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1881, a singularly uneventful year: Everyday death, destruction, and disaster in the Spanish Philippines

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While 1880 is remembered in the Philippines for a great earthquake that struck Manila and 1882 for a highly destructive typhoon that caused untold damage, the everyday disasters that happen all too often across the archipelago are soon forgotten. The interest is in the ‘big’ event, and historiography rarely focuses on less spectacular occurrences. 1881 was one such year when ‘nothing really much’ happened. And yet, a closer examination of the archival record reveals 12 months of earthquake, volcanic eruption, typhoon, storm, flood, and fire that afflicted people across the archipelago. These everyday calamities are historically such an integral part of Filipinos’ lives that they have shaped both their histories and their customs. More than the severity of the event, it is the frequency with which people have had to deal with calamity as an everyday event that has engendered socio-economic adaptation and cultural change. By examining the full range of disasters that people in the Philippines faced in 1881, this article examines the significant impact that geophysical and meteorological forces have had in influencing the daily lives of Filipinos in the past as they continue to do so in the present.

1881 was a singularly uneventful year in the Spanish Philippines. Unlike 1880, when a violent earthquake in July rocked the colonial capital, Manila, and devastated surrounding provinces.¹ Nor like 1882, when a destructive typhoon in October, ‘the most severe that has visited the islands for 50 years’, unroofed houses, drove countless vessels ashore, and laid waste to whole villages.² Nothing of the kind happened in 1881. True, the death of Sultan Muhammad Jamalul Alam on 6 April marks, with hindsight, the unravelling of the Sulu Sultanate, but Sulu was far from the centre of

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1 Francis A. Gealogo, ‘Historical seismology and the documentation of postdisaster conditions: The 1863 and 1880 Luzon earthquakes’, *Philippine Studies: Historical & Ethnographic Viewpoints* 64, 3–4 (2016): 359–84; Kerby Alvarez, ‘The June 1863 and July 1880 earthquakes in Luzon, Philippines: Interpretations and responses’, *Illes I Imperis: Estudios de Historia de las Sociedades en el Mundo Colonial y Postcolonial* 22 (2020): 147–69. See also Miguel Saderra Masó, *Catalogue of violent and destructive earthquakes in the Philippines with an appendix: Earthquakes in the Marianas Islands 1599–1909* (Manila: Bureau of Printing, 1910).

2 *El ciclón del 20 de octubre de 1882 que sufrieron Manila y las provincias centrales de la Isla de Luzon* (Manila: Establecimiento Tipográfico de la Oceanía Española, 1882); Samuel Kneeland, ‘The typhoon at Manila, Philippine Islands, Oct. 20, 1882’, *Science* 1, 1 (1883): 9.

colonial power and not yet under direct Spanish administration at the time.³ A powerful typhoon, too, passed over the Philippines in early October but its impact was mainly felt on the north coast of Vietnam where it reportedly killed 3,000 people.⁴ No, on balance, 1881 was not a year to particularly remember, a seemingly unremarkable 12 months among many in the long lead-up to the Philippine Revolution of 1896 and the dawn of modern Philippine historiography.⁵

And yet, 1881 was not such an uneventful year, if appraised, not with the macro-scope of ‘big history’ and the occasions that shape the fate of nations, but rather if measured in terms of the everyday death, destruction, and disaster than determine the minutiae of daily life in the islands: the periodic moments of terror induced by fire or quake, endless days of rain and flood, the devastating winds of seasonal typhoons, and the annual carnage of local shipping at sea. In the Philippines, these events in the past (as in the present) seldom receive more mention than an odd item in the local press or a humdrum report by a district official. What really separates 1881 from similar years of historical anonymity is a document in the Archivo Histórico Nacional (AHN) in Madrid. Its more than three hundred pages contain the newspaper cuttings, situation reports, telegraphic dispatches, and weather advisories for the principal island of Luzon and its immediate outliers over a six-month period for this year.⁶

The historical importance of this document lies in the rare snapshot it provides of the daily risks faced by everyday Filipinos in the late nineteenth century. There may have been no ‘big event’ in 1881 but across Luzon and, by extension, the rest of the archipelago, tens of thousands of people were adversely affected by natural hazards, most of which fell far short of what would be regarded as disasters. As it turns out, 1881 was a year in which countless people had their homes flooded, one in which many farmers never saw a harvest, when a provincial capital burnt to the ground, and 12 months of constant losses at sea. It was a time of tribulation for many who lost family, relatives, friends, and neighbours. The impact of natural hazards on societies is not confined to major events, the big earthquake, the powerful storm, the explosive eruption. Dire though the consequences of such disasters may be and lead, in extremis, to the abandonment of settlements and the depopulation of entire regions, it is more than simply the severity of the event that matters.⁷ Rather, it is the constancy of the everyday, small-scale hazards that people face that proves more

3 Cesar Andres-Miguel Suva, ‘In the shadow of 1881: The death of Sultan Jamalul Alam and its impact on colonial transition in Sulu, Philippines from 1881–1904’, *TRaNS: Trans -Regional and -National Studies of Southeast Asia* 8, 2 (2020): 85–99.

4 James P. Terry, Nigel Winspear and Tran Quoc Cuong, ‘The “terrific Tongking typhoon” of October 1881—implications for the Red River Delta (northern Vietnam) in modern times’, *Weather* 67, 3 (2012): 72–5. See also Marc Dechevrens, *The typhoons of the Chinese seas in the year 1881* (Shanghai: Kelly & Walsh, 1882).

5 See among others: Teodoro A. Agoncillo, *The revolt of the masses: The story of Bonifacio and the Katipunan* (Quezon City: University of the Philippines Press, 1956); Renato Constantino, *A past revisited* (Quezon City: Tala, 1975); and Reynaldo C. Ileto, *Pasyon and revolution: Popular movements in the Philippines, 1840–1910* (Quezon City: Ateneo de Manila University Press, 1979).

6 ‘Testimonio geológicos y meteorológicos ocurridos en la isla de Luzón desde el 24 de mayo al 30 de agosto de 1881’, Archivo Histórico Nacional (AHN), Madrid, Ultramar-500-Exp. 1.

7 Anthony Reid, ‘Two hitherto unknown Indonesian tsunamis of the seventeenth century: Probabilities and context’, *Journal of Southeast Asian Studies* 47, 1 (2016): 88–108.

enduring.⁸ Infrequent major events act, at times, as ‘catalysts of change’ or ‘windows of opportunity’ for major transformations in societies,⁹ but it is the frequent, more minor hazards that encourage socio-economic adaptation and cultural change.¹⁰

By scrutinising what happened in one year, 1881, not historically known for any major disaster, this article depicts the growing impact that everyday meteorological and geophysical forces had on Filipinos in the past. As Charles Perrow argues, the more complex society is, the more numerous the subsystem linkages that connect one sector or unit to another become.¹¹ While referring primarily to technological risks, the same interactions are manifest in rural communities like the nineteenth-century Philippines. Over time, there was an increasingly ‘tight coupling’ between natural hazards and agricultural practices that led to a cascade of multiple interacting hazards, one the direct or unanticipated result of the other.¹² None of these events were particularly noteworthy on their own account but together they present a detailed image of daily life in the archipelago. The picture it draws is not ‘big history’ (lowercase), nor does it advance any grand theory or argument about the past. Instead, it is about small things, the everyday perils and misfortunes that make up people’s lives. It depends on an assemblage of empirical facts, layer upon layer of historical examples, the power of ‘thin description’ (as opposed to ‘thick’)—but lots of it, to build its case and support its conclusions.¹³

In so doing, the article also accords more recognition to what happened in the countryside, as opposed to the city, giving more weight to events in rural areas, the *cabeceras* (provincial capitals) or *pueblos* (towns), where most people in the past lived. The classical histories of the nineteenth-century Philippines tend to be elite-centric and Manila-biased due partly to the provenance of available records and partly to the preoccupation of historians with crafting a national narrative.¹⁴ Even the shift

8 The importance of small-scale recurring disasters has received some recent attention, see: Arabella Fraser, Mark Pelling, Anna Scolobig and Stavros Mavrogenis, ‘Relating root causes to local risk conditions: A comparative study of the institutional pathways to small-scale disasters in three urban flood contexts’, *Global Environmental Change* 63 (2020), doi.org/10.1016/j.gloenvcha.2020.102102; Kishani Tennakoon, Silvia Serrao-Neumann and Christina Hanna, ‘Examining the incorporation of small-scale recurring disasters in emergency management frameworks: Insights from Aotearoa—New Zealand’, *International Journal of Disaster Risk Reduction* 66 (2021), doi.org/10.1016/j.ijdr.2021.102595.

