

YEAR 1894

Seven storms were found to have occurred in 1894. Tracks for these storms are presented in Fig. 1.

Storm 1, 1894 (Jun. 6-9), T. S.

This is a new storm which has been recently documented by the author of this study and which, of course, is not included in Neumann et al. (1993).

Documentation of this storm was based on the following information: 1) Jun. 6-9, 1894. A cyclonic perturbation of a large diameter formed to the S. of Cuba and followed a W.N.W. path at a good distance from the island. It caused extensive flooding along Cuba, from Oriente to Havana, which caused great damage, especially at Santa Clara. Winds were moderate (Sarasola, 1928). Author's note: Actually taken from the catalog of Cuban cyclones by M. Gutierrez-Lanza, which is included in Sarasola (1928). 2) The cyclone of Jun. 6-9 caused small damage in Las Villas province (Martinez-Fortun, 1942). 3) A period of rainy and stormy weather traversed the island of Cuba on Jun. 4-6, causing heavy rain and flood on the southern side of the island (Monthly Weather Review, Jun. 1894).

Although the storm might have existed in its formative stages as early as Jun. 4 (item 3), the author of this study decided to prepare a track for the storm starting on Jun. 6 and continuing through Jun. 9 in accordance to information in items 1) and 2). The track, which is only an approximate one, shows the following 7 A.M. positions: Jun. 6, near 19.0 degrees N., 78.3 degrees W.; Jun. 7, near 19.3 degrees N., 80.7 degrees W.; Jun. 8, near 19.7 degrees N., 83.3 degrees W.; Jun. 7, near 20.7 degrees N., 85.5 degrees W. The track satisfies, in general, the description that the storm moved towards the W.N.W. at a good distance from Cuba, but the confidence the author has in the above mentioned positions is low. The track for Storm 1, 1894 is displayed in Fig. 1.

Indications are that this weather system was a rather weak tropical storm.

Storm 2, 1894 (Aug. 5-9), T. S.

This storm corresponds to Storm 1, 1894 in Neumann et al. (1993).

The following information was found in relation to this storm: 1) On the morning of Aug. 4, the winds, as reported from the eastern portion of the Gulf of Mexico, indicated the presence of a cyclonic whirl. By Aug. 5, p.m., its presence E. of Port Eads was clearly indicated and on Aug. 6, p.m., the N. wind of 34 mph at that point indicated its near approach. The progress of the whirl seems to have been nearly due N.; it passed a little W. of Pensacola about midday Aug. 7 and then moved slowly westward, disappearing on Aug. 9 in southern Mississippi. Very heavy rain attended this storm (Monthly Weather Review, Aug. 1894). Author's note: The storm

center seems to have been to the S.E. and not to the E. of Port Eads on Aug. 5, p.m. 2) Maximum wind velocities: Pensacola, S.E. 52 mph on Aug. 7; Mobile, S.E. 36 mph on Aug. 8 (Monthly Weather Review, Aug. 1894). 3) Washington, Aug. 7, 8 P.M. A cyclonic disturbance of a small area developed off Pensacola and is now central in western Florida. It is apparently diminishing in intensity and will probably dissipate over the land (The New York Times, Aug. 8, 1894, p.6, col.7) 4) Storm of Aug. 6-7, 1894. La., Mi., Al. Coastal areas. Minor (Dunn and Miller, 1960). 5) Storm of Aug. 6-7, 1894. Middle Gulf coast; of a small force (Tannehill, 1938). 6) A track for this storm showing a stationary position near 26.5 degrees N., 86.5 degrees W. from Aug 4, a.m., through Aug.5, a.m. and morning positions near 28.7 degrees N., 88.5 degrees W. on Aug. 6; near 29.7 degrees N., 87 degrees W. on Aug. 7; near 31.7 degrees N., 87.7 degrees W. on Aug. 8; near 31 degrees N., 91.3 degrees W. on Aug. 9 (Monthly Weather Review, Aug. 1894). 7) Map showing a track starting near lat. 25 N., long. 86.5 W. on Aug. 4 and ending near lat. 31 N., long. 90.5 W. on Aug. 9 (Garriott, 1900). Author's note: In general, this track is quite similar to the one in item 6). 8) A storm was first observed at lat. 28 N., long. 88 W. on Aug. 6, 1894 and lasted 2 days; it was last observed at lat. 31 N., long. 89 W. (Mitchell, 1924). Author's note: With the exception that the track in Mitchell (1924) was started one day later, such a track and the one in Neumann et al. (1993) were found to be quite similar.

The information contained in the above items allowed one to introduce some modifications along the track for this storm which is shown as for Storm 1, 1894 in Neumann et al. (1993). After having kept unchanged the 7 A.M. positions for Aug. 5-6 in the above mentioned publication and discarding the idea of introducing a 7 A.M. Aug. 4 position because of discrepancies in items 6) and 7), the author of this study estimated a 7 A.M. Aug. 7 position near 30.0 degrees N., 87.5 degrees W. which allows for the center of the storm to have passed a little to the W. of Pensacola at midday Aug. 7 (item 1) and not right over Pensacola as indicated by the track displayed in Neumann et al. (1993). The 7 A.M. Aug. 8 position shown in the latter publication was adjusted by about 40 miles to the S. in order to reach a better agreement with the S.E. wind direction reported at Mobile that day (item 2); the author's 7 A.M. Aug. 8 position was near 31.0 degrees N., 88.7 degrees W. Finally, the author extended the track in Neumann et al. (1993) to Aug. 9 in compliance with information in items 1), 6) and 7); his 7 A.M. Aug. 9 position was estimated near 31.5 degrees N., 90.5 degrees W. The entire track for Storm 2, 1894, as prepared by the author of this study, is shown in Fig. 1.

Information in item 2) was found to support the tropical storm status which Neumann et al. (1993) gave to this storm (Storm 1, 1894 in their publication).

Storm 3, 1894 (Aug. 30- Sept. 9), H.

This storm corresponds to Storm 2, 1894 in Neumann et al. (1993).

The following information was found about this storm: 1) This

hurricane must have been central about lat. 35 N., long. 45 W. on the morning of Sept. 7, near lat. 43 N., long. 42 W. on Sept. 8, near lat. 49 N., long. 40 W. on Sept. 9, near lat. 60 N., long. 20 W. on Sept. 10, and rapidly expanded over the Atlantic to the northward and on Sept. 11 pressure was very low about lat. 70 N., long. 10 E. During Sept. 8-9, low pressures and hurricane winds near the center were reported by the steamships "Rotterdam", "Spree", "Tris", "Othello" (which reported a pressure of 27.99 inches), "Queen's More", "Peninsula", "Ocean", "Charlois", "Brazilian", "Manheim", "Burgermeister", "Taurie" and "Christine" (Monthly Weather Review, Sept. 1894). 2) The steamer "Exeter City" arrived at Bristol from New York. Was hove to on Sept. 9 in lat. 47 48 N., long. 41 42 W. for about 30 hours during hurricane (The Times, London, Sept. 19, 1894, p.8, col.3). 3) Antwerp, Sept. 19. The steamer "Henry Reith" arrived here yesterday from New York, having encountered a hurricane and terrific weather during passage (The Times, London, Sept. 21, 1894, p.4, col.6). 4) The barque "Mary" arrived at Greenock from Marimichi (New Brunswick, Canada) and reported that when about a week at sea encountered a heavy weather in lat. 49 N. (The Times, London, Sept. 21, 1894, p.6, col.4). 5) Schr. "Origin" arrived at Falmouth on Monday (Oct. 8). One man was lost overboard and drowned during a heavy gale in lat. 53 40 N., long. 32 35 W. (The Times, London, Oct. 10, 1894, p.11, col.5). 6) Storm of Aug. 30-Sept. 11. Atlantic (Tannehill, 1894). 7) A storm was first observed at lat. 14 N., long. 38 W. on Aug. 30, 1894 and lasted 12 days; it recurved at lat. 26 N., long. 60 W. and it was last observed at lat. 69 N., long. 10 E. (Mitchell, 1924). Author's note: A storm track shown in Mitchell et al. (1924) was found to be quite similar to the one corresponding to this storm in Neumann et al. (1993), which is designated as Storm 2, 1894 in that publication.

Information in the above items was found to support the track in Neumann et al. (1993), particularly over the period Sept. 7-9. Therefore, the track for Storm 2, 1894 in said publication was accepted as for Storm 3, 1894 and reproduced in Fig. 1.

Information in items 1) through 3) allowed the author of this study to verify the hurricane status which Neumann et al. (1993) gave to this storm as for Storm 2, 1894. In addition, the barometer reading of 27.99 inches reported by the "Othello" (item 1) showed that Storm 3, 1894 was a major hurricane.

Storm 4, 1894 (Sept. 18-30), H.

