

YEAR 1873

Five storms were identified as having occurred in 1873. Tracks for these storms are presented in Fig. 3.

Storm 1, 1873 (Jun. 1-2).

Very little information was found about this storm. Tannehill (1938) mentioned the storm as having occurred at Jacksonville on Jun. 2 but Dunn and Miller (1960) did not refer to this weather system. The Monthly Weather Review, Jun. 1873 indicated that the system moved over southern Georgia and dissipated, producing heavy rain and brisk winds. In addition, the same publication displayed a track extending from just west of Andros Island northward and then northwestward, showing landfall in the Jacksonville area. Such a track was not significantly different from the one contained in Neumann et al. (1993). The author of this study has adopted the track shown by Neumann et al. (1993) without introducing any modification and has included it in Fig. 3.

Storm 2, 1873 (Aug. 13-28).

The following information of meteorological character was found about this storm: 1) The storm was first reported by the bark "Crest of the Wave" in lat. 14 N., long. 27 W. on Aug. 13 (Garriott, 1900). 2) Some positions for the storm were: Aug. 18, at noon, lat. 22 N., long. 60 W.; Aug. 19, at noon, lat. 22 N., long. 63 W.; Aug. 20, lat. 27 N., long. 66 W.; Aug. 21, lat. 30 N., long. 65 30 W.; Aug. 22, lat. 35.5 N., long. 68.5 W.; Aug. 23, lat. 37 N., long. 67 W.; midnight Aug. 24-25, lat. 44 N., long. 56 W; Aug. 25, at noon, lat. 44.5 N., long. 54.5 W.; Aug. 26, at noon, lat. 44.5 N., long. 50 W; Aug. 27, at noon, 49.5 N., 54.5 W. (Garriott, 1900). 3) Halifax, Sept. 6. The brigantine "Kingston" was towed into port today, having been dismasted in a hurricane on Aug. 20 near lat. 28 N., long. 66 W. (The New York Times, Sept. 1, 1873, p.1, col.3). 4) Aspinwall, Panama. The steamer "Ocean Queen", from New York, had a big blow over the Gulf Steam (The New York Times, Sept. 14, 1873, p.8, col.6). 5) Brig "Tropic Bird". Sea running against current from Cape Canaveral to Hatteras,; it appears to be the track of a hurricane (The New York Times, Sept. 1, 1873, p.8, col.7). 6) Halifax, Aug. 26. Saturday night (Aug. 23) and Sunday morning, heaviest gale in many years doing considerable damage to property (The New York Times, Aug. 27, 1873, p.1, col.3). 7) The "Arthur" was coming to Halifax from Boston and was struck by the hurricane at 5 P.M. Sunday (Aug. 24). The storm cleared the deck of spars, etc. (The Times, London, Sept. 29, 1873, p.10, col.5). 8) Ship "Ellen Southern". Aug. 24, off Cape Sable, had a hurricane from E.S.E. to W.S.W. (The New York Times, Sept. 18, 1873, p.8, col.7). 9) According to Liverpool newspapers, the "Hammonia" had reported at Plymouth that, on Aug. 24, encountered a hurricane and had to heave for 36 hours. The storm began on Sunday afternoon and that night a succession of mountainous waves broke over the steamer (The Times, London, Sept. 8, 1873, p.10, col.6). 10) Wreck of the