9 Thomas A. Birkland, *After disaster: Agenda setting, public policy and focusing events* (Washington, DC: Georgetown University Press, 1997); Clare Johnson, Sylvia Tunstall and Edmund Penning-Rowsell, ‘Floods as catalysts for policy change: Historical lessons from England and Wales’, *Water Resources Development* 21, 4 (2005): 561–75; Jörn Birkmann, Philip Buckle, J. Jaeger, Mark Pelling, Neysa Setiadi, Matthais Garschagen, Nishara Fernando and Jürgen Kropp, ‘Extreme events and disasters: A window of opportunity for change? Analysis of organizational, institutional and political changes, formal and informal responses after mega-disasters’, *Natural Hazards* 5, 3 (2010): 637–55.

10 Greg Bankoff, *Cultures of disaster: Society and natural hazards in the Philippines* (London: Routledge, 2003); Gregory Clancey, *Earthquake nation: The cultural politics of Japanese seismicity, 1868–1930* (Berkeley: University of California Press, 2006); Sherry Johnson, *Climate and catastrophe in Cuba and the Atlantic world in the age of revolution* (Chapel Hill: University of North Carolina Press, 2012).

11 Charles Perrow, *Normal accidents: Living with high-risk technologies* (New York: Basic, 1984).

12 Amir AghaKouchak, Laurie S. Huning, Felicia Chiang, Mojtaba Sadegh, Farshid Vahedifard, Omid Mazdiyasn, Hamed Moftakhari and Iman Mallakpour, ‘How do natural hazards cascade to cause disasters?’, *Nature* 651, 27 (2018): 458–60.

13 Clifford Geertz, *The interpretation of cultures: Selected essays* (New York: Basic, 1973), pp. 3–30.

14 Onofre D. Corpuz, *The bureaucracy in the Philippines* (Manila: Institute of Public Administration, University of the Philippines, 1957); Nicholas P. Cushner, *Spain in the Philippines: From conquest to*

to writing a more provincial historiography in the 1970s and 1980s, with its concern over issues of land tenure and agricultural production, failed to address the devastating effects that repeated disasters had on provincial towns and rural communities.¹⁵ While recent scholarship accords a measure of recognition to the role of hazards in the past,¹⁶ it still often reflects a fixation with ‘national’ institutions and agencies.¹⁷ The material contained in the AHN report, however, offers a more accurate portrait of everyday hazards and the increasing impact they had on rural communities in the late Spanish Philippines.

Moments of terror

There was neither a high intensity earthquake nor a major volcanic eruption in 1881 to shatter the peace of people’s lives. Yet seismic activity is never far from daily life in the Philippines. Tremors rocked Manila, evoking uncomfortable fears of the previous year. Mount Mayon, seldom completely quiescent, erupted in July, albeit in a minor way. And a huge fire entirely consumed Calapan, the provincial capital of Mindoro, leaving the town a smouldering pile of ash. None of these events proved fatal, but they all served as constant reminders of what might happen at any moment: the terrible earthquakes in Manila of 1863 and 1880, the violent eruptions of Taal (1808) and Mayon (1814),¹⁸ and the great fire of 23 March 1870 that destroyed Binondo, the capital’s retail centre within hours.¹⁹

Manila was rocked by strong tremors in August, the most serious of which occurred on Sunday, 14 August. According to the Manila Observatory, the main tremor was felt at 9:46 pm and was followed by another, less intense, at 11:08 pm.²⁰ Tremors of varying intensity continued the next day and persisted to trouble the city during the following week, only to be overshadowed by the severe typhoon that hit the capital on the night of 19–20 August. Though tremors continued to

revolution (Quezon City: Ateneo de Manila University Press, 1971); John Schumacher, *The Propaganda Movement, 1880–1895: The creators of a Filipino consciousness, the makers of revolution* (Manila: Solidaridad, 1973).

15 John A. Larkin, *The Pampangans: Colonial society in a Philippine province* (Berkeley: University of California Press, 1972); Marshall S. McLennan, *The central Luzon plain: Land and society on the inland frontier* (Quezon City: Alemar-Phoenix, 1980); Norman G. Owen, *Prosperity without progress: Manila hemp and material life in the colonial Philippines* (Quezon City: Ateneo de Manila University Press, 1984); Bruce Cruikshank, *Samar, 1768–1898* (Manila: Historical Conservation Society, 1985).

16 James Warren, ‘Philippine typhoons, sources and the historian’, *Water History* 7 (2015): 213–31. See, for example, ‘Disasters in history’, special issue, *Philippine Studies: Historical & Ethnographic Viewpoints* 64, 3–4 (2016): 333–662.

17 Aitor Anduaga, *Cyclones & earthquakes: The Jesuits, prediction, & Spanish dominion in Cuba & the Philippines, 1850–1898* (Quezon City: Ateneo de Manila University Press, 2017); Kerby Alvarez, ‘A history of earthquakes in the Luzon Island, Philippines during the 19th and 20th centuries: Historical seismology, bureaucratic responses, and socio-cultural interpretations of disasters’ (PhD diss., Université de Namur, 2019).

18 Thomas R. Hargrove, *The mysteries of Taal: A Philippine volcano and lake, her sea life and lost towns* (Manila: Bookmark, 1991); Greg Bankoff, ‘Under the volcano: Mount Mayon and co-volcanic societies in the Philippines’, *Environment and History* 26, 1 (2020): 7–29.

19 Greg Bankoff, ‘A tale of two cities: The pyro-seismic morphology of nineteenth century Manila’, in *Flammable cities: Urban fire and the making of the modern world*, ed. Greg Bankoff, Uwe Luebken and Jordan Sand (Madison: University of Wisconsin Press, 2012), pp. 170–89.

20 *Diario de Manila*, 17 Aug. 1881.

shake the city throughout the cyclone, residents ‘scarcely felt [them] because of the strength of the wind’.²¹ The main tremor struck on Sunday night when the capital’s nightspots were filled with people. Both Manila’s principal theatres were performing zarzuelas that evening, a popular form of Spanish operetta.

At the *Variedades*, where Governor-General Primo de Rivera (1880–83) was watching a performance of *Dos Leones*, the audience sprang from their seats in alarm. Two matrons suffered convulsions, one broke into hysterical laughter, while the other froze rigid and then fainted. Backstage, several petrol lamps fell over, luckily without any further mishap. The governor-general did his best to assuage people’s fears, steadfastly remaining in his chair, and signalling for the operetta to resume, although, many in the audience considered it prudent to leave. At the *Teatro Filipino*, where the zarzuela *La Calendaria* was playing to a packed audience, the laughter caused moments before by the unexpected shutting of a metal door, died on people’s lips as everyone made for the doors at once. In the ensuing crush, one young man, a flautist recently arrived in the colony, tripped, and dislocated his shoulder. The prompt actions of the orchestra’s maestro, however, who struck up a popular dance tune, restored a measure of calm to the audience and most people resumed their seats. ‘Those who were able to overcome their fear,’ one newspaper account observed, ‘remained in the theatre disgusted by those weak-hearted who had departed.’²²

The anxiety shown by the theatre audiences was understandable given the destruction caused by the magnitude 7.0 Mw earthquake the year before.²³ Though the tremors caused minor damage in comparison to the earthquake the previous July, they were sufficiently prolonged to evoke ‘sad memories still fresh in the minds of its [the city’s] residents’. One writer noted how ‘we were taken by surprise once again by the Earth’s convulsions that destroy our interests and alarm our spirits’. Many were unable to sleep at night from fear, ‘remembering bad dreams and troubles little forgotten’.²⁴ So great was the alarm that seized some of the owners of the substantial stone houses in Intramuros that they moved their families to the surrounding rural areas. The *bahay kubo*, the native nipa and palm house, better withstood sudden earth movements and rarely proved fatal even if the structure collapsed.²⁵ But these evacuations were temporary. A subsequent report described how the continuing subterranean noises and the repeated shakings of the earth ‘made all those who had returned to their stone structures to think again of nipa ones’, and, in Tondo, ‘several families left, taking with them in their carriages, the essentials necessary to sleep’.²⁶ For several days, wagons and carriages could be seen carrying furniture and other household items back-and-forth between the city and its extensive suburbs.²⁷

21 *Diario de Manila*, 24 Aug. 1881.

22 *Diario de Manila*, 17 Aug. 1881.

23 José Centeno y García, *Memoria sobre los temblores de tierra ocurridos en Julio de 1880 en la Isla de Luzon* (Madrid: Imprenta de la Guirnalda, 1881).

24 *Diario de Manila*, 17 Aug. 1881.

25 Fernando N. Zialcita and Martin I. Tinio. *Philippine ancestral houses (1810–1930)* (Quezon City: GCF, 1992), pp. 65–89. On seismic construction in the Philippines, see Aitor Anduaga, ‘Earthquake building overseas: Military engineers, cyclonic-seismic affinity and the Spanish dominion in the Philippines, 1860–1898’, *Engineering Studies* 6, 1 (2014): 1–22.

