: 25 and walked on the beach where I was caught in a rain and sat with an umbrella over me until it was over. Returned and bathed. At 8:30 a.m. barometer 29.55, thermometer 83.5, wind east southeast 3, clouds 4. Matilda better. Mrs. Charles Tift was quite sick yesterday evening. Read papers. After dinner went out to the Duck Ponds with my gun. Shot 1 Marlin, 1 Egaret and a small Gull. Raining all day. The **C. Vanderbilt** got in this afternoon, she will bring no freight and is of no advantage to us.

Saturday, August 18. Woke at 4:30 and found that it was raining as it had been all night. Barometer 29.48, thermometer 83, wind

southeast 1, clouds 8. John P. Smith is on board the **Vanderbilt** as mate and pilot until October when he is to have charge of one the Texas boats. He was my office all morning he told all about his troubles with his wife. The child of which she delivered on the 16th was born 10 months and 9 days after he left her in New York on the 6th of October 1854 and he did not return until the 11th of January, 1855. He mentioned many other circumstances which are sufficient to prove guilt. She has applied for a divorce to which she will offer no resistance. He had to go off into the Northwest passage in a boat to await the steamer he having thrashed one of the crew who got a warrant for him. The **Vanderbilt** went out in the evening about 5 p.m. and the schooner **Ella** got in after dark. Sent 17 bags of Government Documents west and 3 by way of Savannah for East Florida.

Sunday, August 19. Rose at 5:10 and bathed. At 8:30 a.m. barometer 29.50, thermometer 84, wind south southeast 2, clouds 8. At 11 p.m. a very heavy squall came up from about south. Read papers. Home about 10 and remained the rest of the day.

Monday, August 20. Rose at 5:45 and walked on the beach. Returned and bathed. At 8:15 a.m. barometer 29.53, thermometer 85, wind south southwest 3, clouds 6. Took gun and accruements to the office to be ready for a trip to the Marquesses with William Randolf which was broken off. Washed the gun and scrubbed her out with white mountain mineral and found she was very rusty inside. Read papers and Law magazine.

Tuesday, August 21. Rose at 5:30 and bathed. At 8:30 a.m. barometer 29.57.5, thermometer 85.5, wind southeast 3, clouds 4. Last evening Matilda was in great agony from a boil which is rising on the left breast near the nipple. Saw Dr. L. Engle who agreed with me that ice water was the best application, accordingly I put clothes wet with ice water to the breast and changed them as they got warm and continued to do so until after midnight when the pain was lessened and the remainder of the night allowed the compress to remain and have the effect of a poultice, got to sleep about one and was up about 3 or 4 times which makes me sleepy this morning. Read papers.

Wednesday, August 22. Rose and walked on the beach with my gun. Returned and bathed. At 8 a.m. barometer 29.60, thermometer 85, wind south southwest 2, clouds 6. Rain from 7 to 9 and a good deal of water fell. Read paper. At home all evening.

Thursday, August 23. Rose at 4 and walked on the beach with gun but saw nothing to shoot. At 8:30 a.m. barometer 29.55, thermometer 86, wind south 2, clouds 3. Rain squalls all round. Sent Mrs. Randolph by Charlotte $8.00 being Kates wages for the past month. Paid Stepney for vegetables $1.00. Read papers and Law magazine. Home all evening.

Friday, August 24. Rose at 4: 20 and walked by the duck ponds and lot. Returned and bathed. At 8:30 a.m. barometer 29.52, wind southeast 4, clouds 3. Read paper and Law magazine. The **Peter Clinton** went to sea about 10 a.m. At home in the evening. The baby a little unwell. Matilda's boil broke but she has another on the other breast. I think her milk much affected and disagrees with the baby.

Saturday, August 25. Rose at 4:20 and walked on the beach, tide high. Returned and bathed. At 8:30 a.m. barometer 29.56, thermometer 86.5, wind southeast 4, clouds 2. Babe with a fever to 2 p.m. when it went off by the use of water to head and stomach. The boil on Matilda's left breast broke which eased her very much but there is another boil on the right breast which is very painful. Read Household Word, having finish my papers and the Law magazine. Sent for the Doctor at dinner time to see the babe. He would not come in until he told me that he had been called to see a man sick with small pox. He said that his book stated that there is no known case of a doctor communicating the disease to his patient. I asked him up, he looked at the babe who at this time was free of fever. He said persevere in the use of water but if the fever returned a little Ipecas would be useful as it acted on the skin. Matilda and Mrs. Tift went to ride in the afternoon.