"Saltwell". The vessel came within 20 miles of Sydney, Cape Breton, at 10 A.M. Aug. 24. Wind blowing S.E. gradually increasing to a gale. It continued to increase to 8 P.M. when it became a perfect hurricane (The New York Times, Sept. 6, 1873, p.1, col.5). 11) At Sydney, Cape Breton, the storm commenced at noon Monday, blowing from S.E., with a barometer at 29 inches. The wind changed suddenly to E., sending a tidal wave, 10 ft high, towards the docks and wharves (The New York Times, Aug. 28, 1873, p.1, col.4). Author's note: It should read noon Sunday (Aug. 24) instead of noon Monday. 12) At Cow Bay, Cape Breton, when the gale began there were 30 ships in harbor. At 5 P.M. (Aug. 24) they all began to drift and by 7 P.M. out of the 30 vessels, all but 2 were adrift (The New York Times, Aug. 29, 1873, p.1, col.6). 13) The gale was very heavy at Sable Island but no damage was done (The New York Times, Sept.7, 1873, p.1, col.3). 14) Bark "Atlantic". Aug. 25, lat. 40 06 N., long. 76 W. (?), had a hurricane from N. around to W. lasting 24 hours, during which lost and split sails, stove bulwarks and rail (The New York Times, Aug. 31, 1873, p.8, col.7). Author's note: Long. 76 W. is obviously wrong. 15) Ship "Guldfare". Aug. 24, lat. 42 50 N., long. 60 W., had a hurricane from S.W. around to N. (The New York Times, Sept. 6, 1873, p.8, col.5). 16) Letter from a gentleman on board the Royal Mail steamship "Russia" to The New York Herald stated that the gale commenced at S., shifting rapidly to S.E. and E. where it blew for 3 hours in the afternoon of Aug. 24. At the same time, the ship was heading westward or west by south at 14-15 knots. The ship was then in the center for about half an hour. Calm with a terrific sea. Then it blew from W. from 5 P.M. Sunday (Aug. 24) to 7 A.M. Monday (Aug. 25) It is said in the description that the ship supposedly was near lat. 42 N., long. 58 W. (The Times, London, Sept. 18, 1873, p.11, col.10). 17) Steamship "Lapland". Aug. 24 and 25, lat. 43 58 N., long. 58 W., encountered a violent hurricane commencing from E.N.E. and working around to N.N.W., barometer down to 28.40 inches (The New York Times, Aug. 30, 1873, p.8, col.6). 18) Bark "Iris". Aug. 26, lat. 44 N., long. 53 W. fell in with bark "Primera" and took Capt. Krynenand and crew of 12. The captain reported that on Aug. 24 took a heavy gale from S. and S.E., carrying away foremast and maintopmast, stove bulwarks and sprung a leak (The New York Times, Sept. 9, 1873, p.8, col.6). 19) Letter from Magdalen Island stated that the tide rose to an extraordinary height. At daylight Aug. 25 the scene at Amherst harbor was beyond description. Nine American schooners were ashore and several others broke their mooring during the day (The New York Times, Sept. 6, 1873, p.1, col.5). 20) Some morning positions shown on a map: Aug. 24, lat. 43.5 N., long. 63 W.; Aug. 25, between Cape Breton and Newfoundland (Monthly Weather Review, Aug. 1873). 21) In the work by Henry Toynbee about the weather of the Atlantic Ocean during Aug. 1873 (published in England in 1878), after having moved northeastward at an accelerated pace, the storm was shown to have slowed down and turned northward over the period Aug. 25-28. This caused an irregularity of the hurricane motion along the second branch of the parabola (Vines, 1895). Author's note: According to his so-called "laws", Vines was expecting the hurricane to have continued moving to the N.E. and E.N.E. at an accelerated pace.

Based on the information contained in the above items, the author of this study proposed to introduce a series of modifications to the track shown in Neumann et al. (1993). The author's track was started near 14.0 degrees N., 27.0 degrees W. on Aug. 13 in accordance to item 1) and, for the period Aug. 14-22, the timing along the track shown in Neumann et al. (1993) was adjusted to the following estimated 7 A.M. positions inferred by the author: Aug. 14, 14.3 degrees N., 32.0 degrees W.; Aug. 15, 14.5 degrees N., 37.3 degrees W.; Aug. 16, 15.0 degrees N., 42.7 degrees W.; Aug. 17, 16.5 degrees N., 49.0 degrees W.; Aug. 18, 18.7 degrees N., 55.0 degrees W.; Aug. 19, 22.0 degrees N., 61.0 degrees W. (no adjustment made); Aug. 20, 26.0 degrees N., 66.0 degrees W.; Aug. 21, 30.3 degrees N., 68.3 degrees W.; Aug. 24, 33.3 degrees N., 68.5 degrees W. For the period Aug. 23-25, the author's estimated 7 A.M. positions were significantly to the north and somewhat to the east of the ones shown in Neumann et al. (1993), which resulted in a track closer to Nova Scotia. Author's estimated positions for those days were: Aug. 23, 37.0 degrees N., 67.0 degrees W.; Aug. 24, 42.0 degrees N., 63.5 degrees W.; Aug. 25, 45.5 degrees N., 54.5 degrees W. Positions given by Neumann et al. (1993) for Aug. 26 and 27 were slightly adjusted to 47.0 degrees N., 54.0 degrees W. and to 48.5 degrees N., 53.5 degrees W., respectively, and the 7 A.M. position for Aug. 28 was kept unchanged. The author's track for the storm is displayed in Fig. 3.

The author of this study has low confidence in the track shown over the period Aug. 26-28, and believes that, if that track is correct, the storm should have weakened considerably over Newfoundland and adjacent cold waters. The author respected that portion of the track based on information in item 21) and due to lacking evidence against the positions shown in Neumann et al. (1993), which apparently originated from a track shown in Tannehill (1938).

This storm was undoubtedly an intense hurricane even at high latitudes, and the pressure reading of 28.40 inches reported by the steamship "Lapland" (item 17) fully supports this statement.