26 *La Oceania Española*, 18 Aug. 1881.

27 Unspecified newspaper, Aug. 1881, AHN, Ultramar-500-Exp. 1.

Newspapers devoted much coverage to the effect of the tremors in Manila, fewer details of what happened in the surrounding *arrabales* (settlements), and almost no space to what took place in the provinces. Events in the capital's theatres are recounted in minute and repetitive detail down to printing the names of the two doctors who reset the shoulder of the unfortunate flautist! Even minor damage to urban property and superficial wounds to its residents received attention. So, readers are informed that Brígido Lim, clerk of the court in Binondo, split his upper lip when he fell awkwardly as the tremor struck his house in the suburb of Trozo.²⁸ In contrast, news that the church in Mariquina (Marikina), a nearby *pueblo*, had lost its entire roof when the central nave collapsed received only passing mention, even though 'in this locality the tremor was felt more than in 1863, and those of the past year'. Events further afield received even less attention, the barest of telegraphic reports that a tremor had happened at such and such an hour, or that it had lasted for so many minutes, or that prayers of thanksgiving had been said for some community's safe deliverance.²⁹ There are reports, too, of further tremors in the provinces throughout the year, hinting at a wider narrative of seismic damage.³⁰

Tremors, however, were not the only seismic disturbance to shatter the peace of the islands in 1881. After nearly ten years of uncharacteristic dormancy, Mayon, the most active volcano in the archipelago, erupted in May and remained in that state for much of the rest of the year. While not a major eruption, the military engineer, Enrique Abella y Casariego, considered it worth his while to pen a brief report of its activities for the Seismological Society of Japan. He describes 'the quiet excretions of lava from several volcanic vents' and how the eruption was accompanied by a sound like that of 'far-off snoring'.³¹ A more vivid account of the main eruption on the night of 27–28 June is contained in a letter written by a resident of Legazpi, the provincial capital of Albay, located at the southern foot of the volcano. Amidst the sound of the wind that night, the writer describes hearing strange subterranean sounds, presumably Casariego's 'far-off snoring', that he declares are known locally as 'the children of Mayon'. He also recounts hearing a loud 'boom' emanating from the volcano at about 7:30 pm and, a little later, being able to see a 'flower of fire' illuminate its cone and light up the countryside for 20 kilometres around. He records three more eruptions during the night and so much rock and sand falling on the surrounding countryside that the main highway to Albay was blocked, and the road to Bigaa 'not only disappeared but is now really nothing more than a mound of stones and cuttings'. Nor did the dawn bring any relief. The day began with 'a semi diluvial fall of water' and the rain continuing for several days, adding to the wildness of the scene. Further eruptions followed. Over the next few days, the volcano continued to eject lava bombs and lapilli, and to emit plumes of smoke exactly like that from 'the funnel of a steamship if its circumference was magnified four times'.³² Even weeks later, the inhabitants of Tabaco, a town on the far side

28 Ibid.

29 *Diario de Manila*, 17 Aug. 1881.

30 *El Comercio*, 21 Oct. 1881; *Diario de Manila*, 17 Nov. 1881.

31 Enrique Abella y Casariego, 'Monografía geológica del volcan de Albay ó el Mayon', *Transactions of the Seismological Society of Japan* 5 (1883): 6.

32 *Diario de Manila*, 11 July 1881.

of the volcano, were still able to read perfectly well at night by the light of the volcano.³³

Unsurprisingly, local people were alarmed. Daily telegrams were sent to Manila reporting on the progress of the eruption. These were short, matter-of-fact statements, giving details as to the intensity of volcanic activity on that day. More detailed accounts had to await the mail or the return of travellers from the province. Recent arrivals in July related that residents lived in constant fear that the eruption might intensify at any moment. The almost continuous noises emitted by the volcano and the constant presence of 'fire' in the cone kept people in a state of barely suppressed panic.³⁴ Dread of eruptions was the price one paid for living in the fertile soils around an active volcano, a fear enhanced by the frequency of earth tremors in such areas. Thus, one correspondent to *La Océania Española* reported how tremors had set off rumours (described as 'vague news') of an impending eruption somewhere in Nueva Vizcaya and had 'caused great alarm in many people'.³⁵

Fire, too, was an ever-present danger, the consequence of a careless moment or the result of an earthquake or volcanic eruption. The August tremors in Manila, for instance, occasioned several domestic fires, most notably in the Madrid Inn, where a Sergeant of Artillery, Camilo Yerba, was celebrating winning the lottery by hosting 20 of his military companions to dinner. The first tremor overturned the oil lamps on the dining table and set the tablecloth on fire. As guests scrambled to escape the building, it was left to the quick thinking of the innkeeper's sister, with 'a valour unusual in her sex', to put out the fire by smothering the flames with the overturned table.³⁶ Such minor incidents, however, pale into insignificance when compared to the fate that overtook Calapan, the provincial capital of Mindoro, a small island to the west of Luzon. In a matter of hours, this town of 4,500 inhabitants was burnt to the ground on the evening of 12 August.³⁷

The fire started at approximately 3:30 pm in a 'humble shack' in the centre of town; its origins attributed to the carelessness of the owner, Margarita Acera.³⁸ In his report to the governor-general, the province's *alcalde mayor* (civil governor) describes how he immediately attended the fire 'with all the forces at my command', mainly public employees, policemen (*cuadrilleros*), and prisoners drawn from the local gaol.³⁹ The town was mainly deserted at that hour of the day as most people were working in their fields. The governor ordered buildings in advance of the fire to be demolished but the density of the buildings, many 'constructed illegally, one immediately next to another', rendered such firebreaks ineffectual. The southwest monsoon wind, the *habagat*, fanned the fire, 'wrap[ping] the entire town in an immense tongue of flame'. Calapan was rapidly converted into an immense bonfire that formed a column of smoke and flames that consumed the town's principal

33 *El Comercio*, 22 July 1881.

34 *Diario de Manila*, 22 July 1881; *Diario de Manila*, 30 July 1881.

35 *La Océania Española*, 4 Nov. 1881.

36 *Diario de Manila*, 17 Aug. 1881; 'Unspecified newspaper'.

37 *La Océania Española*, 25 Aug. 1881.

38 *Diario de Manila*, 24 Aug. 1881.

39 On the various police forces operating during the 19th century, see Greg Bankoff, *Crime, society, and state in the nineteenth century Philippines* (Quezon City: Ateneo de Manila University Press, 2000), pp. 129–54.

buildings: the town hall (*casa real*), the church, the priest's dwelling (*convento*), the toll house (*fielato*), the police barracks, and the prison.⁴⁰ The fire also consumed 150 houses, many belonging to the more well-to-do inhabitants. By the day's end, all that remained of the *cabecera* were some nipa and palm houses on the outskirts of town belonging to poor soldiers and fisherfolk.⁴¹

Fortunately, there were no fatalities, but the material losses were great and the loss of public property considerable. Only the most portable items of value were spared from the flames due to the prompt action of government functionaries. The chests containing the town's tax receipts and municipal funds were rescued from the *casa real*. The entire canonical record perished, however, as church and *convento* went up in flames and only the ciborium and several sacred images were saved. The *fielato* fared somewhat better due to the valour of a *cuadrillero*, Corporal Pedro Gonzalez Vallejo. Although injured, Vallejo and his comrades managed to carry to safety 115 *cajones* (wooden chests) of second-grade cigars, 103 pesos in silver, and 15.62 pesos in small change. The town's police funds and records also escaped the blaze by being thrown into the nearby river, though nothing is said about their subsequent condition. Even the governor's horse was 'turned into carbon', and he was left with only a single chest containing some clothes.⁴² 'The ruin of this place is absolute,' he concludes his official report, and 'we are camped outside, on the beach, in need of supplies and aid'.⁴³

Immediate steps were taken to restore governance and the necessities of daily life. Temporary structures were erected to house the town hall, the toll house, and, interestingly, the local butchers amidst the 'ashes and debris'.⁴⁴ A small room was also set aside to function as a temporary church where mass might be celebrated.⁴⁵ On authorisation from Manila, a 1,000 pesos was distributed from the public calamity fund to meet the inhabitants' immediate needs.⁴⁶ The homeless crowded into the remaining houses on the outskirts of town, whose owners generously opened their doors to their neighbours. It was, though, 'impossible to provide shelter for so many people'.⁴⁷ Orders were issued to *Hacienda* (Treasury) officials in the neighbouring province of Batangas to supply Calapan with timber and other materials needed for reconstruction.⁴⁸ All these measures, however, proved hopelessly inadequate given the sheer scale of the destruction. Newspaper editorials alternated between appeals for charity and demands for 'necessary measures' to prevent such a catastrophe from happening again. Officials were called upon to ensure that the laws governing the construction of houses were properly enforced, that the 'disorderly agglomeration of houses' be prevented, and that streets were wide enough to facilitate firefighting.⁴⁹

Calapan was undoubtedly the largest conflagration in 1881 but there were many other fires that consumed whole buildings rather than entire towns. Thus, 'a voracious

40 *Diario de Manila*, 17 Aug. 1881; *La Oceania Española*, 25 Aug. 1881.

