

Isaac S Storm: The Drowning of Galveston Study Guide

Isaac S Storm: The Drowning of Galveston by Erik Larson

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Plot Summary

Isaac's Storm, by Erik Larson, is the story of the hurricane that hit Galveston, Texas, in 1900. It is the deadliest hurricane in recorded history. In a time before hurricanes were given their own names, this destructive storm was named for the head of the Galveston branch of the US Weather Bureau, Isaac Cline. As a youngster and later as a college student, Isaac always had a fascination with weather. In fact, he read everything he could get his hands on about the subject. When the newly named Chief of the US Weather Bureau asked the deans of various high-ranking colleges for candidates with whom he could staff his revamped bureau, Isaac's name was offered. When Isaac was given the opportunity to join the Weather Bureau, he could not turn it down.

Initially, Isaac was assigned to remote bureaus in Arkansas and Texas. Along the way, he earned his M.D. degree and became one of the country's first physicians to study the impact of weather on one's health. Isaac's intelligence, dedication and performance earned him a promotion and transfer to the top spot in the Galveston weather station. By the fall of 1900, life was good for Isaac. He was married to Cora, a woman he deeply loved. They had three daughters and another child on the way and lived in a beautiful home just blocks from the Galveston beach.

Isaac's younger brother, Joseph, had joined the weather station as an observer. There was always a rivalry between the brothers. Isaac was the more accomplished of the two and Joseph struggled under his older brother's brilliance and achievement. But Joseph was right about the safety of the family during the storm. He insisted that the house would not survive the storm and that the family should evacuate. Isaac insisted that the storm would not be that severe. The house would stand up to the wind and rain and his family would be safe there. Unfortunately, he lost his pregnant wife and almost his own life. Fortunately, his three daughters were saved. The situation placed great stress on the brothers' relationship and eventually they stopped communicating, an estrangement that endured for the rest of their lives.

Moore, who was always set on besting those local Cubans whom he considered beneath his own staff, issued a warning that the storm would travel up the Atlantic coast and would only be a moderate disturbance with no substantial damage. Moore never admitted just how wrong his office was and in the aftermath of the devastating storm, he lied to officials about the steps his bureau had taken to warn the people of Galveston about the hurricane.

The storm hit Galveston on September 8, 1900, and to this day ranks as the deadliest storm in history. There were estimates of between 3,000+ deaths to over 10,000 deaths. The injuries were in the thousands. In the aftermath, the city looked like it had been bombed. The loss of property was astronomical. Isaac wrote that he warned people to evacuate but there is no historical data to back up those claims.

Isaac stayed with the US Weather Bureau for the rest of his career. He was always haunted by the storm of 1900. Had he been more alert as to the severity of the storm,



could he have saved his wife and unborn child? Was he at least in part responsible for the death of thousands?

The Chief of the US Weather Bureau, Willis Moore, was a political animal and was concerned more with his reputation and career than getting forecasts right. Moore was feuding with local forecasters in Cuba who were predicting that a tropical storm—one that would evolve into a cyclone—that was hitting Florida would be traveling across the Gulf of Mexico to the southern Texas coast.



Introduction: The Beach

Introduction: The Beach Summary and Analysis

September 8, 1900

On the night of September 7, 1900, Isaac Monroe Cline had an explicable feeling of foreboding. Isaac had been assigned in 1891 to open the Texas Section of the new US Weather Bureau. He was lauded by the government for his service for making his station one of the best in the country. Isaac saw himself more than a weatherman, he was a scientist. He did his homework and studied the works of celebrated meteorologists and geographers.

That summer, the temperature had been oppressive and the humidity unbearable. The entire country was experiencing higher than normal temperatures. Texas was painted as a paradise with perfect temperature to lure immigrants with no mention of the hurricanes that assaulted its Gulf of Mexico coast. Isaac was also a physician and was a pioneer in medical climatology, the study of how weather impacts people.

Isaac lived with his wife Cora and their four children. His younger brother, Joseph lived with them and worked for the weather service as an observer. Their house was new and was located just four blocks north of the Gulf. It was built on stilts to avoid damage from flooding. The family would often visit the beach on the weekends. That September night, the sounds of the pounding surf frightened Isaac. The Gulf was usually placid.

Isaac had warnings from the central Weather Bureau that Cuba had been battered by a severe tropical storm that was moving north-northwest. Galveston's highest point was only 8.7 feet above sea level. The city of Galveston attracted a lot of tourists and beach goers. At the turn of the century, Galveston was a cosmopolitan boom town, poised to take on the same status as New Orleans or San Francisco. It was the biggest cotton port in the United States and the third largest port of all kinds.

Isaac checked the tide that September morning. The pace of the swells was slow but Isaac knew their size to be ominous. At the weather station, the barometric pressure was not out of the ordinary. There were no measures that indicated problems but Isaac felt something about the day felt wrong. He sent a telegram to the Central Office in Washington advising them that the water was high and there were opposing winds. He'd never seen these exact conditions before. Isaac felt that even though a savage storm may be on its way to Galveston, he was certain the city could withstand it.

One hundred miles off shore, Captain J. W. Simmons, who commanded the "Pensacola," was in the middle of the deadliest storm he'd ever encountered. In the next twenty-four hours, that storm would come to shore in Galveston with deadly results: 8,000 men, women and children would die from the storm. Isaac himself suffered a tragic loss. He blamed himself.



Part I: The Law of Storms

Part I: The Law of Storms Summary and Analysis

Somewhere, a Butterfly

The storm began gathering over the African highlands east of Cameroon. In the United States, temperatures were in the 100s. Thirty people had died during the heat wave. The heat and high-pressure zone stretched from the Midwest far into the Atlantic. The air was stagnant over the majority of the nation. August 1900 was the warmest on record from the upper Mississippi Valley to the Ohio Valley. The heat was unbearable but what was worse was the persistence of the heat wave. Springfield, Illinois suffered from twelve consecutive days of 90 degree temperatures or above. During the time, Galveston suffered from the heat and pouring rain. Lightning was damaging trees and the streets were flooding. The humidity was near 100 percent.

Low pressure lingered over Niger and the air was heavy with moisture. This condition caused trillions of water molecules to heat up which propelled the air higher into the atmosphere and caused dangerous thunderheads to form. Ships at sea witnessed the repetition of first dry air, blue skies and fair conditions; then dominating high clouds and gray skies; and, finally dark skies and a lower cloud ceiling. The drizzle began in the last phase and quickly escalated to a line of thunderstorms. This condition was referred to as the "August wave." As the storm traveled and repeated this pattern, it grew in size.

Most tropical disturbances dissipated, beaten down by powerful head winds. But some survived and became "killers." Why some tropical disturbances survive the journey across the Atlantic is unknown even in modern times. In *Perils of a Restless Planet*, Ernest Zebrowski put forth the concept of "nonlinear dynamics," and the butterfly effect: Could a murderous storm eventually pounding the South Carolina coast be caused by a butterfly in Africa opting to fly to the left of a tree rather than the right? Zebrowski did conclude that tiny, hardly perceptible variants seemed to play into the formation of tropical storms and hurricanes.

While Galveston sizzled, the world was in political strife—from the Boxer Rebellion and Boer War to America's new 'destiny' of interventionism overseas.

Washington, D.C. - Violent Commotions

Isaac fondly looked back on his childhood. He lived on a large farm in Monroe County, Tennessee. He and his brother did their chores, trapped animals and explored the hilly terrain. As a youngster, Isaac was an avid reader and had a natural interest in science. He considered becoming an attorney at one point but in 1880, General William B. Hazen of the US Signal Corps wanted to staff his department with the best. He asked for recommendations from the deans of the top universities and Dean Bruner of



Hiwassee College recommended one of his top students, Isaac Cline. who accepted the position.

