

Reply to “Comments on ‘The Myth of Cleveland Abbe: A Review of a Manufactured History of the Creation of the National Weather Service’”

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<https://doi.org/10.1175/10.1175/BAMS-D-22-0114.1>

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In final form 11 August 2022

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KEYWORD: History

We would like to thank Dave Schultz and Sean Potter for their interest in and comments on our paper “The myth of Cleveland Abbe: A review of a manufactured history of the creation of the National Weather Service” (Romano et al. 2022; Schultz 2022; Potter 2022). We may have struck a nerve, perhaps indicating we achieved one of our goals: to address the many variants related to the way the National Weather Service history has been written over the last 150 years. This was a period marked by many unacceptable differences related to who did what in its formative stage in the middle 1800s, culminating with specific differences related to the formation of the first national weather service in this country and the issuance of the first official forecast in 1870.

It is important to recognize that a key approach of our paper is to present historiography related to the various historical versions of the formation of the weather services in our country and to show how the history of the formation of what is now the National Weather Service changed over time. Furthermore, we shed light

on the systematic trend of those changes during the period between 1870 and 1920, with the changing history elevating Cleveland Abbe's role in the creation of the nation's first national weather service, while others' roles were greatly diminished in the new history presented in documented speeches, newspaper articles, and in the standard-bearer *Encyclopaedia Britannica*. And, as part of this historiography, we show how those with a vested interest in raising Abbe's profile—including Abbe himself—did so at the expense of the others, an effort led by the newly created American Meteorological Society and the Weather Bureau.

We recognize Abbe's significant contributions to the effort to build up and improve what was then known as the U.S. Army Signal Service's Division of Telegrams and Reports for the Benefit of Commerce and then the Weather Bureau. However, we stand by the findings presented in the paper that Abbe was a key player in this *dramatis personae*, evidenced in part by the continued use of his signature phrase "I have started that which ..." that Abbe first shared in a letter to his father in 1869. This phrase would be used at key times by Abbe when he was recounting his accomplishments, including in his 1916 Hartley Medal acceptance remarks. These remarks were capped off by William Morris Davis and Weather Bureau Chief Charles Marvin, who promoted Abbe as the solitary heir to all that was put forward from a research and service perspective at a time when others, especially Increase Lapham, were essentially erased from the history of the weather service. And this phrase reappeared in numerous memorials and histories, including by Henry (1917), Humphreys (1919), Fleming (1990), and most recently as a chapter header in Potter's (2020) Abbe biography.

We believe the use of this rhetorical device by Abbe and others points to the desire to elevate his status as the sole person responsible for the creation and growth of the early weather service, even though these accomplishments were built on the shoulders of many others. With respect to Schultz's specific concern about our representation of Abbe's singular role in the founding of the *Monthly Weather Review* that Abbe shared in his speech delivered to the South African Philosophical Society in 1890 (Abbe 1892; Schultz 2022), the facts describing the foundation of the *Monthly Weather Review* are clearly spelled out in Schultz and Potter (2022). However, this does not diminish our contention that Abbe's rhetoric stakes a claim that ignores the contributions of others and prior attempts to establish regular reviews of climate and weather observations that used the moniker of providing a *monthly weather review*.

As we show in the paper, Abbe's use of similar singular phrases in his 1890 South African speech was part of the trend in the evolution of Abbe's rhetoric in describing the early history of the Division of Telegrams and Reports. He shifted from giving Increase Lapham and others recognition that more accurately accounts for their important roles the creation and early development of the first national weather service in the United States to 1) resurrecting the singularity of his accomplishments in his 1890 South Africa speech, 2) his elevation to *Encyclopaedia Britannica* Editorial Board in 1904, after which his role in the creation of the Signal Service was elevated while Increase Lapham's role was essentially erased, and 3) providing this same rhetoric for William Morris Davis and Charles Marvin to use during the 1916 Hartley Medal celebration shortly before his death. This rhetoric designated him as the "solitary heir" and would be carried forward shortly after his death in many memorials and newspaper articles, and histories written by the Weather Bureau and American Meteorological Society for another 100+ years.

This trend line represents a long-term effort to elevate Abbe's roles in many key activities as the meteorological community emerged in the United States. As in other scientific achievements and related service advancements, the history of the science of meteorology and the creation of a national weather service in this country was developed on the shoulders of many, dating back to the colonial period and within several states where regional weather services were attempted but could not be sustained. All this occurred well before Abbe entered the meteorological community in 1867.

We provide a clearly stated conclusion that—as Abbe knew and wrote about in the early 1870s—Increase Lapham, Congressman Halbert Paine, and General Albert J. Myer should be clearly recognized as the key players that got a national weather service started in the United States in 1870. Furthermore, Increase Lapham, who explored with others around the world the use of weather observations for making weather predictions in real time 1) provided the supporting evidence to Congressman Paine for getting the law passed that established the Signal Service's Division of Telegrams and Reports for the Benefit of Commerce in 1870, 2) was the first civilian hired into the Signal Service by General Myer, and 3) issued the first official forecast product from the Signal Service on 8 November 1870.

In our paper, we have only scratched the surface of the many issues surrounding the roles of those involved in the confusing history of the National Weather Service and the meteorological profession.

We welcome the ongoing work of historians in the American Meteorological Society and the larger scientific community who continue to explore the growth of interest in weather and climate throughout the history of this country, with a focus on the development of the meteorological sciences and related services in the late nineteenth and early twentieth centuries. Indeed, a historical reckoning is needed to untangle the larger political, social, and, in Abbe's case, personal forces that influenced the history of our field to more accurately account for the contributions of people who have worked to advance our science, prediction capabilities, and weather services provided to the American public.

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