Sunday, August 26. Rose at 4:20 and walked on the beach. Returned and bathed. At 9 a.m. barometer 29.60, thermometer 87, wind east southeast 2, clouds 4. There was a nice shower about 7 last night, about 9 I received a message to be at Felix Senac's house tomorrow to go to the Marquesas with a party and Lt Watkins of the Lighthouse Schooner. I declined on the plea that I did not like to hunt on Sunday I find that a similar objection was made by the others and the party did not go. The Babe had a fever again.

Monday, August 27. Babe had a high fever all night and Ipecac with wet cloths to head and stomach not breaking the fever at 4 a.m. put her in Lien Pack and kept her there 1 hour and 15 minutes with a wet

(Continued on page 8)

(Hackley from page 7)

cloth with ice water on her head. This reduced the heat somewhat and about 6 after she was taken out she was cooler than she had been for three days. The Doctor did not get to see her before the fever left her. He said that he thought the pack was the best thing that he could have done for Babe and thinks it will be best to pack her again during the day. At 9 a.m. barometer 29.69, thermometer 86.5, wind east northeast 2, clouds 4, several hard showers fell yesterday afternoon. I was with the Babe at my usual time for walking and did not go out. John H. Geiger came to me and asked my advice as to bring an action against Benjamin Sawyer for money earned by the sloop **Plume** in the wreck of the bark **Magnolia**. Geiger claims that he was consorted with the **Plume** at the time Sawyer claims that the consortship ended at the time of the arrival at Key West which was at 12 the night preceding the wreck of the **Magnolia**. The case was settled by agreement for $5,500 and paid by bill on the owners which has been paid and Sawyer the owner of the **Plume** has received the money and refuses to pay the amount claimed by Geiger. I drew up a rough sketch of a libel. At home all afternoon and at 2 observing some signs of perspiration about the babe wrapped her up in a woolen shawl and she soon perspired freely and kept her enveloped for 2 ½ hours having the cloth wet with cold water on her head. She was taken out to be fed by Matilda who went with Mrs. Tift and perspired freely the whole time she was out but her head remained too hot. The Doctor recommended Quinine 2 grains to be taken in 6 hours and so as soon as she got home gave her two teaspoons full and continued the same quantity every hour until 12 when she had taken nearly all and was nearly free from fever having been in a perspiration all night. Julius Tift invited me to go with a party to the Marquesses starting at midnight but the Babe was too sick. I wanted much to go.

Tuesday, August 28. Rose at 4 and walked on the beach. Returned and bathed. At 9 a.m. the barometer 29.52, thermometer 87.5, east southeast 2, clouds 2. We had ice cream made of solidified milk and it was very good, no one could have told of what it was made.

Wednesday, August 29. Rose at 4 and found it was raining. Went out at 4:45 and walked on the beach, returned and bathed. At 8:40 a.m. barometer 29.40, thermometer 88.5, wind east by north 3 clouds 10. Rain at the time of writing and continued at intervals during the day. Wind fresh from east hauling towards night to south blowing fresh. The schooner **Hayward** with the mail arrived about 9. Got a letter from Mother and the papers which should have come by the last mail but the paper mail which should have come by this vessel is missing. Babe vaccinated.

Thursday, August 30. Rose at 4 and walked out to Sickmann's Pond and sat some time and killed 2 Marlins and a large Sea Gull. At 9 a.m. barometer 29.43, thermometer 83, wind south 8, clouds 9. Rain squalls passing over frequently. After dinner took my gun up home and washed and put away the Mortime gun as she is so light that I cannot shoot well with her without considerable practice.

Friday, August 31. Rose at 4: 30 and walked by the duck ponds. Killed 4 snipes. Returned and bathed. At 8 a.m. barometer 29.60 thermometer 84, wind southeast 2, clouds 3. At home all evening. Wrote to Mother.

Saturday, September 1. Rose at 4:20 and walked on the beach. Returned and bathed. At 8:15 a.m. barometer 29.65, thermometer 85, wind east southeast 4, clouds 3. Captain Gage of the bark **Rainbow** of Warren and wife came down in a Turtler. The bark loaded with coal struck on Collins Patches on the night of the 29th of August and bilged. The weather was heavy. Got an eight day marine clock, striking and shows the days of the month from Walburg in exchange for the one I had in my office and which did not keep good time. Went to the church with Matilda and stayed till 10.

