

## Media, Typhoons, and Contests over Meteorological Sovereignty in Nineteenth-Century East Asia

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### Cross-Boundary Media and Meteorological Science in Treaty-Port China

Nowadays most of us know about scientific controversies such as global warming or Genetically Modified Organisms (GMOs), through the media. Researchers have found that media has played a major role in setting the agenda when it comes to defining society's most important environmental and scientific questions.<sup>1</sup> Back in the nineteenth century, newspapers played a similar role, framing questions about science and the environment for their readers. When it came to questions about weather and meteorology, typhoon warnings published in East Asia's English-language newspapers influenced the thinking and actions of merchants who operated along the China coast. But unlike contemporary media, which is so strongly tied to national contexts, this colonial media operated in a more heterogeneous, trans-national context. English-language newspapers from Hong Kong and Shanghai, which mainly served foreign Anglophone (non-Chinese) merchant communities, alerted their readers to the dangers of typhoons and, in the process, drew attention to questions about the accuracy of meteorological reports issued by observatories in multiple countries.

The rise of modern meteorology was facilitated by improvements in various communication technologies. The telegraph in particular was the key to the rise of the "synoptic method" of meteorology in the second half of the nineteenth century. The synoptic method was enabled by the collation of standardized weather data transmitted by telegraphic communication across enormous distances, the making of weather maps, the analysis and prediction of upcoming weather phenomena, and, finally, the broadcasting of "diagnoses" through the media. Synoptic forecasting relied upon a network of observers who worked within national or international institutions.<sup>2</sup> In nineteenth-century East Asia, there were no national meteorological networks, but rather a heterogeneous mixture of practitioners working to

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<sup>1</sup> Maxwell T. Boykoff, *Who Speaks for the Climate? Making Sense of Media Reporting on Climate Change* (Cambridge: Cambridge University Press, 2011).

<sup>2</sup> For instance, in the United States, the Army Signal Corps established the first government telegraphic network for meteorology in 1870, which was the forerunner of the US Weather Bureau. European countries also employed the telegraph in weather forecasts, following the US model. See James Rodger Fleming, *Meteorology in America, 1800–1870* (Baltimore: Johns Hopkins University Press, 1990), 141–62.

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analyze the weather in locations under the control of both colonial and semi-colonial regimes. This informal network can be seen as a part of the “informal empire” that exerted paramount influence upon local politics and economy in East Asia at this time.<sup>3</sup> This article examines the way in which communications related to meteorology crossed national and international boundaries, undermining imperial and colonial claims to monopolies on weather forecasting.

In addition to the telegraph, newspapers, especially English-language ones, printed weather predictions, serving as another communication technology that challenged the imperial monopoly on weather forecasting. The Anglophone press, such as the *China Mail* in British colonial Hong Kong and the *North China Herald* in treaty-port Shanghai were published since the mid-nineteenth century and circulated beyond their publishing entrepôts. Simon J. Potter has argued that in the last three decades of the century, there constituted a British “imperial press system” that corresponded to the worldwide circulation of knowledge, personnel, and money.<sup>4</sup> In the “Far East,” this imperial publication system featured meteorological information. The circulation of typhoon warnings involved the exchange of information via newspapers from Hong Kong, Shanghai, Manila, and other port towns along the typhoon corridor.<sup>5</sup> Observatories in Hong Kong, Shanghai, and Manila engaged with these media outlets by sending them weather information related to shipping risks.

The state-sponsored collection of telegraphic weather data in Euro-American countries began in the 1860s.<sup>6</sup> This process led to the creation of meteorological “sovereignties” as states standardized protocols of observation and monopolized forecasting within their territories. The synoptic method necessitated a head meteorological official, who was responsible for maintaining observation networks and overseeing the circulation of information. In contrast to this state-run system, the China coasts featured a private system of data gathering, organized through institutions within Britain’s informal empire. The system was initiated in Shanghai in 1881 by the foreign mercantile community. The Shanghai Chamber of Commerce asked a Jesuit observatory operated by French fathers to act as the head office for weather data-collecting and typhoon warnings in the region. The Chamber promised to raise funding for the scheme in the first few years. Meanwhile, the foreign-staffed Maritime Customs Service, one of the institutions that exemplified Britain’s informal empire in China, was asked to provide the head office in Shanghai with standardized observation data gathered from their stations and lighthouses.<sup>7</sup> This private effort to establish a head observatory in Shanghai had long-term ramifications for meteorology in China. The Zikawei Observatory, as it was called, served as the country’s *de facto* central observatory until the post-World War II era.

<sup>3</sup> The concept of “informal empire” comes from C. R. Fay in “The Movement Towards Free Trade, 1820–1853,” *The Cambridge History of the British Empire*, Vol.2 (Cambridge: Cambridge University Press, 1940, 1968), 388–414. It was conceptualized by John Gallagher and Ronald E. Robinson in “The Imperialism of Free Trade, 1815–1914,” *Economic History Review* 6 (1953): 1–15. For further discussion of this concept in the East Asian context, see Fa-ti Fan, *British Naturalists in Qing China: Science, Empire, and Cultural Encounter* (Cambridge: Harvard University Press, 2004), 62–64 and 72–75.

<sup>4</sup> Simon J. Potter, *News and the British World: The Emergence of an Imperial Press System, 1876–1922* (Oxford: Clarendon Press, 2003); Simon J. Potter, “Webs, Networks, and Systems: Globalization and the Mass Media in the Nineteenth- and Twentieth-Century British Empire,” *The Journal of British Studies* 46, no. 3 (2007): 621–46.

