The Great Storm of 1893 and the Schooner Riverside

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The year 1893 was the third most energetic Atlantic hurricane season ever recorded in the United States. There were ten hurricanes and two tropical storms which devastated many coastal communities; however, the damage was not limited to the coastlines. The Great Lakes region was also affected by Hurricane No. 9, or the "North and South Carolina Hurricane." This storm made landfall near Charleston, South Carolina, on 13 October 1893 and continued far inland, wreaking havoc along its path. Shipping on the Great Lakes was severely impacted and resulted in the sinking or stranding of at least 39 ships. One of the vessels sunk in the storm, the three-masted schooner Riverside, was recently discovered by the Cleveland Underwater Explorers (CLUE) on 6 October 2007. Its tragic loss with its entire crew of seven was typical of the storm's effect on the people who made their living carrying cargo and passengers on the Great Lakes.

Introduction

The year 1893 was a year of hurricanes. This Atlantic hurricane season was unusual not only in the number of storms but in their size and power. It was the third most energetic Atlantic hurricane season ever recorded (National Oceanic and Atmospheric Administration 2009a) with a total of 12 tropical storms, 10 of which became hurricanes (National Oceanic and Atmospheric Administration 2009b). Out of these 10 hurricanes, 5 became major hurricanes of at least category 3 (sustained winds between 111-130 mph / 178-209 kph), including one that became a category 4 storm (sustained winds between 131-155 mph / 210-249 kph) (National Oceanic and Atmospheric Administration 2009b). The 1893 Atlantic hurricane season is also noteworthy because four hurricanes were active on the same day, Tuesday, 22 August 1893, which is an event that has occurred only one other time, 25 September 1998, in recorded weather history (National Oceanic and Atmospheric Administration 2009c).

The 1893 hurricane season devastated the coastal communities of North America with a very high casualty rate. There were an estimated 4,000 deaths, and substantial damage occurred on the Gulf and Atlantic coasts (National Oceanic and Atmospheric Administration 2009d). At that time it was the deadliest Atlantic hurricane season in the history of the United States and would not be surpassed until 1900, the year of the "Galveston Hurricane" that took more than 8,000 lives (National Oceanic and Atmospheric Administration 2009d).

Two prominent examples of the very destructive

hurricanes in 1893 are Hurricane No. 6, the "Sea Islands Hurricane," and Hurricane No. 10, the "Chenière Caminada Hurricane" (National Oceanic Atmospheric Administration 2009e). These hurricanes are named not only from their modern National Oceanic and Atmospheric Administration (NOAA) nomenclature but also from their historic names. Hurricane No. 6 landed near Savannah, Georgia, on 27 August 1893 as a category 3 hurricane (National Oceanic and Atmospheric Administration 2009b) and took between 1,000 - 2,000 lives (National Oceanic and Atmospheric Administration 2009e). Many died from the flooding that occurred due to the storm surge produced by this hurricane. It remains the fourth deadliest hurricane in United States' history and is closely equivalent to Hurricane Katrina in 2005 (National Oceanic and Atmospheric Administration 2009f).

Hurricane No. 10 formed on 27 September 1893 and developed into a category 4 hurricane, the only one of the season (National Oceanic and Atmospheric Administration 2009b). It made landfall near New Orleans, Louisiana, on 2 October 1893 with devastating results (National Oceanic and Atmospheric Administration 2009b) that left the thriving resort town of Chenière Caminada completely destroyed. The final death toll approached 2,000, and the town never recovered from the storm's devastating effects and was eventually abandoned (Davis et al. 1992:17; National Oceanic and Atmospheric Administration 2009d). The destruction of this community provides evidence of the power and strength of this hurricane, which remains the second deadliest hurricane in United States' history

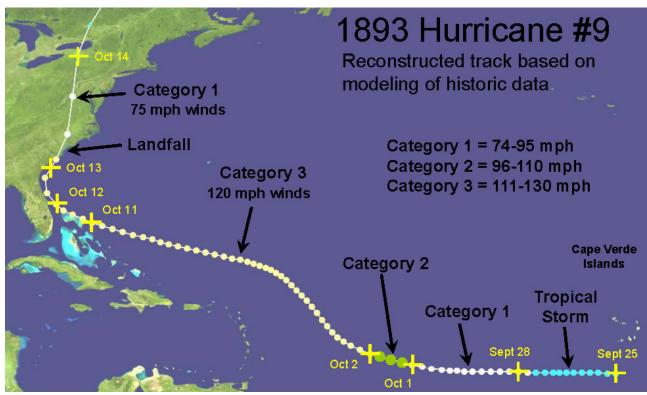


Figure 1: Track of Hurricane No. 9 (NOAA data plotted on NASA earth image).

