Tannehill (1938) has listed two storms for 1859, and Ludlum (1963) has mentioned a third one which was not mentioned by Tannehill (1938). The author of this study has documented five additional storms, which represents an increase by 167 percent in the number of known storms for 1859.

Storm 1, 1859 (June or early July).

This storm was newly documented by the author of this study using the following information: The Tuxpan and Tecolutla have been visited by a violent hurricane and several vessels have been lost. The French bark "Anahuac" has also been lost on Tampico bar. The steamer "Marques de Habana", from Havana, experienced heavy weather on her voyage to Veracruz (The New York Times, Jul. 23, 1859, p.1, col.4). The same message indicated, in addition, that the 4th of July was duly observed in Veracruz. This latter statement was the basis to infer that the storm should have occurred in June or early in July. Storm 1, 1859 was placed near Tuxpan, Mexico (Fig. 2) and, due to the lack of suitable information, no attempt was made to determining a track for it.

Storm 2, 1859 (Aug. 17-19).

This is the second new storm case that the author of this study has documented for 1859. Marine information published in newspapers was again the source allowing him to document Storm 2, The following information served to establishing its existence and to determining the storm track shown in Fig. 2: 1) Ship "Tornado" experienced a hurricane from E.N.E. to N.E. by N., then S.E. at lat. 42 N., long. 62 30 W. on August 17. The gale was strongest from 8 P.M. to midnight when it blew with terrific fury. Barometer: 29.20 inches (The New York Times, Aug. 26, 1859, p.8, col.6). 2) Bark "Caure" (from Italy, Jul. 5 and Gibraltar, Jul. 14). Had a heavy easterly gale on Aug. 18 and 19. Barometer down to 29 inches; supposed a hurricane was to the south of the vessel (The New York Times, Aug. 25, 1859, p.8, col.6).

The track in Fig. 2 was based, primarily, on the information given by the "Tornado". The fact that the wind direction reported by the vessel changed from E.N.E. to N.E. by N. and then to S.E. was not surprising since the ship was sailing eastward, from St. John, N. B. to Liverpool, before it changed its course and put into New York in distress (The New York Times, Aug. 26, 1859, p.8, col.6). Unfortunately, the information furnished by the "Caure" had only a limited use for track purposes because no position was given by the bark. However, the relatively slow motion of the storm can still be supported by the "Caure" because she is known to have arrived in New York on Aug. 24 and should not have been very far to the east of the position the "Tornado" encountered the hurricane when she reported a heavy easterly gale on Aug. 18 and 19.

As both the "Caure" and the "Tornado" reported barometer readings in the vicinity of 29 inches, there is reason to believe

that Storm 2, 1859 attained hurricane intensity.

A "violent hurricane from the W.N.W." allegedly encountered by the schooner "J. L. Bowman" at lat. 32 27 N., long. 71 W. on Aug. 18 (The New York Times, Aug. 28, 1859, p.8, col.6) was discarded because neither a previous nor a later history was found for this system and, in addition and more importantly, it seemed very likely that the bad weather encountered by the "J. L. Bowman" was associated with a trough trailing southwestward from Storm 2, 1859.

Storm 3, 1859 (Sept. 2).

Tannehill (1938) has listed this storm which has been mentioned by Alexander (1902) as well. The following statement about Storm 3, 1859 has been extracted from Alexander (1902): The center of a rather mild hurricane passed over St. Kitts on Sept. 2. It also passed over St. Croix. The reference given by Alexander (1902) is W. J. B. which stands for Dr. W. J. Branch of St. Kitts. The author of this study has not found any additional information on this storm. However, he has prepared a one-day track for it (Fig. 2), which shows the storm just east of St. Kitts at 7 A.M. Sept. 2 and then moves it towards the west to the St. Croix area later on that day.

Storm 4, 1859 (Sept. 12).

This is the third storm documented by the author of this study for 1859. Once more, information published in newspapers turned out to be crucial in determining the existence of this storm: Bark "Liberty". Sept. 12, at lat. 39 30 N., long. 50 30 W., experienced a most severe hurricane from the E. which lasted for 4 hours; then gales from N.W. (The New York Times, Sept. 26, 1859, p.8, col.6). This information allowed one to place Storm 4, 1859 near 39.5 degrees North, 50.5 degrees West on Sept. 12, 1859 (Fig. 2), but no track for this storm was attempted. According to the description given by the "Liberty", the storm attained hurricane intensity.

Storm 5, 1859 (Sept. 15-16).