<sup>5</sup> This sphere of public communication regarding typhoons extended to Singapore, which was located outside the typhoon region, but whose ship traffic was certainly affected by typhoons.

<sup>6</sup> A comprehensive list of meteorological services and institutions in European countries and the United States can be found in Katherine Anderson, *Predicting the Weather: Victorians and the Science of Meteorology* (Chicago: Chicago University Press, 2005), 44–45.

<sup>7</sup> For a recent analysis of the Chinese Imperial Maritime Customs, see Hans van de Ven, *Breaking With the Past: The Maritime Customs Service and the Global Origins of Modernity in China* (New York: Columbia University Press, 2014).

## The Intervention of British Imperial Meteorology in Hong Kong

The British colonial government established the Hong Kong Observatory shortly after the launch of the Zikawei Observatory in Shanghai. During this period, a letter soliciting funds for the Shanghai observatory reached an agent of Lloyd's of London in Shanghai, who forwarded it to Lloyd's of London headquarters. Receiving this message, Sir Henry M. Hozier, Secretary of Lloyd's and later father-in-law of Sir Winston Churchill, refused to fund the Shanghai scheme. Instead, on 6 March 1882, he forwarded the message to the British Meteorological Office. Thereafter, the British government inaugurated a new policy for meteorology in its empire in East Asia.<sup>8</sup> This policy established a new official observatory in Hong Kong and made it the head observatory for the British government in China.<sup>9</sup>

From the very beginning, the Shanghai initiative also caught the eye of the English press in Shanghai and Hong Kong. These newspapers along the China coasts originated in mercantile zeal and were highly sensitive to issues of navigation safety which was essential to the bustling trade.<sup>10</sup> Typhoons and their alleged damage to vessels at sea were common topics in newspaper columns almost every typhoon season, even if the typhoons caused little or no damage on land. The press, along with the insurance and shipping industries, which comprised a large portion of the newspapers' advertising business, valued efforts to improve maritime security.

The mercantile media's desire for typhoon warnings framed the work of both the Zikawei and Hong Kong observatories. It also made the imperial or national intention to monopolize weather messages less relevant to public concern. Before the establishment of the Shanghai and Hong Kong observatories, a telegraphic connection to the Philippines from Hong Kong had been finished in 1880. This brought the Manila Observatory to the attention of media outlets located in coastal cities in China. Figure 1 shows the timing of the establishment of each observatory and their directors. The observatory in Manila was established by Spanish Jesuit fathers. As typhoons usually originated in the Philippine Sea, the Manila Observatory was on the front lines of weather monitoring and was expected to forward timely typhoon warnings to Hong Kong and the China coast. In addition, the observatories provided chronometric, astronomical, seismological, and magnetic services and observations. But in a society dominated by "mercantile marine" interests, the importance of typhoon warnings overshadowed and even overwhelmed other tasks.

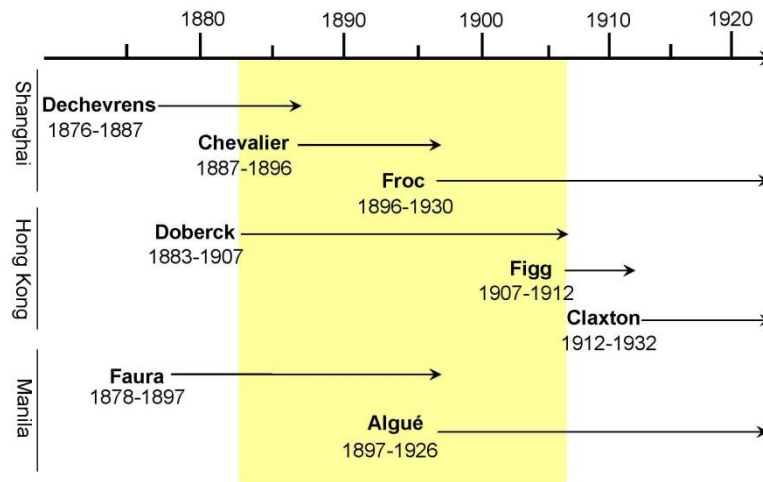
The Jesuit directors of the Shanghai and Manila observatories recognized this need more than their colleagues in Hong Kong. Dr. William Doberck was particularly involved in highlighting the entangled relationship between the press and weather reporters of these observatories in the typhoon region in this period. Doberck, a Dane with a doctorate in astronomy from Germany's Jena University, was the first director of the British government's new observatory in Hong Kong. His directorship gave him an official stature on par with the directors of the Shanghai and Manila observatories. But due to the tendency of each

<sup>8</sup> Henry Hozier to the Secretary of the (British) Meteorological Office, 6 March 1882, Correspondence and Papers Related to the Establishment and Operation of the Royal Hong Kong Observatory, 1882–1912, HKRS356 1-1(1), no. 2, in the Hong Kong Public Record Office.

