Tannehill (1938) mentioned 4 storms for 1865 and Ludlum (1963) mentioned a fifth one which was not listed by Tannehill (1938). The author of this study has contributed the documentation of 4 additional storms which were unknown before but, at the same time, he has combined into a single case two individual storm cases mentioned by Tannehill (1938) and Ludlum (1963), respectively. Therefore, there has been a net increase of the total number of the listed storms from 5 to 8 as a result of the author's work. This represents, of course, a 60 percent increase. However, strictly speaking, the actual number of known storms was increased from 4 to 8, or by 100 percent, as a result of the author's effort.

Storm 1, 1865 (May 29-30).

This is a newly documented case by the author of this study. The storm existence was based on the following information:

The steamship "Golden Rule" was wrecked at Roncador Reef, located near lat. 13 33 N., long. 80 04 W. on May 30 at 3:30 A.M. The vessel was sailing from New York to Greystown on the eastern coast of Nicaragua and news about the wreck were brought to New York by the "Ocean Queen", which came from Aspinwall (Panama). Dark weather and heavy rain squalls started to affect the "Golden Rule" in the evening of May 29, continuing during the night. After the wreck, the vessel had a high breeze from the E., very heavy rain squalls and very heavy swell which broke completely over her during May 30. A small island was sighted to the northwest of the wreck site in the afternoon of May 30, and over 500 passengers and the crew were transported later to that small piece of land, using several boats. They stayed there for about 10 days and were rescued by two U.S. vessels sent from Aspinwall to assist them. The accident had been known in Panama from several crew which sailed in a boat that left the small island on June 2 and made a trip to Aspinwall in 97 hours (The New York Times, Jun. 26, 1865, p.2, col. 4 and 5).

The above description allowed one to place Storm 1, 1865 in the southwestern Caribbean Sea on May 29-30. No track has been determined for this weather system whose existence has been denoted near 13.5 degrees North, 80 degrees West in Fig. 1.

Storm 2, 1865 (Jun. 30).

This is the second storm which the author newly documented for 1865. Documentation of this storm was based on the following newspaper information: 1) Message from New Orleans, July 10. The New Orleans Times correspondent at Brazos, Texas, writing on July 1, reports a terrible storm there on June 30 (The New York Times, Jul. 13, 1865, p.5, col.3). 2) Message from New Orleans, July 9. A Shreveport letter to the New Orleans Times, dated on July 4, reports a heavy storm in Louisiana and Texas (The New York Times, Jul. 11, 1865, p.1, col.5).

Storm 2, 1865 has been placed in the vicinity of Brownsville on June 30 (Fig. 1) and no track has been determined for this storm.


The track for Storm 3, 1865, which is shown in Fig. 1, was primarily based on estimated positions for Aug. 20, 23 and 24 which the author inferred from information contained in items 1), 7) and 9).

Storm 4, 1865 (Aug. 22-23).

Tannehill (1938) is the only author who has mentioned this storm as having occurred in Cuba.

According to Rodriguez-Ferrer (1876), a hurricane passed to the S. of Cuba prior to the one of October 22 and continued towards the Gulf of Mexico, causing damages in Louisiana and Texas. The storm referred to by Rodriguez-Ferrer (1876) is obviously the same one mentioned by Ludlum (1963) as having affected the Sabine River-
Lake Calcasieu area on Sept. 13 and definitely is not the storm referred to by Tannehill (1938) as having occurred in Cuba on Aug. 22-23, 1865.

The author of this study believes this storm might have never occurred in reality. However, he has not been able to prove that the storm did not exist. Therefore, he decided to keep the storm on record and to arbitrarily place it over central Cuba, near 22.5 degrees North, 80 degrees West in Fig. 1.

Storm 5, 1865 (Sept. 6-13).

This storm combines in a single one two separate storms of the past: the Sept. 6 storm mentioned by Tannehill (1938) as having occurred in Guadeloupe and the Sept. 13 storm that Ludlum (1963) mentioned to have occurred near the Texas-Loisiana border and that he identifies as the Sabine River- Lake Calcasieu storm of 1865. The author's track for Storm 5, 1865 is shown in Fig. 1.