The following information was found about this storm: 1) Dispatches produced by the Belen College Observatory indicated on Sept. 20 that, based on telegrams received at that observatory, the existence of a cyclone to the E. one quarter to N.E. of Martinique could be inferred. The observatory indicated at 9 A.M. Sept. 21 that the cyclone which was to the E. one quarter to the N.E. of Martinique at 3 P.M. Sept. 19 passed to the N. of that island and that morning seemed to be to the S.S.W. of St. Thomas (Gutierrez-Lanza, 1904). Author's note: The same publication stated that the cyclone entered the Caribbean Sea between Dominica and Martinique on Sept. 20. 2) The cyclone passed into the Caribbean Sea between

Dominica and Martinique around noon Aug. 20, it passed to the S. of Puerto Rico on Sept. 21 and over Santo Domingo during Sept. 22 (Sarasola, 1928). Author's note: Actually taken from the catalog of Cuban hurricanes by M. Gutierrez-Lanza which is included in Sarasola (1928). 3) The hurricane passed westward between Dominica and Guadeloupe and moved later over the southern portions of Santo Domingo and Haiti (Monthly Weather Review, Sept. 1894). Author's note: According to this item, the storm entered the Caribbean Sea some farther north than indicated in items 1) and 2). 4) St. Pierre, Martinique, Sept. 21. During strong gale the schooners "Apaze" and "Midinina" went ashore and will be total losses (The Times, London, Sept. 22, 1894, p.6, col. 4). 5) Schr. "Geraldine" is ashore at Ponce and will probably be a total wreck (The Times, London, Sept. 25, 1894, p.4, col.4). 6) Doctor Eduardo Neumann in his "Historia de la Ciudad de Ponce" said that this storm, known in Puerto Rico as San Mateo, was moving to the W.N.W. about 5 "leguas" per hour (some 15 mph) and that the center passed a little over 40 miles S. of Ponce and 30 miles S. of Cabo Rojo (southwestern tip of Puerto Rico) on Sept. 21 and then entered the island of Santo Domingo near Saona on Sept. 22 and crossed that island. At Arroyo (S.E. coast of Puerto Rico) wind gusts were felt as early as 4 A.M. Sept. 21 and by 9 A.M. the full storm was blowing. At Xauco (midway between Ponce and Cabo Rojo) the cyclone started at 11:30 A.M. and lasted until 9:30 P.M., the barometer having fallen to 29.76 inches. The meteorologist at the Mayaguez station (on the W. coast) reported winds over 40 mph and a barometer reading of 29.53 inches (Salivia, 1972). Author's note: The barometer reading at Mayaguez seems to be too low and the storm center appears to have passed to the S. of Puerto Rico not as close as indicated by doctor Eduardo Neumann. 7) Washington, Sept. 22, 8 P.M. The storm in the West Indies has moved slowly westward and appears to be to the S. of Santo Domingo (The New York Times, Sept. 23, 1894, p.2, col.7). Author's note: Actually the storm center had already emerged from Haiti into the Windward Passage by the evening of Sept. 22. 8) Mr. Fred W. Ramsden, British Consul at Santiago de Cuba wrote on Oct. 15 that, according to information he received, the center of the storm passed almost over and just to the S. of the city of Santo Domingo about 2 A.M. Sept. 22, then a little to the N. of Port-au-Prince about midday Sept. 22 and S. of St. Nicholas Mole (northwestern Haiti) the same afternoon, reaching Santiago de Cuba at 12:30 A.M. Sept. 23. At the latter city the wind was very strong from N. and N.N.W. up to that hour, when it became almost calm, veering to the N.E. and E., commencing suddenly again to blow violently at 3 A.M. Sept. 23 from the S.E. (Monthly Weather Review, Sept. 1894). Author's note: A similar note written by Mr. Rafael Mosquera, Weather Bureau observer at Santiago de Cuba, was also published in the Monthly Weather Review, Sept. 1894. The observer added that, in his opinion, the section of the vortical calms passed N. of Cape Cruz. 9) The hurricane reached extreme eastern Cuba the night of Sept. 22, the center passing just to the S. of Santiago de Cuba, where a calm occurred around midnight Sept. 22-23, then the center ran along Cuba during Sept. 23. The hurricane, which was a moderate one recurved over the provinces of Matanzas and Havana, and the vortical calm was felt at the Cuban capital

from midday to 5 P.M. Sept. 25 (Sarasola, 1928). Author's note: The date of Sept. 25 is in error; it should read Sept. 24. In addition it should be mentioned that, according to Gutierrez-Lanza, 1904), the path of the hurricane to the vicinity of Havana was announced by the Belen College Observatory at 10 A.M. Sept. 23 and that the rapid approach of the vortex to the city was stated in the 9 A.M. Sept. 24 bulletin. 10) Washington, Sept. 23, 8 P.M. The storm reported last night to the S. of Santo Domingo has moved to eastern Cuba, the pressure having fallen 0.12 inch at Key West in 24 hours, with a maximum wind of 36 mph from the N.E. The direction of this storm is not determined as yet but will probably affect the South Atlantic coast. Dangerous for any shipping at the S. part of Florida to leave port (The New York Times, Sept. 24, 1894, p.3, col.7). 11) According to a write-up prepared by W. B. Stockman, Forecast Official Weather Bureau, at 4 A.M. Sept. 25 (it should read Sept. 24) the barometer began to fall more rapidly (at Havana), with very hard gusts of wind from the N.N.E. At 8 A.M. the barometer continued falling, with violent N. and N.E. winds, steady rainfall and dark weather. At 10 A.M. the wind began to diminish somewhat, but the barometer continued to fall until 4 P.M., reading at that hour 29.35 inches, attended by light rain and moderate gusts of W.N.W. wind. At 6 P.M. the barometer showed indications of rising and at 8 P.M. it began to rise (Garriott, 1900). 12) The hurricane of Sept. 23-25, 1894 caused a terrible flooding at Sagua la Grande (Martinez-Fortun, 1942). 13) The effects of the hurricane on the island of Cuba were moderate, exception made of the district and city of Sagua la Grande, where torrential rains and their associated overflows caused the greatest catastrophe ever known in that area (Sarasola, 1928). 14) The Sagua and Yabucito rivers overflowed. At 4 A.M. Sept. 25 the waters reached the city of Sagua. The flood reached a maximum height of 23 to 29 meters (it seems too high even if it were actually in feet instead of meters) along the river banks, about 5 feet at the railway and about 8 feet at the Telegraph Hotel (Garriott, 1900). Author's note: Actually taken from a statement on Cuban hurricanes prepared by W. B. Stockman. 15) Havana, Sept. 29. The Sagua River overflowed its bank yesterday and the city of Sagua la Grande is flooded. Many of the residents of the city have been drowned and the damage to property is immense (The New York Times, Sept. 30, 1894, p.1, col.5). 16) The steamer "Panama" brought particulars of the violent manner in which the cyclone swept over some of the richest and most fertile portions of Cuba. At Sagua la Grande, a town situated over the Sagua River, the water was driven back and up the river with such force that inundated the town and drove one-third of the population from their homes and to the hills for safety. The flood lasted 48 hours and was accompanied by a violent rainstorm that continued for a day after the waters receded. From reports obtained when the "Panama" left Havana (Sept. 30) it is believed that 200 lives have been lost (The New York Times, Oct. 6, 1894, p.1, col.5). 17) Washington, Sept. 4, 8 P.M. The tropical cyclone is very nearly central over Havana and appears to be moving N.W., a pressure of 29.38 inches and a maximum wind velocity of 60 mph being reported from Key West. The hurricane will cause violent E. and N.E. gales in Florida, South Carolina, Georgia, Alabama and western Florida.

Signals are displayed from Wilmington and Wilmington section to New Orleans (The New York Times, Sept. 25, 1894, p.3, col.7). 18) Some observations taken by Mr. Boyer, Weather Bureau observer at Key West: 8 A.M. Sept. 24, barometer 29.80 inches, wind N.E. 42 mph, light rain; 11 A.M., barometer 29.77 inches, wind N.E. 42 mph, light rain squall; 2 P.M., barometer 29.66 inches, wind E. 37 mph, light rain squalls; 5 P.M., barometer 29.48 inches, wind N.E. 58 mph, heavy rain; 6 P.M. violent squall of 72 mph; 8 P.M. barometer 29.38 inches, wind N.E. 33 mph, light rain; 10 P.M., wind S.E. 13 mph; 11 P.M., barometer 29.31 inches, wind E.S.E. 20 mph, light rain; 2 A.M. Sept. 25, barometer 29.20 inches, wind S.E. 9 mph, light rain; 5 A.M. barometer 29.13 inches, wind S. 24 mph; 6 A.M., barometer 29.10 inches, wind S.S.W. 30 mph, wind suddenly increased to 38 mph at 5:40 A.M.; 7 A.M., barometer 29.13 mph, wind S.W. 24 mph; 8 A.M., barometer 29.13 inches, wind S.W. 28 mph; 9 A.M., barometer 29.11 inches, wind S.W. 50 mph, squalls of great violence, impossible to go on the roof, barometer pumping violently; 10 A.M., barometer 29.19 inches, wind S.W. 40 mph, violent squalls, between 8:30 and 9:30 A.M. there were sudden and violent fluctuations of 0.1 inch in the barometer; 11 A.M., barometer 29.20 inches, wind S.W. 70 mph, violent gusts and heavy rain; the maximum velocity of the hurricane occurred at 11:20 A.M., with a terrific squall recording 87 mph in 5 minutes and 104 mph during 1 minute; 11:30 A.M., barometer 29.15 inches; noon, barometer 29.28 inches, heavy rain; 1 P.M., barometer 29.35 inches, wind S.W. 60 mph, violent gusts and heavy rain; 2 P.M. barometer 29.38 inches, wind W.S.W. 44 mph; 5 P.M., barometer 29.48 inches, wind W. 30 mph. The barograph curve showed 3 pressure minima, having them occurred at 6 A.M., 9 A.M. and 11:30 A.M. Sept. 25. The very marked lull in the wind force from about 9 P.M. Sept. 24 to about 5 A.M. Sept. 25 indicated the very proximity of the vortex (Monthly Weather Review, Sept. 1894). 19) From a report by Capt. Moorhouse of the schooner "Consiston": I left Tortugas in the morning of Sept. 22. The first heavy squall struck me at 3 A.M. Sept. 23 from about E.N.E. It kept blowing worse and the wind continued E.N.E. until 4 P.M. Monday afternoon (Sept. 24). I noticed that the wind suddenly went E. by S. Though I was on the east of the center, I steered W. and so ran until 11 P.M. when I struck the calm of the center of the storm. At 2 A.M. Tuesday (Sept. 25) the wind was very heavy from W.S.W. and continued so until 5 P.M. (Sept. 25) when the weather was clearing. I must have been a little W. of Key West. I judged I ran 50 miles before I struck the calm; it must have been somewhere W. of Tortugas. It was the heaviest storm I was ever in. I think that the wind blew fully 120 mph (Monthly Weather Review, Sept. 1894). Author's note: On the basis of information in item 18), the "Consiston" should have been in the center of the storm a short distance to the S.W. of Key West and not a short distance to the W. of Dry Tortugas. 20) Reports from Key West, Sept. 29-30, stated that bark "Maria" was totally lost off that port, that barques "Camerone" and "Nada" went ashore and that barque "Wandering Chief" was totally lost at Elbow Reef and that the ship "Thionva" is ashore at Turtle Harbor (The Times, London, Oct. 1, 1894, p.7, col.3). 21) Barque "Brandon", Ship Island for Liverpool, has been totally lost off Crokers Reef.