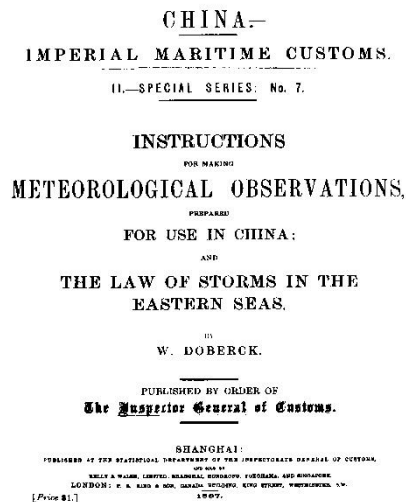
<sup>9</sup> This Lloyd's initiative for the Shanghai observatory was not mentioned in P. Kevin MacKeown's account for the beginning of the Hong Kong Observatory. See his *Early China Coast Meteorology: The Role of Hong Kong* (Hong Kong: Hong Kong University Press, 2010).

<sup>10</sup> For a detailed introduction to these newspapers, see Frank H. H. King and Prescott Clarke, eds., *A Research Guide to China-Coast Newspapers, 1822–1911* (Cambridge, MA: Harvard University Press, 1965) and Prescott Clarke, "The Development of the English-Language Press on the China Coast, 1827–1881," (MA diss., SOAS, University of London, 1961).

observatory to consider itself the “central” one in East Asia, Dr. Doberck’s relationship with the other directors was characterized more by rivalry than by cooperation.



**Fig 1.** Directors of the Shanghai, Hong Kong, and Manila observatories from their inauguration to the 1920s. Source: created by the author.



**Fig 2.** Dr. William Doberck’s pamphlet published by the Chinese Imperial Maritime Customs.

Source: ARL Chinese Center, *The Publications of Chinese Maritime Customs*, Washington, D.C.: Centre for Chinese Research Materials, Association of Research Libraries, 1970, microfilm reel no. 94.

Before Dr. Doberck's arrival in Hong Kong in 1883, the President of the British Royal Society had described him as "a very scientific man".<sup>11</sup> However, this compliment was apparently not shared by Hong Kong's "ratepayers", who held major interests in the shipping and trading industries. After his arrival, Dr. Doberck became tangled in a series of disputes, some with his scientific confrères in other nearby port cities. These disputes were due not to Doberck's cantankerous personality, but to competition with the Shanghai-based meteorological organization launched two years earlier, in 1881.<sup>12</sup> In what follows, I focus on his controversies with these typhoon forecasters outside of Hong Kong.

These controversies are especially significant for what they reveal about the evolution of state sovereignty in the typhoon region. The exclusive territorial claims of each governmental meteorologist were in question, while the media intentionally carried typhoon warnings from various authorities. Typhoon reports from different observatories were printed side-by-side in newspaper columns, allowing readers who were themselves seafarers or who were in the seaborne merchant business to determine the accuracy of the data from each respective observatory based upon the actual journeys of every ship and vessel. These mercantile users thus not only acted as sponsors and spectators of the observatories' weather services; they were also present for the emerging rivalry between the observatories and acted as juries in subsequent disputes between them. Most importantly, in the early synoptic age, they also provided marine data to the respective observatories.

### **Tension Between a Meteorological Monopoly and the Circulation of Weather Messages Among Ports**

From the very beginning of the communication between the Hong Kong and Manila observatories, Manila provided information and forecasts about typhoons. The Manila Jesuits distributed these forecasts to the Hong Kong press via the Spanish Consul in Hong Kong. Rather than seeing these warnings and forecasts as signs of friendly reciprocity from one port city to another, Doberck viewed them with suspicion and doubt. They were an annoyance, even a nightmare, for the meteorological "reporter-in-chief" in the British colony. Dr. Doberck made every effort to ignore them.

Two major newspapers in Hong Kong soon reported astonishment at Doberck's attitude towards his scientific peers at Manila and his neglect of their typhoon warnings. For instance, in the autumn of 1886, the Spanish Consul in Hong Kong (M. C. Ribera) received a typhoon warning from Manila and forwarded it to the *China Mail*. The telegram read: "A typhoon is raging to the N.E. of Luzon. It appears to be travelling towards the N.N.W. It is moving slowly. If it changes direction advice will be given".<sup>13</sup> Doberck ignored the message and in his weather report for the following day, he made no mention of the typhoon.<sup>14</sup> The *China Mail* criticized his attitude: "Now, although this telegraphic message deals with a storm which is most unlikely to touch or affect this Island, it nevertheless conveys a piece of intelligence which is most important to know, and which may materially affect the movements of ships here and at the

<sup>11</sup> William Spottiswoode, President of the Royal Society, 1878–1883, to the Colonial Office, Robert G. W. Herbert, 8 December 1882, British Colonial Office File, CO 129/206, 209.

<sup>12</sup> Marlon Zhu, "Typhoons, Meteorological Intelligence, and the Inter-Port Mercantile Community in Nineteenth-Century China" (PhD diss., Binghamton University, State University of New York, 2012).

<sup>13</sup> "Approaching Typhoon," *China Mail*, 7 September 1886, 2.

<sup>14</sup> *China Mail*, 8 September 1886, 4. The paper's daily column, the "*China Coast Meteorological Register*," Doberck's usual channel for issuing his warnings in the press, noted: "The barometer has risen and gradients are slight for S.W. winds in the South. The temperature is moderate, the air unusually dry, and the weather fine".