41 *Diario de Manila*, 26 Aug. 1881.

42 *La Oceania Española*, 25 Aug. 1881.

43 *Diario de Manila*, 17 Aug. 1881.

44 *Diario de Manila*, 24 Aug. 1881.

45 *Diario de Manila*, 26 Aug. 1881.

46 *Ibid.*

47 *La Oceania Española*, 25 Aug. 1881.

48 *Diario de Manila*, 17 Aug. 1881.

49 *Ibid.*; *La Oceania Española*, 25 Aug. 1881.

fire', caused by a typhoon in the province of Abra, reduced the barracks of the *Guardia Civil* (regional police) in Talalan to ashes in a few moments despite the torrential rainfall. Troopers only had time to save their arms and a few personal effects.⁵⁰ Fire, whether caused by typhoon, tremor, arson, or carelessness was a constant threat to people living in structures built from very flammable materials, and where lighting and cooking depended on naked flames. In the traditional *bahay kubo*, the kitchen was usually a freestanding structure separated from the main house to minimise the spread of fire. Such precautions, however, were not always successful. The fire that reduced Calapan to a heap of ashes in just a few hours reportedly started in just such a kitchen.⁵¹

Days of rain

Buildings were not just constantly at risk from fire but were likewise vulnerable to flood. The rain that inevitably accompanies typhoons proved immensely damaging to property and often cost lives. Reading through the litany of disasters contained in the pages of the 1881 report, the reader is struck by the frequency and sheer magnitude of the floods that beset the islands' inhabitants. In particular, the provincial towns, the *cabeceras* and the *pueblos*, many located on riparian sites, were flooded as rivers, swollen by torrential downpours, overflowed their banks and inundated, especially low-lying *barrios* (neighbourhoods). Letters from provincial residents, printed in the columns of the Manila newspapers, graphically portray their experiences. Thus, a correspondent in Agno, Zambales relates the 'indescribable terror' he felt on the morning of 19 October as he watched the river overflow its banks 'seeming to want to bury us in its breast'. The waters continued to rise all day until only the town's rooftops were visible, and people had to come and go by *banca*, a type of dugout canoe with outriggers.⁵² Another writer, this time in Bataan, recounts how, on opening his window after a night of violent winds and torrential rain, 'we observed with terror that all the fields and streets were converted into one immense sea', and the waters were rising so quickly 'that we believed the town would disappear'.⁵³

The sheer quantity of water that accompanied typhoons was often enormous, rain falling sometimes for days at a time. It rained solidly for five days in Camarines Sur after the typhoon of 28 June and so much water fell that the province was flooded for 25 square leagues around. The towns of Bato, Nabua, and Bao appeared rising out of the floodwaters as if they were 'houses floating on a wide sea'.⁵⁴ A letter from Capiz complained that for 15 days the torrential rain had continued without people 'having sight of the sun all this time' and that, consequently, 'everything is flooded'.⁵⁵ After weeks of ceaseless rain, a resident of Abra jokingly mused that they were returning 'to being amphibians'.⁵⁶

50 *Diario de Manila*, 31 Aug. 1881.

51 'Antecedentes de espedientes sobre el incendio ocurrido en la cabecera de la provincia de Mindoro, el día 12 de agosto de 1881', National Archives of the Philippines, Manila, Calamidades Publicas, Incendios.

52 *Diario de Manila*, 10 Nov. 1881.

53 *El Comercio*, 29 Aug. 1881.

54 *Diario de Manila*, 19 July 1881.

55 *Diario de Manila*, 13 July 1881.

56 *El Comercio*, 10 Nov. 1881.

It was the rivers, though, that posed the real threat. Rivers swollen by torrential downpours might rise by metres in a few minutes. ‘The overflowed river seems to want to bury us within it,’ another eyewitness account from Agno in Zambales wrote, ‘the water increased moment by moment, and by 6 pm, had flooded [the town] entirely’.⁵⁷ Towns were not uncommonly submerged to depths of 2 to 3 metres or more, with low-lying settlements suffering the most. Streets became rivers, and people were forced to ply their lengths in boats.⁵⁸ At other times, the force of water was overwhelming. Floodwater struck the town of Quinamotian in Pampanga (unidentified location) with such force as a typhoon passed overhead on 19 August that it swept away everything in its path, leaving scarcely four houses standing and these only because they were situated on higher ground. Water rolled ‘over the houses and inhabitants together in the obscurity of the night so that it was a miracle that not everyone died’.⁵⁹

The situation was often worse in rural areas. The typhoon of 20 October struck Nueva Ecija with such ‘extraordinary violence’ that it caused serious flooding, damaging crops and orchards.⁶⁰ Agriculture suffered badly as fields were inundated, often to depths of 4 metres or more.⁶¹ ‘For more than 15 days the rains have not ceased,’ lamented a correspondent from Iloilo, ‘and so much water threatens the fields ... that are flooded by the rising of the rivers’.⁶² Too much standing water in July ruined the sugarcane,⁶³ while the force of the water in August pulled sugarcane up by its roots.⁶⁴ In other provinces, floodwaters destroyed the tobacco crop, ruining entire harvests.⁶⁵ Tobacco, if anything, was even more vulnerable once harvested. Bundles stacked in storerooms were susceptible to floodwater and government employees went to great lengths to save as much of the crop as possible when threatened with inundation—often at considerable personal risk.⁶⁶ But to the peasant farmer, it was what happened to the *palay*, the rice crop that really mattered and determined his family’s fortune for the coming year.⁶⁷ Too much water made it difficult to transplant seedlings or simply killed the plants.⁶⁸ Waterlogged fields made it impossible to harvest the rice.⁶⁹ Even after the water receded, it often left the rice ‘covered by a cap of river sand, half a vara [about 0.4 metres] thick’ reducing the fertility of the field for several seasons.⁷⁰

57 *Diario del Manila*, 10 Nov. 1881.

58 *El Comercio*, 20 Aug. 1881; *Diario del Manila*, 10 Nov. 1881.

59 *El Comercio*, 25 Aug. 1881.

60 *El Comercio*, 21 Oct. 1881.

61 *El Comercio*, 4 July 1881.

62 *El Comercio*, 16 July 1881.

63 *Diario de Manila*, 27 July 1881.

64 *La Oceania Española*, 25 Aug. 1881.

65 *El Comercio*, 10 Nov. 1881.

66 ‘Gobernador PM of Abra to Governor-general, Huracan del 25 de octubre de 1881, Provincia de Abra, Comunicacion oficial’, 31 Oct. 1881, San Quintin, AHN, Ultramar-500-Exp. 1.

67 James Warren, ‘Typhoons and droughts: Food shortages and famine in the Philippines since the seventeenth century’, *International Review of Environmental History* 4, 2 (2018): 27–44.

68 *El Comercio*, 26 July 1881.

69 *El Comercio*, 30 Aug. 1881.

70 *La Oceania Española*, 25 Aug. 1881.

Nor were the animals spared. Livestock frequently grazed lowland pastures alongside rivers and were swept away in the swollen floodwaters. One observer in Ilocos Sur saw 'a multitude of animals, some alive and others dead' in the river. Some were spared as the current swept them to the riverbank but most were not so fortunate.⁷¹ The bodies of 40 cows and horses were discovered washed ashore on the beach at Iba, carried downriver from the town of Botolan, their ownership identified by their brands.⁷² The toll from such floods might be considerable with one stock breeder in Zambales reportedly losing 200 head—horses, cows, and carabaos.⁷³ In the same province, the town of Santa Cruz lost more than 100 cattle in an earlier typhoon.⁷⁴ It was left to the authorities to organise their removal. In Iba, local officials had to arrange the burial of 50 carcasses, afraid that 'so much putrefying flesh' less than a kilometre from town might lead to an outbreak of disease.⁷⁵

Any animal might be vulnerable to floodwater, but some were apparently more vulnerable than others.⁷⁶ In the riverine pastureland of the Bao swamp, the main livestock area in the province of Camarines Sur, one acute observer noted how species responded differently to floodwaters during the typhoon of 28 June. The carabao, evidently 'blessed with great intelligence' and followed by most of the cattle, had, on their own initiative, undertaken a timely tactical retreat to higher ground as soon as the river overflowed. The horses, however, daunted by the great amount of rain, took shelter under the bamboo, 'and nobody but nobody' could make them move 'until they were surprised by the water and drowned'. A stockman from Bula later reported having seen more than 300 horses drowned and had only been able to save 40 animals. Another stockman estimated more than a thousand horses had perished.⁷⁷ Overall, floods took a terrible toll on rural production. The predicament was succinctly summarised by one provincial correspondent who, in the aftermath of the August typhoon, wrote that 'without palay and animals, Zambales perishes'.⁷⁸

Floodwaters also played havoc with rural communications, carrying away bridges, damaging roads, cutting telegraph lines, and isolating, often for weeks, the *cabecera* from Manila, and the provincial capital from surrounding *pueblos*. Most bridges were built from wood and unable to resist the force of water, their timber planks and piles disappearing downstream. Copious rains in Benguet on the night of 7 July destroyed two bridges in both Galiano and Tublay, forcing residents to cross the river by raft.⁷⁹ In the same month, the wooden bridges linking Iba to its province of Zambales were swept away by the raging waters.⁸⁰ The same bridges were destroyed once again a few months later during the typhoon of 19–20

71 *La Oceania Española*, 28 Oct. 1881.