This storm has been mentioned by Ludlum (1963); he is the only author who has referred to this storm which is not listed in Tannehill (1938).

Ludlum (1963) mentioned the storm as having occurred at Mobile, Al., on Sept. 15. He refers to The Mercury, Mobile, Sept. 16 as a source and gives no further details. The author of this study has found this additional information about Storm 5, 1859: 1) From The Mobile Register, Sept. 17. From all accounts received, the storm of Thursday night (Sept. 15) was more disastrous elsewhere than in the city. In several stores on Commerce and Front streets, above St. Francis, the water covered the floors some instances six or seven inches to cause the injury of sugar, flour, bagging, etc. At Point Clear, and also higher up on the eastern shore, nearly all the bath-houses and wharves were swept away. Two oyster boats capsized near Shore's wharf and 2 persons were drowned. The steamer "Flirt", which left for up the river at 5 P.M. Sept. 15, returned before daylight yesterday morning with the loss of her chimneys

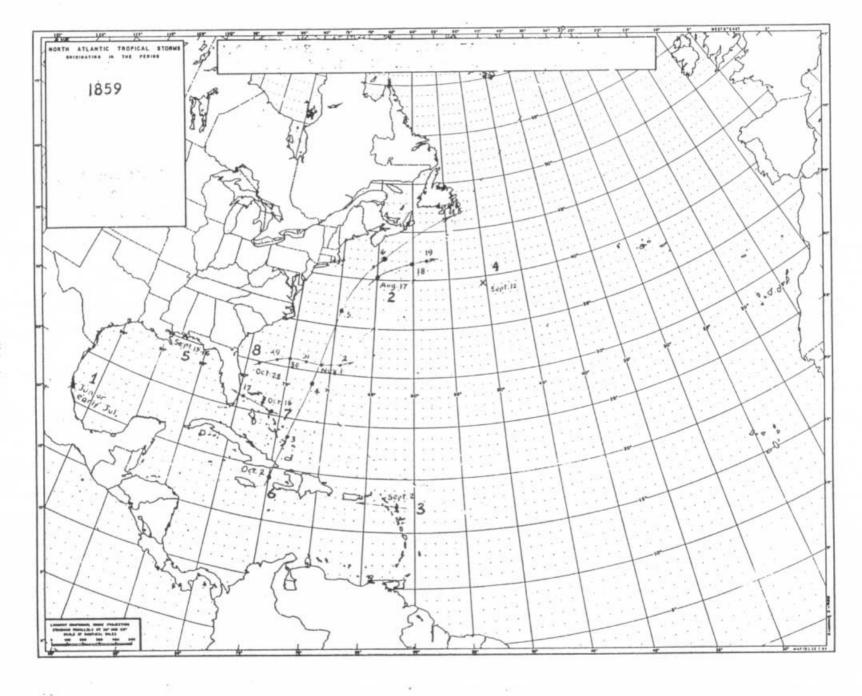


Fig. 2

(The New York Times, Sept. 24, 1859, p.1, col.2). 2) Message from New Orleans, Sept. 19. The steamer "Atlantic" which has arrived here, reports the loss of the U.S. steamer "Fulton", which went ashore on Santa Rosa Island, near Pensacola, during the gale of Sept. 16 (The New York Times, Sept.20, 1859, p.1, col.2).

Based on the above information extracted from Ludlum (1963) and from The New York Times, Storm 5, 1859 was placed near Mobile, Al., on Sept. 15-16 (Fig. 2). No track was attempted for this

storm.

Storm 6, 1859 (Oct. 2-6).

Tannehill (1938) has listed this storm as having occurred in Cuba on Oct. 2, 1859. In addition, Garriott (1900) has mentioned this storm by quoting an article published by Marcos J. Melero in Diario de la Marina, Oct. 9, 1873. The author of this study has extended the documentation of this storm to the Bahamas and the western Atlantic over the period Oct. 2-6. He has also produced the track for Storm 6, 1859 which is shown in Fig. 2.

The southernmost information which the author found about this storm placed it near Hispaniola and eastern Cuba: Message from Jamaica, Oct. 12. Bark "Sarah", from Savanilla (Colombia) for New York, arrived on Oct. 10 in distress, having on Oct. 2, when off Cuba and Santo Domingo, experienced a severe gale (The New York Times, Nov. 15, 1859, p.8, col.6). This information allowed one to start the track for Storm 6, 1859 near the Windward Passage on Oct. 2 (Fig. 2).