Sunday, September 2. Rose at 5:30 and bathed. At 8:30 a.m. barometer 29.59, thermometer 83.5, wind east southeast 3, clouds 5. Considerable rain fell. Went home by 10 and read Harpers. Raining at intervals during the day and night.

Monday, September 3. Rose at 5:15. When I woke at 4 and found that it was raining hard and I lay down again. At 8 a.m. the barometer 29.51.5, thermometer 84, wind east by south 2, clouds 6. The brig **Huntress** of Philadelphia, James Dolby Master, came in she having been on the reef. She is light from Gray Town having taken Col. Kinney down from Turks Islands. Philip Fontane sent for me to draw a petition for the sale of some wrecked sails and materials which I did. The **Hayward** came in from Havana about dark.

Tuesday, September 4. Rose at 4:20 and walked on the beach. Returned and bathed. At 9 a.m. barometer 29.52, thermometer 85, wind east southeast 2, clouds 4. The steamer **Northern Light** got in about daylight and coaled and

got off by 9. The mail boat sailed for Charleston about 7 a.m. Read papers. Walked with Matilda and the children to the Fort.

Wednesday, September 5. Rose at 4:30 and walked on the beach. Returned and bathed. At 8:20 a.m. barometer 29.53, thermometer 84.5, wind east southeast 3, clouds 4. Drew up the answer of Captain James Dolby of the brig **Huntress** to the libel of Edgar Coste and others. Captain James Dolby feeling as if he was going to have a chill went home before I finished. Read the papers. Walked to the Fort with Matilda and children. The men stationed there killed a Blackfish 11 feet 6 inches long and are trying it out. The fish is tied to the old wharf near the walls and I went to see it and broke through a rotten plank just at the edge and went through to the knee which I bruised considerably. One of the men close by caught me as I was falling or I should have gone down head foremost if my leg had not caught in the hole and been broken.

Thursday, September 6. Had a wet cloth on my knee which is much swollen and painful. Changed the cloth twice during the night and the morning it is better the still much swollen. At 8:20 a.m. barometer 29.53, thermometer 85, wind east southeast 3, clouds 4. A very light shower fell about 7 a.m. The Judge read the decree in the case of the **El Tevere**, giving 42 per cent salvage on the net amount of sales. Tried the case of Edgar Coste vs. brig **Huntress**. P.M. Siesta, my knee better.

Friday, September 7 It rained heavily just before day. I kept a wet cloth to my knee all night and the swelling is going down and the pain is much less. At 8:30 a.m. barometer 29.50, thermometer 84, wind east southeast 3, clouds 7. The steamer **Florida** from Charleston came in last night. She is to run in connection with the **Vanderbilt** to New Orleans. She is too small and the line must lose money unless larger boats are put on. Read papers. P.M. Siesta.

Saturday, September 8. Rose at 4:50 and walked on the beach and home by the Lighthouse. The tide being high the walking on the beach was bad. At 8 a.m. barometer 29.47, thermometer 84.5, wind east southeast 4, clouds 3. About 10 the bark **Pilgrim** came up from the Tortugas in charge of wreckers. She has been ashore on Loggerhead Key and got off by wreckers. Consigned to Tift. Stephen Mallory Libels and I answer. Cargo valuable vessel being bound to Mobile with a full cargo of dry goods. P.M. Siesta. Rain squalls all day.

Sunday, September 9. Rose at 4:30 and walked as yesterday, tide being high. At 8:25 a.m. barometer 29.52, thermometer 83, wind east southeast 3, clouds 6. Yesterday at 4 p.m. 29.43 and cloudy with squally weather during the night with several heavy rain squalls and blew heavy. Babe mouth very sore. Sarah Patterson says that she has the thrush and is using a preparation of brickdust burnt alum and honey which she says she has always used with good effect. Baby is growing finely and looks well if her mouth will only get well she will soon get fat and will be pretty. My leg is black and blue from near the ankle to the knee and is considerably swollen yet not painful. Home about 10 and remained all day.

Monday, September 10. Rose at 4:20 and walked on the beach and to Sickmanns pond, saw nothing to shoot. The steamer **Florida** got off about 8 At 8:40 a.m. barometer 29.50, thermometer 84.5, wind east by south 4, clouds 4. Tift desired me to attend to the case of the bark **Rainbow**. P.M. Read the Libel of J. Pent to Captain Gage, a simple case of saving materials from a bilged vessel.

Tuesday, September 11. Rose at 4:20 and walked on the beach. At 8:20 a.m. barometer 29.53, thermometer 86, wind east 3, clouds 4. Tried the case of J. Pent vs. materials of bark **Rainbow**. Read over the Libel of S. Gillel et. als vs. bark **Pilgrim** and cargo to Captain Andros and took notes for the answer. P.M. Siesta.