72 *Diario de Manila*, 27 Aug. 1881.

73 *El Comercio*, 30 Aug. 1881.

74 'Huracan del 19–20 de octubre de 1881, provincial de Zambales, comunicaciones oficiales', 28 Oct. 1881, Iba, AHN, Ultramar-500-Exp. 1.

75 *El Comercio*, 27 Aug. 1881.

76 Greg Bankoff, 'Bodies on the beach: Domesticates and disasters in the Spanish Philippines 1750–1898', *Environment and History* 13, 3 (2007): 285–306.

77 *Diario de Manila*, 19 July 1881.

78 *El Comercio*, 27 Aug. 1881.

79 *El Comercio*, 13 July 1881.

80 *Diario de Manila*, 14 July 1881.

October, leaving the town isolated for a further 48 hours.⁸¹ So vulnerable were wooden bridges to damage from floodwaters that local officials often resorted to cutting the central section away in advance of a typhoon and mooring it to the bank, though this action was still insufficient always to save the structure from destruction.⁸²

Roads were vulnerable to floodwaters too. 'Chunks' of roadway were repeatedly lost to the current or simply slid down hillsides as their foundations were undermined.⁸³ The rammed earth overlaying the stone foundations of major highways were 'left stripped by the waters' and the roads gouged into metre-deep ditches. Landslides blocked roadways, preventing the passage of wheeled vehicles.⁸⁴ In August, metre-high floodwaters rendered several sections of the road between Angeles and Bataan impassable. At Magalang in Pampanga, the flooded Parua River cut the road at various places, sweeping away bridges, and leaving 3-metre-deep ditches along its surface.⁸⁵ The typhoon of 19–20 October left the public highways in Zambales flooded and passable only 'at the risk of one's life'.⁸⁶

Telegraph lines, often running alongside roadways, also suffered damage from floodwaters. Poles toppled over, interrupting the tenuous flow of information between town and capital. Severe floods in July temporarily cut all communications between the district of Principe (present day Aurora) and the province of Nueva Ecija.⁸⁷ Telegraph lines spanning rivers were particularly vulnerable. A sudden 3-metre rise of the Abra River in Lepanto in the wake of a typhoon on 19 October pitched cable and poles into the water and prevented their timely retrieval.⁸⁸ The telegraph line to Abucay, Bataan, was 'completely destroyed'.⁸⁹ Floodwaters might leave communities isolated for days or even weeks at a time, delaying the request for aid, and compounding the hardships exacted by reduced harvests and loss of livestock.⁹⁰

Nor, of course, was Manila spared from the ravages of floodwaters and many of its low-lying *barrios* were regularly inundated. Incessant rain at the end of June flooded various parts of the capital, especially Tondo, reducing transportation to movement by boat.⁹¹ In August, 200 houses were destroyed in Tondo and the water was waist high in some streets.⁹² Industry, too, suffered. At the important foundry of La Olimpia (Macati), many unfired bricks were ruined when floodwaters submerged the kiln in August.⁹³ Floodwaters disrupted trade and commerce by rendering major urban arteries impassable to wheeled traffic and causing permanent damage to the city's principal highways unless their foundations were promptly repaired.⁹⁴ Flood

81 'Huracan del 19–20 de octubre de 1881'.

82 *La Oceania Española*, 1 July 1881.

83 *El Comercio*, 7 July 1881; *Diario de Manila*, 19 July 1881.

84 *Diario de Manila*, 2 June 1881; *El Comercio*, 7 July 1881.

85 *La Oceania Española*, 25 Aug. 1881.

86 *Diario de Manila*, 10 Nov. 1881.

87 *Diario de Manila*, 17 July 1881.

88 'Comandancia PM de Lepanto to Governor General, huracan del 19–20 de octubre de 1881, distrito de Lepanto, comunicacion oficial', 23 Oct. 1881, Cayan, AHN, Ultramar-500-Exp. 1.

89 *El Comercio*, 29 Aug. 1881.

90 *Diario de Manila*, 27 July 1881.

91 *La Oceania Española*, 1 July 1881.

92 *Diario de Manila*, 21 Aug. 1881.

93 *El Comercio*, 22 Aug. 1881.

94 *La Oceania Española*, 2 July 1881; *Diario de Manila*, 6 July 1881.

was more of a risk to life and property in both country and city during the *habagat*, the southwest monsoon season from May to October, and also the principal season of typhoons.⁹⁵

A season of winds

Not unexpectedly, the report of 1881 is preoccupied with typhoons, their number and size, which towns and provinces lay in their paths, and the amount of damage and death they caused. An average of 20 tropical cyclones enter the Philippine Area of Responsibility each year, more than anywhere else in the world. On average, eight or nine of these cyclones make landfall, mainly between the months of July and October.⁹⁶ The report initially lists ten typhoons for the year, three of which struck Luzon, and then, in an addendum, gives details of two further typhoons in October.⁹⁷ The most damaging of these typhoons occurred on 19 August, a month that 'will live in our memories ... for the quantity of bad things that have happened'.⁹⁸

Since the establishment of the Manila Observatory in 1865 and the completion of the initial telegraph lines in 1873, weather observations had become routine and more accurate, able to warn of approaching tropical cyclones.⁹⁹ The Observatory's founder and first director, the Jesuit Fr Federico Faura, was praised in the colonial press for his 'great service', though, his name was 'still not yet sufficiently well-known among the public'.¹⁰⁰ By 1881, at least 13 provincial towns had rudimentary electro-meteorological stations that included a barometer and some form of anemometer to measure wind speed and direction. The data gathered by these instruments were communicated to the Jesuit fathers, whose observatory was linked to the Inspectorate of Telegraphs in 1878.¹⁰¹ The effectiveness of this warning system, however, rested entirely on the telegraph network whose wooden poles were often among the first casualties of severe weather. Consequently, news about passing storms might take days to reach Manila.¹⁰² A typhoon at the end of June, for instance, disrupted the telegraph network across the whole of Luzon, interrupting international services to Europe, and took several days for engineers to fully restore.¹⁰³

95 Charles. E. Deppermann, 'General features of Philippine weather', *Philippine Studies* 2, 2 (1954): 102–25.

96 'Tropical Cyclone Information', *Philippine Atmospheric, Geophysical and Astronomical Services Administration* (PAGASA), <https://www.pagasa.dost.gov.ph/climate/tropical-cyclone-information> (last accessed 14 Feb. 2022); Greg Bankoff, 'Storms of history: Society and weather in the Philippines 1565–1930', in *Water in maritime Southeast Asian societies, past and present*, ed. Peter Boomgaard (Leiden: KITLV Press, 2007), pp. 153–83.

97 'El gobernador-general remitiendo datos de las observaciones meteorólogos duran y los terremotos y baguios ocurridos desde el mes de mayo a agosto de 1881', 23 Dec. 1881, Madrid, AHN, Ultramar-500-Exp. 1.

98 *Diario de Manila*, 31 Aug. 1881.

99 José Batlle y Hernandez, 'Plan general de comunicaciones telegráficos del archipiélago Filipino,' *Revistas de Telégrafos* 13, 15 (1873): 177–80; Aitor Anduaga, 'Transnational co-production of knowledge: The standardisation of typhoon warning codes in the Far East, 1900–1939', *Minerva* 60, 2 (2014): 301–23.

100 *El Comercio*, 20 Aug. 1881. On the Manila Observatory, see John N. Schumacher, 'One hundred years of Jesuit scientists: The Manila Observatory 1865–1965', *Philippine Studies: Historical and Ethnographic Viewpoints* 13, 2 (1965): 258–86.

101 Anduaga, *Cyclones & earthquakes*, p. 60.

102 *El Comercio*, 22 Oct. 1881.

103 *Diario de Manila*, 1 July 1881.