Coast Ports". The newspaper noted that this was not the first time Dr. Doberck had ignored the Manila telegrams. His seemed deliberate ignorance was observed by the press as a "matter of common remark" by which such information from Manila usually did "not find its way to the public".<sup>15</sup>

The editor continued to remind readers of the Hong Kong Observatory's *raison d'être*. In his opinion, the observatory was a center for a "grand combination of storm-warnings". Nevertheless, the realization of its mission was, the editor lamented, threatened by Doberck's indifferent attitude toward the Manila telegrams:

The friends of Dr. Doberck, we believe, set down that learned official scientist as a most exceedingly ill-used gentleman, because his learned brethren and collaborators in science at Shanghai, Manila and elsewhere fail in those friendly and mutually-beneficial courtesies necessary to the prosecution of systematic meteorology and the prophesying of storms. On the other hand, the worthy Doctor is by others asserted to have got all his brethren both in and out of the Colony by the ears. Our Astronomer, indeed, is freely spoken of as a veritable Storm King, and that it is perfectly reasonable and safe to predict a storm, official or scientific, upon his approach . . . A general impression exists that no reciprocity exists worthy of the name.<sup>16</sup>

Such comments on the apparent lack of courteous reciprocity between Doberck and forecasters in Manila and Shanghai became a frequent topic of discussion in the Hong Kong newspapers. Even to the very end of Doberck's directorship in 1906, the Hong Kong press used words such as "glorious isolation" sarcastically to criticize the situation that resulted from Doberck's temperament.<sup>17</sup>

Further criticisms culminated in the "Manila Incident of 1899", in which the Manila Jesuits directly confronted Doberck. Doberck usually had to fight with Jesuits on two fronts to maintain his monopoly on weather messages: Manila in the south, where typhoon warnings earlier than Hong Kong often originated, and Shanghai in the north, where the Jesuit observatory claimed to be China's central observatory. The quarrels always focused on the prediction of typhoons. Different and sometimes conflicting "diagnoses" of typhoons were juxtaposed publicly in the press. The typhoon season of 1884, the first year of the Hong Kong Observatory, witnessed such confrontation, with different weather information coming from different authorities. One letter to the editor of the *Hong Kong Daily Press*, another major English-language daily, pointed out that the Jesuit directors of the observatories in both Manila and Shanghai had furnished the Hong Kong public "much fuller information" than Doberck regarding a typhoon that had just hit Hong Kong.<sup>18</sup> General readers of the papers thus had an easy time determining which source of information was more reliable amid the ongoing rivalry between Doberck and his counterparts; but for those who had a stake in shipping interests, being greatly affected by typhoons, were heavily involved in debates over meteorological information, and some even tested the accuracy of such information in person on the open seas. To them, it was a matter of dead or alive.

### **A Trial of Trust: The Manila Controversy of 1899**

The rivalry between Dr. Doberck and the Jesuits was most intense in late 1898 and early 1899. At this time, the United States had just defeated Spain in war and had imposed its rule over the Philippines. On 5 November 1898, Dr. Doberck addressed a letter to Dr. Willis

<sup>15</sup> Editorial, *China Mail*, 8 September 1886, 2.

<sup>16</sup> Ibid.

<sup>17</sup> Editorial, *Daily Press*, 26 September 1906, 2.

<sup>18</sup> "Nubes," "Correspondence: Typhoon Notes," *Daily Press*, 16 September 1884, 2.

L. Moore, Chief of the Weather Bureau in Washington DC, asking the US authorities in the Philippines to stop the Jesuit fathers of the Manila Observatory from transmitting weather telegrams from Manila to Hong Kong.<sup>19</sup> The US authorities adopted Doberck's suggestion and the transmission of weather telegrams from Manila ceased on 27 February 1899.<sup>20</sup>

The Jesuit fathers in Manila responded angrily to Doberck's action. Father Jose Algué, who succeeded founding director Frederico Faura as head of the Manila Observatory, found out about Doberck's letter to Moore. After the official prohibition of telegrams, Algué reached out to authorities in Manila and Hong Kong for assistance. In a letter to the US Provost Marshal General of Manila, Algué argued that the prohibition, which he himself was willing to obey, would "make a sad impression upon the British Naval and Civil Authorities of Hong Kong, and upon the Naval and Commercial Institutions of any Nationality in the Far East".<sup>21</sup> Algué clearly sought to isolate Doberck. Algué wrote:

Nevertheless, we desire to have it known, that the same Provision is based upon biased and incorrect information, of one single Director of the Hong Kong Observatory, who alone, of all other Directors of the Observatories in the Far East, is hostile to Meteorological Institution at Manila, the reputation of which he has been trying to impugn, ever since the year 1884; and now that he has brought the question before the Department of Agriculture of the U.S., we earnestly beg the American Authorities, here and in Washington, to inquire thoroughly into this matter.

Later on, we shall prove the efficiency of our Meteorological Department, but meanwhile, we oppose to the assertions of the Director of the Observatory in Hong Kong the testimonials of a man, the most competent to appreciate the work done, at present, by the Observatory at Manila.<sup>22</sup>

Algué's writing suggests that Doberck and the Manila Observatory developed tensions as early as 1884, during the first year of the Hong Kong Observatory's existence.