According to The New York Times, Aug. 14, 1873, p.4, col.6, a report prepared by the U.S. Signal Service indicated 600 hundred deaths and 1122 vessels lost in Nova Scotia and Newfoundland as well as some 90 additional vessels lost elsewhere.

In relation to this storm, Tannehill (1938) has indicated that cautionary signals issued for Cape May (New Jersey) to New London (Connecticut) on Aug. 23, 1873 were the first ones issued by the U.S. Signal Service for a hurricane. The apparent source for that statement was some information published in the Monthly Weather Review, Aug. 1873. However, Calvert (1935) and Dunn and Miller (1960) have disputed its validity on the alleged ground that the storm was not tropical at the time the signals were issued, which has been found to be incorrect. But The New York Times, Aug. 24, 1873, p.1, col.7 (section of weather and probabilities, Washington D.C, Aug. 24, 1 A.M.) indicated that the pressure had increased in the lower lake region, the St. Lawrence Valley and the Middle and New England States, with brisk and high northwesterly and northeasterly winds and generally clear weather, that cautionary signals were ordered for Cape May, New York and New

London and that, for New England and Middle States, the probability was for brisk to high northerly and easterly winds with increasing cloudiness and stormy weather on the coast. It should be mentioned that no cyclone or hurricane was specifically mentioned in the weather note and that, according to the description given, the strong winds could be attributed to the increasing pressure gradient and not necessarily to a tropical cyclone. The author of this study believes that it is highly questionable that, because of the following reasons, the true characteristics of the storm were known in Washington at the time the cautionary signals were issued: a) the storm was a good distance offshore and had not passed near Havana, Santiago de Cuba or Kingston, places from where the Signal Service had just started to receive daily reports by telegraph (Dunn and Miller, 1960) and b) there was practically no time for the ships which met the storm at sea to have arrived at the nearest port and to have spread the word using telegraph lines. It should be mentioned that the first wireless message that the Weather Bureau received from a ship at sea was on Dec. 3, 1905 (Tannehill, 1938).

Storm 3, 1873 (Sept. 18-20).

The following information was found in relation to this storm:

- 1) Washington, Sept. 20, 1 A.M. The disturbance on Thursday night (Sept. 18) southwest of Florida has moved northeastward to South Carolina (The New York Times, Sept. 20, 1873, p.5, col.2).
- 2) Dispatch from Tallahassee, Sept. 21 (via Augusta, Ga). A terrible gale prevailed on Friday morning (Sep. 19). Several stores were uproofed, 30 or 40 houses blown down and several others badly damaged. St. Marks was washed away (The New York Times, Aug. 23, 1873, p.5, col.6).
- 3) Augusta, Ga, Sept. 20. The heavy and continuous rain of yesterday and last night did considerable damage to the railroad entering this place (The New York Times, Sept. 21, 1873, p.4, col.7).
- 4) Charleston, Sept. 20. There was a heavy gale from S.E. to S.W. last night; it is clear today (The New York Times, Sept. 21, 1873, p.8, col.7).
- 5) Steamship "Magnolia" (from Savannah, Sept. 19). Heavy gale from S. shifted to N.W. at 5 P.M. Sept. 20, going around to E. It blew very hard with head seas until Sept. 21 (The New York Times, Sept. 23, 1873, p.8, col.5).
- 6) Bark "Sarah E. Fraser" (from Havana in 12 days). Sept. 20, lat. 33 30 N., long. 71 50 W., experienced a S.E to S.W. hurricane. Barometer 29.30 inches (The New York Times, Sept.29, 1873, p.8, col.7). Author's note: The longitude seems to be in error because long. 71 50 W. is too far east for a Havana-New York voyage; the correct longitude would probably be between long. 77 W. and long. 75 W.
- 7) Schr. "Helen Augusta". Sept. 20, lat. 33 N., long. 77 15 W., wind S.S.E., weather looking stormy. 8 P.M., squally. 9 P.M., gale burst upon the vessel most furiously. Vessel laboring and straining very much, sea making a clean breach over her. Wind veered to S.W, followed by a lull and then a most violent blast from N.W.. At 11 P.M., bore away for Wilmington, N.C. (The New York Times, Sept. 29, 1873, p.8, col.7).
- 8) Schr. "Francis Shubert". Sept. 20, off Hatteras. 1 A.M. took a squall from S.E., increasing to a gale and lasting 3 hours; 4 A.M., had a squall from N.N.E. increasing to a

hurricane at 6 A.M. and lasting 8 hours; had to scud before the wind with heavy head sea. Sept. 21, lat. 34 50 N., long. 75 15 W., spoke bark "Clara" which reported having shipped a sea in the gale of Sept. 20 (The New York Times, Sept. 30, 1873, p.8, col.5). 9) Brig "Lecita" (from Santo Domingo for Boston). Put into New York in distress. Aug. 20, lat. 36 25 N., long. 71 30 W., experienced a hurricane from S.W. veering around to N.E., lasting 9 hours (The New York Times, Sept. 30, 1873, p.8, col. 5). Author's note: The date should read Sept. 20 instead of Aug. 20. In addition, wind directions are doubtful.