Issuing weather alerts was a new role for the Observatory, whose staff were keenly aware of the need ‘to proceed with care’ and avoid unnecessarily ‘causing alarm’ by untimely warnings.¹⁰⁴ Still, the newspapers are full of detailed information about ongoing weather conditions and the passage of low-pressure systems and tropical cyclones. An account of weather conditions for the month of May, for example, describes a typhoon as it tracked across Luzon on 23 May in graphic detail: the sudden fall of the barometer by two degrees, clouds that turned red ‘as in some immense fire’, and windspeeds of 72 mph with gusts of 88 mph.¹⁰⁵ Another report on 28 June recounts how factory workers had to be sent home at noon because of the rapidly deteriorating weather conditions.¹⁰⁶ These advisories, however, were not always accurate or timely. A resident of Tuguegarao in the far north of Luzon complained how the town was ‘unexpectedly’ hit by a typhoon on 14 October that destroyed many nipa and palm houses, levelled the tobacco crop, and sunk many local craft.¹⁰⁷ At other times, too, editors apparently simply failed to report the ‘careful observations’ issued by the Observatory and so gave no notice of impending storms.¹⁰⁸

Nevertheless, the growing accuracy and sophistication of weather reports often did give advance warnings of an approaching typhoon—at least to the larger provincial centres linked to the rapidly expanding telegraph network. These advisories provided precious hours in which state and church authorities might prepare populations for what was coming and allow them to put in place whatever preventative measures they were able to in the time available. Typhoons, however, continued to wreak untold damage on communities lying in their path.¹⁰⁹ Windspeeds in excess of 90 mph and gusts of over 100 mph were not uncommon.¹¹⁰ Perhaps, the most iconic structure to fall victim to the force of the wind in 1881 was the lighthouse of San Nicolas, newly erected at the mouth of the Pasig River to guide vessels entering the port of Manila. The latest addition to a series of lighthouses that had stood on that location since 1642, the tower was constructed entirely of iron and had only been inaugurated on 1 August 1879. This ‘elegant and strong’ structure disappeared overnight during the typhoon of 19 August, and, on the following morning, only the great screw piles to which the lighthouse had been attached were left to mark the spot where it had once stood.¹¹¹

The strong winds accompanying typhoons took a terrible toll on urban centres and their rural hinterlands, leading one government official to conclude that they ‘cause more suffering and damage than large earthquakes’.¹¹² While it was not always

104 ‘Estado general de la atmosfera, observaciones del día 30 de junio de 1881, observatorio meteorológico del Ateneo Municipal de Manila’, 30 June 1881, AHN, Ultramar-500-Exp. 1.

105 ‘Resumen de las observaciones meteorológicas verificadas durante el mes de mayo de 1881’, May 1881, AHN, Ultramar-500-Exp. 1.

106 *El Comercio*, 28 June 1881.

107 *Diario de Manila*, 25 Oct. 1881.

108 *Diario de Manila*, 25 May 1881.

109 Warren, ‘Typhoons and droughts’, pp. 36–9.

110 *Diario de Manila*, 21 Aug. 1881.

111 *Gaceta de Manila*, 23 Aug. 1881.

112 ‘Director of civil administration to minister of Ultramar’, 18 Nov. 1881, Manila, AHN, Ultramar-500-Exp. 1.

possible to record the strength of the wind, there were other ways by which to gauge its force. One correspondent noted how the capital's residents 'barely felt' the tremors that struck Manila at the same time a typhoon passed over the city in August.¹¹³ Another letter described how the wind blew with such 'hideous fury, so that the houses seemed like hammocks', remarking that it was 'a rare person who remained calm'.¹¹⁴ Strong winds might last only a few hours but, at other times, they might blow for days. The typhoon that struck Dagupan in Pangasinan on 18 October lasted for 37 hours.¹¹⁵ All too frequently, one typhoon followed hard upon another, giving no time for the stricken inhabitants to repair the damages caused by the previous storm. A resident of Tuguegarao describes how three typhoons struck the town on successive Wednesdays, on 12, 19 and 26 October. He went on to note, somewhat wryly, that 'the sky took on a certain unsettled character, giving us the first indications that we were going to be struck by another [typhoon] that had come to see if there was anything left in the inkwell'.¹¹⁶

The ubiquitous nipa and palm house, the *bahay kubo*, was most at risk to strong winds.¹¹⁷ The typhoon of 28 June wreaked havoc among such dwellings in Manila's suburbs, with Tondo losing 248 houses, Mariquina (Marikina) 130, Novaliches 89, and other districts between 15 and 20 houses.¹¹⁸ Houses in rural areas fared no better, as, for example, when a typhoon in August damaged 237 nipa and palm houses in Abucay, Bataan.¹¹⁹ One account describes seeing an entire house lifted up by the wind and blown away, its final resting place unknown.¹²⁰

Typhoons also damaged more substantial buildings, those constructed of stone or other *materiales fuertes* (literally, strong materials). Strong winds frequently ripped the galvanised iron or tin roofs off a town's principal structures, its municipal and commercial buildings, and the residences of the more well-to-do. The massive cigar factory of Meisic, the *fábrica de puros* in Tondo, lost 150 metal roof sheets during the typhoon of 28 June.¹²¹ Most houses in the Manila suburbs of San Mateo and San Juan were unroofed during the ferocious typhoon of 19 August.¹²² Streets were left 'strewn with roof sheets and broken shell windows'.¹²³ Even partial damage to the roof during a storm might expose personal belongings to the elements, ruining clothes, books, furniture, and spoiling stored agricultural produce such as rice and tobacco.¹²⁴ People, too, complained of the shoddy construction of many buildings and the ubiquity of leaks, 'where it rained almost as much inside the houses as in the streets'.¹²⁵

113 *Diario de Manila*, 24 Aug. 1881.

114 *El Comercio*, 29 Aug. 1881.

115 *El Comercio*, 6 Nov. 1881.

116 *Diario de Manila*, 6 Nov. 1881.

117 Julian E. Dacanay, 'Bahay kubo', in *Balai vernacular: Images of the Filipino's private space*, ed. Ma. Corazon A. Hila, Roderigo D. Perez III and Julian E. Dacanay (Manila: Sentrong Pangkultura ng Pilipinas, Museo ng Kalinangang Pilipino, 1992), pp. 161–253.

118 *Diario de Manila*, 1 July 1881; *La Oceania Española*, 1 July 1881.

119 *El Comercio*, 29 Aug. 1881.

120 *Diario de Manila*, 23 Aug. 1881.

121 *Diario de Manila*, 1 July 1881.

122 *Diario de Manila*, 24 Aug. 1881.

123 *La Oceania Española*, 25 May 1881.

124 *El Comercio*, 27 Aug. 1881.

125 *La Oceania Española*, 25 May 1881.

Wooden structures were particularly vulnerable to damage as timbers deteriorated rapidly if left uncovered for any length of time.¹²⁶ Residents, however, were not without recourse and might lash down thatched and tin roofs with canes and ropes, if given sufficient warning of an approaching storm.¹²⁷

The growing urban and communications infrastructure of the late colonial state, public lighting, telegraph poles, and roads were particularly exposed to the full fury of the wind. In Manila, the typhoon on 19 August wrought havoc among the city's lamp-posts, wrenching some from the ground and leaving many others without glass. In only one subdivision of Intramuros, 34 lampposts were destroyed.¹²⁸ Telegraph poles, often placed in exposed locations, were blown down like skittles and the tenuous lines of communication that linked provincial centres to Manila snapped in a storm's aftermath. Telegraph lines in Tuguegarao, damaged in a typhoon on 12 October, had still not been restored two weeks later.¹²⁹ Nor were telegraph offices immune from wind damage; rainwater rendered the Dagupan station inoperative when the structure lost its roof and window shutters.¹³⁰ Roads were all too often blocked by fallen trees or rendered nearly impassable by potholes 'so that those on foot had to be gymnastically talented to pass by, while those travelling by carriages experienced mortal somersaults lurching from abyss to abyss'.¹³¹ Even the *Jardín Botánico*, the botanical gardens established outside the walls of Intramuros in 1858, did not escape the ravages of the wind. The typhoon of 19 August uprooted two rare trees, the only specimens of their kind in the archipelago, *Pithecellobium saman*, a native of Central and South America, and *Cassia javanica* L., the rainbow shower tree.¹³²

In rural areas, agriculture suffered as rice plants were stripped, and sugarcane and tobacco crops were flattened by the wind. The provincial governor of Zambales explained how the typhoon of 19–20 October had caused such extensive damage 'due to the fact that the palay plant was in flower, and they have been stripped so reducing the harvest to one-third'.¹³³ Coconut plantations and orchards were particularly susceptible to high winds as boles were easily toppled and branches divested of their fruit.¹³⁴ Along the shore, fish pens, a risky investment at the best of times, were at the mercy of the wind due to their exposed locations. Losses could be extensive, running to 'thousands of pesos', and lead to a reduction in badly needed tax revenues. In the aftermath of one typhoon in October, a newspaper concluded that there had not been a fish pen 'in the bay that has remained unscathed and without some damage and disruption, and others have disappeared altogether'.¹³⁵

Some newspaper reports are visceral in their depictions of the wind. Sounds are repeatedly described: loud noises in the roof, doors slamming, and the clatter of

126 *El Comercio*, 26 Aug. 1881.