(National Oceanic and Atmospheric Administration 2009e).

Hurricane No. 9

It was Hurricane No. 9, or the "North and South Carolina Hurricane," however, that was noteworthy that year for its longevity and power displayed. It ties Hurricane Carrie of 1957 for being the fourth longest duration Atlantic hurricane, both of which lasted 20.75 days (National Oceanic and Atmospheric Administration 2009g). According to the NOAA Accumulated Cyclone Energy (ACE) scale, Hurricane No. 9 is calculated to have had a value of approximately 65, making it an extremely energetic storm with more energy than the entire yearly total for many hurricane seasons (National Oceanic and Atmospheric Administration 2009a). Although it was only a category 3 hurricane with winds measuring up to 120 mph (193 kph) (National Oceanic and Atmospheric Administration 2009h), its extreme persistence at this level ensures its status as one of the most energetic Atlantic storms in history. This persistence also resulted in this hurricane extending its destruction and damage far inland to communities that normally would not experience the effects of adverse tropical weather. According to its reconstructed position and intensity (Figure 1) based on historic and computational data, Hurricane No. 9 started as a tropical storm off the Cape Verde Islands near Africa on 25 September 1893 (National Oceanic and Atmospheric Administration 2009b). Within three days it turned into a category 1 hurricane (National Oceanic and Atmospheric Administration 2009h). On 1 October 1893 it became a category 2 hurricane, and a day later it became a category 3 hurricane (National Oceanic and Atmospheric Administration 2009h). From 2 October 1893 until 10 October 1893, the storm took a leisurely track north of the Caribbean far away from any islands or land, building in size and intensity. Finally, on 11 October 1893 it passed north of the Bahamas, and the next day it approached the Florida coastline before swinging north to skirt the Georgia and South Carolina coasts 50-100 miles (80-161 km) offshore (National Oceanic and Atmospheric Administration 2009b). Its passing off the coastline caused severe flooding (Fernandez-Partagas 1996) due to the ground in that area having been previously saturated by storms earlier in the season (National Oceanic and Atmospheric Administration 2009b). It finally came ashore on Friday morning, 13 October 1893, near Charleston, South Carolina. For a remarkable 11 days this hurricane had remained a category 3 (National Oceanic and Atmospheric Administration 2009h).

It is hard to appreciate the true size and area of

influence of a major hurricane over a region. Although no satellites existed in 1893, an idea of the appearance of Hurricane No. 9 can be obtained by examining Hurricane Floyd from 1999. This hurricane followed a roughly similar coastal path (National Oceanic and Atmospheric Administration 2009i) and was a category 3 hurricane when the image in Figure 2 was obtained. This satellite image shows the hurricane blanketing almost the entire eastern coastline in clouds and rain and its influence reached far inland to the Great Lakes region.

When Hurricane No. 9 came ashore, it immediately started to weaken and became a category 1 hurricane when it reached the middle of North Carolina. Although weakened, it still produced very strong winds, between 75-90 mph (121-145 kph), and amazingly persisted as a category 1 hurricane as it passed inland away from the coast (National Oceanic and Atmospheric Administration 2009h). Many inland communities in central Virginia were ravaged as the storm continued on a northern path, and on Friday evening it passed 60 miles (97 km) west of Washington, DC (National Oceanic and Atmospheric Administration 2009b). At this point it was still a category 1 hurricane with winds measuring 75 mph (121 kph) (National Oceanic and

Atmospheric Administration 2009h), and the storm's intensity prevented the members of the Senate from leaving the Capitol building due to the high winds and rain (*The Atlanta Constitution* 1893:1).

