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RESEARCH

Disaster, society, and administration: the Midnapore and Burdwan Cyclone of 1874 in Bengal, India

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Abstract
Coastal Bengal is one of the most vulnerable territories in India due to its periodic exposure to severe cyclonic storms. In this context, it is noteworthy that during the second half of the nineteenth century, cyclonic appearances in Bengal became more frequent. Official records reveal that devastating cyclones ravaged this province in 1850, 1851, 1864, 1867, 1869, 1874, 1876, 1885, and 1897. However, in 1874, the intensity of the storm and the height of the storm wave were extremely high. Never before had such a severe cyclone, which became known as the Midnapore and Burdwan Cyclone, struck this province. The present article tells the story of this cyclone in the Bengal Province from a historical perspective. The discussion deals mainly with two subjects. First, it briefly analyses the formation and progress of the 1874 cyclone and its landfall in Bengal. The article shows how the violence of the associated wind force and high storm waves affected the province. In this context, the article examines both the physical and human impacts of the cyclone and addresses the crises that resulted in society. The discussion that I then take up looks into the issue of whether this catastrophic destruction helped generate new meteorological research in terms of developing cyclonic theories. Second, the discussion seeks to address several issues regarding what help the survivors received from the state and how the colonial administration handled the crisis. To understand these issues, not only the question of the efficiency of the government's relief operations towards the disaster but also the attitude of the colonial state towards the recovery must be considered. All these are relevant questions in revisiting the cyclone of 1874.

1 Introduction

The historical dimensions of natural calamities form an essential part of the historical reconstruction of the human past. These issues, along with their regional variations, are being increasingly recognized. As a result, there have recently been a number of articles and monographs published on the history of natural calamities of the colonial period in India. In keeping with this pattern, the incidents of the Midnapore and Burdwan Cyclone of 1874 affecting Bengal Province should be discussed. The *Report of the Midnapore and Burdwan Cyclone of the 15th and 16th October 1874*, written by W. G. Willson, the officiating meteorological reporter to the government of Bengal, is particularly helpful for the present discussion as it had provides a great deal of valuable data concerning the formation of the cyclone in the bay and its progress onto land, along with the havoc it caused. In addition, descriptions of this great devastation in the British period are limited to the official publications of district gazetteers. However, the descriptions in the gazetteers only summarized the physical aspects of this disaster and are, therefore, quite inadequate to critically review the human aspects of the calamity. The later work of Arabinda Samanta (1997) makes a difference in this context. Samanta's work provides an analytical picture of destruction and creation in human society against the background of this disaster. Although his article carries a significant focus on the human aspects of calamities in coastal West Bengal in the late nineteenth and twentieth centuries, it leaves open the study of the devastating impacts of the 1874 cyclone in Bengal Province. An extraordinary attempt to apply systematic social science concepts in the study of disasters is made by Tirthankar Ghosh (2018) in his Ph.D. dissertation. Ghosh's work, covering the period from the second half of the nineteenth century to the first half of the twentieth century, provides an analytical picture of the distress that arose in north Bengal due to the 1874 cyclone, though without any detailed discussion about its effects in coastal Bengal. Through Mili Ghose's work (2021), we can ascertain the deaths of living

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beings and the damage to properties, especially crops and houses, due to the 1874 cyclone. However, very little is said about the survivors and their indescribable suffering in the work. Therefore, studies on this great cyclone that affected Bengal, about which little is known, are highly desirable.

