An Illinois weatherman

Charting weather phenomenon in the early nineteenth century

By Richard Stickann

It was part of an enormous assault of storms and tornadoes that swept through the Midwest, a band of destructive weather racing over 150 miles across Illinois, killing 101 people and injuring 600 in Coles County alone, the largest portion of fatalities occurring in Mattoon. Its strength and destruction secured a place in history as one of the deadliest tornadoes in Illinois.

The hail was larger than billiard balls

It was unexpected, this enormous storm covering a large swath of rural Illinois. There were no sirens to sound the alarm and, as a result, it soon became deadly. As the threatening weather moved across Coles County, Charles Gramesly, a resident of Charleston, picked up his pen and recorded the worrisome clouds that darkened the midday sky. He noted the dark shades of the clouds, mostly gray but the tone quickly deepening to black; and the patterns, circular and opaque pouches, like a sky full of smoke tinged cotton balls. He drew them in his journal as they moved over the town. But these weren’t soft clouds. Far from it. Instead, they were the leading edge of a storm that quickly evolved into a devastating tornado that hit Charleston, Illinois, and a large portion of central Illinois on May 26, 1917. After drawing the clouds Gramesly wrote, “Peculiar clouds 2 P.M. By 3:45 this had developed into a terrible tornado. The hail was larger than billiard balls and shot through windows like bullets.” Thirty-four people died and hundreds were injured in the Charleston area, Gramesly recorded. The only warning was the darkness that rapidly covered the town. He did not name the clouds he identified in pen and ink, but they were most likely mammatus clouds, generally rounded and smooth and many times the precursor of a turbulent atmosphere and thunderstorm activity. By drawing the clouds, Gramesly had provided a reference for future weather patterns similar to what he had seen on that day. Granted, if he saw those clouds again, the warning would still be short, but perhaps sight of those clouds would provide enough time to find safety.

While Gramesly did not actually forecast the weather, particularly as it is predicted today, he had developed his own rudimentary method to at least give himself and others near him a running start should those clouds come again. He did the same thing with rain, wind, and temperature, recording in charts and graphs the historical record of those weather occurrences, and giving him the ability to predict from years of records how the seasonal patterns might progress. Before the creation of the U.S. Weather Bureau in 1890, Charles Gramesly had established his own local weather bureau, producing not only daily weather statistics, but charting monthly and annual average temperatures, wind speeds, describing cloud patterns, and providing an overall look at the weather in Charleston.

His methods may not have been as sophisticated as we find today, but his interest in weather and fondness for figures and gathering weather data led him to graph what he observed on a daily basis, showing the temperature and rainfall and especially recording the prevalence and direction of the wind by the day, the week, and the month. Using a wind rose, he diagramed a summary of wind data he gathered three times each day at a defined site. His efforts emulated the use of wind roses used by 13th century Spanish mariners to document wind direction and frequency. Gramesly recorded his graphs by hand in his journal book one hundred years ago;
today meteorologists frequently use computer generated wind roses to chart wind prevalence and direction, measuring how much the wind blows from each direction during a certain period of time.

Gramesly's charts, graphs, and daily records of temperature, precipitation, wind, and empirical observation also was historically significant because he provided in detail the historical record of his weather that years later gave his descendants an interesting look at the climate conditions that affected, and afflicted, their ancestors' daily lives.

**The power of weather**

Ida Tarbell, an American investigative journalist, wrote that, “The weather itself is a constant interest, shaping as it does the day's work.” Humans forever have been captivated by weather, even awestruck and many times controlled by its power. They have set time by it, shaped religions with it; it has influenced planting and harvesting, inspired art, destroyed economies, or allowed them to flourish; it has swayed human emotions. The influence of weather on our lives and the resulting appeal of weather observation and documenting climate over time goes back thousands of years. Charles Gramesly was greatly influenced by the power of weather.

His pursuit put him in good company. Weather observation had caught the attention of many notable early Americans. Benjamin Franklin was an astute observer of weather patterns, as were George Washington and Thomas Jefferson, who consistently recorded weather phenomena. Lewis and Clark, on their westward expedition, routinely recorded their observations of the weather. A few years after Charles Gramesly's birth in 1842, Joseph Henry, the Secretary of the newly established Smithsonian Institution developed the first countrywide network of observers using the nations telegraph network to predict storms. In 1870, the Secretary of War was authorized by Congress to establish a national weather service. In the mid-1880s balloons were used to measure meteorological conditions above surface of the earth. And while Charles Gramesly

In 1917, when Gramesly recorded the look and feel and aftereffects of that massive tornado, there was no television, no commercial radio and few telephones, no weatherman in front of a blue screen to tell them what they could expect for the day, for the week, or for the next thirty days. As a result there was no way to provide advance warning of impending hazardous weather. At that time Gramesly and others depended principally upon hit and miss accuracy of the Farmer's Almanac, and occasionally relied on rings around the moon and old wives’ tales to predict what was on the way. But these tools of weather forecasting, when and if reliable, provided general information of weather patterns over time and still did not give any indication of when a deadly tornado would strike. But as Gramesly did, they also depended upon the appearance of the sky and how those threatening clouds consistently brought bad weather.
Origins of an intensely curious weatherman