The Great Storm of 1893

The period of Saturday, 14 October 1893, through Sunday, 15 October 1893, became known as the Great Storm of 1893 in the Great Lakes region. This storm was the remnant of Hurricane No. 9, which affected the entire region and caused great damage on both land and water. One of the hardest hit cities was Buffalo, New York, at the eastern end of Lake Erie. Newspapers of the day recounted how the streets were deserted and how those who ventured outside were blown off their feet (*The Cleveland Leader* 1893a:1). One unfortunate individual was blown into the Niagara River and drowned (*The Cleveland Leader* 1893a:1). Damages from the storm include the following:

- Collapse of a train depot, resulting in the death of 3 boys.
- Lifting off the iron roof of a gas works building and collapsing three of its walls.



FIGURE 2: SATELLITE IMAGE OF HURRICANE FLOYD, 1999 (NASA GODDARD - LABORATORY FOR ATMOSPHERES).

- Blowing a tannery from its foundations.
- The collapse of four cottages.
- Innumerable roofs blown off buildings, broken windows, and downed lines (*The Cleveland Leader* 1893a:1).

It was the effect of this storm on the maritime industry of the Great Lakes where this storm had its largest impact. As reports started to accumulate in the days following the storm, it became obvious an enormous maritime disaster had occurred. One local paper reported, "No such awful list of fatalities has been known in shipping circles for a decade as the one to which additions are being made daily...giving details of the terrific gale that swept the inland seas steadily for more than forty-eight hours at the close of last week" (The Newark Daily Advocate 1893:3). Losses were reported from Lake Ontario to Lake Superior. A total of 39 vessels were affected, including 10 that were lost and 29 that were stranded (Marion Daily Star 1893:1). Of those stranded, 13 were estimated to be total losses (Marion Daily Star 1893:1). At least 54 people lost their lives due to shipwrecks, and losses were estimated to be \$700,000 - a very large sum of money in 1893 (Marion Daily Star 1893:1). As the damages were totaled, one paper reported it was "the most destructive storm... within the memory of the oldest lake mariner..." with "nearly every boat out in the storm suffering heavy damages..." (Marion Daily Star 1893:1).

Although the storm's center passed over the middle of Lake Ontario, it was Lake Erie that was the hardest hit of the Great Lakes. The damage at Buffalo and the heavy loss of shipping on Lake Erie stand as testament to the 60 mph (97 kph) winds (*The Cleveland Leader* 1893a:1) and tremendous seas reported on the lake (*Hamilton Daily Democrat* 1893:1). One harrowing tale of a ship caught in this storm was the schooner *Mount Blanc* bound for Buffalo.

She was loaded with wheat and struck the storm 100 miles up the lake. Her sails were blown away, and for forty miles she scudded before the gale with nothing but the staysails and jib up. Just as she rounded the breakwater the sails were swept away and she turned the point on her side with her masts almost touching the water (*The Cleveland Leader* 1893a:1).

Two tugs took the hapless schooner in tow and brought the ship inside the harbor. The captain's wife was aboard "lashed to the cabin in an almost unconscious state" (*The Cleveland Leader* 1893a:1). An hour later, just after the crew had been removed, the ship sank

(The Cleveland Leader 1893a:1). "When his boat went under...the captain's eyes filled with tears and he wept" (The Cleveland Leader 1893a:1). The captain's reaction at the end of this struggle suggests what a horrific experience it must have been. One newspaper described the account as "one of the most heroic fights for port ever seen at this end of the lake" (The Cleveland Leader 1893a:1).

Mount Blanc was far from the only ship to meet grief at the hands of this storm. One of the most famous victims was the wooden steamer Dean Richmond, which left Toledo, Ohio, on Friday, 13 October 1893, and was last seen on Saturday, 14 October 1893, in heavy seas off Erie, Pennsylvania, with one funnel down and steering problems (Buffalo Evening News 1893a:1). The ship was never seen again. Debris, along with the bodies of the 18 crew, began to wash ashore near Dunkirk, New York (Buffalo Evening News 1893a:1). To add to the death toll, three more people perished off Dunkirk on Monday when their small boat overturned while searching for bodies (The Newark Daily Advocate 1893:1). This ship was the subject of an extensive search by modern divers until it was found upside down in 110 feet (34 meters) of water near Erie, Pennsylvania. Its forward mast is stuck vertically into the lake bottom next to the wreck, suggesting the vessel rolled before sinking in the huge waves, a final testament to the ship's struggle against the strength of the seas.