Wednesday, September 12. Rose at 5. My leg being much swollen last night rubbed it with Mustang Liniment several times during the night. And concluded not to walk or bathe this morning. The **Ella** from Charleston got in last night and I went down before breakfast and got papers. I did not have a single letter. The Charleston letter mail did not come. At 9:30 a.m. barometer 29.59, thermometer 86, wind east 4, clouds 6. Two rain squalls, very slight, during the morning. The case of Gillet vs. bark **Pilgrim** set for today but the G**lobe** and sloop **Plume** not having got up I cannot draw the answer. The **Globe** and **Plume** arrived during the day and commenced transferring the cargo to the ship. Bought at the sale of the materials of bark **Rainbow** a Cottage Piano the property of the Captain's wife who was onboard for which I paid $130.00. It is a pretty and I think a good toned instrument. The cargo of the **Plume** is very badly damaged her decks leak fore and aft and the holes cut in her main hatch for the chain cables and when not covered up the water rushed through and damages the cargo. The

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Alexander Pattersons were round and played on the piano. I like the tone very much. My leg felt badly and was much swollen.

Thursday, September 13. Rose about 5 and bathed. At 8:30 a.m. barometer 29.57, thermometer 83.5, wind west southwest 3, clouds 7. Had my leg in wet clothes all night and is still swollen this morning. The **Globe's** cargo which was delivered this morning was also damaged and there is a survey on the wet boxes. Drew up my answer as far as I could. P.M. Siesta.

Friday, September 14. Rose at 5:30 and bathed. At 8 a.m. barometer 29.60, thermometer 86, wind east southeast 2, clouds 4. My knee is less swollen this morning. I had a wet cloth on it all night and bathed it well before I went to bed. Babe is three months old today and is quite well, weighs 14 pounds. Tried the case of the bark **Pilgrim**. Court adjourned till morning. Matilda and children spent the day at Alexander Patterson's. I dined there.

Saturday, September 15. Rose at 5:20 and bathed. At 8:30 a.m. barometer 29.60, thermometer 87, wind east northeast 3, clouds 4. Leg better had it bandaged all night. The bark **Broosa** of Boston, Perice master, laden with Guano from the Caribbean Sea put in yesterday with six feet of water in her hold. Consigned to Asa Tift. Senator Stephen Mallory made his speech in the morning. On the 13th bought a Parrot of Kate for $.75 which had been given her by old Bill. My parrots being sick and I fear will die. P.M. Siesta. The **Governor Anderson** got in.

Sunday, September 16. Rose at 4:20 and walked on the beach, my leg being better. At 9 a.m. barometer 29.58, thermometer 87, wind east by south 4, clouds 2. Went home before 10 and remained all day reading papers.

Monday, September 17. Rose at 4:40 and walked on the beach. At 9:30 a.m. barometer 29.61, thermometer 87, wind east by north 3, clouds 6. The mail boat came in from Havana and brought a portion of the Key West mail which had been put into the Havana bag. Hatty got a letter from Mother. The Judge read his decree in the case of Gillet vs. bark **Pilgrim** giving $9,257.31 salvage. Senator Stephen Mallory gave notice of appeal and court was adjourned till tomorrow. Read papers.

Tuesday, September 18. Rose at 4:40 and walked on the beach. Returned and bathed. At 9 a.m. barometer 29.58, thermometer 86, wind east northeast 2, clouds 2. The Judge refused Tift's commissions and allowed $10.00 per day which I think Tift will refuse. Read paper.

Wednesday, September 19. Rose at 4:30 and walked on the beach. At 8:40 a.m. barometer 29.56, thermometer 86, wind northeast 2, clouds 3. Read papers. A heavy rain fell in the afternoon.