Isaac, who'd never been away from Tennessee, arrived in Washington, DC on July 6, 1882. He was stunned by the crowds and the many telegraph poles strung about. Isaac took a cab to the hotel and eagerly anticipated the next day when he'd meet with General Hazen. He was unaware of the recent scandal involving the Signal Corps. In 1881, Henry Howgate, chief financial manager of the Signal Corps, was arrested for embezzling nearly a quarter of a million dollars. He was convicted and imprisoned but escaped and was still at large. The incident launched a far-reaching investigation of the entire Corps.

The invention of the telegraph was key to the development and effectiveness of the Weather Bureau allowing for the rapid transmission of weather forecasts from city to city. Some of Isaac's first duties included sending and receiving telegrams. But, staying true to the service, he also learned to send messages using flags, torches and the heliograph.

Monday, August 27, 1900

The first official notation of the storm was made by a Captain in his log on August 27, 1900.

Fort Myers: What Isaac Knew

Isaac spent many hours studying the various facets of meteorology. Weather had been a national obsession for centuries. Important men were intrigued by it. Thomas Jefferson kept a lifelong weather journal. Isaac studied the entire history of weather. Going back to the third century BC, the Byzantines noted that "air" had substance. Aristotle proved that air had mass. Early mariners enjoyed the trade winds that propelled their ships along but also encountered monstrous storms that swelled up without warning. In August of 1492, Columbus' ships were sailing on smooth waters under blue skies when an observer sounded the alarm after sighting huge swells just ahead. These swells were probably the beginnings of a hurricane.

Columbus was commissioned to lead a fleet on another voyage in 1502 to Hispaniola. It was on this trip that Columbus sailed in his first hurricane. Columbus lost sight of the other ships in the fleet and steered his closer to shore. Many of the ships carrying gold sank, most were badly wounded and only one other than Columbus' ship came through without major difficulty.

Galileo confirmed Aristotle's theory and invented a way to "weigh air." Physicist Evangelista Torricelli improved upon Galileo's device and created the first barometer. Englishman William Dampier studied the significance of the colors of the skies just prior to a storm. In November 1703, the coast of England was hit by a series of powerful storms. The massive storms destroyed seven hundred vessels on the Thames. More than 8,000 seaman perished from the English cyclone of 1703. On land, 128 people lost their lives. The storm totally obliterated the lighthouse on Plymouth.



Astronomer Edmund Halley was the first to recognize that the earth's rotation had a great impact on weather. In 1735, scientist George Hadley recognized that the equator moved at a more rapid pace than the poles. Three vicious hurricanes struck the Caribbean in 1780. After a hurricane hit near New York City in 1821, William Redfield detected a circular pattern to the damage it rendered. He referred to it as a whirlwind.

Isaac was not allowed to study weather forecasting which was limited to just a handful of people because of the dire consequences of an inaccurate forecast. After his training, Isaac was assigned to the station in Little Rock, Arkansas. His duties were to record temperature and barometric pressure.

Galveston: Dirty Weather

In Arkansas, Isaac made weather observations at five in the morning and eleven at night. He enrolled in the University of Arkansas's medical school to pursue a degree in medicine. He planned to study how weather affected people. Isaac graduated from medical school in March 1885. He then transferred to the weather station in Fort Concho, Texas, a remote outpost that wasn't even on the map.

Isaac noticed that the winds seemed to roar particularly loud in August. Water came rushing ashore in fifteen to twenty feet tall waves wreaking havoc on the land. Fish that were pushed upstream in a river were ice-cold to the touch yet the temperature was scorching. Isaac later concluded that the ice was caused by a severe hail storm, a concept that most experts thought too far-fetched. When he was moved to the Abilene station, he met Cora Smith whom he later married.

The demand for an improved Weather Bureau grew. To that end, General Adolphus Greely, retired Navy hero, was named as the new chief of the Signal Corps. Greely initiated an entire overhaul of the Corps. In March of 1889, General Greely transferred Isaac to the Galveston station. Part of his job was to establish a state-wide bureau for Texas. The physical attraction and newness of the city was appealing to Isaac. By the end of September 1900, the beautiful city had disappeared with the smell of burning corpses wafting a hundred miles out to sea.

Isaac did well in rejuvenating the Galveston office. His brother, Joseph, joined him at the station to help. Greely was replaced by Mark Harrington who was replaced by Willis Moore. Things ran smoothly under Harrington but Moore's micro-management tendencies created a tense environment. He was most concerned with bolstering his own reputation. He convinced President McKinley to approve the establishment of a hurricane warning system to help the US Navy during the Spanish-American War. The winter of 1898-99 was a brutal one with blizzard conditions followed by unusual flooding that spring.

Thursday, August 30, 1900

In St. Johns, a severe thunderstorm appeared with continuous thunder and lightening. Shortly before the storm arrived, there had been an ominous stillness and skies that were rimmed with a reddish-yellow light.



An Absurd Delusion

In January 1900, a weather buff, Professor Andrew Jackson DeVoe of Tennessee, predicted a cyclone on September 9th that would form over the Gulf of Mexico and move up the Atlantic coast. In July of 1891, Isaac had written an article about hurricanes that was published in the Galveston News. In the article he indicated that Galveston was in harm's way—it was in hurricane alley. He did downplay the damage that could result from a hurricane hitting land at Galveston. He failed to detail the horrific damage and human loss caused by the hurricane that struck Indianola, a port 150 miles southwest of Galveston in 1875. A second hurricane struck the same area in 1886 with results that were just as devastating. Isaac's 1891 article provided false hope about the impact of a hurricane: "It would be impossible for any cyclone to create a storm wave which could materially injure the city." (Part 1, page 84)



Part II: the Serpent's Coil

Part II: the Serpent's Coil Summary and Analysis

Spiderwebs and Ice

The big storm entered the Caribbean on Friday, August 31st. The falling rain did not deplete the storm clouds; it only made them bigger. The cold air of the troposphere penetrated the warm air of the stratosphere. Droplets of moisture were picking up mass and speed. Normal rain depletes clouds but hurricanes use wind to create more moisture. As the amount of moisture and wind speed increases, the rain that falls appears to be coming more from a faucet than from a cloud. This is why there is so much rain associated with hurricanes. Hurricane Camille that hit the Gulf Coast in 1969, caused so much rain with such high velocity that it filled the nostrils of birds and drowned them in trees.

Louisa Rollfing

On September 1, 1900, August and Louisa Rollfing were just finishing the renovation of their seventh house in Galveston. Both were originally from Germany but met in Galveston. In November 1885, the night before their wedding, a terrible fire started a short distance away. Soon the fire spread and threatened the house where Louisa was staying. That night Galveston burned to the ground. On September 1, 1900, the family made the last payment on a piano and had it moved into their house. They planned to find a piano teacher for their daughter, Helen.

Isaac's Map

On September 4th, a lightning strike knocked out the city's power and threw all the government buildings into darkness. In the wee hours of the morning, Isaac was monitoring the storm, noting the frequency of thunderclaps. That morning, he walked to the beach and noted the arrival of a large British steamship called the Roma. It was pleasant on the boardwalk—the storm had lowered the temperature by a full seven degrees. There was no warning from the main office in Washington that a severe storm was approaching.