Despite being disabled from a birth defect as well as from an accident he sustained at age fifteen, Charles Gramesly was not an idle man. He was an explorer, a traveler, an entrepreneur, a pioneer. At four-years-old he was a mate on a freight boat piloted by his father and mother down the Erie Canal. At age sixteen, he sat astride a fence at the Coles County, Illinois Fair Grounds in 1858 and watched Abraham Lincoln and Stephen A. Douglas in their fourth debate. He raised silk worms, and was an expert on fungi, corresponding with fungi experts from around the country about what he had discovered in the woodlands of Coles County, Illinois. He was a teacher at a rural school in Coles County, Charleston postmaster, short story writer, liquor store/billiard hall proprietor, photographer and artist using pencil, charcoal, pen, and ink and oils as well as his camera to produce the indelible images that captured for the ages the people and places he brought to life. More importantly, he was a farmer and a lumberman, planting several hundred acres every spring from his fields northwest of Charleston and harvesting wood for railroad ties from his land in Coles County, which later became Fox Ridge State Park. For 45 years, 1878 to 1921, from his home in the bucolic town of Charleston, just 50 miles from the Indiana border, he kept a daily journal that chronicled his community and his world, documenting the progress of his and his family’s remarkable lives, of his community, of his time, and, of course, the weather.

He and his family, father William Sayre, mother Phebe, and younger brother Henry, moved from Palmyra, New York, in 1858 settling in Coles County, Illinois, where his journals, sketches, stories and photographs represent the pastoral simplicity and charm of rural and small town life, an elementary yet softly intricate view of Charles Gramesly’s world more than a century ago. It was in that world he developed a keen interest in weather. Within his eclectic mix of interests and diversions he, like many others throughout history, had an intense attraction to weather observation that went well beyond what might be described as a hobby, although it wasn’t until his middle years that Charles Gramesly became an avid follower of weather patterns and weather-related occurrences.

While the recording of his weather observations was only one of Gramesly’s noteworthy achievement, it was the one that consistently attracted his attention as he documented weather phenomena in Charleston, entering the data daily in journal books he bought at the local mercantile. Gramesly began his journal on February 22, 1878, at the age of 36, just six months after he and Keturah Hildreth married. The journal was born out of a notion to record the new couple’s life in Charleston, as if the state of matrimony demanded written testimony for their marriage to thrive. Perhaps they started out just wanting to keep tabs on what the newly-weds were spending, for the early entries into their nascent journal contained only the couple’s daily expenditures—the cost of coal oil, crackers, pickles, oysters, cough candy, and Harper’s...
magazine, as well as a multitude of items that filled their cupboard and satisfied their diversions.

The evolution of this passion for weather progressed slowly at first. Early journal entries were simple: the time he woke and when he went to bed, who visited, the price for coal oil, horseshoes, and the cost to repair his buggy. He began his weather observations, although sometimes ambiguous and incomplete, on the day he started the journal, making his last entry for that day “light rain all day.” It was another five weeks until he again offered another observation. On that day, he wrote at the beginning of the journal entry “rainy day.” Although the beginnings were small, those early days saw Charles’ attraction to the journal grow stronger, and soon he was recording the outdoor temperatures at rising, midday, and at bedtime, also giving the average daily temperature. If the day called for it, he added comments such as cloudy, some rain, partly sunny, and gave the wind direction. It wasn’t long before it became a dedicated pursuit.

Soon he began commenting on the weather each day, eventually adding wind speeds and precipitation totals as well as daily weather patterns in the Coles County area, describing the clouds and the look of the sky during storms. He devoted an entire journal book to charting the monthly winds for several years.

Documenting a legacy

His last journal entry was recorded on September 10, 1924, just six months before his death. He was eighty-two years old. He wrote: Wednesday 6 AM. Ther 42 64 56 = 54. Cloudy NW 3. It seemed to be growing colder all the morning entirely cloudy day. Ought to have good fires but don’t feel able to carry up the coal. We have no wood. Bert called an hour or two A.M. but would not stay to dinner. Tue [his wife] went up town this afternoon to replenish the larder. Tue rents her north chamber to Mr. Martin, an express messenger, at 3.00 per week. We learn that Frank Ball has cut his broom corn. Walter [his son-in-law married to his daughter, Marie] too busy to go out. The fair suffered a worse day than yesterday.

Charles Gramesly died March 2, 1925. He chronicled the weather that impacted his world and that of his friends and neighbors, and at his own pace and in his own uncommon style. Documenting the weather was a small but significant part of Charles Gramesly’s legacy. The Gramesly family did not sit still and involved themselves in a multitude of exploits. Father William Sayre and Charles’ brother, Henry, went to the Civil War joining the 5th Illinois Cavalry at ages 52 and 16 respectively. At age 71, William Sayre led a large contingent of Coles County men to the silver mines of Leadville, Colorado, and his son, Henry, then 35, followed a few weeks later. Henry, following his brother’s lead, also kept a journal during his stay in Leadville in 1880 and 1881, recording his daily activities as well as logging weather information. However, Henry was not interested in establishing a record of meteorological activity; instead, his purpose was to chronicle the hardship and gloom brought on by the weather at 12,000 feet elevation and how it affected his equilibrium and health.

Charles’ disabilities kept him from accompanying his father and brother to the Civil War and to Leadville, but he had no absence of adventure in his life. It was those interests he developed as a result of his physical limitations that gave him the incentive to look at what people generally thought back then to be an unruly atmosphere and to use his weather recording tools to give it some order.

While Gramesly’s weather observation and detailing were hardly as sophisticated as the National Weather Service’s, even of the late nineteenth century his work left a legacy of the climate activity in one small locale of central Illinois, and his preservation of a small part of late nineteenth century and early twentieth century Illinois weather history is immense.

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