In another letter to the editor in Hong Kong, Algué accused Doberck of writing to Washington that "the Observatory in Manila, is in hands of men who possess very little scientific education" and that the "scandal is caused by our [Manila's] continually communicating sensational typhoon warnings to the newspapers in Hong Kong".<sup>23</sup> A duplicate copy of Doberck's letter kept in the Public Record Office of Hong Kong, Doberck did undermine the credibility of the Manila Observatory by saying "the Municipal Observatory in connection with the High School in Manila," and the "Spanish priests, who possess very little scientific education."<sup>24</sup> In the following passages of the same paragraph in Doberck's letter, he was accusing Manila committed plagiarism when they derived "much of the matter which they print from the publications, weather telegrams etc., issued from this Observatory (Hong Kong),

<sup>19</sup> William Doberck to Willis Moore, 5 November, 1898,

<sup>20</sup> The US Weather Bureau was at that time under the Department of Agriculture. Thus, the official order was issued by the Secretary of Agriculture, transmitted via the Secretary of War, and then sent to the Provost Marshal of Manila (R. P. Hughes). It suspended telegraphic typhoon warnings given by Manila for any place outside the Philippines. For the starting date of this prohibition, see *China Mail*, 15 April 1899, 3.

<sup>21</sup> Jose Algué to R. P. Hughes, 7 March 1899, in *China Mail*, 17 March 1899, 3.

<sup>22</sup> *Ibid.*

<sup>23</sup> For Algué's letters from 7 March 1899 to the editors of the *China Mail* and the *Hong Kong Telegraph*, see *China Mail*, 17 March 1899, 3; and "Correspondence and Papers Relating to the Hong Kong Observatory, 1891–1967," HKRS842, 1-3, No. 28, in the Hong Kong Public Record Office.

<sup>24</sup> William Doberck to Willis Moore, 5 November, 1898, "Correspondence and Papers Relating to the Hong Kong Observatory, 1891–1967," HKRS842, 1-3, No. 33-1, in the Hong Kong Public Record Office.

without however in any way acknowledging their indebtedness to this Observatory.”<sup>25</sup> Algué did not mention this accusation in his publicized responses.

Algué, for his part, misrepresented Doberck’s accusations:

The sole aim of the Manila Observatory is to be useful to the Public at large, and especially to seamen, naval and mercantile, of every nationality, who are so often exposed to the dangers of typhoons in the Far East. To this end, our Observatory has worked for a great many years with a vast amount of labour and expenditure, and undoubtedly, in many instances disaster has been avoided owing to its timely warnings. But, if after all, the reputation achieved has been merely that of causing scandal by sensational typhoon warnings, that is a very discouraging result indeed.<sup>26</sup>

Algué seemed to suggest that Doberck was intent on besmirching the reputation of the Manila Observatory by linking its work with “scandal” and “sensational” forecasting. He reprinted parts of Doberck’s confidential letter to Moore to make his case. A review of the complete text of Doberck’s letter, which can be found in the “Correspondence and Papers Related to the Establishment and Operation of the Royal Hong Kong Observatory, 1882–1912”, kept by the Hong Kong Public Records Office, does indeed show that Doberck used such language. In that letter, the meaning of the “scandal” was explained as follows:

Scandal is caused by the Spanish priests continually communicating sensational typhoon warnings through the Spanish Consul to the newspapers in Hong Kong. *As it is against international regulations* laid down for the guidance of meteorological authorities, for an authority in one country to issue storm-warnings in the district covered by an authority of another country, I would venture to suggest that you should recommend the American Government of the Philippines to put a stop to this irregularity”.<sup>27</sup>

Doberck’s letter shows that he denounced the work of the Jesuits in Manila based upon the notion that international regulation allowed state authorities to maintain a monopoly over meteorology in their country—that is, to maintain “meteorological sovereignty”. As I will demonstrate later, these “international regulations” were the reason behind the US decision to end the transmission of Manila’s warning telegrams to Hong Kong.

Algué’s letter appeared in the *China Mail* on 17 March, arousing public condemnation of Doberck in the following days. The editor of the *China Mail* commented that Doberck’s correspondence with Washington was a “highhanded and arbitrary action”. On 20 March, the *Hong Kong Daily Press* commented that Doberck’s letter constituted “a public misfortune”, and suggested that the prohibition might be rescinded through a joint petition made by “the Insurance Offices and shipping firms of Hong Kong”. The Editor continued by mentioning the history of the connection between Hong Kong and Manila in terms of weather information before the establishment of the Hong Kong Observatory (HKO), and described the HKO as originated from mercantile need “on purely utilitarian grounds”. Before the HKO’s establishment, the Hong Kong mercantile public relied solely on Manila for storm warnings and highly appreciated its information, as demonstrated by the voluntary subscriptions made to Manila by insurance companies in Hong Kong. Even in the HKO’s first few years, the Hong Kong public remained dependent on the information provided from Manila. Owing to these considerations, the Hong Kong press claimed that the Hong Kong “public have regarded the

<sup>25</sup> William Doberck to Willis Moore, Chief of the US Weather Bureau, 5 November 1898, in “Correspondence and Papers Relating to the Hong Kong Observatory, 1891-1967,” Hong Kong Public Record Office, HKRS842, 1/3, No. 33.

<sup>26</sup> Jose Algué to R. P. Hughes, 7 March 1899, in *China Mail*, 17 March 1899, 3.

<sup>27</sup> Doberck to Moore, 5 November 1898. Emphasis added.