Rodriguez-Ferrer (1876) stated that there was a hurricane which was strongly felt at Baracoa, eastern Cuba, on Oct. 2 and that the storm had been mentioned by Melero and Poey. In addition, The New York Times published the following message from Savannah, Ga., Oct. 14: Advices from Cuba indicated that the weather was unsettled and that the brig "Frank" from Kingston put into Havana in distress (The New York Times, Oct. 15, 1859, p.1, col.6). However, Martinez-Fortun (1942) wrongly stated that there was a weak hurricane at Havana on Oct. 2, which is in contradiction with the fact that the storm occurred at the easternmost portion of Cuba.

The following information was found about the storm in the southeastern Bahamas: 1) From The Standard, a newspaper published in Turks Is., Nov. 5. The gale which was particularly felt here on Oct. 3, did considerable damage at Inagua destroying 25 boats and 2 wrecking schooners. Several of the crew and two soldiers who were on board the schooner "Experiment" were drowned (The New York Times, Nov. 24, 1859, p.8, col. 6). 2) Bark "Roenoke" was totally lost during the hurricane of Oct. 2 at Inagua (The New York Times, Nov. 1, 1859, p.8, col.6). 3) Brig "Isabel Beurmann" had a N. and N.W. terrific gale and tremendous seas in southeastern Bahamian waters on Oct. 2 and 3 (The New York Times, Oct. 17, 1859, p.8, col.6). 4) Brig "Cyrene" had the storm between Inagua and the Crooked Island passage. Winds started from E. by N. and increased during the night (Oct. 2); at 5 A.M. Oct. 3, wind N. W.; at 6 A.M., wind W. (The New York Times, Oct. 20, 1859, p.8, col.6). 5) A message from Long Cay, Oct. 8, indicated that the schooner "Esther

Ann" left Inagua on Oct. 2 and experienced a severe hurricane that

night (The New York Times, Oct. 26, 1859, p.8, col.6).

The following marine information allowed one to track Storm 6, 1859 up to high latitudes in the Atlantic: 1) Brig "Mary A Forrest" experienced a tremendous gale from E.S.E. at lat. 38 57 N., long. 64 31 W. on Oct. 5 (The New York Times, Oct. 28, 1859, p.8, col.6). 2) Schr. "Lady Mansell", Oct. 6, lat. 41 N., long. 67 W., during a heavy gale from S.E.to N.W., was hove down and obliged to cut away the foremast (The New York Times, Oct. 15, 1859, p.8, col.6). 3) Ship "Lucy Thompson", Oct. 6, lat. 42 40 N., long. 63 30 W., had a very heavy gale from E.S.E. to W.N.W. (The New York Times, Oct. 13, 1859, p.8, col.6). 4) Bark "Pursuit", Oct. 6., during a hurricane from E.S.E. to W.N.W., when in lat. 42 30 N., long. 63 30 W., lost bulwarks, boats, main-yard, sails, etc. (The New York Times, Oct. 13, 1859, p.8, col.5). 5) Ship "John Bunyan" (from Shields in 40 days), encountered a heavy gale from S.E. to N.W. on Oct. 6, the barometer falling to 27.70 inches (The New York Times, Oct. 14, 1859, p.8, col.5). 6) Ship "Germania" experienced a S.W. to N.W. hurricane off Sable Island on Oct. 6 (The New York Times, Oct. 15, 1859, p.8, col.6).

The barometer reading of 27.70 inches reported by the "John Bunyan" strongly suggests that Storm 6, 1859 was an intense hurricane even at high latitudes in the Atlantic.

Storm 7, 1859 (Oct. 16-17).

This is the fourth storm that the author of this study has documented for 1859. A track for this storm is displayed in Fig. 2.

The following information allowed one to document Storm 7, 1859: 1) Schr. "Ida Mailler" (from Jacmel, Haiti, Sept. 23). Experienced a gale from N.N.W off Winter Quarter Shoal on Oct. 16. Went ashore at Hog Island on Oct. 17 (The New York Times, Nov. 21, 1859, p.8, col.6). Author's note: Hog Island, also known as Paradise Island, is located off Nassau, Bahamas. 2) Schr. "G. I. Miller" (from Abaco, Bahamas, in 11 days) reported that the bark "C. Thompson" went ashore at Abaco on Oct. 16 and that the crew was saved and went to Nassau. A note from Nassau, published in the same marine section, specified that the bark "C. Thompson" went ashore at Elbow Keys (Abaco), being a total lost (The New York Times, Nov. 3, 1859, p.8, col.6). 3) Bark "Naiad", Oct. 17, lat. 27 30 N., long. 80 15 W. Heavy gale from eastward (The New York Times, Nov. 3, p.8, col.6). 4) Bark "Pentucket", Oct. 17, lat. 27 30 N., long. 80 W. Had a severe gale from E.N.E. to E.S.E. with heavy

squalls and rain (The New York Times, Nov. 5, 1859, p.8, col.6).