Another famous vessel lost in the Great Storm of 1893 was the three-masted schooner C.B. Benson. This vessel was built specifically for the Great Lakes-Atlantic trade, and it became the first ship ever to make a profitable transit in 1874 to Europe to sell corn directly from the Great Lakes region (Swayze 2009). The schooner spent several years in the Atlantic Ocean surviving the seas in both the northern and southern hemispheres before returning to sail the Great Lakes (Detroit Free Press 1893a:1). It left Buffalo on Friday, 13 October 1893, and was lost with all seven crew aboard (Detroit Free Press 1893a:1). Tragically, three of the crew were members of the Duff family, who were the builders and owners of the vessel (Detroit Free Press 1893a:1). The ship was located off Port Colborne, Ontario, in 80 feet (24 meters) of water soon after its sinking (Detroit Free Press 1893a:1). Despite being built for the harsh conditions of the open ocean, it was no match for the storm's fury.

Another large loss of life occurred on the wooden steamer *Wocoken*, which left Ashtabula, Ohio, on Friday, 13 October 1893, and later picked up a schooner consort, *Joseph Paige*, in Erie, Pennsylvania (*Hamilton Daily*)

Democrat 1893:1). Of the crew of 17, only 3 survived to tell the tale of its struggle against the seas (Buffalo Evening News 1893b). As the ship headed upbound in the middle of Lake Erie, the survivors described a howling wind and huge waves that washed over the entire length of the deck as it struggled against the onslaught of the storm (Hamilton Daily Democrat 1893:1). The steamer was described as being "almost dismantled" (Hamilton Daily Democrat 1893:1) by the storm, and eventually it was forced to cut Joseph Paige loose from its tow (Hamilton Daily Democrat 1893:1). The steamer continued to fight the storm but eventually became waterlogged and sank (Hamilton Daily Democrat 1893:1). The three survivors climbed the rigging of the masts immediately before the ship plunged to the bottom. They were rescued by the lifesaving crew from Port Rowan after 17 hours of clinging to the masts that were continually awash by the sea (The Cleveland Leader 1893b:1). The rest of the crew was swept away and drowned, including the captain and his wife (The Cleveland Leader 1893b:1). A ship was sent from Cleveland, Ohio, to recover the bodies from the wreck, but only the flattened hull was found in 8 fathoms (48 feet / 15 meters) of water (The Cleveland Leader 1893b:1). The consort schooner Joseph Paige survived the storm but lost all its canvas and was towed into Erie, Pennsylvania, with five feet of water in its hold (Detroit Free Press 1893b:1; Hamilton Daily Democrat 1893:1).

The Schooner Riverside

Finally, yet another tragic casualty of the Great Storm of 1893 was the three-masted schooner Riverside, which was originally constructed in 1870 as a twomasted schooner but was rebuilt in 1884 and 1889 (Cleveland Press 1893a:1), when a third mast was added. Riverside sailed from Detroit, Michigan, to Kelleys Island in western Lake Erie on Wednesday, 11 October 1893 (The Evening News 1893:1), to pick up 670 tons of limestone (The Plain Dealer 1893:1). Two seamen, William Raymond and William Whelan, left the ship for some unknown reason before it sailed from Kelleys Island (The Evening News 1893:1) and were hastily replaced by two unknown sailors from Sandusky, Ohio (The Evening News 1893:1). The ship set sail for Tonawanda, New York, on Friday morning, 13 October 1893 (The Plain Dealer 1893:1) but never arrived at its destination. By Wednesday, 18 October 1893, it was obvious the schooner was overdue, but its owner, Captain John M. Jones of Detroit, Michigan (The Cleveland Leader 1893b:1), was still hopeful it had taken shelter along the sparsely populated Canadian north shore of Lake Erie (*Detroit Free Press* 1893a:1).