Cuba: Suspicion

There was bad weather in Cuba. Chief Moore's controlling nature had resulted in a schism between Cuban and US meteorologists. Moore feared that the Cubans might be better at predicting hurricanes than his station. His fears were not without reason since the Cubans had long been recognized as very accurate in their forecasting. Nonetheless, because the US had a say over operations in Cuba, Moore assigned a new bureau forecast official for Havana, William B. Stockman, who was a bureaucrat who never saw red tape he didn't love and issued volumes of tedious, unnecessary reports. Stockman and Moore agreed on conservative reporting and that the issuance of



warnings could spook the naïve, uneducated populace. Stockman and his staff were careful not to use the word "hurricane."

New Orleans: Captain Halsey's Choice

Captain T. P. Halsey ordered his crew to ready his steamship, Louisiana, anchored in New Orleans, to head for the Gulf. There was a storm warning but he felt it was not a threat to his large ship. No reference to a cyclone or gale had been issued from the Weather Bureau. The Bureau's reluctance to use the term "cyclone" or "hurricane" gave false confidence to sea captains, among them Halsey. The Louisiana entered the Gulf in the late afternoon and unknowingly, it was directly in the path of the storm.

Straits of Florida: A Matter of Divination

On Wednesday morning, the storm hit the Straits of Florida. The Weather Bureau was predicting that it would move north and land in New England by Friday. The storm was mild with some heavy rain and moderate winds. Chief Stockman didn't think the storm warranted much attention. His station failed to detect the switch in wind direction at Key West. The storm did not go north as they predicted. Stockman approved an erroneous dispatch that pinpointed the storm at 150 northeast of Key West. Even after the hurricane devastated Galveston, the Weather Bureau insisted that the storm was a different one than the one that had passed over Cuba. Storms like that one, the Bureau contended, never moved from Florida to Galveston.

M Is for Missing: Key West

In Galveston on September 6th, Joseph Cline made his weather observations at 7 am. The day was normal—blue skies, normal atmospheric pressure and a pleasant 80 degree temperature. It was the same moment that the storm was racing toward Galveston. The storm had made a turn and was 800 miles away ready to cross the superheated Gulf. The Thursday morning weather map did not show temperatures for Key West. Instead, the letter "M" was inserted meaning that the numbers were missing.

Gulf of Mexico: The Devil's Voice

As the Louisiana continued on its journey, Captain Halsey, veteran of many tropical storms, had to know that the storm was a cyclone. The barometer was falling fast and horizontal rain was pelting the ship. He cleared the deck and sealed the hatches. He estimated the wind at 100 mph and had probably neared the heart of the storm. The ship was inundated with sea water and the wind increased to as much as 150 mph. On that same day, Isaac noted in his daily journal that there were scattered clouds and northerly winds. Washington sent a message that the storm was over Florida. Isaac saw no cause for concern. In fact, it was assumed that the storm would move up the Atlantic coast.

Galveston: Heat



The heat was oppressive in Galveston. In the morning, Captain Simmons of the Pensacola ordered his crew to head for the channel at the east end of Galveston island which connected the bay to the Gulf. Later that morning, Moore sent a message to Isaac to raise the storm warning flag. They now thought the storm was moving northwest in the Gulf. The Bureau still contended that the storm was a mild one. By the afternoon, only a few sea captains and their crews knew that the storm had grown into a monster. Simmons ordered all hatches sealed against winds at 100 mph. He ordered the ship to halt and dropped the anchor. On land, even non-experts were noticing the high tide and large waves.

Cuba: Who Is Right

Stockman was irritated that the Cuban forecasters had referred to the storm as a "cyclone." He sent a dispatch to Washington indicating that the storm that had passed through had no dangerous winds. The hurricane season had passed without a hurricane. The Cuban forecasters felt differently; they felt that a large storm was forming. They predicted that the storm was passing through the Gulf and heading to the southern part of Texas.



Part III: Spectacle

Part III: Spectacle Summary and Analysis

Gulf of Mexico: The Pensacola

Captain Simmons and his guests were hanging on for dear life as the ship seemed closer and closer to disintegration. Simmons' first officer felt they were in a confluence of storms—a hurricane from the east and a gale from the north. Mid-morning, the anchor broke apart and the ship was at the mercy of the waves that shoved the Pensacola towards Galveston. Obviously, Galveston was directly in the storm's path. There was nothing Simmons could do to warn the city.

The Beach: Delight

Both Isaac and his neighbor Dr. Young were on the beach at dawn on Saturday, observing the waves as they washed across the streetcar trestle that had been built over the Gulf. Dr. Young immediately sent a telegram to his wife who was en route to Galveston with their children. He told her to delay their return. Isaac had the same reaction and rushed to the weather station ordering his staff to issue warnings. He raced back to the beach and told everyone he encountered to retreat to the center of town.

Despite Isaac's alarm, his office still downplayed the potential severity of the storm, referring to it as an "offspur" of the larger storm that had struck Florida. Isaac visited some merchants whom he told to raise their products three-feet off the floor because there could be some minor flooding. The inaccurate forecasting was in part due to the Cuban office that was obsessed with besting the native Cuban forecasters. The media was at fault as well. The Weather Bureau reports were hidden in the inner pages of the newspapers and the stories were edited down, leaving out important details about the storm.

Children frolicked on the beach and found the early stages of the storm delightful. The strong winds and high waves were exciting. The air had cooled and gave everyone a break from the oppressive heat. Even the first flood waters that came ashore did not frighten the people. The furious sea drew visitors thinking that the huge waves and pools of sea water on shore were beautiful. Some wore bathing suits so they could romp in the waters. But the water kept rising and people began to get nervous. Ships anchored off shore were higher than the land. The surf was breaking bathhouses apart.

Ritter's Cafe: You Can't Frighten Me

When Rabbi Henry Cohen left his congregation to go home, he was shocked to see all the people walking away from the beach and carrying personal items with them. He realized they were leaving their homes for safer ground. Cohen's own house was close to the beach. At home, the wind was so strong that it literally knocked plaster from the walls. Downtown no one was paying much attention to the storm. Everything seemed



cozy inside Ritter's Cafe, except for a strong gust of wind that shook the front windows now and then. Suddenly, the roof was blown off and the second floor of the building collapsed on the cafe, killing half the diners and severely injuring the rest. As word spread, the city began to panic.

Bolivar Point: The Last Train

Two trains entered Galveston. The Galveston-Houston traveled on the trestle over the bay and had quite a few nervous moments - the water was only two feet from the track. Eventually it was stranded and couldn't move because the track ahead of it was underwater. A. V. Kellogg, the engineer, announced he had called for a relief train. The passengers walked down the track that was still above water to the rescue train. It almost made it to the Sante Fe Station but the water had gotten too deep. The male passengers made a human chain to save the women and children aboard. The passengers entered the station that was rapidly taking on water. The gravity of the situation wasn't fully realized until the body of a child floated into the station.

The second train was coming from Beaumont, Texas, and was traveling along the flood tracks of the Bolivar Peninsula. The train could only get to Bolivar Point and was unable to rendezvous with a ferry. The Captain couldn't fight against the wind and water and ordered the train back to Beaumont. As the engine propelled the locomotive backward, water began to flow into the coaches. At first all 75 passengers decided to stay with the train but as it swayed and shimmied ten passengers departed and headed to a lighthouse they saw in the distance. The train was being hit by torrents of rain. It eventually derailed down track. All the remaining passengers died. Those in the lighthouse heard gun fire. The soldiers on Galveston Island were trapped and were firing their weapons in a plea for help.