The track displayed in Neumann et al. (1993) practically reproduced one shown in the Monthly Weather Review, Sept. 1873. The author of this study believes that the track in Neumann et al. (1993) is quite reasonable but that a slight displacement of the track to the west during Sept. 19 would bring the storm closer to Tallahassee and just to the west of Charleston as suggested by items 2) and 4), respectively. Fig. 3 shows the author's track for the storm after having implemented the above mentioned displacement.

Storm 4, 1873 (Sept. 22-24).

Very little information was found in relation to this storm. Only a heavy N. gale encountered by the schooner "H. Hulburt" on Sept. 24 while sailing from Baltimore for New Haven (The New York Times, Sept. 25, 1873, p.8, col.7) was found to be presumably related to this weather system.

The track shown in Neumann et al. (1993) seems to have closely followed one displayed in the Monthly Weather Review, Sept. 1873, after having extended it backwards to Sept. 22. The author of this study has adopted the track in Neumann et al. (1993) and reproduced it in Fig. 3.

Storm 5, 1873 (Sept. 26- Oct. 9).

The following information was found to be related to this storm: 1) Steamship "Moselle" has arrived at Plymouth bringing the mail from the West Indies. There was no news of interest from the French West Indies, business being dull at Point-a-Pitre and Basseterre (The Times, London, Oct. 30, 1873, p.3, col.6). Author's note: The storm should have been very weak when crossing the Lesser Antilles because otherwise it would have been reported from the French islands or from other islands of the Lesser Antilles. 2) The Royal Mail steamer "Elba" arrived at Plymouth. Her dates were: Jamaica, Sept. 24; Jacmel, Sept. 26; Barbados, Oct. 1 and St. Thomas, Oct. 10 (The Times, London, Oct. 24, 1873, p.7, col.6). Author's note: On her voyage from Jacmel to Barbados, the "Elba" should have passed near the storm on Sept. 27. As the ship did not reported it, the storm should have been of rather a short diameter although it might have already attained hurricane intensity. 3) Havana, Oct. 14. Terrible hurricane in Haiti. Jacmel and several other places were visited by a hurricane on Sept. 28. Many houses were demolished and there was considerable loss of life. The hurricane did not reach Port-au-Prince or Aux Cayes (The New York Times, Oct. 15, 1873, p.1, col.7). 4) On Sunday, Sept. 28, between