Thursday, September 20. Rose at 4:34 and walked on the beach. Returned and bathed. At 8:25 a.m. barometer 29.55, thermometer 85.5, wind northeast 2, clouds 3. The bark **Pilgrims** went to sea early this morning. Tift paid me my fee in the bark **Pilgrim** and I paid William Pinkney a $130.00 which he advanced for the purchase of the piano. At 11:41 a.m. lightning struck Tift's cupula and set it on fire at the southwest corner of the roof which was extinguished without damage. The lightning then ran down the four corners of the building and stunned Asa Tift who was at the desk and chocked Whaton and two others who were in the counting room. A number of persons were in the piazza and none were hurt. The lightning passed between the weather boarding and plastering and broke through just about the barometer in the northwest corner which it broke into atoms and about 12 inches below reentered the wall making a smooth whole about the size of a musket ball in the plastering and broke out the whole frame of the window on the eastern side near the desk where it tore to ribbons a quantity of papers which were on an iron file. It then stopped a marine clock which was in the iron chest at 11:45. It also burned a chronometer which was on the table near the barometer and knocked a key rack in the southeast corner off the wall and took off the plastering on the west side and did sundry other damage. The same flash struck the schooner **Libby Shepperd** lying at Bowne and Curry's wharf and did some damage to her top mast and in her cabin. The schooner being at least 1,000 feet from the cupula struck. Captain Graham Lester, who was on board the brig **Tavenier** at Brown's wharf about 300 feet south of the **Libby Shepperd**, was knocked down and many carpenters at work on the ship were affected.

Friday, September 21. Rose at 4:10 and walked on the beach. Returned and bathed. At 8:40 a.m. barometer 29.52, thermometer 84.5, wind east by south 1, clouds 4. A heavy shower fell at 7 a.m. Oliver O'Hara says that he got 2 feet of water in his cistern (12,000 gallons) and the low ground near the fort are covered this morning. The **J.J. Taylor** went to sea about noon and Captain Gage went in her. P.M. Siesta and read papers.

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succumbing to scurvy.

The appearance of scurvy on a long voyage was as predictable as the sunrise. No matter how healthy the men were when the ship set sail, after 10 to 12 weeks at sea the symptoms of scurvy would begin to emerge. In Hutchinson's case, he was 16 weeks at sea when he experienced a soreness in his chest where he had received a heavy blow many years before. During the next 3 months, his physical condition deteriorated.

From this time the sea scurvy increased upon me, as it had done upon many others, a good while before me; and I observed that they soon took to their hammocks below, and became black in their armpits and hams, their limbs being stiff and swelled, with red specks, and soon died; I therefore kept exercising in my duty, and went aloft as long as possible, and till forbidden by the officers, who found it troublesome to get me down with safety, as I frequently lost the use of my hands and feet, for a time ...

Richard Walter, the chaplain of Anson's squadron, noted that scurvy caused scars of old wounds to reopen and dissolved the bonding that reunited broken bones, even those that had been healed for many years. He also observed that the disease weakened not only the physical structure of the body, but also affected the ability to control emotions.

This disease, so frequently attending all long voyages, and so particularly destructive to us, is usually attended with a strange dejection of the spirits, and with shiverings, tremblings, and a disposition to be seized with the most dreadful terrors on the slightest accident.

Food Sources Of Vitamin C

Food	Serving Size	Vitamin C (mg)
Guava, raw	½ cup	188
Red sweet pepper, raw	½ cup	142
Red sweet pepper, cooked	½ cup	116
Kiwi fruit	1 medium	70
Orange, raw	1 medium	70
Orange juice	¾ cup	61-93
Green pepper, sweet, raw	½ cup	60
Green pepper, sweet, cooked	½ cup	51
Grapefruit juice	¾ cup	50-70
Vegetable juice cocktail	¾ cup	50
Strawberries, raw	½ cup	49
Brussels sprouts, cooked	½ cup	48
Cantaloupe	¼ medium	47
Papaya, raw	¼ medium	47
Kohlrabi, cooked	½ cup	45
Broccoli, raw	½ cup	39
Edible pod peas, cooked	½ cup	38
Broccoli, cooked	½ cup	37
Sweetpotato, canned	½ cup	34
Tomato juice	¾ cup	33
Cauliflower, cooked	½ cup	28
Pineapple, raw	½ cup	28
Kale, cooked	½ cup	27
Mango	½ cup	23

Source: *Dietary Guidelines for Americans 2005* Appendix B-9. U. S. Dept of Health and Human Services and the Dept of Agriculture.

Untreated, scurvy is a progressive and eventually fatal disease. Death can occur with little or no warning as Chaplain Walter reported in his book "Anson's Voyage Around The World.".

... many of our people, though confined to their hammocks, appeared to have no inconsiderable share of health, for they ate and drank heartily, were cheerful, and talked with much seeming vigour, and with a loud, strong tone of voice; and yet on their being the least moved, though it was only from one part of the ship to the other, and that in their hammocks, they have

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immediately expired; and others who have confided in their seeming strength, and have resolved to get out of their hammocks, have died before they could well reach the deck. And it was no uncommon thing for those who were able to walk the deck, and to do some kind of duty, to drop down dead in an instant, on any endeavours to act with their utmost vigour, many of our people having perished in this manner during the course of this voyage.