25th and Q: A Gathering of Toads

As the day wore on, Isaac became increasingly concerned with the flooding and rain. The storm swells were increasing in size and frequency signaling the danger that was approaching. He drove the beach from one end to the other shouting at people to take cover. Later, he claimed to have saved 6,000 people. However, there are no historical accounts of his heroics. Isaac wrote an urgent cable to Willis Moore telling him of the terrible situation and that Galveston was going underwater. He asked for assistance. Isaac gave the message to his brother, Joseph, to deliver. Wires were down so he couldn't send a telegraph. The telephone operator wouldn't put him through because there were 4,000 people ahead of him waiting to place calls. The manager of the phone company finally got him connected to a Western Union station. He dictated his urgent message over the phone.

Isaac continued warning people to seek higher ground on his way home. He planned to stay there with his family and ride the storm out. When he reached home, his yard was already chest deep in water. He noted that frogs were sitting on every available object or piece of wood floating in the water. Many neighbors were taking shelter in Isaac's

house because it was so well built. Joseph wanted to evacuate but Isaac insisted on staying.



Part IV: Cataclysm

Part IV: Cataclysm Summary and Analysis

A telegram was sent from the Houston weather station to the Chief of the US Weather Bureau in Washington, DC, informing him that they had lost all contact with the Galveston office.

With each step August Rollfing took, the water was deeper. He was making his way from his home back downtown. He hired a driver and buggy with orders to pick up his wife and children and take them to his mother's house in the West End where they would be safer. Louisa was thrilled when the buggy arrived. It was a slow and dangerous ride—the streets were flooded and electric wires were down everywhere. Judging from the debris, whole houses had been blown apart. Louisa and her children wound up at her sister's house which was in an area that hadn't been hit yet but the wind soon shifted to the stronger flank of the hurricane. It blew out windows in the house and caused the houses to sway back and forth.

Avenue P ½: Parents and Their Choices

Sam Young

Dr. Young started back to his house at Bath and P ½. He assumed that his family was safe and he prepared to "enjoy" the storm from his house. The water started coming up the stairs of his house but he remained unafraid. A few hours later, the entire first floor of his house was flooding rapidly. He watched from the second floor with fascination as the water rushed down the streets not knowing that corpses were floating in it. Other parents were in the midst of deciding which child to save from drowning.

Mrs. Hopkins

Louise Hopkins was playing with her friend Martha in the yard when they began to see debris and water rushing down the streets. It scared Louise. She rushed home fearing if the water got too deep, she wouldn't be able to get home. When she arrived home, Mrs. Hopkins was moving items to the second floor. She was looking out the window hoping to see that her two sons were coming home. Finally, one brother, John, came home. Her brother Mason was still absent. The water was rising all around the houses on the street. Mason finally made it home, the water had been up to his underarms.

Judson Palmer

Several families made their way to Judson Palmer's house, judged to be one of the sturdiest houses in the area. Seventeen people in all took shelter there. Palmer and some of the men helped carry up carpets and furniture to the second floor. By evening, Palmer estimated that the water in his yard was seven feet deep; in the parlor, it was two feet deep. The rain and wind intensified causing windows to break and plaster to



fall. Some of those in the house crawled out a bathroom window and floated off on a passing roof. Others huddled up in a bathroom. Soon the water was on the second floor and up to the Palmer's neck. The roof collapsed and everyone still in the house was underwater. Palmer surfaced, treading water in his yard. He called out but could not find his wife and son.

25th and Q: Isaac Cline

Isaac and Joseph still argued about whether to stay in the house or evacuate. Isaac thought it would be suicidal to venture out in the streets but the first floor was already flooded. Isaac looked out over the neighborhood which was now covered in sea water. But the water was strangely calm—there were no waves and crashing surf. Closer to the beach there was a pile of wreckage three stories high and miles long. It contained parts of houses, parts of ships and personal items from pianos to photographs. Also in the pile were thousands of corpses. It was temporarily holding the waves back.

As Isaac watched, the water rose four feet in just seconds. The water was 15 feet deep in the area. Nearby, Dr. Young saw the rapid rise of water, the change in wind direction and the toppling of house after house. The first floor of his house was in nine feet of water. Though it shook, Young thought his house would survive. He didn't know that a huge segment of the train trestle was being pushed by the water toward his house. Isaac's wife and children were terrified as he and his brother Joseph argued about whether to stay or go. While they argued, the trestle was moving in their direction.

The Levy Building: Vital Signs

John Blagden who was a new employee at the Galveston weather station found himself alone in the office in the four-story Levy Building. Much of their equipment had been destroyed so all he could do was monitor the barometer. The wind was measured at 110 mph. The storm's track hit Galveston at a 90 degree angle with its eye passing forty miles west of the city. The wind shifted again and became more powerful, striking the building like cannonballs. It was estimated that at the height of the storm, the barometric pressure fell to 27.49—a low that no one had ever seen before and one that pointed to the severity of the storm. It is estimated that wind gusts hit 200 mph. Blagden saw buildings being destroyed all around him. It was later concluded that Galveston's geography and topography made it particularly vulnerable to the storm—Galveston was the victim of two storm surges, one from the bay and one from the Gulf. By the evening, the winds picked up and moved the water through the city. Galveston had become Atlantis.

Avenue P ½: The Wind and Dr. Young

In the early evening, Dr. Young heard a banging that came from a downstairs bedroom. Young lit his only candle and ventured out to investigate. When he opened a door the wind blew in so strongly that the candle blew out and went flying off. He was in the dark and had to creep around in the unknown in his own house. He got to a door that opened to the outside. Waves were sweeping the entire neighborhood. Each wave propelled



huge pieces of debris. He could only see one house in the area that was still standing. It belonged to the Youens. Suddenly that house seemed to pirouette, was swept back and disappeared. At one point the water rushed in Young's second story window which was 33 feet above the street. The wind was reaching 125 mph. For a short time, the rain beat down so hard on the sea that not even a wave could escape.

Hideous things were happening all over Galveston. Poisonous snakes slithered up trees occupied by people to escape the water. Slate from roofs became weapons, fracturing skulls and taking off limbs. Mrs. Heideman was eight months pregnant and saw her house collapse on her husband and three-year-old son. She soon had her baby. She never saw her husband again but was reunited with her son who was plucked out of the water by a stranger. Young had a raft made from a door tied near his escape door in case he needed it.

The house shifted and became buoyant. The time had come. Dr. Young jumped out of the door and swam as far from the swiftly moving house as possible. Once it was gone, he captured his raft. He stayed on the raft for the next eight hours before he was rescued.

25th and Q: What Joseph Saw

Isaac's house capsized after being hit with something very large—the trestle. Joseph grabbed two of Isaac's daughters and jumped through a window, landing on an edge of the house which was now horizontal. He called to the others but no one answered. Anyone left inside was submerged.

The Beach: Ruby Credo

Ruby Credo told the story of her family's fight for survival during the storm. Anthony Credo had built a storm shelter in the back of his property. It was on stilts and he thought it would be the safest place for his children and took them there. But as he watched all the buildings and structures collapse and disappear in the water, he changed his mind. He swam back and forth to the shelter, only able to bring one child back at a time. The children climbed through a window and went upstairs to the attic bedrooms. They watched out the windows as houses were swept away. During the night the house was pulled from its foundation. He told the kids to hold on to pieces of wood. The family scattered but he was able to find them and get everyone together again.

Credo's son Raymond was hit in the back of the head by a telegraph pole. Anthony kept him afloat but he was unconscious; Credo feared he was dead. They floated on a roof for over an hour. A piece of timber struck Credo's daughter Vivian and knocked her into the water. She did not surface. Another daughter Pearl was severely injured when a piece of wood was driven through her arm. It was a miserable night. Vivian was dead; Raymond was dying; and, Pearl probably faced amputation. There was worse news to come.