Part of the crew saved and landed at Key West (The Times, London, Oct. 2, 1894, p.4, col.5). 22) Intelligence reached Cork last evening of the total loss of the barque "Brandon" on Sept. 26 on the Crokers Reefs and the drowning of the captain and 13 of the crew, only 3 men being saved after a terrible struggle with the waves..The "Brandon" went ashore during a terrific hurricane at 10 P.M. (Sept. 25 ?). At daybreak the vessel rolled off the rocks and capsized, throwing the worn-out marines into the waves (The Times, London, Oct. 13, 1894, p.3, col.3). 23) Nassau, Oct. 3. Barque "Alida" has been totally lost in Bahama Banks. All on board saved (The Times, London, Oct. 4, 1894, p.6, col.3). 24) The steamer "Tyrian", which arrived in New York last night, states that she was unable to get her usual cargo of bananas because the ruin worked throughout the eastern end of Cuba by the cyclone (The New York Times, Oct. 6, 1894, p.1, col.5). 25) At Titusville, wind of 48 to 60 mph from the N.E. began at 8 A.M. Sept. 25 and continued until midnight (Monthly Weather Review, Sept. 1894). 26) The reports from Tampa show that the hurricane center passed some distance to the E.. The maximum wind during any 5 minutes was 43 mph, with one minute puffs of 60 mph. The lowest barometer was 29.48 inches at 8 P.M. Sept. 25 (Monthly Weather Review, Sept. 1894). 27) Washington, Sept., 25, 8 P.M. The tropical hurricane has moved from the vicinity of Key West northward to a little S.E. of Tampa, which station reports a pressure of 29.48 inches and a N. wind of 35 mph. Hurricane winds and rain may be expected in eastern Florida and on the Atlantic coast from North Carolina southward (The New York Times, Sept. 26, 1894, p.7, col.1). 28) Jacksonville, Fl., Sept. 25. A terrific gale is raging along the E. and W. coasts of Florida and also at interior points. A message reached here from Titusville and Jupiter late this afternoon indicating that the wind was blowing 60 mph. Soon after, the wires at those places were reported down (The New York Times, Sept. 26, 1894, p.4, col.7). 29) At Jacksonville the N.E. gale, beginning at midnight (Sept. 25-26), reached a maximum of 48 mph at 10:40 A.M. Sept. 26; the total rainfall during the storm was 11.11 inches (Monthly Weather Review, Sept. 1894). 30) Jacksonville, Sept. 28. The damage caused in Florida by the recent storm is estimated at over one million dollars. The loss to the orange growers is very heavy. Several large cigar factories at Tampa have been wrecked by the wind. There has also been a number of maritime casualties (The Times, London, Oct. 1, 1894, p.5, col.5). 31) Washington, Sept. 26, 8 P.M. Signals are displayed on the Atlantic coast from Boston and Boston sector to Jacksonville sector. The hurricane reported this morning S.E. of Jacksonville has moved nearly N. to a point between Savannah and Charleston, a pressure of 29.32 inches and maximum wind velocity of 52 mph from the N.E. being reported at Charleston. It will probably move to the N.N.E. direction tonight and reach Washington City Thursday afternoon (Sept. 27) and southern New York Thursday night (Sept. 27) or early Friday morning, Sept. 28 (The New York Times, Sept. 27, 1894, p.6, col.2). 32) On the morning of Sept. 27 the center was between Charleston and Savannah; on Sept. 28 near Morehead City, N.C. and by evening of Sept. 30 reached a position approximately at lat. 39 N., long. 70 W. On Sept. 30 when the storm center was S. of Rhode Island and E. of New Jersey, the high tide

and very heavy surf which prevailed all day at Marragansett pier was considered the most severe of the season at that place as well as along the coast of Long Island to the W. and Nova Scotia to the E. At St. John's, Newfoundland, a gale was also prevailing but such a gale was associated with another Atlantic storm and not to this present hurricane center (Monthly Weather Review, Sept. 1894). 33) Washington, Sept. 27. There is a capacity of two forces that has operated to retard the advance of the West Indian hurricane. For 2 days a high has been lingering over Nova Scotia. According to reports yesterday morning, indications were that the high would pass off and leave an undisputed field to this product of the tropical sea. When this morning's reports reached the Weather Bureau, however, it was found that the Nova Scotia condition had remained absolutely stationary and, until that begins to move, the southern storm cannot make much headway north. Up to 11 A.M. this morning the advance of the storm had been slow. It was central last night between Charleston and Savannah and this morning (Sep. 27) was a few miles N. of Charleston, with a S. wind blowing there at a rate of 12 mph. This indicated an advance of about 6.5 mph (The New York Times, Sept. 28, 1894, p.1, col.7). Author's note: The S. 12 mph wind at Charleston suggested the center to have been to the N.W. and not to the N. of Charleston. A graph shown in the Monthly Weather Review, Sept. 1894 shows a minimum barometer of 29.11 inches to have occurred at Charleston at 2 A.M. Sept. 27 and the highest tide (9.7 feet) to have occurred at 7 P.M. Sept. 26. 34) The schooner "Clara E. Bergen" sailed from New York for Charleston on Sept. 24 and at first had a fair wind from the N.W. Off Cape Henry it veered to N. and E. and on Sept. 26 the weather began to look bad. A hard blow set in, piling up the sea in huge waves, and a heavy rain also began to fall. At 4 A.M. Sept. 27 the wind suddenly shifted to the S. and S.E. Unable to beat against the high wind and with the mizzensail gone, Capt. Borroughs decided to put back to New York (The New York Times, Oct, 6, 1894, p.1, col.5). 35) Washington, Sept. 27, 8 P.M. The hurricane reported this morning a few miles N. of Charleston has moved very slowly N.E. and was a few miles W. of Wilmington at 8 P.M. this evening, that station reporting a pressure of 29.46 inches and an E. wind of 8 mph. The maximum velocity of the day has been 36 mph from the E. at Norfolk. The storm has lost its energy during the past 12 hours, but dangerous gales and high tides will continue on the immediate coast from Hatteras to Nantucket (The New York Times, Sept. 28, 1894, p.7, col. 5). Author's note: The E. 9 mph wind suggests that the storm center was very close to the S. of Wilmington, and not to the W. of that place, at 8 P.M. Sept. 27. 36) Washington, Sept. 28. The tropical cyclone reported last night near Wilmington has moved in a N.E. direction a few miles off Cape Hatteras, diminishing markedly in intensity. It will continue to move slowly, giving dangerous gales on the ocean and the south New England coast (The New York Times, Sept. 29, 1894, p.1, col.5). 37) Lewis, Del., Sept. 28. A heavy N.E. gale is prevailing at the Delaware Breakwater since 3 A.M. this morning and at noon was slightly increasing with mist in the vicinity of the Capes (The New York Times, Sept. 29, 1894, p.1. col.5). 38) Atlantic City, N.J., Sept. 28. The storm is abating in its intensity here. At noon the government observer

reported that the wind was blowing at 35 mph. The high tide this morning submerged the meadows and the railroad tracks (The New York Times, Sept. 29, 1894, p.1, col.5). 39) The latest reports received at the Weather Bureau last night indicate that the cyclone is now well out at sea and holding its carnival in the latitude of the "roaring forties" (The New York Times, Sept. 29, 1894, p.1, col.6). Author's note: This suggested position appears to have been too far north and east of the real one for the night of Sept. 28. 40) Washington, Sept. 29, 8 P.M. The tropical storm has moved from near Hatters a few miles N.E. into the ocean, diminishing in intensity (The New York Times, Sept. 30, 1894, p.2, col.4). 41) New York was fanned yesterday by the tail of the great cyclone which has been working up along the coast. Forecaster Dun and his assistants placed it yesterday morning (Sept. 30) 150 miles S. of Fire Island. The wind was then blowing here (New York) at 27 mph but off Sandy Hook the wind was 40 mph and the sea was running high. Reports received from Block Island indicate that the wind was blowing at the rate of 60 mph in the afternoon and at 44 mph in the evening (The New York Times, Oct. 1, 1894, p.1, col.5). 42) Asbury's Park, N.J., Sept. 30. The cyclone from the Tropics reached the New Jersey coast yesterday. The wind blew with terrific force and drove the waves shoreward mountain high (The New York Times, Oct. 1, 1894, p.1, col.5). 43) Atlantic City, N.J., Sept. 30. A furious wind blowing with the velocity of a gale forced the tide into the inlet and bays to a depth that inundated the inlet district and lower floors of the buildings here (The New York Times, Oct. 1, 1894, p.1, col.6). 44) Plymouth, Ma., Sept. 30. The N.E. storm struck this place this morning. The wind has been blowing a gale ever since (The New York Times, Oct. 1, 1894, p.1, col.6) 45) Nantucket, Sept. 30. After viewing yesterday's sea kicked up by the supposedly departing tropical hurricane, Nantucketers were to find this morning that the erratic weather headed this way. A stiff E. gale has been blowing all day accompanied by heavy rain and high surf (The New York Times, Oct. 1, 1894, p.1, col.6). 46) Washington, Sept. 30. The tropical cyclone reported yesterday off Cape Hatters has moved N.E. off Fire Island, a maximum velocity of 60 mph from N.E. being reported from Block Island. A high pressure area has remained nearly stationary in the Gulf of St. Lawrence (The New York Times, Oct. 1, 1894, p.1, col.6). Author's note: The high pressure in the Gulf of St. Lawrence probably contributed to the gale reported from St. John's, Newfoundland to have started there during the night of Sept. 29-30 and continued fiercely on Sept. 30. (The New York Times, Oct. 1, 1894, p.1, col.6). However, according to information in item 32), the above mentioned gale was associated with another Atlantic storm. 47) New York, Oct. 4. The vessels "Scud", from Barbados, and "Henry S. Woodruff", from St. Kitts, encountered hurricane; had decks swept, sails split, etc. (The Times, London, Oct. 5, 1894, p.4, col.5). Author's note: The location in which the vessels encountered the hurricane was not given, but it must have been off the U.S. coast. 48) Maximum wind velocities: Titusville, N.E. 66 mph on Sept. 25; Tampa, N.E. 43 mph on Sept. 25; Key West, 87 mph on Sept. 25; Jupiter N.E. 50 mph on Sept. 25; Jacksonville, N.W. 48 mph on Sept. 26; Savannah, N.E. 48 mph on Sept. 26; Charleston, N.E. 49 mph on Sept. 26; Wilmington,