127 *Diario de Manila*, 26 May 1881.

128 *Diario de Manila*, 21 Aug. 1881.

129 *Diario de Manila*, 6 Nov. 1881.

130 *La Oceanía Española*, 22 Oct. 1881.

131 *Diario de Manila*, 1 July 1881; *Diario de Manila*, 13 July 1881.

132 'Huracan del 19 de agosto de 1881, partes oficiales', 20 Aug. 1881, AHN, Ultramar-500-Exp. 1.

133 'Huracan del 19–20 de octubre de 1881'.

134 *La Oceanía Española*, 19 July 1881.

135 *La Oceanía Española*, 28 Oct. 1881.

objects flying around.¹³⁶ The violence of the wind alarmed people ‘with its loud clashes made by slamming doors and windows, while the rolling round of pots made it seem like an earthquake’.¹³⁷ In some districts of Manila, residents reported being unable to sleep ‘so loud was the noise in the roofs of their houses’.¹³⁸ This discordant racket was in stark contrast to the eerie stillness that reigned over urban centres in advance of a storm’s approach, when ‘you could not see anyone in the streets, as, everyone, either from cold or fear, is curled up in their houses’.¹³⁹ And sometimes, too, the noise heralded death as well as destruction. In Polo, Bulacan, the wind caused the death of two little girls and injured three other children when their house collapsed around them in the 19 August typhoon.¹⁴⁰

A year of carnage at sea

If the land often proved unsafe, matters were little better at sea. While there are no reports of storm surges or tsunamis striking the archipelago in 1881, typhoons wrought havoc among local vessels plying between the islands. Given the insular nature, mountainous topography, and dense tropical forests of the Philippines, transport in the nineteenth century largely revolved around water. An array of sailing vessels of all sizes carried goods and people to and from their destinations. The seas were alive with their comings and goings, from the ubiquitous two masted brig-schooner (*bergantin goleta*) and the more recent steamship (*vapor*), the workhorses of inter-island trade, to the smaller sailing ships (*lancha*, *pailebot*, *panco*, and *pontin*) favoured for coastal traffic, to the single-masted *lorcha* and flat-bottomed *casco* found in shallower waters and inland waterways, to the traditional, outrigger crafts (*banca*, *balangay*, and *paraw*) powered by paddle and sail and favoured by fisherfolk and local traders.¹⁴¹ These crowded waterways and the vessels upon them were particularly vulnerable to high winds, storms, and typhoons.

It is difficult to gauge the extent of the toll on local shipping as there are no systematic records of their losses. The scale of the carnage taking place at sea is only hinted at in the columns of the Manila newspapers. Short reports like that for the town of Enrile (Cagayan) that ‘all the local craft were sent to the bottom’ due to a typhoon on 12 October.¹⁴² Only the larger maritime disasters receive more extensive coverage. So, for instance, in early July, letters began to appear in the press describing what was considered ‘not only by seamen but by old fisherfolk as well as one of the worst maritime disasters in this country’. In the Gulf of Albay, at least five oceangoing vessels, including the steamship *Mariveles* and ‘two of the best ships in Philippine shipping’, the brig-schooners, *Navarro* and *Leonor*, were lost during a typhoon on 27 June.¹⁴³ Two letters dated on 29 June provide most of the details. The three vessels had docked earlier in the day and had begun to unload their cargoes, continuing to do

136 *El Comercio*, 20 Aug. 1881.

137 *Diario de Manila*, 28 Aug. 1881.

138 *Diario de Manila*, 27 Aug. 1881.

139 *El Comercio*, 30 July 1881.

140 ‘Huracan del 19 de agosto de 1881’.

141 On the many different types of vessels used in the Philippines, see Ricardo E. Galang, ‘Types of watercraft in the Philippines’, *Philippine Journal of Science* 75, 3 (1941): 291–306.

142 *Diario de Manila*, 25 Oct. 1881.

143 *Diario de Manila*, 9 July 1881.

so till evening when the stevedores retired for the night. It had been a beautiful day with only a light breeze and a few showers. At 7 pm, however, the barometer began to fall rapidly, and the wind rose. These portents of things to come convinced the ship's captains to take some precautionary measures: uncouple their vessels from their moorings, and anchor further out in the roadstead attached to buoys. On the *Mariveles*, the boilers were also relit to give the ship steerage during any impending storm.

Unfortunately, the measures proved to no avail. As the wind increased to typhoon strength, the buoys to which the ships were moored broke loose, and both buoys and ships were cast onto the beach. In the case of the *Mariveles*, the weight of the steamship's chains and anchors left the vessel sloping sideways to port exposing its timber deck and superstructure to the full force of the waves. The former was stripped away, and the latter splintered 'into millions of fragments'. The two sailing ships lay on the beach with their hulls shattered, their crews managing to save their lives 'but nothing more'. However, four Chinese passengers on board the steamship drowned. When, next morning, a group of local officials and merchants led by the provincial governor came down to the beach to organise the recovery, they were struck by the sad sight of the 'half naked' crews salvaging what they might.¹⁴⁴

Nor were these the only vessels to flounder that night. Perhaps as many as five other brig-schooners were lost in the seas around Bicol during the typhoon: the *Legazpi* and *San Fernando* in the Straits of San Bernardino, the *San Rafael* in the port of Tabaco, as well as the *Carmelita* and *La Jóven Petrona*.¹⁴⁵ There was news, too, that another steamship, the *Aeolus*, was stranded on the beach at Tabaco,¹⁴⁶ and that an additional brig-schooner, the *Oretano del Pilar*, had run aground off Panlatuan but was later refloated.¹⁴⁷ As was only to be expected, many smaller vessels also sank: a *pontin* (yaw) and a schooner in Tabaco, five *pontins* and *paraws* off the Sorsogon coast, and the loss of a *paraw* from Catanduanes carrying Fr Clemente Emerenciano—though it is possible this craft was lost on the previous day.¹⁴⁸ Commenting on events in Albay, the *Diario de Manila* concludes that the 'major part of its best cabotage boats' had been lost during the passage of this one typhoon.¹⁴⁹

Less than two months later, another typhoon of an intensity considered 'unparalleled in twenty years' struck shipping in Manila Bay on 19 August. An eyewitness depicts the scene along a stretch of coast the following day. How, close to the Paseo de Luneta, he had come upon a beautiful schooner, the *Roca*, from Dagupan lying amidst blocks of concrete from the smashed embankment. Nearby, the *Florida*, a *pontin* with a cargo of rice, also from Dagupan, had run aground. Only 200 metres further on lay the brig-schooner, *Angela*, stranded on the shore, while higher up the beach, a *lorcha*, the *Arpa*, was in a sorry state. Still walking further in the same direction, the witness describes 'stumbling' upon two more stranded *lorchas*, the *Ada* and the *Quiapo*, with their cargoes respectively of sugar and timber

144 *Diario de Manila*, 9 July 1881; *Diario de Manila*, 14 July 1881.

145 *Diario de Manila*, 6 July 1881; *Diario de Manila*, 15 July 1881.

146 *La Oceania Española*, 9 July 1881.

147 *El Comercio*, 13 July 1881.

148 *Diario de Manila*, 9 July 1881; *Diario de Manila*, 15 July 1881.