The following information is available for the storm while crossing the Lesser Antilles: 1) A severe hurricane swept Guadeloupe and 300 persons were drowned. Basseterre suffered terrible damage and Marie Galante was submerged. Many of Marie Galante inhabitants escaped to Guadeloupe in boats but a number of them were drowned in the attempt. Several vessels were in distress and the influence of the heavy seas was felt in St. Kitts and St. Thomas. The brig "Melba", from Trinidad to Marseille, put into St. Thomas on Sept. 9 with loss of foremast, main-gallantopmast, etc. A Frech bark had similar damages in the hurricane between St. Kitts and Guadeloupe and a schooner from Puerto Rico to Barbados with cattle was obliged to throw overboard her life cargo and run to St. Thomas (The Times, London, Sept. 28, 1865, p.12, col.1). 2) Point-a-Pitre appears to have suffered but slightly, while Basseterre, Grande Terre and the other parts of Guadeloupe suffered the combined fury of the elements spent upon them. From Marie Galante and Les Saintes, comes the same tale of horror and every building except two small ones, were destroyed at the latter place. At Grand Bourg (Marie Galante) alone, 59 persons have been wounded and 36 killed (The Times, London, Oct. 14, 1865, p.11, col.1).

The following meteorological description is extracted from a letter written at Grand Bourg (Marie Galante): At around 6 P.M. Sept. 6, the wind shifted to N.E. and blew a hurricane with incredible rapidity. One moment we fancied that the wind has exhausted its violence, and a few minute respite succeeded its first fury, only to recommence the work of destruction from the south finishing what that from the north had begun. At length, towards 9 o'clock the wind abated (The Times, London, Oct. 14, 1865, p.11, col.1). The above description allowed one to infer that the center of the storm went right over Marie Galante, and that the size of the storm was fairly small as it barely lasted for three hours.

According to The Times, London, Sept. 28, 1865, p.12, col.1, the storm appears to have taken a W.N.W. direction after passing the Lesser Antilles, the Royal Mail steamer "Elder" having experienced its effects severely when off the coast of Cuba. Independently from this statement, Rodriguez-Ferrer (1876)
mentioned that a hurricane passed to the S. of Cuba in 1865, prior to the one of Oct. 22, and that it continued towards the Gulf of Mexico, having affected Texas and Louisiana. Unfortunately, Rodriguez-Ferrer (1876) did not mention a specific date for that hurricane, but it should have been the same one described by Ludlum (1963) as having occurred at the Texas–Louisiana border on Sept. 13 and also the same one encountered off Cuba by the "Elder" and which passed over Guadeloupe and adjacent islands in the night of Sept. 6. The above reasoning allowed the author to establish the approximate track for Storm 5, 1865 (Fig. 1) over the Caribbean Sea and the Yucatan Channel into the Gulf of Mexico. The track shows the storm to have moved between Jamaica and Cuba after having just passed S. of Haiti. This decision was made after having taken into account that the storm is not known to have affected directly Jamaica and Hispaniola, probably because of its very small diameter. According to the author's track (Fig. 1), the storm entered the Gulf of Mexico on Sept. 11, curving towards the Texas–Louisiana border afterwards.

The following description has been extracted from Ludlum (1963): A dispatch from Niblet's Bluff to the newspaper Vermilion Advertiser stated that the place was destroyed by a terrific storm. After a stormy day (Sept. 13), the wind blasted increased in violence about sunset and continued to 11 o'clock, and all the buildings were blown down or badly injured. Another report from the Sabine River country mentioned strong N.E. gales with heavy rain and that the wind veered later to N., N.W. and W. Severe damage did occur in the town of Orange where only three houses survived intact, and many houses were blown down at Johnsons Bayou. The area around Lake Calcasieu was flooded by the storm tide. Grand Chenier was put under water and many houses were washed away. Eastward along the Gulf coast to the Mississippi River, tides ran very high and inundated fields but there was no report of high winds except in extreme western Louisiana.

Storm 5, 1865 appears to have been a hurricane whose destructive winds seem to have covered a fairly small area throughout its known life-span.

Storm 6, 1965 (Sept. 28).

The author has recently documented this storm whose existence was not known before. Documentation of this storm was based on the following information: Bark "Teresa". Sept. 28, lat. 25 30 N., long. 69 40 W., experienced a hurricane from S.S.E. and backing around to E. and ending at N. It lasted for 13 hours; lay to under storm trysail; received no damage (The New York Times, Oct. 15, 1865, p.8, col.6).

No track for his storm was determined and Storm 6, 1865 was placed near 25.5 degrees North, 69.5 degrees West on Sept. 28 (Fig. 1).

It appears that gales that were directly or indirectly related to Storm 6, 1865 extended northwestward over a considerable distance from the storm center. The following information supports the above statement: 1) Steamship "Granada" (from Charleston, Sept. 27). Encountered N.E. gales with heavy sea from Charleston to

Storm 7, 1965 (Sept. ?).