N.E. 44 mph on Sept. 27; Southport, S.E. 54 mph on Sept. 27; Kittyhawk, N.E. 60 mph on Sept. 27; Hatters, E. 36 mph on Sept. 27; Atlantic City, N.E. 46 mph on Sept. 30; New Haven, N.E. 34 mph on Sept. 30; Nantucket S.E. 42 mph on Sept. 30; Boston, N.E. 32 mph on Sept. 30 (Monthly Weather Review, Sept. 1894). 49) Storm of Sept, 25-27, 1894. A major hurricane on the S.W. Florida coast. Extreme wind: Key West, 104 mph. Minor on coastal sections of Carolinas and Georgia (Dun and Miller, 1960). 50) Storm of Sept. 18-30, 1894. Haiti, Cuba, Florida. Considerable damage from wind in Cuba and rivers overflowed (Tannehill, 1938). 51) Map showing a track for this storm. Morning positions were as follows: Sept. 20, lat. 15.7 N., long. 60 W.; Sept. 21, lat. 18.3 N., long. 66.7 W.; Sept. 22, lat. 19.5 N., long. 73.3 W.; Sept. 23, lat. 21 N., long. 78 W.; Sept. 24, lat. 22.7 N., long. 81.5 W.; Sept. 25, lat. 25.3 N., long. 82.3 W.; Sept. 26, lat. 29 N., long. 81.3 W.; Sept. 27, lat. 33 N., long. 81 W.; Sept. 28, lat. 35.3 N., long. 77.3 W.; Sept. 29, lat. 37.3 N., long. 74 W.; Sept. 30, lat. 38.7 N., long. 72 W. (Monthly Weather Review, Sept. 1894). 52) A Sept. 1894 storm appeared at lat. 16 N., long. 60 W., recurved at lat. 23 N., long. 82 W. and disappeared S.E. of New England (Garriott, 1900). 53) A storm was first observed at lat. 12 N., long. 52 W. on Sept. 18, 1894 and lasted 12 days, it recurved near lat. 27 N., long. 82 W. and it was last observed near lat. 39 N., long. 73 W. (Mitchell, 1924).

Some modifications along the track which is shown for the storm in Neumann et al. (1993), as for Storm 3, 1894 in their publication, were introduced by the author of this study on the basis of information contained in the above items. The author's track was started on Sept. 18 with a 7 A.M. position near 13.5 degrees N., 51.7 degrees W., which is about 70 miles to the N.N.E. of the corresponding position in Neumann et al. (1993).; the author estimated his position on the basis of space-time continuity as applied backwards from his estimated 7 A.M. Sept. 19 position near 14 degrees N., 55.5 degrees W. which, in turn, was based on information placing the storm to the E. of Martinique in the afternoon of Sept. 19 (item 1) and on space-time continuity. The author's position for 7 A.M. Sept. 20 was estimated near 14.7 degrees N., 59.7 degrees W. on the basis that the center passed into the Caribbean Sea between Martinique and Dominica about noon Sept. 20 (item 2) and after discarding a statement saying that it passed between Guadeloupe and Dominica (item 3) because this would have implied an unrealistic inflexion to the north and then to the west along the track; the author's position for Sept. 20 was just a short distance to the N.E. of the one shown in Neumann et al. (1993). The 7 A.M. Sept. 21 position in the above mentioned publication was kept unchanged on the ground that it was found to keep a good space-time continuity along the storm track. However, their 7 A.M. Sept. 22 position was adjusted by about 40 miles to the N.W. to fit better the saying that the storm center passed just to the S. of the city of Santo Domingo around 2 A.M. Sept. 22 and a little to the N. of Port-au-Prince at noon Sept. 22 (item 8); the 7 A.M. Sept. 22 position, as adjusted by the author of this study, was near 18.3 degrees N., 71.0 degrees W. The author's 7 A.M. Sept. 23 position was estimated on the basis of information stating that

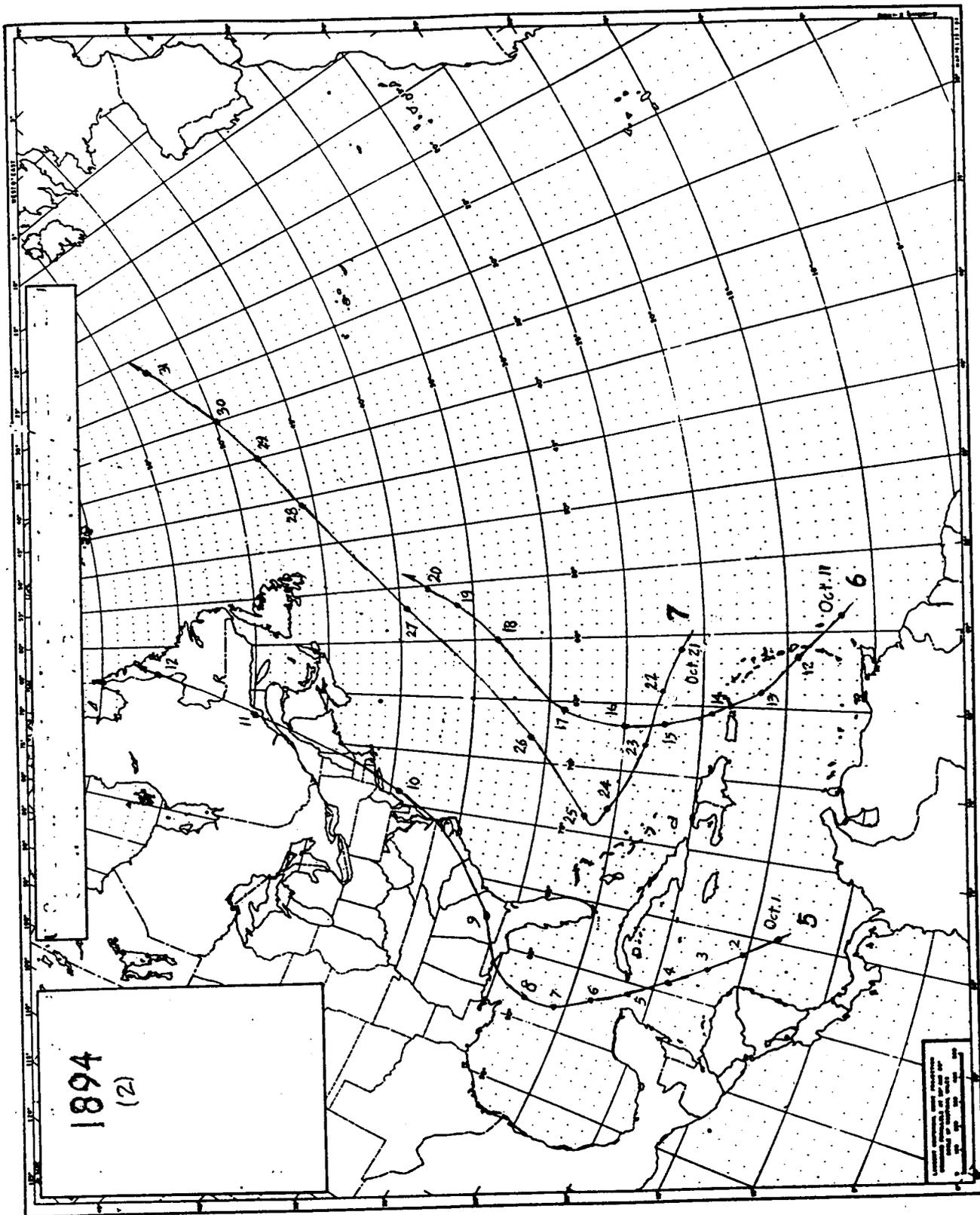


Fig. 1. (Continued)

the storm center passed just to the S. of Santiago de Cuba around midnight Sept. 22-23 (items 8 and 9) and on space-time continuity; his position was near 20.5 degrees N., 77.0 degrees W. The author's 7 A.M. Sept. 24 position was estimated near 22.5 degrees N., 81.5 degrees W. and was based on information in items 9) and 11); the author's position is about 70 miles to the W.N.W. of the corresponding one in Neumann et al. (1993). A careful analysis of the Key West observations which are included in item 18) allowed the author to estimate his 7 A.M. Sept. 25 position near 25.0 degrees N., 82.0 degrees W., which was about 50 miles to the S. of the corresponding one in Neumann et al. (1993). The author of this study found that information in items 29) and 31) supported the 7 A.M. Sept. 26 position in Neumann et al. (1993) and, therefore, he decided to keep such a position unchanged. A slight adjustment was made to the 7 A.M. Sept. 27 position in the above publication in order to account for the S. 12 mph wind reported at Charleston at 8 A.M. Sept. 27 (item 33) which suggested the center to have been towards the N.W. and not towards the N. of Charleston at that time; the 7 A.M. Sept. 27 position, as adjusted by the author of this study, was near 33.0 degrees N., 80.3 degrees W. The 7 A.M. Sept. 28 position in Neumann et al. was adjusted to the S.E. by about 40 miles in order to fit a space-time continuity derived from a location a few miles S. of Wilmington in the evening of Sept. 27 (inferred from the E. 9 mph wind reported from Wilmington at 8 A.M. Sept. 27 as given in item 35) and the location near Morehead City which was given for Sept. 28 in item 32); the author's 7 A.M. Sept. 28 position was near 34.7 degrees N., 76.7 degrees W. The 7 A.M. Sept. 29 position in Neumann et al. (1993) was kept unchanged by the author of this study, but their 7 A.M. Sept. 30 position was adjusted to the S.E. by about 30 miles in order to fit information for Sept. 30 as presented in items 32), 41) through 46), 51) and 52). The author's adjusted position for Sept. 30 was near 39.7 degrees N., 72.5 degrees W. The author's track for Storm 4, 1894 is shown in Fig. 1.