A scurvy-ridden ship posed a dire situation for its captain and officers. The men confined to hammocks were useless and a drain on resources. The afflicted who could physically work were often difficult to manage due to seesawing emotions induced by the disease; the slightest criticism reducing some to tears while others became excessively angry/ belligerent over the most trifling incident. Most dangerous and frightening for the other members of the crew were their shipmates who appeared to be in reasonably good health and then dropped dead while performing their duties.

The impact of scurvy was particularly acute aboard warships where the availability of a sufficient number of able-bodied crew to maneuver the ship and operate the weaponry is critical. Naval planners were forced to take into account the depletion of manpower due to scurvy and other shipboard diseases and established complements accordingly. On a first-rate man-of-war carrying 100 guns or more the complement could be nearly 1,000 based on the assumption that a third of the men would be unavailable due to shipboard disease. On smaller warships the general estimate was that one fourth of the crew would not be fit for duty due to disease.

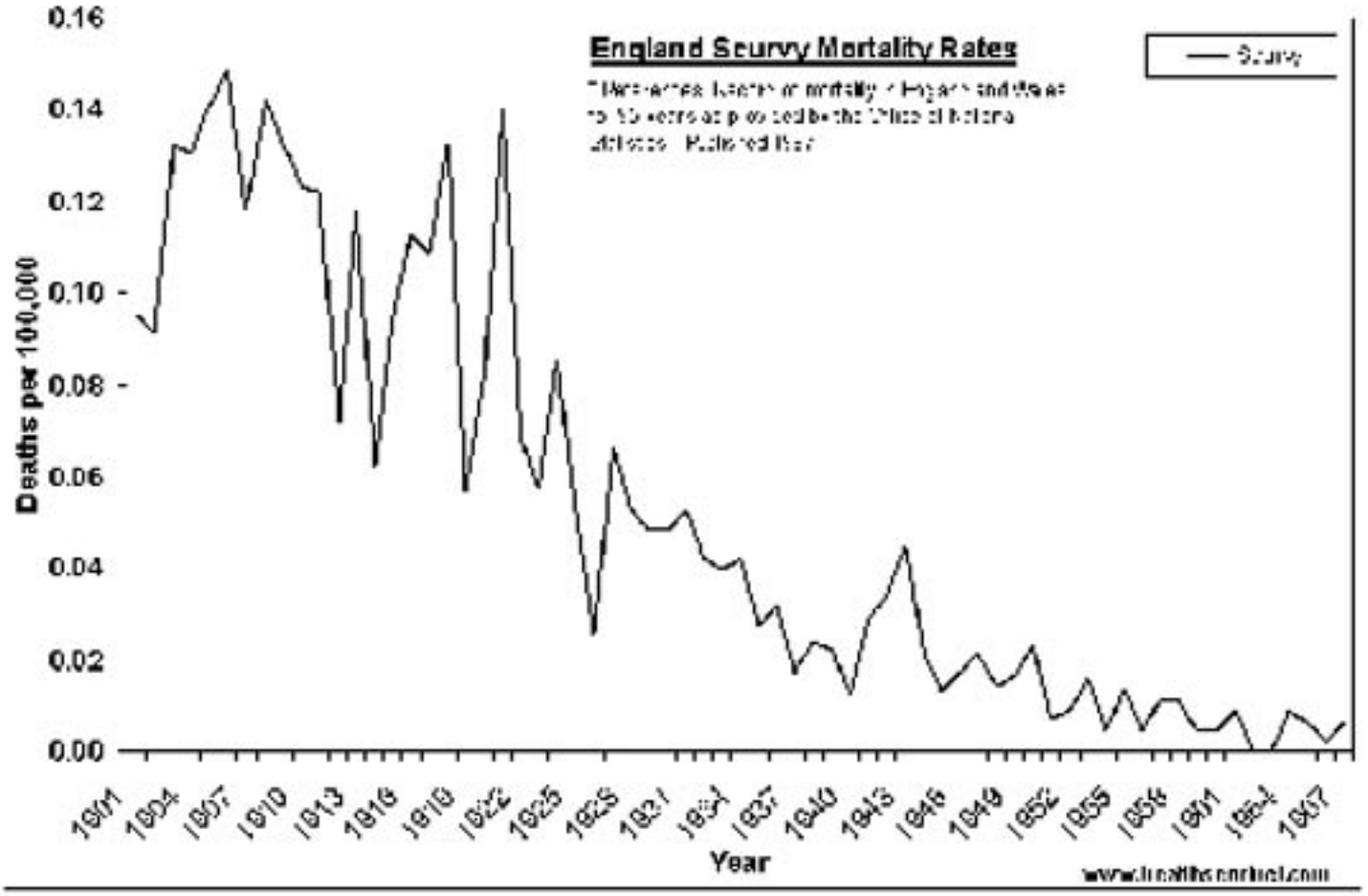
Finding a way to prevent the occurrence of scurvy became a subject of intense interest for the military, and especially for the Royal Navy. By the middle of the 18th century the medical community had begun to make the link between diet and diseases such as scurvy and beriberi. It was well known that as terrible as the onslaught of scurvy was, desperately ill men would recover in as little as 10 days after reaching land where they could be given fresh fruit or salad greens. In William Hutchinson's case, by the time his ship reached the southeast coast of India, he was in the advanced stages of scurvy and close to joining his shipmates who had perished from the disease. In less than three weeks ashore he had recovered and returned to his ship.