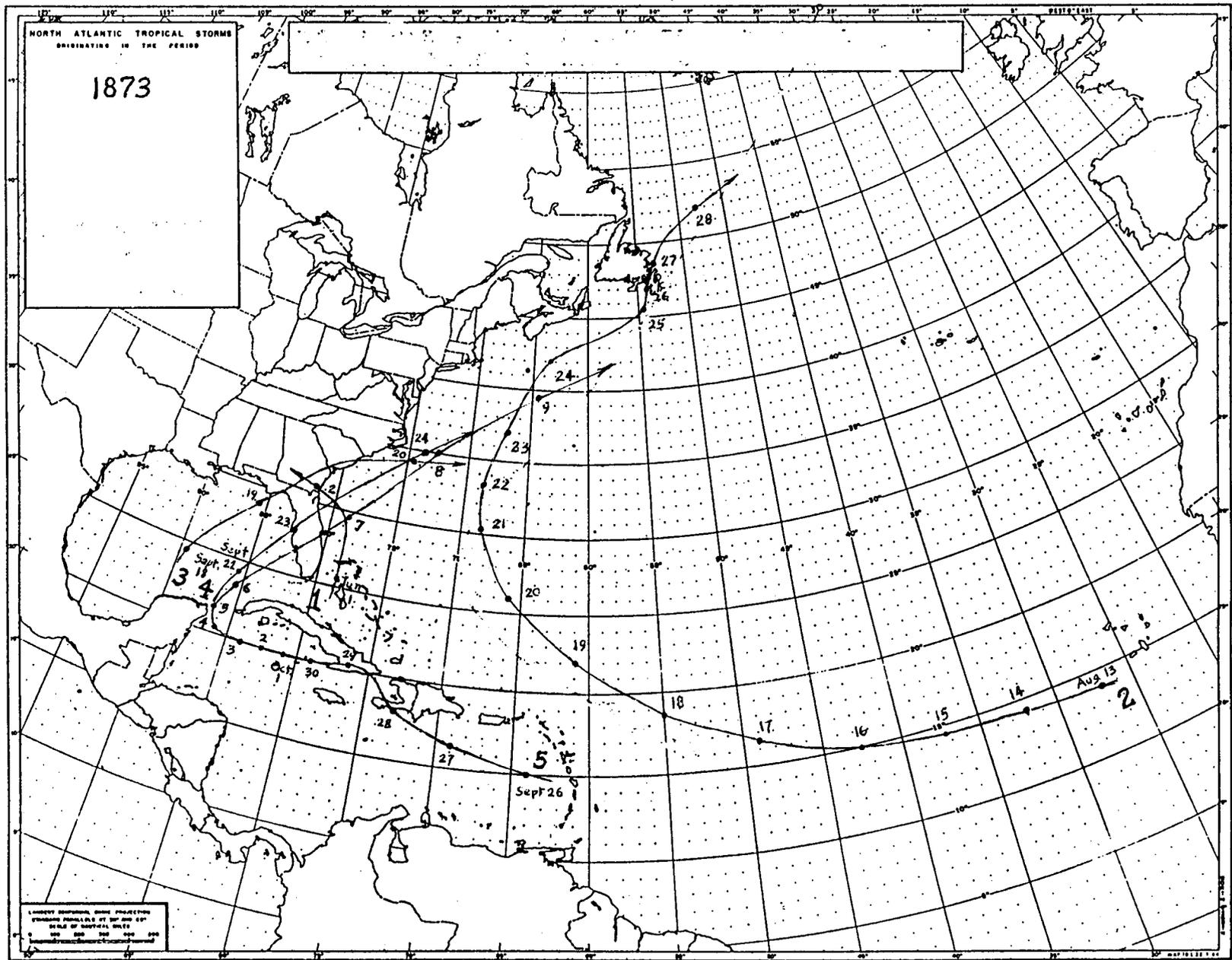


Fig. 3

8 and 9 o'clock the hurricane struck the town of Jacmel with all its force. Two hundred houses were blown down and every vessel in the port became a helpless wreck (The Times, London, Oct. 30, 1873, p.3, col.6). 5) From The St. Thomas Tidende. Hurricane at Jacmel. On Sunday, Sept. 28, there was a dreadful hurricane about 3:30 A.M. (obviously the starting time). Wind was blowing from N.N.E. to E.N.E. Different barometers read: 28.60 inches, 28.70 inches, and 28.84 inches and another 29.70 inches (?). By 10:30 to 11 great work of destruction had occurred. The prison was completely demolished and the church suffered a great deal. Of some houses, there is scarcely a vestige left. Solid masonry was blown away, ironwork twisted. Trees of immense size were rooted out to the ground. Three vessels in the harbor were wrecked: the "Teresa de Pavia", the "Isabella" and the "Eulalie", being all total wrecks. The British schooner "27th of October, 1867" sank 18 miles off Saletrou. A boat coming from Saletrou to Jacmel sank before Bainet. The gale was concentrated over western Haiti as Bainet, Marigot and Saletrou suffered much (The Times, London, Nov. 15, 1873, p.10, col.3). 6) Brig "Ida" arrived at Port Royal, Jamaica, and reported that on Sunday night, Sept. 28, experienced a severe hurricane off Cuba (The Times, London, Oct. 30, 1873, p.3, col.6). 7) Taken from a description of Cuban hurricanes by W.B. Stockman. Sept. 28, 7 P.M., Caimanera (Guantanamo), barometer read 28.66 inches; at 11 P.M., 28.95 inches with a hard N.W. wind and heavy sea from S.E.; after that hour, the wind backed to S. with gusts of hurricane force (Garriott, 1900). 8) Havana, Oct. 7. On the night of Sept. 28, Guantanamo was struck by the tail of a hurricane. All vessels in port were driven ashore and the roofs of many houses were blown off (The New York Times, Oct. 12, 1873, p.1, col.2). 9) Taken from the description of Cuban hurricanes by W.B. Stockman. Note dated on Oct. 3 and signed by S.D.A. (name unknown) stating that "in my opinion we are under the influence of a hurricane which should form near the southernmost of the West Indies and pass to the southward of Jamaica, recurving between lat. 20 and 21, near Yucatan, and it is probable that its effects will be felt on the northwest and part of the interior of the west provinces (Garriott, 1900). Author's note: S.D.A. should have been stationed at Havana. 10) Taken from a description of Cuban hurricanes by W.B. Stockman. Meteorological record at Havana. Sept. 30, 4 A.M., barometer 29.70 inches, wind E.S.E., no speed given; Oct. 1, 4 A.M., barometer 29.69 inches, wind E., no speed given; Oct. 2, 4 A.M., barometer 29.71 inches, wind S.S.E., no speed given; Oct. 3, 4 A.M., barometer 29.72, wind E. by S.E., no speed given; Oct. 4, 4 A.M., barometer 29.72 inches, wind E., 20.1 mph; Oct. 4, 4 A.M. (it should read P.M.), barometer 29.70 inches, wind E.S.E., 20.1 mph; Oct. 5, 4 A.M., barometer 29.68 inches, wind E.S.E., 22.4 mph; Oct. 5, 4 A.M. (it should read P.M.), barometer 29.65 inches, wind S.S.E., 26.8 mph; Oct.6, 4 A.M., barometer 29.55 inches, wind S.S.E., 29.1 mph; Oct.6, 4 A.M. (it should read P.M.), barometer 29.56 inches, wind S., 33.6 mph (Garriott, 1900). 11) Map showing the following estimated positions: Oct. 3, afternoon, just west of Isle of Pines; Oct. 4, morning, 22 degrees N., 85.5 degrees W.; Oct.5, morning, 25.0 degrees N., 86.0 degrees W.; Oct.6, morning, 26.5 degrees N., 83.0 degrees W. (Monthly Weather Review, Oct. 1873). 12) Havana, Oct. 6.