The lowest barometer reading of 29.10 inches and the highest wind of 104 mph at Key West (item 18) were found to fully support the hurricane status given to this storm by Neumann et al. (1993) as for Storm 3, 1894 in their publication. However, the above mentioned meteorological measurements fell short of verifying the major hurricane status given in item 49).

Storm 5, 1894 (Oct. 1-12), H.

This is the same storm that Neumann et al. (1993) show as Storm 4, 1894.

The following information was found in relation to this storm: 1) This was a hurricane which became severe at the Weather Bureau stations on Oct. 7, but the early history of this depression may be traced from its beginning in the southern portion of the Caribbean Sea, off Colombia, on Oct. 1 as pressures were falling in Nicaragua and Panama. By the morning of Oct. 2, the surrounding winds indicated as whirl central a little E. of Roncador reef. This whirl moved N.E. (it should read N.W.), passing midway between Cuba on the right hand and Nicaragua, Honduras and Yucatan on the left

hand. Shut in by the land areas, it apparently did not grow in size but may have been as intense as it was in the subsequent part of its path (Monthly Weather Review, Oct. 1894). 2) The storm development was traced from a point off the coast of Colombia, South America. Following a N.W. course from lat. 14 N., long. 78 W. on Oct. 2 it passed midway between Cuba and Yucatan on Oct. 4-5. It was in lat. 27 N., long. 88 W. on the morning of Oct. 7, when it swerved to the N.E. entering the U.S. at the western extremity of Florida in the morning of Oct. 8 (Garriott, 1900). 3) Oct. 4-6, 1894. Cyclonic perturbation formed to the third quadrant (from Havana), passing over the Yucatan Channel into the Gulf. Its gusty winds did not cause damage, but the torrential rains and floods extended eastward to Santa Clara. They caused their heaviest damage at Pinar del Rio province (Sarasola, 1928). Author's note: Actually taken from the catalog of Cuban cyclones by M. Gutierrez-Lanza, which is included in Sarasola (1928). 4) Rainstorm (in Cuba) on Oct. 4-5, 1894 (Martinez-Fortun, 1942). 5) While passing through the Gulf, this hurricane was encountered by the "Cayo Romano" and the "Johann Ludwig" on Oct. 8 in about lat. 27 50 N., long. 87 45 W., and by the "Stephen Bishop" and the "Acme" on Oct. 9 (Monthly Weather Review, Oct. 1894). 6) Observations taken from the log of the "Johann Ludwig": Oct. 6, 8 A.M., lat. 28 45 N., long. 86 25 W., wind N.E. force 10, barometer 29.96 inches; 8 P.M. lat. 28 38 N., long. 86 35 W., wind E. to N.E. force 11, barometer 29.94 inches. Oct. 7, 8 A.M., lat. 28 22 N., long. 86 58 W., wind E. to N.E. force 11, barometer 29.86 inches; 8 P.M., lat. 28 15 N., long. 87 15 W., wind E. force 12, barometer 29.54 inches. Oct. 8. 8 A.M., lat. 28 10 N., long. 88 13 W., wind E. force 12, barometer 28.38 inches; 8 P.M., lat. 28 03 N., long. 87 55 W., wind N.W. force 10, barometer 29.50 inches. From 8:30 to 10 A.M. Oct. 8, nearly calm. At 10 A.M. Oct. 8, wind shifted to N. and barometer started to rise rapidly. The strongest wind occurred about 2 P.M. Oct. 8. At 6:30 A.M. Oct. 8, rigging was cut away to save vessel from capsizing. The sea was full of foam, and the sea, air and clouds had seemingly merged into one. After sundown of Oct. 8 to the morning of Oct. 9, wind moderating from N.W.; clear, settled weather by night of Oct. 9 (Monthly Weather Review, Oct. 1894). 7) Washington, Oct. 7. The West Indian hurricane previously reported in the Gulf and of which timely warnings have been given is now approaching the central Gulf coast, the wind having reached 60 mph at the mouth of the Mississippi River. The indications are that the storm will recurve and move N.E., causing dangerous gales on the South Atlantic coast in the night of Oct. 8 (The New York Times, Oct. 8, 1894, p.2, col.2). 8) Galveston, Oct. 7. Storm warnings are displayed here tonight as the cyclone is reported S. of Port Eads. The Gulf tonight is high and turbulent, indicative of some violent atmospheric disturbance (The New York Times, Oct. 8, 1894, p.2, col.2). 9) Mobile, Al. Rain began at 7:45 P.M. Oct. 7 and continued, with high wind, until 5:45 P.M. Oct. 8 (Monthly Weather Review, Oct. 1894). 10) Fort Morgan, Al. Oct. 7, 8 A.M., barometer 29.85 inches, wind E. to N.E. 22 mph; high tide and heavy sea at 4 P.M.; 8 P.M., barometer 29.75 inches, wind E.N.E. 32 mph. Oct. 8, 8 A.M., barometer 29.43 inches, wind N.E. 53 mph, light rain, tide water 5 feet above ordinary tide high, very heavy sea; 10 A.M.,

barometer 29.35 inches, wind N.E. 60 mph; 11:55 A.M., barometer 29.30 inches, wind 60 mph; 2 P.M., barometer 29.24 inches, wind 62 mph; 3 P.M., barometer 29.34 inches; 6:30 P.M., barometer 29.38 inches, lightning in the N.W. and clouds moving rapidly from N. to S.; 8 P.M., barometer 29.46 inches; 10 P.M., barometer 29.54 inches. Oct. 9, 8 A.M., barometer 29.68 inches, wind N. 20 mph (Monthly Weather Review, Oct. 1894). Author's note: Fort Morgan is located at the entrance of the Mobile Bay near lat. 30.2 N., long. 88 W. 11) Pensacola, Oct. 8, rain continued from early morning and ended 8 P.M. with heavy N.E. gales until late in the afternoon. The tide was higher than ever before (Monthly Weather Review, Oct. 1894). 12) New Orleans, Oct. 8. A storm of great violence has been raging over South Louisiana and Mississippi county. At Horn and Ship Islands everything is reported as blown ashore (The New York Times, Oct. 9, 1894, p.2, col.3). 13) Jacksonville, Fl. Oct. 8. The cyclone reported raging in the Gulf last night has reached Florida. At noon, the wind at Pensacola was reported to be blowing at 64 mph. Tallahassee reported early in the night that there were indications of a heavy gale and that much apprehension was felt. At Jacksonville tonight the barometer has fallen to 29.50 inches and the wind has reached a velocity of 36 mph. It is thought, however, that the storm will pass N. of Jacksonville (The New York Times, Oct. 9, 1894, p.2, col.3). 14) Lake City, Fl. Oct. 8, a heavy E. storm occurred all day, which increased after dark to 40 or 50 mph with heavy rain; the storm increased in intensity until daylight of Oct. 9 when the wind was about 80 mph with heavy rain (Monthly Weather Review, Oct. 1894). 15) Jacksonville, Fl. Rain began at 8:40 P.M. Oct. 8, with high winds and rapidly falling barometer. The early morning of Oct. 9 the storm increased in violence; a maximum velocity of 62 mph from the S.E. occurred at 5:45 P.M., being the highest velocity ever register at the office. The rain ended at 9:30 A.M. (Monthly Weather Review, Oct. 1894). 16) Charleston, N.C. Oct. 9, rain continued all day, with high winds; maximum velocity S.E. 48 mph. All shipping remained in port (Monthly Weather Review, Oct. 1894). 17) Charlotte, N.C. Oct, 9, rain continued all day ending at 7 P.M., the total amount being 3.80 inches. High wind prevailed all day; maximum velocity 30 mph (Monthly Weather Review, Oct. 1894). 18) Washington, Oct. 9, 8 P.M. The tropical storm has moved rapidly N.E. and is now central in eastern North Carolina. Severe gales and heavy rain prevailed throughout the Southern Atlantic States and will extend over the Middle Atlantic and southern New England coast (The New York Times, Oct. 10, 1894, p.3, col.7). 19) New York. Rain began at 11 P.M. Oct. 9, became heavy in the morning of Oct. 10 and ended at 12:45 P.M. (Monthly Weather Review, Oct. 1894). 20) New Rochelle, Oct. 10. The heavy wind storm which struck this place at an early hour this morning played havoc with many yatches and sail boats anchored in this harbor (The New York Times, Oct. 11, 1894, p.2, col.5). 21) The storm knocked down a number of trees and telephone poles in Brooklyn while sky lights and signs were down from their fastenings (The New York Times, Oct. 11, 1894, p.2, col.5). 22) Another tropical storm visited Manhattan and adjacent islands early yesterday morning. The barometer was one of the lowest we have had in years It was 29.06 inches in Atlantic City this morning and