Tannehill (1938) and Dunn and Miller (1960) have listed this case as having occurred in West Louisiana and in Louisiana, respectively. It may well be the Sabine River- Lake Calcasieu hurricane listed by Ludlum (1963), which occurred on Sept. 13 (Storm 5, 1865). As a matter of fact, this seems to be the case as far as Tannehill (1938) is concerned. He included the following citation in his book: "In September 1865, a hurricane struck the Louisiana coast near the town of Calcasieu. The place was inundated and several persons perished".

However, there is an alternative to the above, especially as far as the statement made by Dunn and Miller (1960) is concerned: Message from Cairo, Illinois. New Orleans papers on Sept. 8 indicated that the schooner "Shooting Star" was wrecked on the night of Sept. 6 in a gale that is feared swept the Gulf of Mexico since no vessel had arrived in New Orleans during the three days prior to Sept. 8. The wreck occurred 15 miles W. of Timbletar (it should read Timbalier) Lighthouse and the schooner was sailing from New Orleans to Galveston (The New York Times, Sept. 15, 1865, p.5, col.3). If this were the case Dunn and Miller (1960) referred to, the day would be Sept. 6. But, as there is no proof that this was indeed the case, the no-day status was retained and Storm 7, 1865 was denoted in Fig. 1 as having occurred over the Louisiana coast in September.

Storm 8, 1865 (Oct. 18-25).

This storm has been mentioned by Tannehill (1938) who wrongly cited the case as a Cuba to Louisiana coast hurricane having occurred on Oct. 22-23. Ludlum (1963) and Garriott (1900) have also mentioned this storm. Ludlum (1963) has quoted S.G. as a reference mentioning the storm at Key West on Oct. 22-23; Garriott (1900) has referred to Marcos J. Melero as the storm source in Cuba. The author of his study has extended the documentation of this storm over the period Oct. 18-25 and has prepared the track shown in Fig. 1.

Storm 8, 1865 has been identified in its early stages just north of Panama on Oct. 18. This documentation was based on the following information: 1) An article about northerly winds in Panama showing a table for several cases in which there were northerly gales but also one referring to a S.W. gale in Oct. 1865, which
lasted for 6 hours and caused damages for $300,000 (Frankenfield, 1917). 2) Quoting from the Panama City Star and Herald, Oct. 21, 1865, the storm was described as a temporal or tempest and the most severe storm in many years. "It commenced in the night of the 17th, continued during the 18th and 19th and partially subsided on the 20th. It blew a perfect gale and the rain, with short intermissions, fell in torrents". The storm was also felt on the Atlantic side but no material damage was done at Colon. The sea was described as very rough in Panama Bay. Evidently, the wind was southerly and the storm could not be rightfully classified as a norther, but might have been associated with hurricane formation (Chapel, 1927).

Based on the information above, the track for the storm (Fig. 1) was started over the extreme southwestern Caribbean Sea on Oct. 18. The storm was then estimated to have moved towards the north-northwest at some accelerated pace until reaching a position near 20 degrees North, 83 degrees West in the morning of Oct. 22. According to The New York Times, Nov. 10, 1865, p.8, col.5, the brig "Lady of the Lake" (coming to New York from Montego Bay in 19 days), at lat. 20 15 N., long. 83 20 W., had a hurricane from N.E. on Oct. 22 and threw overboard deck-load. The storm position for Oct. 22 was based on the information provided by the "Lady of the Lake" and suggested that the storm started recurving about two degrees to the north of the 16-18 degrees North latitude indicated by Vines (1895).

The following information pertains to the hurricane in Cuba: 1) A very strong hurricane crossed the island of Cuba from south to north on Oct. 22-23, 1865, the vortex passing to the west and very near Havana. The calm corresponding to the vortex started at 10 P.M. and lasted for half an hour. The wind uproofed the Belen College Observatory at Havana just before reaching its peak intensity before the calm occurred (Sarasola, 1928). Author's note: Actually published in "Ciclones que han pasado sobre la Isla de Cuba o tan cerca de ella que han hecho sentir en ella sus efectos con alguna fuerza, desde 1865 a 1926" by M. Gutierrez-Lanza, which is contained in Sarasola (1928). 2) Ricardo Zenoz mentioned in a short article about the hurricanes of Oct. 7 and Oct. 19, 1870 in Cuba that the lowest pressure in the 1865 hurricane was 28.84 inches at 10 P.M. Oct. 22. The reading was taken at the Observatorio Fisico-meteorologico de La Habana and Zenoz was the first assistant at that observatory (Gaceta de la Habana, No. 147, Oct. 21, 1870, p.3, col.1). 3) Marcos J. Melero in Diario de la Marina, Oct. 9, 1873, mentioned a barometer reading of 29 inches and the lowest barometer of 28.78 inches in the hurricane of Oct. 22, 1865 (Garriott, 1900). 4) Narrative from New Orleans, Nov. 8. There had been a storm in Havana and Matanzas. In the harbor of Havana much damage was done and houses were blown down and otherwise injured. A number of houses were blown down at Matanzas. Several vessels were damaged (The New York Times, Nov. 10, 1865, p.1, col.5). 5) Havana news, Nov. 4. Nothing has been heard from one or two vessels known to have been near the port at the time of the recent hurricane and the government has ordered two or three vessels on a cruise to search for and aid any who may have suffered shipwreck (The New York Times, Nov. 9, 1865, p.1, col.5). 6) Bark
"Eliza" (from Trinidad, Cuba, Oct. 25). A severe easterly gale visited Trinidad Oct. 22 during which an English brig was driven ashore (The New York Times, Nov. 14, 1865, p.8, col.5).