Manila information and prognostications, as far as they went, with more confidence than our local forecasts".<sup>28</sup>

The editor of the *Hong Kong Daily Press* was on Algué's side in confirming the mercantile community's trust in the Manila telegrams. He reiterated Algué's assessments of Doberck. With regard to the claim that the Manila directors had "very little" scientific education, the *Daily Press* asserted that the value of the directors' scientific education was a matter of opinion. But the newspaper added that one should perhaps question "the value of the scientific education of the Director of the Hong Kong Observatory".<sup>29</sup> The editor thought that local opinion would probably be in favor of Manila. He called out Doberck's transgression, noting that "the slur cast by one scientist upon rival scientists who have always excited his jealousy is more than ungenerous".<sup>30</sup>

The Hong Kong press exonerated Algué and the Manila station in other ways. Where Doberck's letter had claimed that "scandal is caused by the Manila Observatory continually communicating sensational typhoon warnings to the newspapers in Hong Kong", the Hong Kong press asserted that this was "an absolute untruth".<sup>31</sup> Obviously misguided by Algué's definition on what was "scandalous," the *Daily Press* defended the Manila warnings, as they always specified the position of the storms and were followed by subsequent telegrams tracing the course of the storms. None of them were sensational, as Algué put in Doberck's mouth. The loyal Hong Kong press continued to absolve Manila of wrongdoing, saying that:

Of the storms notified naturally only a limited proportion have struck Hong Kong, but it is unnecessary to dwell upon the value to shipping of early and accurate information regarding the existence of typhoons, whatever their direction may be. The information supplied from Manila has been very accurate indeed, a statement which we think will be borne out by all who have carefully watched the typhoon movements.<sup>32</sup>

The editor of the *Daily Press* then concluded that the colony was under great obligation to the Manila Observatory, and whatever decision might be made concerning the communication of future storm warnings, steps should be taken to make amends to Manila for the offensive conduct of the HKO's director. Doberck's attack, in the editor's opinion, had already brought disgrace upon the government and the whole community.

On 21 March 1899, an editorial in the *China Mail* doubled down on the denunciations of Doberck, stating that: "We were pleased to see the forcible and sensible remarks which appeared in the leader column of our morning contemporary yesterday concerning the attack made by the Director of the Hong Kong Observatory upon the kindred institution in Manila".<sup>33</sup> And the *China Mail's* Editor continued, saying that its columns had been useful more than a decade, in proving "the harm steadily and persistently done by Dr. Doberck, in alienating nearly every outside recorder of storm warnings, and the consequent isolation of the local Observatory from all useful cooperation with similar institutions at Sicawei (Shanghai) and

<sup>28</sup> Editorial, *The Hong Kong Daily Press*, 20 March 1899, 2.

<sup>29</sup> The Hong Kong press commented on Doberck's scientific education in astronomy, with a doctoral degree from a German university (Jena), implying that he was not educated as a meteorologist. In fact, meteorology was not yet academically institutionalized in the nineteenth century and no degree in meteorology was granted. All the directors of the various observatories, including the Jesuits, were originally trained as astronomers.

<sup>30</sup> Editorial, *The Hong Kong Daily Press*, 20 March 1899, 2.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Editorial, *The China Mail*, 21 March 1899, 2.

Manila”.<sup>34</sup> The editor pointed out that this was not Doberck’s first mistake. Indeed, the *China Mail* had already called upon three successive Hong Kong governors to deal with Doberck’s “glorious isolation”, in order to prevent “absolute destruction of any little element of usefulness which was apparent at the Kowloon Observatory”.<sup>35</sup> The reason for the regrettable situation was due to “the rude and insulting disposition of the Head of that institution”.

The Hong Kong newspapers thus served as a venue for litigating a case involving the public’s trust: that of Doberck against his Manila colleagues. While editors and readers seemed to side with Manila, public opinion ignored the point about control over meteorological information that Doberck had raised in his letter to US meteorological authorities. At issue was the meteorological sovereignty of British officials and the HKO within British colonial territory, an issue which seemed to raise little concern in the inter-colonial press.

### “International Courtesy” in Meteorology and the Case of the *New York Herald*

The controversy of 1899 taxed the time and energy of Doberck and others who became involved in debating whether Manila’s typhoon warnings were “sensational”. The issue occupied a great many lines in the Hong Kong government’s official minutes. However, the crucial reason why Doberck asked Washington to suspend Manila’s telegrams was not the “sensational” nature of the warnings but rather state power, something that Doberck later reiterated in his original explaining letter to the Hong Kong Government regarding the Manila incident.<sup>36</sup> To cite Doberck’s words, his request to Moore was based in “international regulations”, which were laid down for the guidance of meteorological authorities. The regulations governed the situation for “an authority in one country to issue storm warnings in the district covered by an authority of another country”. Whether the warnings were sensational or not was not Doberck’s main concern.

In his letter of 5 November 1898, Doberck reminded officials in Washington of a similar situation that had occurred between the United States and the United Kingdom, in which the US meteorological authorities “most courteously assisted the Meteorological Office in London to put a stop to the *New York Herald* storm warnings, which interfered so materially with the work of the British Meteorological authority”. The reason for this was, Doberck noted, that the telegraphed American storm warnings “were doing harm” to the UK.<sup>37</sup> When composing its warnings, the *Herald* drew upon numerous sources of information, including data from ships arriving in New York after crossing the North Atlantic and observations from on-shore stations. In addition to the data from the US Army Signal Corps, the *Herald*’s weather intelligence also came from British Columbia, Central America, and Mexico.<sup>38</sup> Katherine

<sup>34</sup> Ibid.