29.12 inches in Philadelphia. At 8 A.M. this morning, it was 29.15 inches in this city (New York and at 10 A.M. had reached 29.14 inches and was slowly dropping. At 8 A.M. the wind reached its maximum velocity of 44 mph. Block Island reported 72 mph at 10 A.M. (The New York Times, Oct. 11, 1894, p.1, col.1). 23) Flushing, L.I., Oct. 10. The wind last night blew a perfect gale. Trees were rooted up and numerous small buildings were unroofed (The New York Times, Oct. 11, 1894, p.1, col.2). 24) Whitestone, L.I., Oct. 10. This morning storm created havoc among small boats and other property on the shore and at Willet's Point (The New York Times, Oct. 11, 1894, p.1, col.2). 25) East Moriches, L.I., Oct. 10. The storm carried away all the bathing and shade pavilions (The New York Times, Sept. 11, 1894, p.1, col.2). 26) Oyster Bay, L.I., Oct. 10. The tide is the highest ever reached here and many docks are under water (The New York Times, Oct. 11, 1894, p.1, col.2). 27) Jersey City, N.J., Oct. 10. The storm raged in this city this morning with marked violence and the streets were obstructed with telegraph, telephone and trolley wires (The New York Times, Oct. 11, p.2, col.5). 28) Asbury Park, N.J., Oct. 10. The gale played havoc with the telephone and electric-light wires and several accidents resulted from horses and individuals coming in contact with them (The New York Times, Oct. 11, 1894, p.2, col.5). 29) Long Branch, N.J., Oct. 10. This place suffered considerable by the storm (The New York Times, Oct. 11, 1894, p.2, col.5). 30) Steamer "Armenia", New York for Naples, arrived at Gibraltar yesterday and reports having one lifeboat carried away; engineer's room stove hole ventilator and sky light smashed on Oct. 10 in lat. 48 N. (it should read 38 N.), long. 72 W. (The Times, London, Oct. 25, 1894, p.10, col.6). 31) Barkentine "George W. Sweeney", Philadelphia for Galveston, experienced a S.W. gale on Oct. 10, was thrown on beam ends and cargo shifted. On Oct. 11 at lat. 31 34 N., long. 72 19 W., the vessel was abandoned, her crew being landed at Liverpool by the "Engineer" (The Times, London, Oct. 27, 1894, p.6, col.4). 32) Block Island, R.I. Oct. 10, a severe storm set in at 12:45 A.M., accompanied by heavy rain and increased in energy to a maximum velocity of 84 mph; storm ended at 9:25 P.M. (Monthly Weather Review, Oct. 1894). 33) Woods Hole, Ma. Oct. 10, heavy rain began at 3:30 A.M. and continued until 11 P.M.; severe gale blew from the N.E. from 5 A.M., veering to E. and S.W., with a maximum velocity of 60 mph from the S.W. (Monthly Weather Review, Oct. 1894). 34) Boston, Ma. Oct. 10, heavy rain began at 3 A.M. and continued until 4:25 P.M., with high wind, reaching a maximum velocity from the E. at 10 A.M. (Monthly Weather Review, Oct. 1894). 35) Portland, Me. Oct. 10, rain began at 8:30 A.M. and continued until 8:12 P.M., with high wind (Monthly Weather Review, Oct. 1894). 36) The storm reached the New Jersey coast in the morning of Oct. 10 and in the evening of that day the severity of the storm was felt in Portland, Me. From this point its course was almost due N. and in the morning of Oct. 11 was in Canada about lat. 50 N., long. 67 W. It again swerved to the E.N.E. and it was in lat. 52 N., long. 45 W. on Oct. 13. (Garriott, 1900). 37) Maximum wind velocities were as follows: New Orleans, N.W. 48 mph on Oct. 8; Mobile, N. 48 mph on Oct. 8; Pensacola, N.E. 68 mph on Oct. 8; Jacksonville, S.E. 62 mph on Oct. 9; Tampa, S.E. 41 mph on Oct. 9; Savannah, S. 40 mph on Oct. 9,

Charleston, S.E. 48 mph on Oct. 9; Wilmington, S.W. 38 mph on Oct. 9; Kittyhawk, S.E. 58 mph on Oct. 9; Hatters. S.W. 60 mph on Oct. 9; Norfolk, N.E. 39 mph on Oct. 9; Cape Henry, N.E. 66 mph on Oct. 9; Atlantic City, E. 54 mph on Oct. 10; Philadelphia, N.E. 39 mph on Oct. 10; New York, N.E. 48 mph on Oct. 10; Block Island, E. 84 mph on Oct. 10; Woods Hole, S.W. 60 mph on Oct. 10; Nantucket, S.E. 54 mph on Oct. 10; Boston, E. 49 mph on Oct. 10; Portland, E. 41 mph on Oct. 10; Eastport, S.E. 42 mph on Oct. 10 (Monthly Weather Review, Oct. 1894). 38) Storm of Oct. 8-10, 1894. Minimal at Apalachicola; many killed. Minor in Georgia, the Carolinas and the Middle Atlantic States. Overland from N.W. Florida (Dun and Miller, 1960). Author's note: The storm was much stronger than minimal in the Florida panhandle west of Apalachicola. 39) Storm of Oct. 1-13, 1894. Western Caribbean Sea, Gulf and Atlantic coast States. Moved N.E. inside the coastline. Winds exceeded 80 mph in some places (Tannehill, 1938). 40) Map showing a track for this storm. Morning positions along the tracks are as follows: Oct. 3, lat. 17 N., long. 81.7 W.; Oct. 4, lat. 20 N., long. 85 W.; Oct. 5, lat. 22.7 N., long. 86.7 W.; Oct. 6, lat. 24.3 N., long. 87.7 W.; Oct. 7, lat. 27.3 N., long. 87.7 W.; Oct. 8, lat. 28.8 N., long. 86.8 W.; Oct. 9, lat. 32.3 N., long. 82.3 W.; Oct. 10, lat. 40 N., long. 73.5 W.; Oct. 11, lat. 51.3 N., long. 67.5 W.; Oct. 12, lat. 51.7 N., long. 58 W.; Oct. 13, lat. 52.3 N., long. 45.5 W. (Monthly Weather Review, Oct. 1894). 41) A storm of Oct. 1894 appeared at lat. 14 N., long. 78 W., recurved at lat. 24 N., long. 88 W. and disappeared N. of Newfoundland (Garriott, 1900). Author's note: The recurvature at lat. 24 N. did not correspond with a track in Garriott (1900) showing the storm to have recurved between lat. 26 and 27 N., long. 88 W. 42) A storm was first observed at lat. 13 N., long. 80 W. on Oct. 1, 1894 and lasted 11 days; it recurved at lat. 27 N., long. 88 W. and it was last observed at lat. 57 N., long. 64 W. (Mitchell, 1924).

Information in the above items clearly showed that the storm recurved farther W. than the location indicated in Neumann et al. (1993) as for Storm 4, 1894. Therefore, the author of this study introduced proper modifications along their track. The 7 A.M. positions for Oct. 6 and Oct. 7 were adjusted by about 40 miles to the S.W. and about 110 miles to the S.S.W. to produce, respectively, a 7 A.M. Oct. 6 position near 23.7 degrees N., 87.0 degrees W. and a 7 A.M. Oct. 7 position near 25.7 degrees N., 88.3 degrees W. These adjustments kept a good continuity along a smooth track from the course shown in Neumann et al. (1993) prior to Oct. 6 and a well documented 7 A.M. Oct. 8 position near 27.7 degrees N., 88.3 degrees W. This latter position was based on a careful analysis of the observations taken by the "Johann Ludwing" (item 6) and was found to be about 120 miles to the W.S.W. of the corresponding one in Neumann et al. (1993). Finally, the 7 A.M. Oct. 9 position in the above publication was adjusted by about 50 miles to the S.W. to near 31.7 degrees N., 83.0 degrees W. and, by so doing, achieve a better agreement with wind information in items 14) and 15). The track for Storm 5, 1894, as prepared by the author of this study, is displayed in Fig. 1.

Information in the above items supported the hurricane status given to this storm in Neumann et al. (1993 as for Storm 4, 1894.

More specifically, major hurricane intensity was fully supported by the barometer reading of 28.38 inches reported by the "Johann Ludwing" (item 6).

Storm 6, 1894 (Oct. 11-20), H.

This storm is the same one which is identified as Storm 5, 1894 in Neumann et al. (1993).

The following information was found about this storm: 1) On Oct. 10 pressure began to fall and the winds had begun to show a cyclonic whirl off the coast of Venezuela west of Trinidad (Monthly Weather Review, Oct. 1894). 2) This whirl moved slowly northward and at noon Oct. 12 was near Martinique, approximately central at lat. 15 N., long. 63 W. It was at that time undoubtedly of small dimensions (Monthly Weather Review, Oct. 1894). 3) In accordance to a report from Mr. Jos. Ridgway Jr., judging from the damage reported, wind must have blown at St. Lucia with hurricane force. Information from Veuxfort (south side) reports great damage to property in that district, many factories being wrecked, the English church also being destroyed and the cane crops totally gone at Caldery and Deunery (it should read Dennery). The fields were quite submerged, and the sugar and cocoa crops of the island are considered to be entirely destroyed. Serious landslips and all roads blocked (Monthly Weather Review, Oct. 1894). 4) St. Lucia. Norwegian brig "Lhadnor", from Cardiff, has gone ashore at Dennery. Captain and mate drowned (The Times, London, Oct. 16, 1894, p.4, col.3). 5) According to Mr. Jos. Ridgway, Jr., the observer at St. Thomas, on the evening of Oct. 13, it was reported there that there was a hurricane to the S.W. of Barbados, but the daily weather reports did not indicate anything so serious, though it had been quite plain some days that there was an evident barometric depression which indicated heavy rain (not unusual at this season) but nothing more. However, late at night (Oct. 13) and early morning (Oct. 14) St. Thomas had strong wind from E. to S.E., then S. and S.W., with torrents of rain (Monthly Weather Review, Oct. 1894). 6) St. Pierre, Martinique. French barque "St. Lucien", from Nantes, arrived in quarantine. After having broken adrift at Barbados on Oct. 12, reports having picked up 16 British seamen but the mane of their vessel was not reported (The Times, London. Oct. 20, 1894, p.6, col.5). Author's note: Information in this item suggests that a sort of bad weather and rough sea was affecting Barbados on Oct. 12, being the cause for the "St. Leucine" to have broken adrift. 7) By noon Oct. 14, the center had passed to the N. of St. Thomas and "had become a southern whirl in a depression that stretched northward to St. Lawrence" (Monthly Weather Review, Oct. 1894). 8) Washington, Oct. 15, 8 P.M. Reports from Key West indicate the presence of a cyclonic disturbance to the E. of the Bahamas and also announce the presence of a storm in the Gulf, but reports from coastal stations are not sufficient to indicate the location of these storms (The New York Times, Oct. 16, 1894, p.3, col.7). 9) Among the vessels experiencing this hurricane were the "St. Giorgio" and the "Herschel" on Oct. 16 (Monthly Weather Review, Oct. 1894). 10) According to reports furnished by the steamship "Herschel", she was in the center from 10 A.M. to 8 P.M. Oct. 16