Hence, an attempt is now made, through this discussion, mainly based on primary sources such as the proceedings of the government of Bengal, kept at the College Street branch of the West Bengal State Archives in Kolkata, to provide an in-depth study of the human aspects of the Midnapore and Burdwan Cyclone that tore through the province in 1874 and strongly impacted the livelihood of the inhabitants. This review of natural calamities during British rule will shed light on many undiscussed issues in the history of colonial India. First, this study will analyse the destructive power of this severe storm. Here, the study will see how much Bengal Province, which suffered great losses with the deaths of at least 78,685 human beings during the 1864 disaster (Gastrell and Blanford 1866, pp. 139–140), was affected by the cyclone of 1874, as it was more severe, in terms of intensity, than the cyclone of 1864 which was itself one of the most destructive cyclones in the history of the world.[1] Second, the analysis of the official relief policy will help to show how ethnically friendly the British rule was. In this regard, it will try to assess the accuracy of the humanitarian image of the British Empire. Thus, the study will contribute to a theoretical understanding of the nature of foreign rule in a subjugated country.

2 Study area

Before the article discusses anything about the Midnapore and Burdwan Cyclone of 1874 in Bengal Province, it would be pertinent to briefly describe the province at that time. Bengal, the largest and most populous province in British India, was situated between the latitudes of 19° 18′ N and 28° 15′ N and extended from 82° E to 97° E longitude, covering an area of 196,408 square miles and containing four large subprovinces——Bengal proper, Bihar, Chota Nagpur, and Orissa (Imperial Gazetteer of India 1909, pp. 1–2). This province was a land of natural calamities. In addition to floods, droughts, famines, and earthquakes, it had always been prone to cyclonic storms owing to its location at the north and northwest of the Bay of Bengal. Usually, cyclones come in from the bay in the postmonsoon period, i.e. from October to November, and a few take place at the beginning of the monsoon, from May to June. This article is a case study of the 1874 cyclone in Bengal Province. In this regard, it needs to be said that although the general context of this discussion is the storm-ravaged Bengal of 1874, we have specially placed the coastal district of Midnapore in the centre of discussion because it was the district most affected by this natural disaster. Consequently, the government also prioritized this district in the rescue and relief programmes conducted during and after the disaster.

3 A brief analysis of the Midnapore and Burdwan Cyclone of 1874

3.1 Origin and progress

It was October of 1874. It was also the season of cyclones. The southwest monsoon was about to retreat; the northeast monsoon had yet to commence. The weather station at Calcutta recorded seasonal winds as usual at the time of the change in the monsoon. There was nothing remarkable about the variations in temperature or humidity before the storm. Even the barometer did not show any considerable fall until the afternoon of October 15. Aside from Calcutta, the barometer at Sagar Island showed no indication of an approaching cyclone up to the night of the 14th, while at False Point, the indications of bad weather were first evident on the morning of the 14th, but here also, there was no striking fall of the barometer until approximately midnight that day (Willson 1875, pp. 13–15). The terrible cyclone made landfall on Thursday, the 15th, and Bengal was the primary site of the widespread havoc it wreaked.

Usually, ship logs contain a large amount of valuable data. However, during this time, there were unfortunately few ships along the part of the bay around the time the cyclone passed through or before noon on the 14th. The *Udston*, approaching the bay, experienced terrible weather, with wind mainly from W.S.W., from noon on October 12. 'Sharp squalls and heavy rain' wrote the captain in his log at 4 a.m. on the 13th (cited in Willson 1875, p. 19). The barometer fell from 30.09 at noon on the 10th to 29.76 at 4 p.m. on the 13th. Finally, the *Udston* overtook the gale around the cyclone on the night of the 13th at about latitude 17° N (Willson 1875, pp. 16–19). On the 14th, although neither the S. S. *Scotia*, which was north of the Andamans, i.e. near the Coco Islands, nor the S. S. *Sirius*, which was at latitude 12°27′ N. and longitude 84°39′ E., was ever near the cyclone, the extracts from their logs are very informative concerning the state of the weather at a distance from the cyclone. There were also three Arab ships: the *Chanticleer*, *Fazel Carreem*, and *Humayun Shah*, whose logs were principally filled with accounts of prayers, the phantom ships they saw, and the devils on their masts. The phenomena of the cyclone were recorded in the logs of the *Ireshope* and

[1] For a detailed historical analysis of the 1864 cyclone in Bengal, see De (2019) and Mitra (2023).

