

A Man for All Seasons: Cleveland Abbe

We've all heard the expression, usually attributed to Mark Twain, that "Everyone talks about the weather, but no one does anything about it." Well, one of our past members did do something about it. He predicted the weather. No, I'm not talking about Tony Sands, Ira Joe Fisher, Steve Raleigh, or even Al Roker. They were not members.

My subject this evening is Cleveland Abbe, who joined the Literary Club in 1868 and was this country's leading meteorologist until his death in 1916. His distant ancestor, John Abbe, had arrived on the shores of New England in 1635, settling in the small village of Salem, Massachusetts, where he became neither a witch nor a warlock. However, he did become a successful farmer and launched his descendants on a comfortable financial path, including Cleveland Abbe's father who was a successful businessman in New York City.

Cleveland was born in 1838, the oldest of seven children. Early in life he showed interest in mathematics and chemistry, and in 1857 he graduated with a B.A. degree from the recently established Free Academy, now The City University of New York. Following a short teaching and tutorial stint at the Trinity Latin School in New York, he went to the University of Michigan where he taught engineering for two years and studied astronomy on the side. After the attack on Ft. Sumter in 1861, he tried to enlist in the Union army. Severe myopia proved too much of a handicap for soldiering, although one might wonder why it didn't prove as much a handicap for astronomy as well. Instead, the first two years of the war found him at Harvard working with the astronomer Benjamin Gould, but in 1864 he traveled to Russia where he worked at the famous Pulkovo Observatory, surrounded by Russian and German scientists.

Later, he described these years as the most intellectually stimulating period of his life, and this may also have been when his interest began to turn towards meteorology.

According to a family legend, on his return voyage from Europe he met an older, very refined lady and the two of them struck up a friendship. Two years later, in 1868, after he had assumed the directorship of the Cincinnati Observatory, at that time situated on top of Mt. Adams, he learned that she was from Cincinnati and had been instrumental in promoting his candidacy for the position. This story might actually be true, although the lady's name remains unknown.

Of course, long before Abbe's interest in meteorology surfaced, there had been people fascinated by weather. In *Matthew 16*, when the Pharisees as a test asked Jesus to show them some sign in the sky, he replied, "In the evening you say, 'Red sky at night, the day will be bright;' but in the morning, 'Sky red and gloomy, the day will be stormy.' If you know how to interpret the look of the sky, can you not read the signs of the times?" And chapters 36 through 38 in the *Book of Job* provide a veritable weather analysis in their explanation of God's power. In somewhat more recent times, Benjamin Franklin collected weather information from colonial post masters, and in early Cincinnati Dr. Daniel Drake made numerous weather observations. Later, the Smithsonian Institution gathered weather data mostly from cities in the northeast. While all of this activity helped people to understand weather, weather fronts moved considerably faster than information could flow, thus making forecasting impossible. That is, until the invention of the telegraph.

Shortly after taking over our own “Lighthouse of the Sky”--John Quincy Adams’s eloquent phrase--Abbe proposed a plan to the Chamber of Commerce. In return for modest funding, he would establish a network of trained volunteers situated as far west as Omaha, as far south as Chattanooga, north to Detroit, and with Washington, DC, anchoring the east. These observers would provide daily information on precipitation, cloud conditions, barometric pressure, wind direction and severe storms. Later river depth would be added. All of this information would be “field coded” to minimize telegraphic cost, sent to Cincinnati’s Western Union office, and from there forwarded to Abbe at the Observatory on Mount Adams.

There he would analyze the information and provide a summary, along with a two-day forecast, to the Associated Press which would then supply it to daily newspapers all across the country. Abbe would even include a map showing isobars, temperatures and wind direction. The Chamber endorsed the concept, provided \$300 in seed money, and Abbe was off and running. It was with considerable chagrin, therefore, that in his first attempt only two stations submitted weather data. Fortunately, the two submissions came from St. Louis and Leavenworth, Kansas, almost exactly 12 hours and 24 hours west of Cincinnati by train. This led to his first weather bulletin. Over the next few days and weeks, some 20 other stations began reporting daily, and this arrangement continued for several years.

Abbe’s relationship with the Cincinnati Chamber of Commerce may have been assisted by his membership in the Literary Club. It seems more than coincidental that the Chamber’s president was John A. Gano, a Literarian since 1864. Then, the three-person Chamber committee that first endorsed Abbe’s proposal included Silas Newton and George Graham who

both joined the club in 1868, and the Chamber's secretary who signed the Chamber's acceptance letter was George McLaughlin, club member since 1859.

Very early in his Cincinnati days, Abbe produced the "Cincinnati Weather Bulletin," a handwritten sheet sent to local subscribers, with a copy posted almost daily in the hall of the Chamber of Commerce. At the bottom of the sheet, under the heading "Probable Weather," Abbe provided his forecast for the next day or two. One September morning, William Davis, a local meatpacker, noticed that the word Tuesday had been misspelled, a reversal of the "u" and "e," a common misspelling of Abbe's. Davis then scrawled across the bottom of the sheet: "A bad spell of weather for Old Probs." For ever after, at least in the city, Abbe was known as "Old Probability."