As reports of the storm's effects started to collect, the steamer Cuba reported seeing a yawl boat with three people in the middle of the lake off Cleveland, Ohio, at the height of the storm on Saturday, 14 October 1893 (The Cleveland Leader 1893b:1). They could not attempt a rescue, however, because they were in too much distress themselves (The Cleveland Leader 1893b:1). On Tuesday, 17 October 1893, the steamer Havana reported seeing two pole spars sticking out of the water off Cleveland and speculated that they belonged to a foundered steamer (The Cleveland Leader 1893b:1). The next day the steamer William F. Sauber reported two spars in roughly the same location (The Cleveland Leader 1893b:1). Finally, on Sunday, 22 October 1893, the fish tug R. T. Roy travelled out of Cleveland to lift its nets a full week after the storm and found two topmasts sticking out of the water about 30 miles off Cleveland (The Cleveland Leader 1893c:1). They were described as spars painted white with gilded balls on top (The Cleveland Leader 1893c:1). The description of the spars was passed to Mr. C. R. Jones of Cleveland, Ohio, part owner of Riverside, who confirmed that these were indeed the topmasts of his ship (The Cleveland Leader 1893c:1).

Almost simultaneously on Monday, 23 October 1893, Captain Jones of Detroit obtained papers from Riverside that had been mailed by a resident from Geneva, Ohio, who found them in a desk that had washed ashore there along with an empty yawl boat (Detroit Free Press 1893c:1). Whether this is the same yawl boat seen by Cuba in the open lake is unknown, but one can imagine the terror of the small boat's occupants in the enormous seas. After hearing the report from the fish tug, the Cleveland Press chartered the tug Louisa out of Cleveland to investigate (Cleveland Press 1893b:1). They set out on Monday in rough seas with diver Walter Metcalf aboard (Cleveland Press 1893b:1). After traveling several hours, they found two topmasts sticking 25 feet above the water, which measured 13 fathoms (78 feet / 24 meters) deep (Cleveland Press 1893b:1). The fore topmast was spliced with two rings around it, another unique feature of Riverside and further proof of the wreck's identity (Cleveland Press 1893b:1). They concluded the ship had been under full sail when it sank and made an additional gruesome discovery of frayed ropes tied to the topmasts containing the back of a man's coat, a sleeve, and a cap (Cleveland Press 1893b:1). It was speculated two crew members tied themselves to the masts in an attempt to survive the sinking but were drowned and

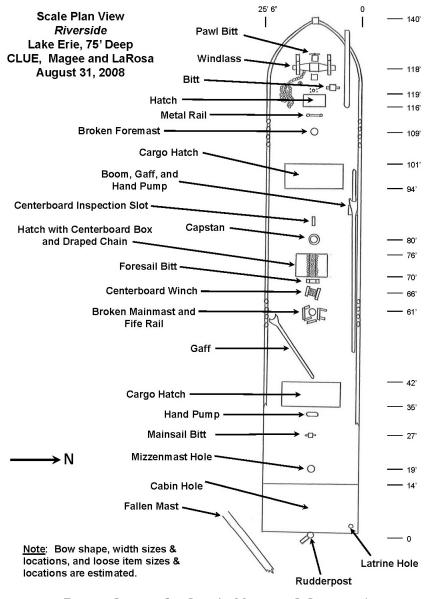


Figure 3: Riverside Site Plan (by Magee and LaRosa, 2008).

ripped away by the waves (*Cleveland Press* 1893b:1). The crosstrees were described as just below the water, and the standing rigging was tangled and broken (*Cleveland Press* 1893b:1). The mizzenmast was missing entirely, and both the mainmast and foremast swayed loosely in the waves (*Cleveland Press* 1893b:1). The reporters attempted to pull up the foremast halyard, but it was stuck on the wreck below (*Cleveland Press* 1893b:1). The rough conditions also precluded the tug from tying up to the foremast and putting diver Metcalf in the water (*Cleveland Press* 1893b:1). He greatly wanted to recover the bodies of the victims but was dissuaded from attempting it (*Cleveland Press* 1893b:1). With the masts sticking out of the water, the wreck was described as a hazard to

navigation, but the season ended with no record of anything further being done (*Cleveland Press* 1893b:1).

The loss of *Riverside* was not just a loss for the commercial interests it represented but also the seven lives it contained. Most tragically was the loss of a newlywed couple, Captain David G. Farrington and his bride Annie (The Evening News 1893:1), who had signed aboard as the ship's cook (Cleveland Press 1893c:1). "Captain Farrington, a handsome man of genial disposition, was only married a few weeks ago, and his bride, a pretty young woman possessing many accomplishments, was traveling with him, by way of passing their honeymoon season" (Cleveland Press 1893c:1). Captain Farrington had recently bought a one-quarter share of the vessel, and this was his first season as captain of the ship (The Cleveland Leader 1893c:1; The Evening News 1893:1). This tragedy extends further to Captain Farrington's 8 or 9 year old daughter from a previous marriage who was left in the care of her grandparents in Picton, Ontario and was orphaned by the sinking (The Cleveland Leader 1893c:1).