25th and Q: What Isaac Did



When the errant trestle struck, Isaac was in the center of his room with his wife and youngest daughter, Esther. The house was collapsing. Furniture and personal items were flying all over; walls were tumbling down. He felt the house moving and was suddenly in deep water. He was driven to the bottom by a huge timber and was pinned there. He did manage to resurface but felt very alone.

The Beach: Light in the Window

Louise Hopkins' sister Lois screamed when she saw one of the walls moving in and out, almost like it was breathing. Mrs. Hopkins said it was time to leave. The house across the street belonging to the Dau family looked sturdy and there was a light in the window. Mrs. Hopkins had her sons position a mattress for her and the girls to sit on while the boys towed it across the water to the Dau house. They saw Mr. Dau take the lantern and leave the house. It had been their only hope.

Several miles down the beach, St. Mary's Orphanage with 93 children was under assault. Sections of the front were falling into the Gulf. The sisters who ran the orphanage brought all the children into the chapel. The sisters tied ropes from themselves to the younger children. They left the chapel for the girl's dormitory further away from the beach. But the water followed and soon all the nuns and ninety children were dead. Three of the oldest children were able to float to safety by clinging to pieces of timber.

No one came to collect their pay from August Rolling as he sat in his shop on 24th street. The shop began to take on water. He left the shop to head to his mother's house to join his family. The water was too deep and he went into the waterworks building which was full of people who had left their homes. Water started to pour in there. At one point, the water seemed to fall and he was able to leave. Early Sunday morning he made it to his mother's house. Only her house was still standing. He pounded on the door and was panicked when his mother told him that his wife and children hadn't come there. He finally got to Julia's house and found that his wife and kids were safe. He fainted.

25th and Q: Isaac's Voyage

As Isaac swam in the deep water, he heard a child crying and miraculously, it was Esther. He swam away with her and assumed that the rest of his family was lost. He heard another shout and it was Joseph and two of his daughters. They found some wreckage that was large enough to accommodate all of them. They drifted for hours. Isaac mourned the loss of his wife and his children cried for her but he realized how lucky he was to have found his daughters.



Part V: Strange News

Part V: Strange News Summary and Analysis

Gulf of Mexico: First Glimpse

The Pensacola drifted throughout Saturday and Sunday. The barometer indicated that the storm had finally passed. Captain Simmons ordered the engines to be restarted and headed to Galveston. When the ship arrived in Galveston, the city was unrecognizable. Steamers were ashore, the fort and barracks were gone and the city appeared to be destroyed. Where buildings had stood there were now piles of debris. The smell of death wafted from the direction of the city. By the time they arrived on shore, the smell was unbearable.

Galveston: Silence

Colonel William Sterett, a writer for the Dallas News, took a train from Houston to Galveston. There was great concern because all communication had been lost with Galveston. There were anecdotal stories about the death and destruction that had been caused by the storm. As the train neared its destination, the passengers began to realize the extent of the damage. They saw drowned cattle and huge piles of debris. Ships were aground. The train moved very slowly due to debris that covered the track and because some of the track was still underwater. They also saw human corpses.

The train was stalled in Texas City which also had been ravished by the storm. Sterett saw the bloated bodies of wild and domestic animals. A team of men buried 58 people during the afternoon. Finally making it to Galveston, Sterett was sure he was among the first outsiders to arrive. He heard that thousands had died but hoped that number had been exaggerated.

28th and P: Searching

The morning after the storm passed, the house where Isaac and his daughters had found shelter was one of the few still standing. A sea of death and destruction surrounded it. After getting his bearings, he guessed that the house they were in was at 28th and P Streets, around three blocks from his own house. At first he spotted what looked to be pieces of clothing. Looking more closely, he saw that human limbs were inside the shirts and legs inside the pants. Bodies of men, women, children and babies were floating everywhere.

Isaac visited the Levy Building and found that the weather station had been destroyed. He looked out over the vista from the building and could see that the spot where St. Mary's Orphanage had once stood was now just all white beach. Bodies were being transported in the streets by death carts. In search for his wife, Isaac visited the hospital which withstood the storm and then on to a temporary morgue where fifty bodies had

been delivered to the morgue. Isaac moved from body to body, recognizing quite a few of the deceased but did not find his wife.

Anthony Credo learned that he had lost a total of nine family members. A married daughter and her two children died. Another married daughter and her husband and children had disappeared. Judson Palmer's wife's body had been found. There was great concern that Palmer would have a mental breakdown. There was a pallor over the city. Those who survived were silent and trance-like. Dr. Young lost his house but his family was safe in San Antonio. The Hopkins family survived. The Louisiana, though badly damaged, made it through and survived with damaged cargo.

Galveston: Not Dead

The Galveston News carried several daily lists. One was entitled "Dead" and the other, "Not Dead." The "Not Dead" list included names of those who had been listed on the "Dead" list but had resurfaced. There were so many dead that the city resolved to bury them at sea. A barge containing 700 corpses was towed by a tugboat to the designated burial spot. The workers—mainly black men—who were rounded up to do this grotesque duty, attached weights to the bodies before throwing them over. Several days later, bodies began washing ashore. The city's burial committee had limited choices since burial at sea wasn't working. The decomposition of the bodies was causing a health hazard to the living. "Dead gangs" were dispatched around town collecting bodies. Hundreds of bodies were burned and hundreds more buried.

Fear struck the city. There were rumors of another approaching killer storm. Black men were allegedly looting corpses. It was reported that looters were being shot to death on sight. Still a fog of stench hung over the city that was so repulsive that sea captains refused to moor in the bay. By the end of the week, businesses were placing ads in the News assuring customers that they would not inflate prices to take advantage of the situation. The "Death List" took over a full page of newspaper space.

The Army sent soldiers and supplies to help the survivors. Fresh water arrived by steamships. Humanitarian Clara Barton arrived to help and sent a message that the situation had not been exaggerated. Contributions poured in from around the world.

Isaac returned to work the week after the storm after hunting and grieving for his wife non-stop since the storm hit. The instruments in his office were still out and he was forced to communicate by boat to the Houston station. It was a very tough time for Isaac who lost his wife, his home with all its contents and the contents of his weather station. He also needed to find someone to care for his children.

The Levy Building was still sound even though the interior offices, including the weather station, were badly damaged. Joseph was injured but Blagden was well and unharmed. Isaac privately wished he would have brought his family to the office for their safety. Isaac felt driven to write an analysis of the storm and its aftermath. He wanted to write a dispassionate piece in a scientific manner but it was impossible. The storm of 1900 had impacted him on such a profound personal level.



Washington: A Letter from Moore

Willis Moore wrote a letter published in the Houston Post defending the forecasting conducted by the Weather Bureau. It was a response to an editorial that accused the Bureau of failure to predict the storm and its deadly intensity. Moore's letter bothered Isaac because he wasn't being completely honest. In his letter, Moore talked about the heroic actions of Isaac after the storm hit. Isaac knew first-hand that Moore had distorted them. What bothered Isaac the most was Moore's statement that Galveston had received warnings and that Isaac's office had ordered hurricane warning flags prior to the storm—neither was true. Isaac sent a letter to Moore and while he was respectful he pointed out some of the inaccuracies. The majority of US newspapers accepted Moore's official version of the Bureau's response. More accurate versions of what occurred came from Cuban forecasters who indicated that they had correctly predicted the storm would not turn up the Atlantic coast but would cross the Gulf of Mexico to Texas. Although these accounts were correct, they enraged Moore who sanctioned Cuba in retaliation.