A severe rainstorm has prevailed for the last three days. Danger signals were hoisted at the U.S. Signal Service office this morning. The wind is very heavy. The water is rising and several streets are already inundated (The New York Times, Oct. 12, 1873, p.1, col.2). 13) Oct. 5-6 hurricane. It was not a very strong hurricane (in Cuba). It passed near the northern coast of Pinar del Rio, where it was felt rather strongly and to a lesser extent in Havana (Sarasola, 1928). Author's note: Actually taken from the catalog of Cuban hurricanes by M. Gutierrez-Lanza which is included in Sarasola (1928). 14) New Orleans. Bark "Leone", when off Cape San Antonio (western tip of Cuba), lost a man overboard in the storm of Oct. 5; also picked up the crew of bark "Leander" which came unmanageable on Oct. 6 (The New York Times, Oct. 15, 1873, p.8, col. 5 to 7). 15) The ship "Tasmania" (from St. Nazaire, France, in 48 days) arrived at Southwest Pass, Louisiana. She experienced a severe hurricane when between Cape San Antonio and Campeche. On Oct. 7 the "Tasmania" came across the ship "Isle of Skye", from Progreso for New York, with her rudder and masts gone and every sail blown away; the crew was taken by the "Tasmania" and brought to New Orleans (The New York Times, Oct. 12, 1873, p.1, col.3). Author's note: Campeche should be interpreted in this case as the Campeche Bank, which extends to the north as well as to the west of the Yucatan peninsula. 16) The mail steamer "George W. Clyde", after having labored against severe gales and heavy seas for 6 days after leaving Galveston, was struck by the cyclone of Oct. 6 about 50 miles west of Dry Tortugas. The vessel stood the beating of the storm until 6:30 P.M. when the pilot house was swept away and 4 officers were washed overboard. The storm ended at 8 P.M. and the "George W. Clyde" was towed to Key West (The New York Times, Oct. 18, 1873, p.4, col.4). 17) Steamship "Emily B. Souder" (coming to New York from New Orleans). Oct. 6, lat. 37 N., long. 86 30 W., had a heavy gale from E.N.E. lasting 23 hours (The New York Times, Oct. 16, 1873, p.8, col.7). Author's note: Lat. 37 N. should read lat. 27 N. 18) Taken from the description of Cuban hurricanes by W.B. Stockman. During the afternoon and night of Oct. 6 and on Oct. 7, a heavy N.N.W. sea was running at Havana, reaching its greatest violence at 2 A.M. Oct. 7. The neighbors had never experienced such waves. The interiors of homes along St. Lazaro Street were destroyed. Marianao Beach was flooded. Some trees in the city were blown down and the Morro Castle was damaged to some extent (Garriott, 1900). 19) Taken from Marcos J. Melero in Diario de la Marina, Oct. 9, 1873. Storm of Oct. 6, lowest barometer 29.56 inches (Garriott, 1900). Author's note: The reading was most likely taken at Havana. 20) Havana, Oct. 7. Some damage was caused by the high water in the streets near the shore. Several persons were drowned. Most all of the telegraph lines on the island are down and communication is much interrupted (The New York Times, Oct. 12, 1873, p.1, col.2). 21) Havana, Oct. 8. At Zaza, several vessels went ashore and were wrecked. The Spanish steamer "Maisi" was lost near Isle of Pines during the late gales; only 2 crew out of 26 were saved. Towns along the coast were flooded and the cane crops suffered severely at Quiebra Hacha. The German brig "Speculant" arrived here with loss of spurs and bowsprit, leaking badly. The English schooner "Mischief" was wrecked. The bark "Lamartine" put