... after a seven months passage we arrived in Pullicat Road; from whence we got fresh provisions, and sent for men to carry the ship to Madras, where, what remained of the sick were got on shore to sick quarters; and where, with fresh provisions and fomentations of herbs I got well, and returned on board in eighteen days ...

Scurvy is a physical deterioration of the human body due to the lack of a specific chemical compound that protects collagen, a protein essential to the health of connective tissue, bones and the dentin of teeth. Collagen holds cells together and aids the healing of wounds by bridging gaps in separated tissues to form a scar. When collagen loses its adhesive qualities, connective tissue, bones, and dentin begin to soften. At first there is a general weakness and joints become painful as lubricating/ cushioning tissue breaks down. As the disease progresses, the gums soften and the teeth become loose and may fall out. The walls of capillaries carrying blood through the body weaken and cells hemorrhage causing red spots to appear all over the skin. The tissue breakdown is pervasive and affects glands that secrete hormones that control emotions. At some point, a major blood vessel becomes so weakened that it bursts and the victim dies from internal bleeding.

The compound that prevents collagen from breaking down is a specific combination of hydrogen, carbon, and oxygen that was identified during the early decades of the 20th Century and named ascorbic acid. The compound is routinely produced in the bodies of most animals, but somewhere along the evolutionary process, certain mammals including monkeys, apes, humans, and guinea pigs lost the genetic information that enabled them to synthesize this vital substance. Consequently, they must ingest ascorbic acid, which only occurs naturally in amounts sufficient for human needs in certain foods, primarily fruits and vegetables.

During the period scurvy was the scourge of the high seas, sailors on extended voyages subsisted on rations that can best be described as nutritionally disastrous. Fresh fruits and vegetables, in fact fresh food of any kind, was a rarity. With no refrigeration, butter soon became rancid, cheese became moldy, and any fresh foods placed aboard rapidly spoiled due to poor storage conditions and infestations of vermin. Even the drinking water stored in casks became foul. Putting into ports along the way to load fresh provisions was rarely done



Deaths from scurvy have declined in developed nations as information was promulgated and the need for better nutrition became more widely known. The synthesis of vitamin C in 1935 and the subsequent availability of vitamin supplements in pill form have continued to decrease the mortality. (Graph: www.healthsentinel.com)

for several reasons; some routes crossed vast stretches of ocean devoid of ports, the major maritime countries were often at war with one another and friendly ports could be few and far between, and the added time and cost was not considered to be justifiable. Consequently, most seamen on long cruises lived on a diet consisting chiefly of salt beef or pork, oatmeal, biscuits, and stale beer; a diet devoid of ascorbic acid.

In 1747 James Lind, a Royal Navy physician, conducted a small-scale study specifically structured to determine the effect of diet on shipboard diseases. He found that orange and lemon juices prevented the onset of scurvy. After doing further research and developing a procedure for concentrating and preserving citrus juices, Lind published a handbook on scurvy that included specific sanitation measures and recommended that one ounce of lemon juice be administered daily to seamen. The Royal Navy would not implement Lind's recommendations for forty years, a delay that cost an estimated 100,000 British sailors their lives.