28th and P: The Ring

Some storm victims literally came back from the dead. Sixteen-year-old Anna Delz was washed to the mainland. She was given up for dead but reappeared a week later. Cases such as these were rare and gave false hope to others. Isaac knew Cora was dead but wanted to find her. His children, especially the younger ones, still hoped she would reappear one day. New homes were being built while funeral pyres still burned. Isaac, Joseph and Blagden all received commendations for their efforts during the storm. Bodies continued to emerge from the wreckage at an average of one hundred per day.

Workers found the remains of a woman under the wall of a house. The woman had a diamond engagement ring and wedding ring. Authorities thought the debris was the remains of Isaac's house. Isaac eventually identified the ring and, finally, found Cora. Her body wasn't burned but returned to the family who held a private funeral for her. Isaac had the ring enlarged and wore it himself. By December 31, 1900, the streets of Galveston were cleaned, there were no pyres, the decomposition odor had lifted and new construction was everywhere. That same night there was news that a storm had toppled one of the pillars of Stonehenge in England. No wind had been strong enough to budge any of the stones in over ten thousand years.



Part VI: Haunted

Part VI: Haunted Summary and Analysis

The Storm

Moore issued a statement that after ravishing Galveston the storm had traveled north and had been diminished to just a moderate rainstorm. Moore was understating the true conditions again. The storm regained power over Oklahoma and traveled west resulting in a destructive windstorm over Ohio. The storm brought hurricane force winds to Chicago and Buffalo, killing several people in its wake. It caused vast communication problems by downing numerous telegraph poles throughout its path. The deadly storm continued on resulting in death and damage as far away as Newfoundland. It did not fully dissipate until it hit Siberia.

Galveston

Initially, there were 3,406 confirmed deaths. Another count in 1901 by the Morrison and Fourmy Company which published the city directory conducted its own count and asserted that there was an overall 8,124 loss of population due to the storm. Some 2,000 had moved but, Morrison asserted, some 6,000 had died. Other estimates were as high as 10,000 dead. In 1910, the city completed the building of a seawall that was 17 feet in height. It was called one of the greatest engineering works of modern times.

Slowly Galveston rebuilt. It erected a new opera house and an immense new hotel. But Galveston was overshadowed by Houston which was becoming a boom town after the discovery of oil. Galveston had to settle for being a beach town for Houston.

Joseph

Joseph was in ill-health and had to delay his transfer to Puerto Rico where he was being promoted to head that station. Eventually he took on that position but only for a short time and returned to the US because of continued ill-health. He was demoted to "observer" and suffered a dramatic decrease in pay.

Moore

In 1909, Moore predicted fair skies for President Taft's inauguration. It snowed.

Isaac

Isaac was eventually assigned to head the New Orleans weather station which encompassed Texas, Oklahoma, Louisiana, Arkansas, Mississippi, Alabama and the Florida panhandle with a big raise in pay. But Isaac saw the transfer as a punishment for becoming more skilled than Moore himself. He concluded that Moore saw Isaac as a threat and posed to take over his position. Moore pressured Isaac to help him lobby for



the position of Secretary of Agriculture under President Wilson. An investigation was launched against Moore for allegations of politicking. He was eventually fired. The rivalry between Isaac and Joseph eventually evolved into permanent estrangement. Most of their problems stemmed from Isaac's anger over Joseph having been correct in wanting to evacuate the night of the storm. Isaac was haunted the rest of his days questioning whether he was responsible for the deaths and injuries caused by the storm. Isaac retired in 1935 and died in 1955 at the age of 93. Joseph died only one week later. They had not spoken for many years.

The Law of Probabilities

Although Moore liked to refer to the storm as a freak of nature, another severe storm hit Galveston in 1915. Many storms of varying severity hit the Galveston coast over the years. In 1961, Carla caused the evacuation of 250,000 people from Galveston and surrounding areas. Carla launched four tornadoes although the seawater was held back quite satisfactorily by the seawall. The death count from all the hurricanes and storms since the 1900 storm numbered under 100. Modern technology learned more about hurricanes but many questions remained. There was still a mystique about them. "Mitch," a friendly sounding hurricane, killed thousands in Latin America in 1998.

In modern-day Galveston, Isaac's storm has all but been forgotten. When a hurricane alert is issued, people buy batteries and bottled water at Wal-Mart and take note of the blue evacuation signs that point to higher ground.



Characters

Issac Cline

Isaac Cline was a college student when his dean recommended him to the Chief of the US Signal Corps, later known as the US Weather Bureau, who had asked the nation's top universities for recruits to fill important positions with his revamped Bureau. Isaac's name was submitted and since he'd always had a fascination with weather, he could not refuse the offer. It was the start of a career that would last a life-time.

After training in DC, Isaac was assigned to remote weather stations in Arkansas and Texas. Along the way, the brilliant young man was able to earn his M.D. and became the nation's first doctor who studied the impact of weather on man. After proving his value, he was selected to head the Galveston, Texas, weather station. By September 1900, life was good for Isaac. He and his beloved wife, Cora, had three daughters and another child on the way. He was doing an outstanding job as head of the weather station and was one of those lucky people who was working at something he loved.

As astute and educated as Isaac was, he was ill-prepared when the 1900 hurricane hit Galveston. He had been tragically in error in his predictions about the severity of the oncoming storm and had failed to take the necessary precautions that could have saved lives. In the aftermath, the property destruction was astronomical. The loss of human life—perhaps as many as 10,000—haunted Isaac the rest of his life. Had he been responsible for those deaths—including that of his wife and unborn child?

Joseph Cline

Joseph Cline was Isaac's younger brother. Although Joseph was not as accomplished or apparently as brilliant as his older brother, the two siblings seemed to have had a long-standing rivalry. Joseph came to work at the Galveston weather station of which his brother was the head. Joseph took on a menial role of weather observer and had a menial salary that matched. Joseph literally lived in the shadow of his brother's genius.

Perhaps this aspect of their relationship is what made it difficult for Isaac to consider that his brother's judgment could ever possibly be superior to his own. Joseph lived in his brother's house along with Isaac's wife Cora, who was pregnant, and their three daughters. After the killer storm of 1900 hit, Joseph thought conditions were dangerous and recommended they evacuate. Isaac countered his brother's suggestion by insisting that his house would hold up against the wind and rain. As it turned out, Joseph was right. Maybe it didn't happen often in their lives, but Joseph was very right this time—at a moment in time when it would have really counted. But older brother Isaac trumped Joseph's recommendation and the family stayed in the house much to their detriment.

The gap in their relationship grew to a real schism after the storm. Joseph was commended for his actions during the storm and earned a promotion to head his own



weather station office in Puerto Rico. He was there only a short time before ill-health forced him to come home where he was demoted back to weather observer. The two brothers did not speak again in the years following the storm. Joseph died one week after Isaac died.

Willis Moore

Willis Moore was the chief of the U S Weather Bureau in 1900 when Galveston, Texas, was hit by a devastating hurricane. He was later fired for "politicking" in his quest to become the Secretary of Agriculture.

The Cuban Forecasters

The reports from local Cuban weather forecasters turned out to be more accurate than those issued by the US Weather Bureau in 1900 when the deadliest hurricane in history struck Galveston, Texas.

Cora Cline

Cora Cline, who was Isaac Cline's wife, perished in the storm. She was pregnant at the time with their fourth child. He identified her body by the engagement ring found with her decomposed remains.

Allie, Rosemary and Esther Cline

When Isaac Cline's house collapsed during the hurricane, he feared that his entire family had been lost. He was greatly relieved when he found his daughter Esther and learned that his brother, Joseph, had saved his other two daughters, Allie and Rosemary.