during which period the barometer was always below 28.50 inches and was lowest, 27.50 inches, at 4 P.M. This low pressure is one of the lowest on record at sea level. The location was about lat. 25 40 N., long. 66 35 W. (Monthly Weather Review, Oct. 1894). Author note: The Monthly Weather Review, Oct. 1894 added that the "Herschel" had left St. Lucia for New York at 1 P.M. on Oct. 12. On one hand, if this were true, the vessel should have departed under stormy conditions prevailing in that island and vicinity and moved with the storm northward. On the other hand, The Times, London, Oct. 24, p.6, col.6) published that the "Herschel" arrived in New York from Santos (Brazil) and stated that she had stockhold flooded, skylight smashed, cabin flooded and sustained other damage in a hurricane. Therefore, it becomes very questionable that the vessel had left St. Lucia on Oct. 12 and the author of this study believes that that statement is in error. He also believes that the "Herschel" was not exactly at the storm center but in its neighborhood for the 10 hour period from 10 A.M. to 8 P.M. Oct. 16 and that, if she ever was in the eye, it must have been around 4 P.M., the time of lowest pressure. 11) Observations from Bermuda: Oct. 16, 7 A.M. barometer 30.13 inches, wind N.E. force 6; Oct. 17, 7 A.M., barometer 29.94 inches, wind S.E. force 7, heavy surf from S.; noon, barometer 29.47 inches, wind S.E. force 7; 2 P.M., barometer 29.45 inches, wind N.E. force 9; 4 P.M., barometer 29.68 inches, wind N.E. force 7, surf from the S.E. (Monthly Weather Review, Oct. 1894). Author's note: The wind direction from the S.E. at 7 A.M. and at noon Oct. 17 looks suspicious and might be in error; such a direction would have implied that the storm center was to the S.W. and not to the S. of Bermuda at those times. 12) Local records at Bermuda do not show the storm, except for the meteorological note to Oct. 17 which says: "Very low barometer, heavy swell on shore" (Tucker, 1982). 13) At noon Oct. 18 the storm was apparently central at lat. 34 N., long. 60 W. Then the storm center began to rapidly die out and disappeared on Oct. 20, while other center, which was farther to the north, expanded and continued (Monthly Weather Review, Oct. 1894. 14) Storm of Oct. 11-19. Windward Islands, Bermuda (Tannehill, 1938). 15) Map showing a track for this storm, with morning positions as follows: Oct. 11, lat. 13.7 N., long. 63.3 W.; Oct. 12, lat. 15.5 N., long. 63 W.; Oct. 13. lat. 17.3 N., long. 64 W.; Oct. 14, lat. 19.7 N., long. 64 W.; Oct. 15, lat. 22 N., long. 66 W.; Oct. 16, lat. 25.3 N., long. 67 W.; Oct. 17, lat. 29.7 N., long. 65.3 W.; Oct. 18, lat. 33 N., long. 63 W; Oct. 19, lat. 35.7 N., long. 57 W.; Oct. 20, lat. 36.7 N., long. 55.5 W.; Oct. 21, lat. 46 N., long 42 W.; Oct. 22, lat. 47.7 N., long. 34 W. (Monthly Weather Review, Oct. 1894). Author's note: The position jump from Oct. 20 to Oct. 21 may represent the dying of the storm center and the intensification of a second center farther to the north as stated in item 13). 16) An Oct. 1894 storm appeared at lat. 12 N., long. 64 W., recurved at lat. 25 N., long 67 W. and disappeared E. of Newfoundland (Garriott, 1900). 17) A storm was first observed on Oct. 11, 1894 at lat. 11 N., long. 59 W. and lasted 8 days; it recurved at lat. 23 N., long. 68 W. and it was last observed at lat. 53 N., long. 51 W. (Mitchell, 1924). Author's note: As a difference from the track shown in other sources, the one in Mitchell (1924) showed the storm to have passed

to the west and not to the east of Bermuda. This was found to contradict the wind information from Bermuda which is contained in item 11).

Although information in items 1), 15) and 16) suggests that the storm formed farther west than indicated in Neumann et al. (1993), 7 A.M. positions for Oct. 11-12 in that publication were kept unchanged because of the very strong indications that the storm caused damaging hurricane winds in St. Lucia (item 3) and the "St. Leucine" became adrift at Barbados (item 6). However, the track in Neumann et al. (1993) shows that the center moved almost right over or slightly E. of St. Thomas during the night of Oct. 13-14, while the changes in wind direction at that island, from E. to S.E. and then to S. and S.W (item 5), clearly show that the center passed to the west. On the basis of these observations, the author of this study decided to adjust the above mentioned track some 40 miles to the west, resulting in estimated positions near 16.7 degrees N., 64.0 degrees W. for 7 A.M. Oct. 13 and near 19.3 degrees N., 65.5 degrees W. for 7 A.M. Oct. 14. The 7 A.M. Oct. 15 position in Neumann et al. was adjusted by about 40 miles to the S. to near 22.5 degrees N., 66.5 degrees W. ; this adjusted position produced a better space-time continuity along the track with the author's estimated position for 7 A.M. Oct. 16, which was near 25.0 degrees N., 66.7 degrees W. and was based on information given by the "Herschel" (item 10). The 7 A.M. Oct. 17 position in Neumann et al. (1993) was kept unchanged, but their 7 A.M. Oct. 18 was adjusted by about 130 miles to the N.E. to near 33.5 degrees N., 60.0 degrees W.; the adjustment was made in order to satisfy the pressure evolution at Bermuda (item 11) which suggested that the storm was closest to the island around 2 P.M. Oct 17 and, at the same time, to take into account information in item 13). The 7 A.M. positions for Oct. 19-20 in Neumann et al. (1993) were kept unchanged. The author's track for Storm 6, 1894 (which corresponds to Storm 5, 1894 in Neumann et al., 1993) is shown in Fig. 1.

Information in several of the items above was found to support the hurricane status that Neumann et al. (1993) gave to this storm as for Storm 5, 1894. The storm was indeed a major hurricane and this can be stated with a very high degree of confidence on the basis of a barometer reading as low as 27.50 inches which was reported by the "Herschel" on Oct. 16 (item 19).

Storm 7, 1894 (Oct. 21-31), H.

This storm is the same one that Neumann et al. (1993) identify as Storm 6, 1894.

The following information was found about this storm: 1) This storm was a West Indian hurricane whose details belong in great part to the storms of the North Atlantic. It was first located about lat. 23 N., long. 63 W. on Oct. 22, from which position it moved eastward (it should read westward) to about lat. 26 N., long. 76 W. in the morning of Oct. 25. Then the path turned to the N.E. at a considerable distance from the Atlantic coast and, on Oct. 31, it was central in lat. 53 N., long. 27 W. (Monthly Weather Review, Oct. 1894). Author's note: In a second description of the storm the Monthly Weather Review, Oct. 1894, stated that on Oct. 20 the wind

circulation was central near lat. 20 N., long. 60 W., and then moved westward to about lat. 23 N., long. 64 W. on Oct. 22 and to about lat. 26 N., long. 74 W. on Oct. 24; then the storm turned northward and by noon Oct 26 it was central near lat. 36 N., long. 68 W. 2) Washington, Oct. 23, 8 P.M. The barometer continues low S.E. of Florida and northerly gales are reported from Florida stations, giving some indications that a tropical storm is moving N. or N.W. to the E. of Cuba (The New York Times, Oct. 24, 1894, p.2, col.2). 3) Washington, Oct. 23, 8 P.M. The tropical storm previously referred to is apparently central E. of Nassau. The only indications of its presence are strong N. winds reported from Florida stations and a special report from Nassau giving the barometer as 29.70 inches (The New York Times, Oct.25, 1894, p.3, col.7). 4) Washington Oct. 25, 8 P.M. The depression on the Middle Atlantic coast this morning has moved to the E., with a considerable energy and is central near the S.E. New England coast, attended by easterly gales (The New York Times, Oct. 26, 1894, p.2, col.3). Author's note: The storm referred to above seems to be a sort of low pressure which developed well to the N. of the tropical system. 5) The schooner 'B. Frank Neally", on her route from New York to Puerto Rico, passed near the vortex of the storm when, at lat. 30 N., long. 71 W. at 3 A.M. Sept. 36, she had a N.N.W. gale of about 70 mph, with the barometer at 29.30 inches, the wind having veered 8 points in 12 hours. The vessel was at one time probably within 100 miles of the center of the storm (Monthly Weather Review, Oct. 1894). 6) On Oct. 26, a short but violent hurricane was recorded at Gibb's Hill (Bermuda) with wind force at 12, i.e. above 75 mph. By 11 A.M. (Oct 26) the N.E. part of the Harrington Sound was in a feather, the sea breaking on the shore and over some cottages, making it almost impossible to pass along the road to Cripple Gate, and between 1 and 2 P.M. the wind jumped about W.N.W. (Tucker, 1982). 7) The N.E. course of this storm was very rapid, being central on Oct. 28 at lat. 46 N., long. 46 W., and on Oct. 29 at lat. 49 N., long. 40 W.; then the rapid progress ceased, being central on Oct. 30 at lat. 48 N., long. 34 W. and on Oct. 31 at lat. 50 N., long. 30 W. Among the many vessels that encountered the storm were the following: "La Flandre", "Manitoba", "Francisco" and "Spain", all of which reported pressure below 28.80 inches on Oct. 28; "Massachusetts", "American", "Donan" and "Maryland", which reported the lowest pressure of 28.20 inches, on Oct. 29; "Amsterdam" which met the storm on Oct. 30 (Monthly Weather Review, Oct. 1894). 8) London, Nov. 7. The "Victoria" arrived yesterday at Dunkirk from New York and reported that on Oct. 26 met the British steamer "Mayfield" in a disabled condition at lat. 44 N., long. 46 W. The "Victoria" towed the "Mayfield" for 375 miles, but they parted in a hurricane on Oct. 28. The "Mayfield" was lost sight of after parting and the "Victoria" had bridge rail, check house, etc. damaged in the hurricane (The New York Times, Nov. 8, 1894, p.1, col.6). Author's note: A similar description was published in The Times, London, Nov. 8, 1894, p.6, col.1). 9) The "Cicelia", from Labrador, arrived at Cookhaven yesterday morning with damage to bulwarks, stanchions and covering boards, having encountered cyclone on Oct. 30 in lat. 50 25 N., long. 41 40 W. (The Times, London, Nov. 13, 1894, p.7, col.4). 10)