The following information was useful in determining the evolution of Storm 8, 1865 in the vicinity of Florida, including the Florida Straits: 1) U.S. steamship "John Rice", originally coming from New Orleans. Oct. 22, experienced a tremendous hurricane from N.E. At 5 P.M. the wind blew so heavily that the ship could not be kept head to the sea and finding that the center of the hurricane would have passed directly over us if we did not change our position, we at the above mentioned hour bore away to the S.W. and ran across the path of the storm until 8 A.M. Oct. 23, when the wind hauled to the westward. Then we resumed the course with the fair wind and arrived at Ft. Jefferson, Dry Tortugas, Oct. 24 at 12 M (The New York Times, Nov. 1, 1865, p.1, col.6). 2) Steamship "Patapoco" (from Mobile, Oct. 20). Made Loggerhead Key Light at 9 A.M. Oct. 22. Gale increasing with rain. 4 P.M., hove to head to S.E., heavy sea, laboring heavily, wind and sea increasing. At 10 P.M. split spanker, lost starboard quarter boat and sustained other damages. At midnight, wind died out to calm, the glass falling. 1 A.M. Oct. 23, wind W. and blowing a terrific gale (The New York Times, Nov. 1, 1865, p.8, col.6). 3) Brig "Ocean Belle" (from Galveston in 42 days). Oct. 22, encountered a very severe gale and put into Key West to repair damages (The New York Times, Nov. 15, 1865, p.8, col.4). 4) Extracted from a narrative by Commander Howes of U.S. ship "John Rice": The hurricane blew down a large brick building at Ft. Jefferson, killing the Post Quartermaster and severely injuring several others. Buildings inside the fort were uprooted, chimneys blown down and trees torn up by the roots. The gale has been intensely severe at Key West. Every vessel in the harbor had been either sunk or driven ashore. One man-of-war lay high and dry on the reefs. Houses were uprooted and trees torn up by the roots (The New York Times, Nov. 1, 1865, p.1, col.6). 5) Message from New Orleans, Nov. 2. The "Fung Shuey" picked up the captain and four of the crew of the schooner "Mannie" lost in the heavy gale of Oct. 23 off Jupiter. The "Fung Shuey" also fell in with the steamer "Chase", 89 miles east of Beaufort, N.C. on Oct. 27. The captain said the vessel was tight and sound but that her hull was full of water, her fires put out and the engines stopped during the heavy gale she met on Oct. 23, while sailing from New York to Savannah. The "John Wesley" went ashore 15 miles from Key West and the "M. E. Smith" went ashore on French Reef, 40 miles west of Key West. The "Mercy" went ashore 200 miles north of Key West (The New York Times, Nov. 4, 1865, p.3, col.3). 6) Steamship "Northern Light". Oct. 23, 2 P.M., lat. 30 28 8., long. 79 30 W. Encountered a heavy gale from E. Wind veered to N.E. at 4 P.M. for 12 hours, then hauled about N.N.E. and continued blowing very heavily for another 12 hours (The New York Times, Nov. 1, 1865, p.8, col.5). 7) Steamship "Flag" (from New Orleans to New York). On the outward passage, Oct. 23 and 24, off Cape Florida, experienced a terrible hurricane, the wind veering around the compass in 14 hours (The New York Times, Nov. 19, 1865, p.8, col.6). 8) Brig "John Stevens". Oct 23, lat. 28 8., long. 80 W., was struck by a hurricane which threw the vessel on her beam ends.
for nearly 36 hours (The New York Times, Nov. 5, 1865, p.8, col.6).