Also aboard were a father and son. The father, Captain Joseph Hargrove, was the mate, and his son, John Hargrove, was a seaman (*The Evening News* 1893:1). The loss of these two men represented a double tragedy

for the Hargrove family. John Paige was another seaman aboard *Riverside* whose father was a mate on another schooner (*The Cleveland Leader* 1893c:1). Upon hearing of his son's loss, Paige's father hired the schooner yacht *Cora* and searched unsuccessfully for his son's body to bring it home to the family (*Detroit Free Press* 1893c:1). Finally, there were the two unknown sailors who joined the crew immediately before sailing from Kelleys Island. Initial reports mistakenly listed Raymond and Whelan as lost with the vessel, but these reports were later corrected. The two sailors who died on *Riverside* died nameless with their families probably unaware of their fates.

Discovery of the Shipwreck Riverside

In 2003, the Cleveland Underwater Explorers (CLUE) began looking for the wreck of the schooner *Riverside*. Over 21 square miles were searched over four years before the wreck was finally located on 6 October 2007. CLUE, led by the authors, Jim Paskert, and Tom Kowalczk, performed a side scan sonar survey, a reconnaissance archaeological survey, and a photo/video survey. From this data an initial site plan was produced (Figure 3).

The wreck rests at a depth of 75 feet (23 meters) with the bow pointing west. The stone cargo is present below deck in the cargo hold, and all major pieces of deck equipment were observed with the exception of the anchors. The cabin is missing, presumably blown off as the vessel sank. Also missing is the mizzenmast, which was reported missing in the historical record. Remnants of the two remaining masts are present along with their associated deadeyes (Figure 4). The foremast (Figure 5) and mainmast are snapped off close to the deck. This damage is consistent with these masts being trapped in

surface ice and ultimately broken off due to the forces exerted by the ice's movement during the winter months.

Identification

The identification of the shipwreck as *Riverside* was accomplished using the Historic Shipwreck Identification Method (HSIM) developed by the author (VanZandt 2009). The historical data available for *Riverside* was categorically evaluated with the acquired archaeological data from the wreck site. The results of the evaluation confirmed that the shipwreck discovered was the schooner *Riverside*. Table 1 describes some of the features used to identify the wreck and how they compare to the known historic values.

Summary

Every year between June and November the Atlantic Ocean gives birth to as many as a dozen hurricanes. The history of Atlantic hurricanes suggests that every so often, when the conditions



Figure 4: Mainmast Deadeyes (photo by VanZandt, 2008).

Category	Historic Value	Measured Value
Dimensions	137' x 25.8' x 10.8'	140' +0'/-7' x 25.5' +0'/-1'
Type of Vessel	3-Masted Schooner	3-Masted Schooner
Head Style	Plain	Plain
Cargo	Stone	Stone
Depth	78 feet (24 m)	75 feet (23 m)
Orientation	Bow West	Bow West
Location	Approx. 30 miles North of Cleveland	Approx. 30 miles North of Cleveland

Table 1: Riverside Identification Features

are just right, a hurricane of exceptional energy and longevity will unleash its destructive power not only in coastal regions but hundreds of miles inland as well. Hurricane No. 9 of 1893 was such a hurricane. With damage recorded from coastal Florida north to Charleston, inland through South Carolina, North Carolina, Virginia, Pennsylvania and New York to the shores and open waters of the Great Lakes, Hurricane No. 9 proved to be a most destructive storm.

When the remnants of Hurricane No. 9 reached the Great Lakes region, they were still powerful enough to take the roofs off buildings, sink

or strand more than three dozen ships navigating the inland seas, and send fifty-four sailors, including all seven crew members of the schooner *Riverside*, to a watery grave. The wreck of the *Riverside*, discovered and identified by members of Cleveland Underwater Explorers in 2007,

is a testament to the force, destruction, and devastating effect of Hurricane No. 9 on the Great Lakes region some 117 years ago.



Figure 5: Broken Foremast (photo by VanZandt, 2008).

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