The Storm 7, 1859 track (Fig. 2) shows the motion of the storm

from the Bahamas (Oct. 16) to South Florida (Oct. 17).

Storm 8, 1859 (Oct. 28- Nov. 2).

This is the fifth storm that the author of this study has recently documented for 1859.

According to The New York Times, Nov. 17, 1859, p.8, col.6, the bark "Wildfire" (coming to New York from Veracruz) experienced a severe hurricane at lat. 24 30 N., long. 85 40 W. on Oct. 28,

which lasted for 4 hours. However, the date given by the "Wildfire" seems to be wrong because it is inconsistent with other information supporting that the storm appears to have already been east of Florida on Oct. 28. Therefore, the above report was discarded and the track for Storm 8, 1859 was started near 30 degrees North, 78.5 degrees West on Oct. 28 (Fig. 2).

The following information was useful in determining the track for Storm 8, 1859: 1) Message from Boston, Nov. 17. Bark "Sam Shepherd", at this port from Havana, fell in with the wreck of Schr. "C. S. Peaslee" at lat. 31 N., long. 77 50 W. on Nov. 2 . The "C. S. Peaslee", from Jacksonville to Philadelphia, had capsized and the crew, except a seaman, perished. The bark took seaman Geo. Satterly from the wreck. The seaman reported that the schooner capsized in a gale and that he had been on the wreck for 5 days when rescued. The schooner was thrown on her beam ends when the sea swept over her and filled the cabin and the forecastle (The New York Times, Nov. 18, 1859, p.1, col.5). Author's note: As seaman Geo. Satterly had been on the wreck for 5 days and was picked up on Nov. 2, the "C. S. Peaslee" capsized in the gale on Oct. 28. 2) Message from New Orleans, Nov. 3. Ship "Portland" arrived from Liverpool, leaking and otherwise damaged in a hurricane on Oct. 28 (The New York Times, Nov. 4, 1859, p.8, col.6). Author's note: It seems that the "Portland" would have arrived in New Orleans much earlier if, as indicated by the "Wildfire", the storm had been in the Gulf of Mexico and not to the east of Florida on Oct. 28. 3) Message from New Orleans, Nov. 7. The "Indiana" was considerably damaged in a hurricane (The New York Times, Nov. 8, p.8, col.6). 4) Message from New Orleans, Nov. 8. Bark "Cobb", which arrived from Boston, lost yards and was otherwise damaged (The New York Times, Nov. 9, 1859, p.8, col.6). Author's note: Damages suffered by the "Cobb" were supposedly related to Storm 8, 1859. 5) "Kensington". Oct. 28, lat 29 57 N., long. 77 27 W., experienced a severe hurricane commencing from S.S.E. The barometer read 29.20 inches (The New York Times, Nov. 17, 1859, p.8, col.6). 6) Schr. "Potomac". Oct. 29, lat. 30 40 N., long. 80 W., took a gale from N.E. (The New York Times, Nov. 19, 1859, p.8, col.6). 7) Schr. "Kate Weston", lat. 32 40 N., long. 74 40 W. (no date given), experienced a hurricane (The New York Times, Nov. 14, 1859, p.8, col.5 and 6). 8) Brig "Ganges" experienced a hurricane from E.S.E. at lat. 31 N., long. 71 W. on Nov. 1 (The New York Times, Nov. 14, 1859, p.8, col.5 and 6). 9) Ship "Galatea", Oct. 31, lat. 31 20 N., long. 69 53 W. At midnight the same day and on the southern edge of the Gulf Stream , during a heavy gale, lost main top mast other spurs and sails (The New York Times, Nov. 7, 1859, p.8, col.6). 10) Bark "Wave Crest" (from Rio de Janeiro, Sept. 27). Experienced heavy weather off Bermuda on Nov. 1 and 2 (The New York Times, Nov. 10, 1859, p.8, col.6).

The track for Storm 8, 1859 (Fig. 2) is found to be unusual in that it shows a very slow eastward motion at latitude 30 degrees North for several days late in the hurricane season. The barometer reading of 29.20 inches reported by the "Kensington" and several other marine reports strongly suggest that Storm 8, 1859 attained

hurricane intensity.