The conservative Admiralty was finally convinced of the soundness of Lind's recommendations as a result of the voyage of HMS **Suffolk** in 1794 to India, which dramatically demonstrated the effectiveness of lemon juice in preventing scurvy. While at sea for 23 weeks, each member of the crew was issued several ounces of lemon juice daily. In contrast to William Hutchinson's experience fifty years before, when **Suffolk** reached Madras there had not been one case of scurvy aboard. The Admiralty adopted a policy in 1795 that lemon juice was to be routinely issued on its ships henceforth. Scurvy rapidly disappeared from the Royal Navy's fleet.

The mercantile marine was not bound by the Admiralty's policies and scurvy continued unabated on board most civilian ships. Owners and captains intent on making as much profit as possible from their vessels, continued to neglect the nutrition of their crews; after all, it was cheaper to replace crewman than it was to make stops along

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the way for fresh provisions. The situation became so serious that Parliament included in the Merchant Shipping Act of 1854 a provision requiring the issuance of lemon juice similar to the Admiralty's policy. The Act was a step in the right direction, but it did not have the teeth to overcome the profit motive and scurvy continued to be a problem on merchant ships until the Act was subsequently amended to make it compulsory that the captain of a ship provide lime juice of good quality to all men under his command. Finally, as steam replaced sails on the high seas and the 19th century came to an end, scurvy faded away as a maritime disease.

In 1912, Casimir Funk, a Polish biochemist developed the theory that some diseases (xerophthalmia, a disease that leads to blindness among children; beriberi, a deadly neurological disease prevalent in the Far East; and scurvy) were due to deficiencies of specific substances normally provided by good diets. The yet-to-be isolated substances were named after the letters of the alphabet with "A" for the one affecting xerophthalmia, "B" for beriberi, and "C" for scurvy. Funk called the group of substances "vitamines", which was later shortened to vitamins.

At that time, the substance believed by Funk and other nutritionists to cure scurvy and referred to as vitamin C had not been proven to exist much less specifically identified. Furthermore, the concept that scurvy was caused by a dietary deficiency was controversial, with some competing theories attributing the disease to tainted foods or poor sanitation. As research continued into the 1930s, Funk's theory was validated and vitamin C was identified as the chemical compound, ascorbic acid. The long sought cure for scurvy was synthesized in 1935.

As a result of England's practice of issuing lime juice to its sailors, British seamen became known as "Limeys". While limes are effective in supplying vitamin C, they are not the only source of ascorbic acid. Guavas have almost six times the vitamin C contained in limes while papayas have more than twice as much. Lemons are one and a half times more potent in vitamin C than limes.

Scurvy is not a disease of the past; it is still a leading cause of death in third world countries. Since it is caused by a chemical deficiency, scurvy can never be eradicated by vaccination.

Although the deficiency of ascorbic acid in humans is primarily related to poor diet, low levels can also be caused or aggravated by behavioral factors such as smoking, drinking alcohol in excess, and stress. Species of animals that are able to naturally can convert blood glucose into ascorbic acid do so at a normal rate of many grams per day. They also possess a feedback mechanism for increasing the production of ascorbic acid when they are under stress. Since humans do not possess such capabilities, they must ensure their diet provides the entire amount of ascorbic acid required by their bodies.

According to the Department of Health and Human Services (HHS) and the Department of Agriculture, there is a concern that adults are not ingesting adequate amounts of vitamin C. To help counteract this trend, they provide a wealth of information regarding good diet practices and sources of important nutrients in its *Dietary Guidelines for Americans 2005*. The *Guidelines* recommend that vitamin C and other nutrients consumed come primarily from foods because "Foods contain not only the vitamins and minerals that are often found in supplements, but also hundreds of naturally occurring substances, including carotenoids, flavonoids and isoflavones, and protease inhibitors that may protect against chronic health conditions." The complete *Dietary Guidelines for Americans 2005* can be obtained from HHS on the internet at http://www.healthierus.gov/dietaryguidelines. .

So, how much vitamin C should humans ingest each day? The Food and Nutrition Board of the Institute of Medicine of the National Academies of Sciences has established nutrient intake recommendations. Recommended Dietary Allowances (RDAs) for vitamin C currently range from 15 mg/day for children (1 to 3 years old) to 120 mg/day for adult women who are lactating. The RDA for adult men is 95 mg/day while for adult women who are not lactating the RDA is 75 mg/day. The complete list of recommended intake levels

and maximum tolerable levels for essential nutrients is available on the internet at http://www.iom.edu/Object.File/Master/21/372/0.pdf . If a simpler approach is preferred, just heed the standard refrain of mothers everywhere and routinely "eat your fruits and vegetables".

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Part of the diorama of the Key West waterfront in the 1850's. Photo credit: Corey Malcom.

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