149 *Diario de Manila*, 19 July 1881.

intact and salvageable. Finally, in front of the watchtower, lay a *casco* with its spoiled cargo of rice, badly damaged.¹⁵⁰ Around the bay, many other vessels were in a similar condition, several *paraws* and brig-schooners sunk or run aground off Tondo, a *pai-lebot* (cutter) lost on the rocks near the Pastel gun battery, and the barque, *Titania*, recently arrived from Wales, dragged close to the Malecon, and stranded on the sand.¹⁵¹

Throughout the year, storms and typhoons wrought a terrible toll on local shipping and the newspapers frequently reported vessels run aground, smashed against the rocks, or otherwise sunk. The flat-bottomed, low-riding *casco*s, ubiquitous to inland waters, seemed particularly vulnerable in high winds and choppy seas.¹⁵² Often towed and laden with cargo and/or passengers, they were ‘at the mercy of the waves’ if the hawser broke or snapped during a storm.¹⁵³ ‘Intelligent people,’ one correspondent observed, ‘consider these coasts most dangerous during times of typhoons.’¹⁵⁴

By 1881, the Manila Observatory was issuing regular weather advisories that kept those port authorities connected to the telegraph informed of impending storms. Ships’ captains who received such warnings had time to take the appropriate measures to ensure the safety of their vessels. Even so, not all choices proved to be the right one. In the event, the decision of the captain of the steamship *Mariveles* to remain in port and not to ride out the typhoon at sea led to the loss of his vessel.¹⁵⁵ Nor were the losses in 1881 in any way exceptional. Miguel Saderra Masó, in his history of the Manila Observatory, describes how a single typhoon that hit Manila Bay on 20 October 1882 was responsible for sinking or badly damaging 57 vessels of all sizes, from steamships to *lorchas*, adding ‘I do not believe we will ever know even a fourth part off what happened to the smaller craft.’¹⁵⁶

A singularly uneventful year

1881, then, is not so historically uneventful as it first appears—if measured, not in terms of major disasters, but the repeated misfortunes that afflicted large numbers of communities across the islands. All around the archipelago, people in the nineteenth century continually experienced moments of sudden terror from fire and quake, days of torrential rain and flood, seasons of typhoons and high winds, and the endless annual carnage at sea. The everyday effects of this constant death, destruction, and disaster from events that are low (or lower) intensity but high frequency needs to be assessed against those that are high intensity but low frequency. What shapes the past more, annually recurring disasters such as the fire that destroyed Calapan and the typhoon that wrecked five ships in the Gulf of Albay, or the ‘once in a century’ earthquake that devastated Manila in 1880? Which type of hazard has the longer-term impact on agriculture, commerce, culture, and the environment?

150 *La Oceania Española*, 21 Aug. 1881.

151 *El Comercio*, 20 Aug. 1881.

152 *Diario de Manila*, 2 July 1881.

153 *El Comercio* 27 May 1881.

154 *Diario de Manila*, 6 July 1881.

155 *El Comercio*, 8 July 1881.

156 Miguel Saderra Masó, *Historia del observatorio de Manila fundado y dirigido por los padres de la Misión de la Compañía de Jesús de Filipinas, 1865–1914* (Manila: E.C. McCullough & Co., 1915), p. 60.

Which of the two has a greater impact on people's psychological health and so influences their behaviour more? Paul Slovic shows that people 'refuse to worry about losses whose probability is below some threshold', they tend 'to ignore rare threats', and to dismiss risks perceived as uncontrollable, have catastrophic potential, or result in fatal consequences. Instead, they are concerned with more frequent hazards of lower intensity, the everyday disasters.¹⁵⁷ Risk perception is not an actual calibration of probabilistic risk but a measure of the factors of how people envisage risk in terms of their attitude, cognition, and vulnerability, the 'perceived risk' as opposed to the 'real risk'. These are the considerations that really influence people's behaviour.¹⁵⁸ The sheer frequency of lower intensity disasters in the Philippines, the repetition as one hazard follows another in close succession, has left its psychological imprint on the Filipino consciousness and sense of identity. The harshness of everyday life in the archipelago has been compared to burden-bearing, *pagdadala*. Over time, Filipinos have learnt how to pack their burdens correctly to bear their weight more lightly, *magaan tayong magdala*. All Filipinos have these burdens to carry, but for some the load is heavier.¹⁵⁹ That some people were more vulnerable than others in the past is evident in the archival evidence and verified by eyewitness accounts. The Spanish governor-general, Fernando Primo de Rivera, reportedly said that typhoons 'mainly affected working people who were left without shelter'.¹⁶⁰ It was the poor who invariably suffered most. It was their homes in the lowest-lying areas of urban centres, whether in Manila or rural towns and settlements, that flooded first and longest.¹⁶¹ It was their houses, too, that suffered the most damage in typhoons 'because their light construction could offer no resistance'.¹⁶² And it was the poorest consumers that were most adversely affected as the price of fish, 'the principal food' in the market, rose as strong winds and tides wrought havoc among coastal fish pens. Typhoons inevitably had 'incalculable [consequences], especially for the proletarian class'.¹⁶³

The frequency with which hazards occur in the Philippines, past and present, and the social implications of their uneven impact on different sectors of the population, especially the vulnerability of the poor, suggest that the historical impact of disasters on Filipinos requires urgent integration into the nation's historiography. Recent scholarship in Disaster Studies has increasingly focused on the need to understand the occurrence of multiple disasters in one location and how one event might precipitate another, causing an otherwise isolated event to become multiple.¹⁶⁴ How, for

157 Paul Slovic, 'Perception of risk', *Science* 236 (1987): 280–85; Paul Slovic, Baruch Fischhoff, Sarah Lichtenstein, Bernard Corrigan and Barbara Combs, 'Preference for insuring against probable small losses: Insurance implications', in *The perception of risk*, ed. Paul Slovic (London: Earthscan, 2000), pp. 69–70.

158 Slovic, 'Perception of risk'.

159 Edwin Decentececo, *Rehab: Psychosocial rehabilitation for social transformation: Some programs and concepts* (Quezon City: Bukal, 1997).

160 *Diario de Manila*, 1 June 1881.

161 *El Comercio*, 27 Aug. 1881; *El Comercio*, 10 Nov. 1881.

162 *El Comercio*, 10 Nov. 1881.

163 *La Océania Española*, 28 Oct. 1881.

164 Minquan Liu and Michael C. Huang, 'Compound disasters and compounding processes: Implications for disaster risk reduction', UNISDR Global Assessment Report on Disaster Risk Reduction, 8 Jan. 2014, <https://www.undrr.org/publication/compound-disasters-and-compounding-processes-implications-disaster-risk-management>.

instance, heavy rainfall linked with a typhoon can cause loose pyroclastic material lying on a volcano's slopes to form lahars that then engulf nearby towns and settlements—as happened around Mount Mayon on 31 October 1875 causing 1,500 fatalities.¹⁶⁵ A single event that initiates a chain of interactions that both amplifies the effects of its impact as it progresses through different states as well as adversely affecting larger and larger areas is known as a compound or cascading hazard. Increasingly common as societies become more complex, Gianluca Pescaroli and David Alexander argue that cascading effects in disasters 'are associated more with the magnitude of vulnerability than with that of hazards'.¹⁶⁶ There are many occasions in 1881 where such cascades are evident: tropical rainfall that caused floods, ruined harvests, and left the poorest destitute, or cyclonic winds that sank ships, disrupted inter-island commerce, and deprived fisherfolk of a living. These chains of interactions require fuller investigation.

However, compound hazards can trigger more than just linear physical causal pathways and can have secondary impacts that are of even greater import and affect even wider spatial locations than the initial event. These are not so much cascading hazards as 'cascading disasters', not just a chain of interactions but one type of disaster spawning another type of disaster.¹⁶⁷ Significantly, too, these secondary disasters do not have to be linear interactions, where one event directly initiates another, but rather triggers that generate unexpected events of strong impact that can be further exacerbated by the failure of physical structures and the social functions that depend upon them.¹⁶⁸ Susan Cutter refers to these unanticipated social, cultural, economic, and political effects as 'social cascades' in which the initial disaster has become 'entwined in its effects and historical meaning with other events', has lost its singularity, and has 'a perverse multiplier effect ... on the spatial and temporal extent and nature of social existence, historical memory, damage sustained, and efforts to realize recovery'.¹⁶⁹ If cascading disasters and social cascades are increasingly seen as the hallmarks of today's complex societies, the intertwining of the physical world with the social fabric of society is already apparent in the nature of disasters in a late colonial society such as the Philippines. The chain of interactions between hazards, topography, climate, agriculture, market forces, technology, social structures, and cultural norms, as attested to by the accumulated accounts of the small-scale disasters that took place in 1881, suggest that disasters were no longer discrete events—if ever they had been ones. Only now, the temporal and spatial pace with which disasters cascaded make these interactions more historically visible. The year 1881 may be singularly uneventful from the standpoint of national historiography, but in terms of understanding the socio-environmental history of the islands, it is one full of historical moment that reveals much about how disasters affected everyday life in the nineteenth-century Philippines.

165 Abella y Casariego, 'Monografía geológica del volcan de Albay'.

166 Gianluca Pescaroli and David Alexander, 'A definition of cascading disasters and cascading effects: Going beyond the "toppling dominos" metaphor', *GRF Davos Planet@Risk* 3, 1 (2015): 58–67.

167 David Alexander and Gianluca Pescaroli, 'What are cascading disasters?', *UCL Open: Environment* 1 (2019), doi: 10.14324/111.444/ucloe.000003.

168 Pescaroli and Alexander, 'A definition of cascading disasters'.

169 Susan L. Cutter, 'Compound, cascading, or complex disasters: What's in a name?', *Environment: Science and Policy for Sustainable Development* 60, 6 (2018): 23–4.