Captain J. W. Simmons

Captain Simmons commanded the Pensacola through the treacherous waters of the Gulf during the storm of 1900. Simmons knew the storm was heading directly for Galveston but had no way of warning the city.

General William B. Hazen

General William B. Hazen was the head of the US Signal Corps which would later become the US Weather Bureau. When he took over the Corps he recruited outstanding students from the nation's elite universities. Isaac Cline was one of those students who was offered and accepted a position with the Corps.



Captain T. P. Halsey

The commander of the Louisiana, Captain T. P. Halsey, sailed from New Orleans to Galveston during the devastating 1900 hurricane. There had been no forewarning about the vicious storm that was coming. The storm was the most treacherous that the veteran sea captain had ever encountered in all his travels.

Ruby Credo

Ruby Credo was a child in 1900 when the hurricane destroyed much of Galveston. She survived the storm but her family suffered a terrific toll with the loss of three of her sisters, devastating injuries to other family members and the loss of everything they owned.



Objects/Places

Galveston, Texas

The deadliest hurricane of all time hit the city of Galveston, Texas, on September 8, 1900. Estimates are that from 3,000 to 10,000 people perished in the storm. The storm caused astronomical property damage, making the city appear as though it had been bombed.

Cuba

The local forecasters in Cuba provided a more accurate reading of the tropical storm that would develop into the killer hurricane that destroyed Galveston than the US Weather Bureau.

Florida Straits

The US Weather Bureau predicted that the tropical storm that hit Florida would travel north up the Atlantic coast and dissipate over New England.

The Louisiana

The commander of the Louisiana, Captain T. P. Halsey, sailed from New Orleans to Galveston. There had been no forewarning about the vicious storm that was coming. The veteran of many storms had never seen a storm as treacherous as the one that would eventually hit Galveston.

The Pensacola

Captain Simmons was commanding the Pensacola through the treacherous waters of the Gulf during the storm of 1900. The ship barely made it through and had to drop anchor and move at a snail's pace to survive. Simmons knew the storm was heading directly to Galveston but had no way of warning the city.

The Beaumont Train

A train from Beaumont, Texas, could only travel as far as Bolivar Point. It was eventually derailed from the force of the wind and rain. Seventy-five people died as a result of the incident.



The Levy Building

The weather station in Galveston, Texas, was located in the Levy Building in the downtown section of the city. Although there was damage to the building from the storm, it was still standing in its aftermath. Isaac Cline privately wished he would have brought his family there during the storm.

The US Weather Bureau

The US Weather Bureau failed to heed the warning signs of the tropical storm that hit Florida. Its prediction that it would travel north from Florida was, of course, way off base. Instead it traveled in the opposite direction and killed thousands who had no pre-warning about the coming monster storm.

Isaac Cline's House

Isaac Cline insisted that his house would withstand the storm. He refused to evacuate which resulted in the death of his pregnant wife.

Barometric Pressure

The barometric pressure continued to decline during the days before the hurricane hit Galveston. The low readings on the barometer were strong indications that the storm would be horrendous. The Weather Bureau surprisingly missed the warnings presented by their own instruments.



Themes

False Pride

One of the intangibles that exacerbated the tragedy of the 1900 hurricane that hit Galveston, Texas, was the personal pride that stood in the way of making the right decisions and taking appropriate actions in the face of the advancing storm. While the US Weather Bureau in 1900 was probably the top such agency in the world, the prideful chief of this federal government department was completely closed to the possibility that his staff was not infallible and could make errors or that an outside source could provide a more accurate forecast.

Such was the case in 1900 when a band of local Cuban weathermen issued warnings that a "cyclone" was forming from the tropical storm that had charged through the Atlantic to the Florida Straits. The US Weather Bureau duly recognized the Florida storm but where it departed from the Cuban forecasters' warning was the prediction as to the trajectory of the storm after it left Florida.

The Chief of the US Weather Bureau was in a childish feud with local Cuban forecasters. Since the Weather Bureau's southeastern station's reporting area encompassed Cuba, the chief did not want conflicting predictions to be issued. He was able to suppress to some degree the distribution of the Cuban analysis of the storm to the detriment, as it turned out, of thousands of unsuspecting people. The pride he held for his staff and its performance and abilities which were a direct reflection on him, did not allow him to consider an opinion that differed from that issued by his organization—especially from the Cuban forecasters, a group of people whom he considered not as educated or as skilled as his own forecasters. The Cuban forecasters issued a warning that a hurricane would form in the Gulf of Mexico and head toward Galveston. The US Weather Bureau issued a forecast that the Florida storm contained only moderate winds and rain and would travel up the Atlantic coast and dissipate in New England.

Politics of Weather

At first glance, one would not associate weather and politics. The former seems scientific and factual, and an element of nature while the latter is a creation of man that is comprised of facts that are interpreted by varying political persuasions to fit each one's ideology. But reading Isaac's *Storm*, it becomes readily apparent that political drivers impacted the US Weather Bureau and were as common and dubious as the political goings-on of modern times. It is sad to think that a geo-political feud contributed to the horrendous loss of life suffered in Galveston from the devastating storm of 1900—sad, but true.

The US Weather Bureau was involved in political gamesmanship at the time of the storm. Its Chief was in a constant battle with local forecasters in Cuba. Since



geographically Cuba was within the scope of the southeastern station of the US Weather Bureau, the organization issued weather bulletins for the region which, due to its location, included Cuba. Since the US was the major player in the region, the Chief of the bureau was able to restrict the weather forecasts from Cuban locals whom he considered unskilled and ill-equipped to compete with his team of professional weather forecasters. He would not allow weather predictions to conflict with those issued by the Bureau.

The US Weather Bureau also had the strange policy of not using words like "cyclone" or "hurricane" because they could frighten the people even when the words were the most apt and accurate to use. The Cubans were not reluctant to use the terms if conditions warranted. But the US big-footed the Cuban reports and the soft, vanilla predictions by the US Weather Bureau prevailed.

It was this strange and ineffective policy that helped lead to a public that was not forewarned and even misinformed about the killer hurricane that was traveling directly to Galveston. Had the Chief of the Weather Bureau had enough courage to discuss the varying forecasts and give the Cubans some credibility that their forecast might have merit, perhaps the lives of thousands would have been spared. The Chief of the Bureau was more concerned about his standing and reputation.

The Fury of Nature

It is no wonder that in olden times cultures believed that they must have angered the gods when beset by horrific weather events. Cyclones, tsunamis, tropical storms and hurricanes were all personified by ancient cultures as gods who were seeking revenge or devils and demons who were joyfully wreaking havoc on defenseless mankind.

The track of the 1900 storm, the deadliest in history, that assaulted Galveston seemed that it had selected its destination and was determined to destroy everything in its path to reach it. The storm was one that shouldn't have been—according to the US Weather Bureau at the time who predicted that the trajectory of the moderate tropical storm that hit Florida was due north, up the Atlantic seaboard. The result of the storm, they forecast, would be periods of wind and rain along the coast. The storm was expected to eventually dissipate somewhere in New England. The Bureau, which was politically correct before its time, was careful never to use words such as "hurricane" or "cyclone." Such terms would frighten the populace and cause undue stress and strain.

But the storm had a different idea. It decided that it would prove to the haughty, know-it-all Weather Bureau that it was all-powerful and could take another more interesting, more devastating path. The storm passed up its chance to turn northeast as it should have done—like any good tropical storm would have done. Instead, it headed north-northwest heading directly for Galveston, Texas. Furious that the Weather Bureau refused to assign it the gravitas it deserved, the storm would prove that it was that terrible word that the panty-waists in the Weather Bureau were too frightened to utter—Hurricane! As the storm gathered moisture and heat from the Gulf of Mexico it grew in



size and its speed quickly accelerated. The bigger the monster got, the hungrier it was for more water and wind. It was a gigantic whirling dervish by the time the Galveston coastline appeared on the horizon.