The following marine information, which includes news about the disasters of the "Republic" and the "North Star", was helpful in studying the hurricane over the open waters of the Atlantic: 1) Schr. "Volant" (from Nassau, Oct. 20). Monday Oct. 23, lat. 29 15 N., long 78 30 W., had a gale from N.E.; 24th, the gale increased; at 4 P.M. the vessel was hove on her beam ends and at 9:30 P.M. was struck by a heavy sea (The New York Times, Nov. 20, 1865, p.8, col.5 and 6). Author's note: Reference to the 24th seems to be wrong; all events should have occurred on Oct. 23 for the given location. 2) Steamship "Petit". Oct. 23, had a strong breeze from N.E., leaving Savannah on Oct. 22. At 8 P.M. Oct 23, it increased to a very severe gale lasting for 56 hours (The New York Times, Nov. 1, 1865, p.8, col.5). 3) Bark "Thomas" (from Cardenas in 15 days). In a heavy gale from E. and N.E., stove bulwarks, split sails and was obliged to throw overboard a partial deck-load of molasses (The New York Times, Nov. 2, 1865, p.8, col.6). 4) Brig "E. Miller" (from Nassau in 13 days). Oct. 23, encountered a hurricane from E.; was obliged to lay to 48 hours under bare poles (The New York Times, Nov. 3, 1865, p.8, col.6). 5) Brig "Alice Franklin". Oct. 23, lat. 31 25 N., long. 78 38 W., in a terrific gale, was hove on her beam ends for 12 hours (The New York Times, Nov. 5, 1865, p.8, col.6). 6) Narrative about the disaster of the "Republic" by Capt. Young: The "Republic" left New York for New Orleans on Oct. 18. The vessel encountered a gale off Savannah on Oct. 23. The gale continued to blow very heavily from E.N.E. and it increased to a perfect hurricane before midnight, shifting to the N.E. with a very heavy sea running. At 6 A.M. Oct. 24, it was impossible to turn the engine over by hand and, after trying for 2 hours, the ship lost the use of the steam pump. At this time (around 8 A.M. Oct. 24), the vessel was leaking badly and the gale was at its height. At 11 A.M. the gale still continued with a heavy cross sea and the ship labored hard with the water still gaining. On Oct. 25 at 9 A.M. the pumps gave out, the ship running fearfully. At 1:30 P.M., the boats and a raft were launched. At 4 P.M., the ship went down. A high sea was running when the boats parted (The New York Times, Nov. 3, 1865, p.1, col.3). 7) Message from Norfolk, Oct. 28. The Norfolk Post gives particulars of the disaster of the "North Star" in a gale off Hatteras on the night of Oct. 24. Such was the force of the leak on the morning of the 25th that the water reached within 4 inches of the fires. After throwing much of her cargo overboard, the vessel managed to get to Norfolk and is now at the wharf here, leaking to the extent of two thousand gallons a minute. The passengers have published some resolutions denouncing the owners of the "North Star" for sending her to sea in unseaworthy conditions (The New York Times, Oct. 29, 1865, p.1, col.2). 8) Bark "Zephyrine". Experienced a hurricane at lat. 33 31 N., long. 74 22 W. from Oct. 23 to 25, commencing from N.E., hauling to S.E. and then backing to E.N.E. At midnight Oct. 24, while hove to, had close-reefed maintopsail blown from the ropes and sustained other damages (The New York Times, Nov. 2, 1865, p.8, col.6). 9) Schr. "Hound", Oct. 24, lat. 28 N., long. 73 W., experienced a very heavy gale from S.E. to S.W. which lasted for 30 hours (The New York Times, Nov. 5, 1865, p.8, col.6). 10) Brig
"Marshall". Oct. 24, 25 and part of 26, lat. 31 26 N., long. 66 15 W. Had a gale from S.S.W. and veering to the northward. When the gale was most furious and the barometer at 29 inches, the close-reefed mainsail blew away and went to ribbons (The New York Times, Nov. 10, 1865, p.8, col.5). Author's note: The position given by the "Marshall" appears to be too far south since Tucker (1982) has not mentioned any storm in Bermuda in 1865 and the "Marshall" alleged position is less than 100 miles towards the W.S.W. of the above mentioned island.

The Storm 8, 1865 track off the U.S. coast in Fig. 1 is somewhat to the east and south of the one the author prepared during a previous preliminary study (Fernandez-Partagas, 1992). The track in Fig. 1 is believed to be closer to reality because it took into account additional marine information which was not considered in Fernandez-Partagas (1992).

Although the track for Storm 8, 1865 was stopped on Oct. 25 due to the lack of suitable information to document its evolution after that day, it is likely that the storm life-span had extended to at least Oct. 26 or 27.