



and devastating the towns on the west coast of this State, including Pensacola, it veered farther to the west, including in its zone much of the low-lying country that comprises the southern portions of Alabama and Mississippi, and the islands skirting their shore line.

In the confusion incident to the storm, the newspaper reports from the places visited by the storm are in the main so incomplete, that the reader cannot get an intelligent and comprehensive idea of the extent of the disaster and the actual causes of the greatest damage. Enough information is available from Mobile, however, to describe the character of the disturbance, the actual destructive force of the wind and water, and other phases which would be of special interest to the student of meteorology. The duration of the hurricane (for such it can properly be called) was remarkable. Beginning shortly after the midnight of September 26, the wind

The Destruction Among Mobile Live Oaks; Ninety Per Cent of the Trees Were Destroyed.

deal more in detail with the work of first aid, while the qualifying examination is much more severe, the successful ones receiving the medallion of the Association.

The whole cost of the undertaking is borne by the railway authorities, so that the employees do not have to expend a single penny in acquiring their knowledge. All that they have to do is to devote their own time to the instruction, and in this connection they have displayed commendable willingness.

Indirectly also the movement is of inestimable value to the traveling community in general, especially in view of the fact that railway disasters in America are much more frequent and serious than in England. A scrutiny of the points at which such catastrophes occur will demonstrate the fact that they frequently happen at some lonely and desolate spot far removed from medical aid. Consequently, two or three hours may elapse before the doctors arrive on the scene, and the death roll is accordingly heavier than would have been the case, had some assistance been forthcoming within a shorter time of the accident. With these trained railway men, the injured are bandaged up until more expert skill can arrive.

EFFECTS OF THE RECENT HURRICANE AT MOBILE.

BY DAY ALLEN WILLEY.

One of the most interesting storms, from a scientific



Typical Scene Along Mobile's Wharf Front; a Fruit Steamer Cast up on Shore.

standpoint, which has ever been experienced in the Southern States was that which recently caused so much damage along the Florida peninsula and the coast line of Alabama and Mississippi. Generally known as a "tropical hurricane," it differed from the usual disturbances of this class by reason of its duration, while in some features it bore a resemblance to the cyclone which at times prevails in the level regions of the West.

As is well known, the storm center hung over the West Indian Islands and the adjacent waters for a considerable period before it changed its course to the northwest. Consequently, the hurricane was not unexpected; its violence, however, surprised even the meteorological experts. Passing over the Florida peninsula

blew for fully twelve hours with a minimum velocity, with the exception of a few intervals or lulls, of 40 miles. The average velocity as recorded by the instruments at the Mobile Weather Bureau was but 55 miles an hour—not sufficient in the opinion of the experts to cause the destruction that resulted. The maximum velocity, however, was much greater. There were times when it exceeded 70 miles an hour. These "gusts," which might be termed a series of tornadoes, were responsible for most of the damage inland.

The site of Mobile is such that it was exposed to the full blast of the hurricane; for the city is built on ground which is low and flat. It is located partly at the head of Mobile Bay and on the northwest shore, a portion of the water front being on the Mobile River.



A House on the Long Shell Road; the Collapse Was Due to the Washing Away of the Foundations.



A River Steamer Lying Totally Wrecked in a Slip.

EFFECTS OF THE RECENT HURRICANE AT MOBILE.

This was another unfortunate circumstance, since the direction of the wind was such as literally to pile up the water of the bay and drive it ashore, the water rising fully ten feet above the surface of the piers. The bay is 36 miles long, and the hurricane swept its entire length in the direction of Mobile. To this fact is due the extensive loss by flooding; but the terrific force of the wind was shown in every part of the city, and many were the curious effects which it produced.

As we have stated, to those familiar with the work of the western cyclone the storm of September 27 bore a very noticeable resemblance to western disturbances. Objects offering little resistance were in many instances unharmed, while greater obstructions were razed or torn to pieces, and scattered over the ground. An odd prank of the wind was the partial destruction of a frame building located at the junction of two streets. Although trees and telegraph poles were leveled all about it, and the structure was apparently directly in the path of the hurricane, only a part of it was demolished. A partition wall extending from the ground floor to the roof had been built from front to back. The air current cut off a part of the house on one side of the partition as neatly as if it had been torn away by human hands. The part removed was blown to pieces, but not a crack was made in the walls left standing, except what had been there before the disaster.

While most of the residences and smaller structures in the city are of wood, in the business section are a number of brick and stone warehouses. The churches and public edifices are mostly of massive design.

Hurled against coasting schooners and other small vessels, they crushed in their hulls as if they had been made of paper. One of the most picturesque wrecks was of a river steamer. Lifted by the combined force of the wind and waves, it was dashed against the wharf with such violence, that its framework was twisted from end to end, and the steamer buckled amidships. In this position it toppled against the wharf and sank.

The hulls of the ocean-going craft riding at anchor suffered little damage, save where struck by the floating missiles driven by the waves; but rigging and spars were blown away like so many splinters and threads. The height of the waves can best be appreciated, when it is stated that the largest of the flotilla, such as timbers two feet thick, were pitched upon the piers with smaller driftwood, some of the piles being ten feet high above the flooring of the piers. The piling supporting much of the wharf front was crushed in by blows from floating material, and the many small boats were thrown against it. The warehouses for storing bananas and other fruit presented a curious appearance. One of the largest had all of its roof and one of its side walls blown completely away. In another instance the ends of a shed were blown out, leaving the sides and roof intact. An examination of the wreckage of these buildings revealed another point of similarity to the Western cyclone: the destructive force had apparently been exerted within, as the planking and framework had been thrown outward in each case, and not inward. This seems to prove the theory that a wind current of great velocity causes such a vacuum in its vicinity, that it creates a

The Alpine Trip of the Balloon "Milano."