here to land the crew and passengers of the Spanish bark "Sisilche" which foundered in the hurricane (The New York Times, Oct. 12, 1873, p.1, col.2). Author's note: Zaza (or Tunas de Zaza) is located on the southern coast of central Cuba; Quiebra Hacha is a town located in Pinar del Rio province (western Cuba). 22) Steamship "Columbia". Oct. 6, Havana harbor bearing S.W by S. 50 miles, ran on the southern edge of a hurricane. Wind S.E. to S., then S.W. with the greatest violence and moderating at W. Entered Havana harbor at 6 A.M. Oct. 7 without a pilot and blowing a W. gale (The New York Times, Oct. 15, 1873, p.8, col. 5 to 7). 23) The Signal Service officer at Key West communicated to The Washington Star that the storm was heralded 18 hours in advance by the fall of the barometer. At 6 A.M. Oct. 6, the gale (40 mph) set in, barometer 29.63 inches. At 4 P.M., barometer 29.37 inches, wind 60 mph. Barometer dropping to 29.28 inches at 5 P.M., then commencing to go up, the wind shifting to S.W. Wind increasing to a hurricane by 7:30 P.M. Maximum velocity: 80 mph. At 8 P.M., anemometer blew away. At 9 P.M. the storm started diminishing and wind at midnight was about 12 mph (The New York Times, Oct. 18, 1873, p.4, col.4). 24) Washington, Oct. 10. Telegrams received at the Washington office of the Signal Service indicate a most destructive cyclone on Oct. 6. At Key West, maximum wind was 80 mph. At Punta Rassa, maximum wind was 90 mph, barometer 28.46 inches and tide 14 feet (The New York Times, Oct. 12, 1873, p.1, col.6). 25) Weather synopsis. A cyclone of moderate dimensions has moved northeastward across the Florida peninsula and the pressure is now quite low throughout the Atlantic coast (The New York Times, Oct. 7, 1873, p.1, col.6). 26) Oct. 3-8, 1873. Severe cyclone in western Cuba, Florida and many disasters at sea. Village of Punta Rassa, Fl., entirely destroyed (Tannehill, 1938). 27) The storm struck Lake City suddenly at 6:10 P.M. The wind was not felt severely at Savannah (Monthly Weather Review, Oct. 1873). Author's note: Ten minutes past six appears to refer to the beginning of the storm at Lake City. 28) Ship "Cleopatra". Oct. 7, lat. 29 25 N., long. 79 20 W., had a hurricane lasting 13 hours. Wind N. to N.N.E. (The New York Times, Oct. 13, 1873, p.8, col.7). 29) Brig "Nattie B. Russel". Oct. 7, lat. 27 28 N., long. 79 W., hurricane from N.E. to N.W. (The New York Times, Oct. 22, 1873, p.8, col.6). 30) Bark "James E. Brett". Oct. 7, lat. 34 20 N., long. 74 10 W., had a severe hurricane, barometer 29.10 inches (The New York Times, Oct. 22, 1873, p.8, col.6). 31) The British brig "A.M.H." arrived at Wilmington, N.C. from Belfast, Ireland, and reported a heavy gale S. of Cape Fear on Oct. 7 (The New York Times, Oct. 21, 1873, p.5, col.2). 32) Schr. "C. & C. Brooks". Oct. 7, 5 miles E. of Cape Henry, had a N.N.W. heavy gale with a heavy head sea (The New York Times, Oct. 26, 1873, p.8, col.6). 33) Bark "New York" (from New Orleans in 26 days). Oct. 7, had a heavy gale from E.N.E. to N., lasting 48 hours (The New York Times, Oct. 31, 1873, p.8, col.6). 34) Brig "Julia and Son". Oct. 8, lat. 34 N., long. 73 W., had a severe hurricane from S.E. and then N.E., lasting 14 hours (The New York Times, Oct. 19, 1873, p.8, col.6). 35) Bark "Syringa". Oct. 24, lat. 40 40 N., long. 69 15 W., spoke bark "Ellen" from Cape Verde to St. John, N.B. who reported having had a severe hurricane from S.S.E. to N.N.E. at lat. 23 N., long. 73 10 W. on Oct. 8 (The

New York Times, Oct. 27, 1873, p.8, col.6). Author's note: Lat. 23 N. is obviously in error; lat. 33 N. fits the storm track but is not along the route a vessel from Cape Verde to St. John, N.B. would be expected to follow. 36) Brig "Emma Dean" (from Cienfuegos, Oct. 4). Oct. 6, saw several disabled vessels; Oct. 8, lat. 28 40 N., long. 88 W., experienced a dreadful hurricane and tremendous seas from all quarters (The New York Times, Nov. 5, 1873, p.12, col.6). Author's note: This report shows several inconsistencies. If the position the brig met the hurricane were assumed to have been in lat. 28 40 N., long. 78 W. (not 88 W.), Oct. 8 would have been a wrong day since the encounter should have occurred on Oct. 7. This latter date is only 3 days after the alleged departure from Cienfuegos on Oct.4 and, unless the departing date is also in error, the brig could not have possibly reached that position on Oct. 7. Therefore, the information given by the "Emma Dean" turned out to be in itself conflicting. 37) Bark "Jane Young". Oct. 9, lat. 40 20 N., long. 66 10 W., took a heavy gale from N.E., lasting 48 hours and shipping a heavy sea (The New York Times, Oct. 17, 1873, p.8, col. 6 and 7).