<sup>35</sup> The three successive governors were Sir George F. Bowen (March 1883 to October 1887), Sir George W. Des Voeux (October 1887 to December 1891), and Sir William Robinson (December 1891 to November 1898). To be more specific, the Hong Kong observatory was built on Mount Elgin in Kowloon, not on Hong Kong Island; hence, the name “Kowloon Observatory” was used by Doberck’s opponents and critics to disparage him and the observatory.

<sup>36</sup> William Doberck to the Colonial Secretary, 17 March 1899, in “Correspondence and Papers Relating to the Hong Kong Observatory, 1891-1967,” Hong Kong Public Record Office, HKRS842, 1/3, No.33-8; and Doberck to the Colonial Secretary, 21 March 1899, No.33-9; and Doberck to the Colonial Secretary, 28 March 1899, No.28a.

<sup>37</sup> William Doberck to the Colonial Secretary, 17 March 1899, in “Correspondence and Papers Relating to the Hong Kong Observatory, 1891-1967,” Hong Kong Public Record Office, HKRS842, 1/3, No.33.

<sup>38</sup> The *Herald* issued its first cross-Atlantic warning on 14 February 1877. See Jerome J. Collins, “The American Storm Warnings,” *Nature* 18, no. 444 (1878): 4–6; *Nature* 18, no. 445 (1878): 31–34; *Nature* 18, no. 446 (1878): 61–63. An example carried in the *Times* of London (5 July 1877, 12) went: “The following Cable dispatch has been received at the London Office of the *New York Herald*: ‘Storm centre will arrive on British and French coasts probably 5<sup>th</sup> or 6<sup>th</sup>. North-east to south-west gales, rain, and lightning. Warn out-bound vessels.’”

Anderson has observed that the *Herald's* storm warnings were a further blow to British pride in meteorology after a comparison of the scale of the two countries' observation networks and the success rate of their predictions. The trans-Atlantic warnings were gratefully publicized in Europe and became, Anderson has observed, somewhat humiliating for British meteorologists.<sup>39</sup>

Facing the challenge of trans-national warning telegrams issued by the *New York Herald* weather service, both British and US meteorological officers responded promptly. Robert H. Scott, the director of the British Meteorological Office, admired the public spirit of the *New York Herald's* proprietor and acknowledged that the American storm warnings had enjoyed an "undeniable popularity with the newspaper-reading public" in Britain.<sup>40</sup> However, Scott also commented that the *Herald* kept the mode of preparation of these telegraphic announcements, and the facts on which they were based, secret. And since these warnings of cross-Atlantic storms were based solely on the conditions of weather prevailing in the United States, lacking of the observation made in the eastern Atlantic side, "we are in a position to show that not a quarter of them could be correct".<sup>41</sup> Scott then cited Captain Hoffmeyer, head of the Danish Meteorological Service, who pointed out that the *Herald* could only have predicted about one-fifth of the northwestern Atlantic storms.

The question of accuracy loomed large in these reviews of the trans-Atlantic storm warnings. It was on this basis that Scott considered the *Herald's* warnings unsatisfactory. He referred to Cleveland Abbe's claim that only 17 percent of the American newspaper's warning telegrams to Europe were "quite right". An additional 23 percent were only "partially right", Scott continued, and the remaining 60 percent were totally inaccurate. Another review by Scott himself in March 1878 showed a similar inaccuracy rate of 57.5 percent. Meanwhile, Scott noted that the *Herald* itself touted its storm warnings as having a very high degree of accuracy, giving readers a false impression of its reliability in weather forecasting. "In one year at least 99 percent of success was claimed", he wrote.<sup>42</sup> However, an analysis by a different writer seemed to verify the accuracy of the *Herald's* warnings. Out of a complete list of 27 warnings issued between 1 March and 30 September 1878, only one was counted as failure.<sup>43</sup> Thus, various methods of verification and validation contradicted one another. Nevertheless, it was obvious to British authorities that the success rate of the newspaper's predictions was low. Almost twenty years later, when Abbe reviewed reports from the *Herald's* weather service, he claimed that his demonstration of their very low rate of accuracy was "so widely distributed in England and so convincing that it soon became undesirable for the enterprising Anglo-American newspaper to continue such work".<sup>44</sup>

<sup>39</sup> Anderson, *Predicting the Weather*, 248–50.

<sup>40</sup> Robert H. Scott, "Forecasting the Weather, II," *Good Words* 22 (1881): 565–70. In which Scott noted the private effort of the public weather service by the proprietor of the *New York Herald*, James Gordon Bennett (Jr.). It was Bennett who hired Jerome J. Collins as the scientific editor and the key figure in the *Herald's* enterprising weather service. Collins wrote an introduction to the history and operation of this service in Jerome J. Collins, "The American Storm Warnings," *Nature* 18, no. 444 (1878): 4–6; *Nature* 18, no. 445 (1878): 31–34; *Nature* 18, no. 446 (1878): 61–63.

<sup>41</sup> Scott, "Forecasting the Weather, II," *Good Words* 22 (1881): 565–70.

<sup>42</sup> Robert H. Scott, "Forecasting the Weather, II," *Good Words* 22 (1881): 565–70.

<sup>43</sup> Charles Halford Thompson, "American Storm-Warnings," *The Gentleman's Magazine* 245, no. 1787 (1879): 597–615.