The balloon "Milano" left the grounds of the International Exposition of Milan on Sunday, November 11, and arrived at Aix-les-Bains after having traveled over Mont Blanc, a distance of 175 miles, in three hours.

The "Milano" had splendid weather from the start, and soon reached an altitude of 16,000 feet, accompanied by 10 deg. F. of frost. The balloon traveled northward over Mont Blanc, and as it progressed it grew colder and colder. Below them the travelers could see nothing except an extensive field of snow, broken by sharp peaks and dotted with frozen Alpine lakes. The highest altitude reached was 20,500 feet. The rarefied atmosphere made it necessary for the men to resort to their supply of oxygen to keep alive. At one point of the trip Signor Uselli succumbed to the nervous strain and burst into tears. On the other side of the mountain the balloon descended gradually and landed safely at Aix-les-Bains.

The "Milano" has a capacity of 1,000 cubic meters. The men in the car were Signor Uselli and Signor Crespi. The report received is from the latter aeronaut.

Volcanic Fertilizers.

That there is a silver lining to every cloud, Dr. Stoklasa, professor at the Technical High School at Prague, again proves in the results of his tests in connection with the late eruption of Mount Vesuvius. In fact, according to his calculations, the crater has thrown out upward of fifty milliard kilos of volcanic mud, sand, lava, ashes, etc., upon the surrounding



The Scene at the Oyster Docks; the Wharves Were Demolished for Over a Mile and the Oyster Fleet Sunk or Piled up on the Piers.



House on St. Louis Street With a Side Blown Away.

EFFECTS OF THE RECENT HURRICANE AT MOBILE.

Christ Episcopal Church is of masonry, except the steeple, which was built in three sections, the two upper ones being supported on wooden pillars. The force of the wind removed every vestige of the tower, even snapping off the timbers which anchored it to the framework of the main roof. The only protection to the city, if it could be called a protection, was the tree growth. Many of the streets were shaded with trees from two to four feet in diameter at the base of the trunk. Bienville Square, one of the smaller parks in the heart of the city, contains a grove of the largest species. On the avenues could be seen rows of fallen trunks, not a single tree left standing for blocks, the impact of the air current being so great that usually the main portions of the roots were torn from the ground as completely as if the work had been done by some powerful explosive. For some unexplained reason, most of the trees in Bienville Square, while not uprooted, were stripped of every twig and small branch, leaving them absolutely bare of foliage. On the other hand, very little of the foliage was torn from the trees blown over, except that on the side of the tree which struck the ground.

Skirting the bay for a distance of about six miles was a driveway composed of oyster shells packed down to the depth of a foot or more, and rolled until the foundation was apparently as solid as a mass of stone or concrete. The action of the wind and water, however, so completely destroyed this, that not a piece as large as the width of a shovel could be found after the storm. The shipping in the harbor suffered not only from the wind, but from the waves which it created; but much of the havoc on the water front was caused by the timbers, logs, and other material which had been washed from the shore into the har-

bor. strong suction or draft, which often causes more damage than the current itself.

Observers of the effect of the air currents agree in the statement that they frequently changed their directions. The continual veering of the weather vanes was further proof of this fact. The pathway of the storm was of such width that it was not clearly marked by the debris left in its wake, as is so frequently the case in a Western cyclone.

The location of Mobile also afforded an opportunity to show the enormous lifting force which a violent wind exerts upon even a small body of water. The heavy rains rapidly swelled Mobile River and its tributaries. While this flood water flowed into the bay, the rapid rise in the harbor as already stated was due more to the fact that the wind crowded the water into it. Waves which resembled Atlantic seas rolled inshore to such a height that the water washed over the wharves and along the streets for a distance of over half a mile from the piers. Much of the \$5,000,000 damage caused in Mobile and its vicinity was due to the undermining of buildings by this unexpected flood.

Sweating of Pipes.

Insulating cold water pipes is frequently done in sections of the country where the water flowing through the pipes is at a comparatively low temperature, the warm air passing over them cooling so quickly as to cause condensation of the moisture in the air. The wet spots under the water pipes are frequently attributed to leaks, but the experienced plumber diagnoses the case as one of sweating. The remedy is to cover the pipes with some kind of non-conducting covering like some of the asbestos productions, protecting the pipes from the warm air.

ground. These, he estimates, contain an average of at least 0.1 per cent nitrogen in the form of ammonia. The mountain has consequently produced about fifty million kilos of fertilizer, representing more ammonia and nitrous acid than is used in the whole of England. He has found besides enormous deposits of potassium phosphate and other fertilizers readily assimilated by the vegetable kingdom. The vapors constantly rising from the mouth of Vesuvius already contain much plant food, in fact the surroundings of volcanoes are always highly fertile, and have no need whatever of artificial fertilizers. Dr. Stoklasa has shown that ammonia is always rising from the crater as white smoke.

A New Comet Located by Holger Thiele.

A cable dispatch has been received at Haryard Observatory from Prof. Kreutz at Kiel saying that a comet, visible through a small telescope, was discovered by Holger Thiele at Copenhagen early Sunday morning in right ascension 9 hours 15 minutes 21.3 seconds, declination 12 degrees 16 minutes 50 seconds.

A second observation cabled at the same time gave the position in right ascension 9 hours 16 minutes 2.3 seconds, declination 12 degrees 28 minutes 31 seconds.

An alloy called "Monel-Metal" consists of:

	Per cent.
Nickel	75.0
Copper	23.5
Iron	1.5

The alloy possesses a high tensile strength and elastic limit. It is also non-corrosive and takes a high polish. The color is practically that of nickel.—Brass World.