Based on information contained in the items above, the author of this study proposed a number of modifications along the track displayed in Neumann et al. (1993). These modifications were for the period Sept. 26- Oct. 6; the track for the period Oct. 7-9 was kept unchanged. Author's estimated 7 A.M. positions for the period Sept. 26- Oct. 6 were as follows: Sept. 26, 15.0 degrees N., 64.0 degrees W.; Sept. 27, 16.3 degrees N., 69 degrees W.; Oct. 28, 18.0 degrees N., 73.0 degrees W.; Sept. 29, 20.3 degrees N., 76.5 degrees W.; Sept. 30, 20.0 degrees N., 79.0 degrees W.; Oct. 1, 20.0 degrees N., 81.0 degrees W.; Oct. 2, 20.0 degrees N., 82.5 degrees W.; Oct. 3, 20.0 degrees N., 84.0 degrees W.; Oct. 4, 20.3 degrees N., 86.0 degrees W.; Oct. 5, 21.7 degrees N., 86.5 degrees W.; Oct. 6, 23.5 degrees N., 85.5 degrees W. According to item 1), the track was initiated just west of the Lesser Antilles, where the storm was so weak that apparently was not reported from any of the islands. Positions for Sept. 28-29 were supported by information in items 3) through 8). The confidence the author has for the track over the period from Sept. 30 to around Oct. 3 is rather poor and some other options were explored before arriving at the estimated positions for those days. One possible option was to dissipate the storm over or near eastern Cuba and a second one was to bring the storm northward over the Bahamas and the western Atlantic. The latter option was not found plausible because the meager information found did not support it. In fact, the only clues slightly in favor which were provided by statements that generally brisk N.E. winds, and possibly a more serious disturbance, had developed on the Florida coast by late Oct. 1 (The New York Times, Oct. 2, 1873, p. , col.) and that the bark "Isidore" had reported a gale at lat. 37 N., long. 67 W. on Oct. 5 (The New York Times, Oct. 17, 1873. p.8, col. 6 and 7) were overpowered by the conditions of mild weather and the sea as smooth as a sheet of glass which prevailed when the steamship "Missouri" struck Gingerbread Ground, one of the reefs off Bimini Islands at 4:30 P.M. Oct. 1 (The New York Times, Oct.17, 1873, p.1, col.5) and, above all, by the absence of marine reports showing bad weather in

the Bahamas and the southwestern Atlantic. Under the above circumstances, any suggestion of a northward turn for the storm was abandoned and the idea of dissipating the storm over or near eastern Cuba was also abandoned because information in item 9) and consecutive items was found to be related to weather events favoring a continuity of a sort with the hurricane described over eastern Cuba in items 7) and 8). Therefore, a slow westward motion, which brought the storm back over the open waters of the Caribbean Sea was adopted. Had not been adopted this continuation of the track, a new entirely independent storm would have had to be introduced over the northwestern Caribbean Sea by early October in compliance with the information contained in items 10) through 15).

Considerable weakening should have occurred as the storm had remained over the Sierra Maestra of eastern Cuba for nearly 24 hours. It probably took sometime for the storm to reorganize itself over the Caribbean Sea and it is even possible that a new center might have formed during the reorganization process. According to the author's estimated positions, a slow westward motion, roughly along the 20 degrees N. parallel, lasted until Oct. 4 . A turn to the N. and N.E. at an accelerated pace took place on Oct. 5-6 and was supported by the information contained in items 13) through 27). The author's track for the storm is shown in Fig. 3. Such a track kept unchanged the portion of the track in Neumann et al. (1993) corresponding to the period Oct. 7-9 which, in general, was found to agree with information contained in items 28) through 37). As a major difference with the track displayed in Neumann et al. (1993), the track proposed by the author of this study did not bring the storm over northern Yucatan and the western Gulf of Mexico.

Items 7) and 24) indicate that the storm was a rather intense hurricane near Jacmel, Haiti, and when making landfall near Punta Rassa on the west coast of Florida. Lowest barometer reading reported in connection with this storm was 28.46 inches at Punta Rassa on Oct. 6.