<sup>44</sup> Cleveland Abbe, "International Courtesy," *Monthly Weather Review* 27, no. 4 (1899): 160–61.

Abbe later became one of Dr. Doberck's few supporters in Hong Kong. To support Moore's decision to suspend the Manila warnings, Abbe wrote an article titled "International Courtesy" in April 1899.<sup>45</sup> His article coincided with the Manila incident. In his piece, Abbe addressed the "official" statement of the US meteorological authorities regarding the Manila warning telegrams. The incident involving the *New York Herald* served as a useful precedent, allowing Abbe to defend the recent decision in Washington. He wrote that it was "about 1878, when a private party in New York gave great offence to the British Meteorological Office, great scandal [the same phrase used by Doberck] to practical meteorology, and great annoyance to the British public by frequent publication in England of storms about to arrive from America".<sup>46</sup> The new discourse of "international courtesy" used by meteorological authorities in the Atlantic had spread to the South China Sea.

Abbe recounted the actions taken by US meteorological authorities at that time. It was Brigadier General Albert James Myer (1828–1880) of the Chief Signal Office who took charge of the national weather service mandated by the US Congress. According to Abbe, General Myer was obliged to explain that he, personally, had no authority in the matter of the *New York Herald's* weather reporting service in Europe. Myer stated that he could, of course, prevent the publication of unauthorized weather predictions within the United States, but not in Great Britain. However, as Abbe recalled, "realizing that we might, as individuals, privately assist our colleagues in their dilemma, the Editor made a quite careful examination of every prediction that had been published in this unofficial manner in England".<sup>47</sup> The difference between official and private weather services was emphasized, and a code of international courtesy and respect for "national" meteorology was bolstered by attacks on the accuracy of weather data coming from private sources.

It was thus not surprising to see Abbe, at the very beginning of his manifesto in support of a monopoly on weather forecasting by national weather services, responding to questions regarding the Manila incident that had lately "excited so much public attention". As he wrote,

Several times in the history of the [US] Weather Bureau, both under the Secretary of War and the Secretary of Agriculture, it has happened that the Bureau has found it necessary to adopt certain rules appropriate to the courteous intercourse of nations as equals. Such rules may sometimes have seemed to make science subordinate and national honor supreme . . . The present question [of the Manila Incident] is not as to the study of storms, or the ability to predict them, but as to the right of issuing public predictions that may in any way bear the stamp of official authority . . .<sup>48</sup>

When introducing the Jesuit weather service in Manila, Abbe called it "a voluntary storm-warning system" for both the Philippines and the adjacent coasts of Asia. The private service, Abbe continued, originated in an inter-colonial situation in which "the French, German, English, Spanish, and native authorities stood in such complex relations to each other that out of pure courtesy and conservatism, and because nobody else offered to do the work, they all allowed the voluntary work of the Manila Observatory to go on from year to year". Now that the Spanish government had relinquished national rights in the Philippines, the Jesuits at the Manila Observatory were "loath to surrender their old-time privileges". But, Abbe proposed, it was the proper course of action that the US Weather Bureau abide by the protocols of international courtesy and suspend the transmission of typhoon warnings from Manila in

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<sup>45</sup> Ibid.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

accordance with Doberck's request. "If the meteorologists at Manila have anything to communicate relative to storms approaching China, Japan, or colonial stations, such as Hongkong", he asked, "why can not the communication be sent, as a matter of international courtesy, to the meteorological offices of these places? Why should not the latter bear the responsibility of giving proper local warnings? Why should local papers and harbormasters circulate warnings from irresponsible parties?"<sup>49</sup> These points would probably have irritated the pro-Manila, anti-Doberck factions in Hong Kong because questions of life or death, not those of international courtesy, were their vital concern. At the end of Abbe's article, he warned that "[i]t is disastrous to science whenever one man or one institution overrides, absorbs, or destroys the honest work of his neighbors. 'Cooperation and not monopoly,' is the only principle that can lead to success in the study and practice of meteorology". This was ironically the very opinion of Doberck's opponents, the anxious and furious inter-port mercantile community and the media who had hoped to continue to receive meteorological reports from Manila.

### **Conclusion: State Meteorology in the Market and the Accountability of Science**

The controversies between Dr. Doberck and his peer observers at the turn of the century are significant from several perspectives. In practice, the development of synoptic meteorology in the nineteenth century, which needed a head observatory to oversee the collection of standardized weather data from across vast distances, usually occurred within nation boundaries. The Hong Kong Observatory was the central British observatory, if not in all of China (as it was initially designated to be), then at least in the colony. According to the discourse of "international courtesy", the observatory had a right and a responsibility to claim meteorological sovereignty over the territory, just as British meteorological authorities had claimed in the *New York Herald* case. Along the China coast, however, Jesuit weather observers in the Philippines challenged the authority vested in the weather service by the British colonial state. It was Dr. Doberck's misfortune that the Jesuits had an older connection with, and a greater reputation among, the "local" mercantile communities in Hong Kong. With regards to meteorology, these communities were never "laypersons". Instead, the most influential among them were shipping merchants who made meteorological observations on the seas and suffered the risks of unpredictable typhoons. In light of the mutual interests of these communities and the Jesuits in Manila, the British imperial intention to uphold meteorological sovereignty in Hong Kong was doomed from the very beginning. In the trial presented by the local press, the winners were the local league of Jesuits, the merchants, and the commercial media.

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<sup>49</sup> Ibid.