Before he left our city Cleveland Abbe fell in love . . . or, at least he got married. In 1870 he married Frances Marshall Neal who eventually bore him three children. Fanny Neal was the sister-in-law of William Hooper, secretary of the Cincinnati Astronomical Society which operated the observatory, and, of course, another Literarian. Apparently she was a rather independent-minded young woman, for she had worked with the American Freedman's Aid Commission near Natchez, Mississippi, from 1866-1868. After returning to Cincinnati she took on the secretarial duties at the Observatory, a position no doubt engineered by William Hooper. Here she helped tabulate weather information and write up the daily reports. Their wedding was a small affair, but among the guests were Julius Dexter and William Goodman, two more members of this club. Perhaps not an overly romantic fellow, Abbe escorted his bride all the way to the Mt. Adams Observatory for their honeymoon.

Although Western Union provided its services at a minimal cost, even that financial burden soon proved too much for the struggling Observatory, and in 1870 Western Union took over control of the operation, keeping Abbe to operate it. But the benefits of increasingly accurate weather forecasting had been made apparent, and it wasn't long before Abbe heard the call from the nation's capital where he became chief meteorologist of the United States Weather Bureau, at that time a division of the U.S. Army Signal Corps. Later it would be transferred to the Department of Agriculture.

As chief meteorologist he continued and refined much of the work that he had initiated in Cincinnati. By 1872 he was producing over 500 sets of daily maps and bulletins, many of which were sent to authorities in European cities in exchange for similar data. He also published and edited the *Monthly Weather Review*, the first American journal devoted to understanding weather. In 1879, in order to more effectively collate information, now coming in from all over the country, he established four time zones, a system adopted by the railroads a few years later.

During his long tenure as the nation's chief meteorologist, he upgraded the instruments used by the Weather Bureau so that they met international standards, and he established 114 self-regulating weather stations, one of which was the Abbe Weather Station on Lafayette Circle in Clifton. Some of you may remember when that was still an active station. He also managed to write almost three hundred scientific papers, virtually making meteorology a respectable discipline. In his spare time, he taught courses at The Johns Hopkins University and Columbian University, now George Washington University.

He helped found the National Geographic Society and was elected an Associate Fellow in the American Academy of Arts and Sciences. The Royal Meteorological Society of Great Britain awarded him its Symans Gold Medal in 1912, and in this country he received the Public Welfare Medal and the Marcellus Hartley Medal from the National Association of Sciences, as well as the Franklin Medal from the American Philosophical Society. Honorary degrees showered down from the City College of New York, the University of Michigan and the University of Glasgow. When he died in 1916, exactly 102 years ago today, both the Department of Agriculture and the National Weather Bureau lowered their flags to half-staff for one week.

His time in Cincinnati lasted about three years and thus his contributions to the Literary Club remained minimal. From 1868 to 1870 he attended meetings regularly and presented two papers, both on aspects of his work. His paper of December 4, 1869, carried the enticing title of "Meteorology and Weather Bulletins." If that topic failed to keep his audience awake, it was immediately followed, according to the club secretary, by "lantern views of the moon and of the earth from a lunar standpoint . . . and then some other views for the immature intellects present." Secretarial humor has always been with us. Coinciding with his marriage, his attendance virtually stopped. The club accepted his resignation in October, 1872, a year after his departure for Washington.

Yet, Cincinnati seems to have had a powerful effect on him and he remained emotionally tied to and interested in the city. Invited to attend the 1888 anniversary celebration of the Literary Club, he responded with a long letter in which he first singled out the

many changes in popular topics that the country had endured since his move to Washington. Among those current topics he mentioned tariffs versus free trade, open immigration, universal suffrage, and technological advances such as the light bulb and 10-story buildings with elevators.

Finally, he lamented the recent decline of elegant writing in all the sciences, but did acknowledge the many contributions of Cincinnatians to various sciences. After singling out Ormsby Mitchel, the founder of the observatory, and Professor John Locke, a physician by training but one who did early work on magnetism in scientific instruments, he went on to praise Daniel Drake's work in meteorology; Joseph Ray's important arithmetic texts; Ormond Stone, his successor at the Observatory; and the contributions to chemistry by Robert Warder. After the letter was read aloud at that anniversary meeting, no doubt members toasted Abbe when he signed off with "Long Live the Club!"

But we owe Cleveland Abby an even greater debt of gratitude, for in the absence of weather there would be many fewer conversations among us as we gather on Monday evenings; or, as Emma Thompson's character in the film version of *Sense and Sensibility* so aptly phrased it, in polite society one should not "say anything at all that does more than mention the weather or the condition of the roads."

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