Storm of Oct. 21- Nov. 7. Atlantic. Described loop S.W. of Bermuda and moved northeastward near Bermuda (Tannehill, 1938). 11) A track for the storm displaying the following morning positions: Oct. 22, lat. 23 N., long. 63 W.; Oct. 23, lat. 23.3 N., long. 69 W.; Oct. 24, lat. 25 N., long. 74.7 W.; Oct. 25, lat. 27 N., long. 76 W., Oct. 26, lat. 35.5 N., long. 72 W.; Oct. 27, lat 42 N., long. 60 W.; Oct. 28, lat. 45 N., long. 47.3 W.; Oct. 29, lat. 48.3 N., long. 40 W.; Oct. 30, lat. 48.7 N., long. 36 W. (Monthly Weather Review, Oct. 1894). 12) An Oct. 1894 storm appeared at lat. 23 N., long. 63 W., recurved at lat. 25 N., long. 75 W. and disappeared E. of Newfoundland (Garriott, 1900). 13) A storm was first observed near lat. 30 N., long. 63 W. on Oct. 21, 1894 and lasted 17 days, it recurved near lat. 26 N., long. 75 W. and it was last observed near lat. 65 N., long. 9 E. (Mitchell, 1924). Author's note: The corresponding track for this storm in Mitchell (1924) described a large loop between Bermuda and the Bahamas. The storm was shown to have moved first to the W.S.W. and then to have swung to the S., the S.E. and the N.E., passing just to the N.W. of Bermuda and continuing into the open Atlantic. This track was found to be entirely different from the one in item 11) and also from the track displayed in Neumann et al. (1993) as for Storm 6, 1894.

A large discrepancy about the track of this storm was found in the light of the information contained in the items above. While information in items 1) through 3) and 11) and 12) provided general support for the track shown in Neumann et al. (1993), information in items 10) and 13) suggested a loop track which was entirely different from the above mentioned track. Under these circumstances, it would be difficult to make a decision about the storm track. However, in view of the fact that the author did not find in the above items suitable marine observations to verify the track in tropical latitudes, he decided to take the option of accepting the track in Neumann et al. (1993) as a first, crude approximation of the storm's path and then to apply some modifications to it in the light of information contained in the above items. 7 A.M. positions for Oct. 21-23 in Neumann et al. (1993) were kept unchanged because they were supported by information in item 1) and the corresponding author's note. 7 A.M. positions for Oct. 24-25 were adjusted to the S.E. and S., respectively, to about 25.5 degrees N., 73.0 degrees W. (Oct. 24) and to about 27.0 degrees N., 74.0 degrees W. (Oct. 25); these positions allowed for the storm to have been to the E. of Nassau in the evening of Oct. 24 (item 3) and to have reached its westernmost location in the vicinity of the 75 degrees W. meridian (items 1 and 11 through 13). The author believes that the abrupt change in the storm motion from W.N.W. to N.E. over the period Oct. 24-25 was due to the development of a low pressure area off the Middle Atlantic coast (item 4) and that the 7 A.M. position in Neumann et al. (1993) reflects a compromise of the actual positions of the tropical and extratropical systems on that day. As estimated by the author of this study, the center of tropical nature was near 31.0 degrees N., 68.0 degrees W. at 7 A.M. Oct. 26; such a position was about 200 miles to the S.E. of the one shown in Neumann et al. (1993) and was primarily based on information given by the schooner "B. Frank Neally" (item 5) and also on space-time continuity. The

storm center passed very close to Bermuda later on Oct. 26, having produced hurricane winds on that island (item 6). Finally the author of this study adjusted the 7 A.M. Oct. 27 position in Neumann et al. (1993) by about 200 miles to the S.E. to near 39.0 degrees N., 57.0 degrees W.; this adjustment allowed for a continuity of the storm's motion to the N.E. to their 7 A.M. Oct. 28 position, which was kept unchanged. 7 A.M. positions in Neumann et al. (1993) for the period Oct. 29-31 were also kept unchanged. The author's track for Storm 7, 1894 is displayed in Fig. 1.

Information in item 6) was found to confirm the hurricane status that Neumann et al. (1993) gave to this storm as for Storm 6, 1894. Barometer readings taken as the storm was crossing the shipping routes of the North Atlantic (item 7) also supported hurricane winds (and one of them, 28.20 inches reported by the "Maryland", even supported major hurricane intensity), but the storm should have been losing its tropical characteristics by that time.

Special statement.

In addition to the storms which were discussed for this year, three other possible cases were found for 1894. However, the available information for these cases was not found to be enough to determine the true nature of the disturbance and/or to infer a track for it.

A) Case of Aug. 27-31, 1894.

The following information was found about this possible case: 1) This system appeared in the morning of Aug. 28 (noon, Greenwich time) as a slight depression near lat. 40 N., long. 60 W. In the morning of Aug. 29 (noon, Greenwich time) it was central at lat. 42 N., long. 58 W. as a hurricane, although the highest winds reported were of force 10 only; in the morning of Aug. 30 it was central at lat. 48 N., long. 49 W. and it was near lat. 53 N., long. 42 W. on Aug. 31. By this time the cyclonic whirl seems to have been generally broken up (Monthly Weather Review, Aug. 1894). 2) Track for this possible case. Morning positions (noon, Greenwich time) were as follows: Aug. 27, lat. 35.3 N., long. 69.5 W.; Aug. 28, lat. 38.3 N., long. 63 W.; Aug. 29, lat. 41.5 N., long. 57.7 W.; Aug. 30, lat. 48 N., long. 50.3 W. (Monthly Weather Review, Aug. 1894). The author considered to include this case as an 1894 tropical storm. However, the characterization of the system as a slight depression on Aug. 28 (item 1) even if the position were in error and actually closer to the one shown in item 2), would imply to accept a tremendous intensification of a hypothetical tropical system near the 40 degrees N. parallel and over the relatively cool sea surface of the southern edge of the Labrador Current in order to have become a hurricane or almost a hurricane on Aug. 29 (item 1). Indeed, such evolution would have been of unlikely occurrence, and the most likely thing to have occurred points to a quick intensification of a non-tropical system.

B) Case of Sept. 16-21, 1894.

The following information was found about this possible case:
1) There was an indefinite depression in the Gulf of Mexico, but accompanied by heavy rain and high wind on the coast, indicating the presence of a small cyclone in the Gulf. It moved over the Atlantic States over the period Sept. 18-20 and disappeared at the mouth of the St. Lawrence River on Sept. 21 (Monthly Weather Review, Sept. 1894). 2) Track for this possible case showing the following morning positions: Sept. 16, lat. 26 N., long. 94.5 W.; Sept. 17, lat. 27 N., long. 88.3 W.; Sept. 18, lat. 31 N, long. 84.5 W.; Sept. 19, lat. 36 N., long. 80 W.; Sept. 20, lat. 43 N., long. 77.5 W.; Sept. 21, lat. 49 N., long. 65.3 W. (Monthly Weather Review, Sept. 1894). It seems very unlikely that this system had acquired tropical storm intensity while remaining over Gulf waters.

C) Case of Oct. 16-18, 1894.

The following information was found about this possible case:
1) The reports from numerous stations in Cuba on Oct. 13-17 showed low pressure through the island and gusty rainy weather that induced considerable anxiety about the possibility of another hurricane similar to the one of last Sept. (Monthly Weather Review, Oct. 1894). 2) Washington, Oct. 16, 8 P.M. Reports from the West Indies and southern Florida indicate a West Indian hurricane to the E. or S. of Cuba and storm signals have been ordered for southern Florida (The New York Times, Oct. 17, 1894, p.6, col.1). 3) Mr. Rafael Junquera, observer at Santiago de Cuba, communicates the following extracts from the log book of the steamer "Antinog y Martinez", sailing from Manzanillo to Santiago de Cuba: Left Manzanillo at 10:30 A.M. Oct. 17, barometer 29.93 inches; 2 P.M., barometer 29.85 inches, wind moderate from N.E., cloudy sky, drizzling; 3 P.M., barometer 29.80 inches, wind fresh from S.E. with violent gusts and torrential rain, lower clouds moving with moderate velocity from E.S.E., cumulus clouds from S.S.W.; 4 P.M., barometer 29.79 inches; 5:30 P.M., barometer 29.70 inches; 6 P.M. minimum barometer 29.67 inches; anchored at Niquero, gusts were very violent inclining to southerly; lower clouds with great velocity from S.E., cumulus from S.W.; 8 P.M. barometer 29.74 inches, wind weak from the second and third quadrants, continuous rain, lower clouds moving at intervals with great velocity; 10 P.M., barometer 29.70 inches. At midnight (Oct. 17-18) the wind changed to the S.W., rain; 3 A.M. Oct. 18, wind became weaker from the first quadrant; 2 P.M., wind S.E. and S., squalls; 8 P.M., wind S.S.W. followed by rain; 3 A.M. Oct. 19, rain ceased, weather improving, barometer rising very slowly (Monthly Weather Review, Oct. 1894). As neither Sarasola (1928) nor Martinez-Fortun (1942) mentioned a storm to have occurred in Cuba around the middle of Oct. 1894, the author of this study believes that, most likely, this possible case did not reach tropical storm intensity and remained as a strong depression.