As Isaac's storm made contact with the city, it decided that it would secure its place in history. Now on land, the storm was hungry again but this time for human life and misery. It lingered in Galveston to teach the Weather Bureau once and for all that even with all their educated experts and fancy meters, charts and maps that a hurricane has a mystique and force that eludes prediction and demands respect.

Style

Perspective

Isaac's Storm, by Erik Larson, is generally written in a third-person narrative. However, the voices and perspective of those living at the time and impacted by the storm are made part of the narrative. The author conducted extensive research on the 1900 hurricane as witnessed by the vast references and resources he cites and relied upon to amass the material necessary to produce a credible historic account of the tragic event.

Larson used public and historical documents in developing his story of the days leading up to the storm of 1900 that hit Galveston. the impact of the storm and its vicious aftermath. The author used the logs, reports and telegrams of Isaac Cline, head of the US Weather Bureau's Galveston station, as well as other official documents. However, many of the accounts contained in the book are personal and anecdotal accounts that have been passed on through the years which underscore the human tragedy, devastation and loss of human life caused by the storm that have never been equaled since.

Erik Larson put on his investigative reporter's hat in writing a historical account of the 1900 storm but he also allowed for his skills as a creative writer to shine through in the dramatic accounts of the disaster that devastated Galveston, Texas. Erik Larson is a noted author who has written, among other books, The Naked Consumer and Lethal Passage. Larson is also a contributor to such well-known publications as Time Magazine, The Atlantic Monthly, Harper's and The New Yorker.

Tone

Isaac's Storm, by Erik Larson, is written in the factual style and approach of an investigative reporter. There is not a judgmental tone to the account of the devastating storm of 1900 that hit the Texas coast at Galveston. Although Larson includes speculation of errors made and warnings missed, Larson does not make any conclusions; rather, he allows the reader to draw his own.

The story is written at least in part in a text-book style that is purely fact-based. He includes the description of the devastation inflicted by the storm and describes the events including missed warnings and erroneous predictions in the context of a historical chronology. It is obvious that the author went to great effort in providing all the detail that is contained in the book. There are numerous notes, sources and references included in the book which are listed to illustrate that his work is based on true accounts and that he left as little as possible to conjecture. However, since the event occurred so many years before the book was written, there necessarily are gaps and questions that the fog of time has clouded over forever.



Larson doesn't limit Isaac's Storm to just the event itself. He provides scientific data about weather and storms and the mystique that surrounds the formation, velocity and power of hurricanes. By providing this factual backdrop to the dramatic aspect of the story of loss and suffering, the author allows the reader to gain a better understanding of the warning signals that were missed and the impact before, during and after the massive storm that became the deadliest in recorded history.

Structure

Isaac's Storm, by Erik Larson, is divided into six main parts each of which are divided into unnumbered sub-sections by subject and or date. A telegram from the Chief of the US Weather Bureau which asks if anyone had heard from Galveston, sets the ominous tone of the account. An introduction, entitled, "The Beach," which provides a brief overview of the September 8, 1900, storm that destroyed Galveston, prefaces the story.

The six main parts are as follows: "Part I, The Law of Storms," provides scientific data about storms and what causes some to escalate to hurricane status. It also sets the stage for the days coming up to the storm and the inaccurate forecasts by the US Weather Bureau about the coming monster. "Part II: the Serpent's Coil" provides the first inkling that a tropical storm in the Atlantic was presenting potentially disastrous problems for the Gulf coast of Texas. "Part III: Spectacle" describes how conditions were drastically changing in Galveston and that warnings of impending doom were ignored or missed. "Part IV: Cataclysm" describes the damage and flooding from Galveston's first brush with the storm and how things were just getting worse. "Part V: Strange News" describes the aftermath of the vicious storm and how the nation and the world slowly learned just how bad things were in Galveston. "Part VI: Haunted" tells of the guilt that Isaac Cline, head of the Galveston weather station, felt the rest of his life. Had he missed all the warning signs and been responsible for the death of thousands, including that of his wife and unborn child?

Before the book begins, there is a map of the Atlantic and a detailed map of Galveston after the 1900 storm. Following the book is a lengthy "Notes" section. The book concludes with "Sources" and "Acknowledgments" Sections and an Index.



Quotes

"It was a time, wrote Sen. Chauncey Depew, one of the most prominent politicians of the age, when the average American felt 'four-hundred-percent bigger' than the year before." (Introduction, page 5)

"William Jennings Bryan stumped for the presidency and railed at America's new imperialist bent, in particular the widely held belief that expansion overseas was American's destiny. 'Destiny,' he thundered, 'is the subterfuge of the invertebrate. . . .'" (Part I, page 27)

"Columbus had learned that the seas of the New World were both seductive and deadly, but in the process had become adept at reading the tropical skies for signs of trouble." (Part I, page 40)

"Travelers arriving by ship saw the city as a silvery fairy kingdom that might just as suddenly disappear from sight, a very different portrait from that which would present itself in the last few weeks of September 1900, when inbound passengers smelled the pyres of burning corpses a hundred miles out to sea." (Part I, page 67)

"Somewhere over St. Kitts, a giant plume of water, ice, and aerosol debris rocketed through the troposphere getting colder and colder until it penetrated the stratosphere, where it entered a realm of new warmth caused by dire radiation from the sun." (Part II, page 87)

"The sky seemed to be made of mother of pearl; gloriously pink, yet containing a fish-scale effect which reflected all the colors of the rainbow. Never had I seen such a beautiful sky." (Part III, page 137)

"Young was a member of that class of mostly landlocked men who believed God put storms on earth expressly for their entertainment." (Part IV, page 179)

"Whole neighborhoods seemed to have disappeared, and the immense bathhouses were simply gone." (Part V, page 225)

"They stopped a man hurrying by who told them thousands of people had been killed, so many that disposal crews known as dead gangs had begun burning bodies where they were found." (Part V, page 229)

"The scent of putrefaction and human waste was at once sickening and heartbreaking. It made his loss seem more definite and filled him with sorrow." (Part V, page 232)



"He [Isaac] dreamed that he had saved her. He dreamed of the lost baby. 'A dream,' Freud wrote in 1900, 'is the fulfillment of a wish.'" (Part V, page 248)

"Time lost can never be recovered and this should be written in flaming letters everywhere." (Part VI, page 272)



Topics for Discussion

When did the train passengers who were taken to the Sante Fe Station realize that the situation was dire? What happened when two other trains tried to enter Galveston after the storm?

In what places did Isaac look for his wife? Why did he think it was important for his children that he find his wife's body? How did he identify her body?

What mistakes did the Weather Bureau make about the 1900 storm? Where did the Weather Bureau in Washington DC predict the storm was heading after it hit Florida?

Why was the topography and location of Galveston particularly vulnerable to a severe storm or hurricane? Why did Galveston lose communication with the outside world?

What were the estimates of the deaths caused by the 1900 storm in Galveston? Why were there different estimates about the number who died?

What caused the rift between Isaac Cline and his brother, Joseph? Where was Isaac assigned after the storm? Where was Joseph assigned and why did his position not last?

What caused the head of the Weather Bureau, Willis Moore, to underestimate the severity of storms in general? What words did the Weather Bureau avoid using and why? The forecasters of what country were more accurate in their predictions than was the US Weather Bureau?