Patrie. Both ships arrived at the bay just before the storm and met it near the sand heads.

Nevertheless, the data available for tracing the course of the cyclone over the northwestern corner of the sea are sufficiently great in number (Willson 1875, p. 27). In the face of the increasing wind and sea, Captain G. B. Smart shipped the *Coleroon*, which had been anchored at the pilot station near the Eastern Channel Light-Vessel, and proceeded to go to sea because, at 7 a.m. on the 15th, he considered it unsafe to continue at an anchor. At noon, Smart wrote in his log that it was 'blowing a furious hurricane and a very heavy sea, the brig entirely at the mercy of the storm'. At 1:15, the lowest reading of the barometer, i.e. 27.58, was recorded (Willson 1875, pp. 29–30). It had fallen at least 2.4 inches during the previous 12 h. The pilot vessel *Cassandra* reached the central calm at 10 a.m. on the 15th, 3 h before the *Coleroon*, as it was approximately 26 miles further out to sea. The *Sir John Lawrence*, proceeding from Calcutta to Chandbally, was assumed to be near the Palmyras Shoals at 2 a.m. on the 15th when all deck passengers were sent below. The wind increased in force and turned N.N.E. at 4 a.m. and N. at 6 a.m. From this time on, the *Sir John Lawrence* was drifting bodily to the south. At 1:30 p.m., the barometer's lowest reading, i.e. 28.75, was recorded, and the full force of the cyclone was simultaneously experienced. The *Mistley Hall* lay at anchor in Sagar Roads, W. ½ S from the lighthouse, and two or three miles from the route of the cyclone. 'Wind S.S.E.; blowing very hard;... barometer 29.05——the lowest point reached (cited in Willson 1875, p. 36)' observed by the master of the *Mistley Hall* at 5 p.m. on the 15th. At the same time, the barometer on Sagar Island also showed its lowest reading, i.e. 29.174.

Thus, the descriptions from these logs help in tracing the cyclone's progress from October 13th, the day when the first indications of its existence were noticed. W. G. Willson copied the position, pressure, and wind data contained in the logs and combined these with observations taken on the coasts. Regarding how the 1874 cyclone was generated, Willson noticed that from noon on the 12th, squally north-easterly winds set in at a latitude of approximately 17° N. and extended as far as 19° N. by noon on the 13th, while on the other hand, the log of the *Udston* showed that from a latitude of approximately 13° to 16° N., wet, squally W.S.W. gales prevailed. The existence of such opposite currents before the formation of a cyclone implied the previous existence of comparatively high atmospheric pressures south and north of the locality of the cyclone's origin, Willson suggested. It was shown that the pressure to the south at Nancowry and Port Blair was exceptionally high throughout all of early October and up to the time of formation of the storm. The pressure to the north over Bengal was also higher than average on October 10 (Willson 1875, p. 79). Based on all these facts, Willson concluded that the cyclone probably formed between latitudes 16° and 17° N and longitudes 89°30′ and 90°30′ E in the bay by the forenoon of October 13 (Willson 1875, p. 86).

3.2 Landfall and its effects

At sea, the cyclone moved approximately 6 or 7 miles per hour in a north-north-westerly direction, but as it approached land, it became faster and more northerly, arriving at the sand heads at approximately noon on the 15th at a speed of 10 or 11. After exerting a terrible impact on the ships at the sand heads, the storm approached Sagar Island at approximately 5 p.m. and struck the coastline at approximately longitude 87°37′ E. (Willson 1875 pp. 1, 88). When it came near Midnapore, the course of the cyclonic storm recurved. The centre crossed approximately 15 miles to the east of the district around midnight, most likely between midnight and 1 a.m. on the 16th (Willson 1875, p. 1). News from Contai, situated southeast of the district, arrived on the evening of Sunday, October 18. The subdivisional officer of Contai, Barber, reported the barometric reading to H. L. Harrison, the then collector and magistrate of Midnapore. The barometer fell below 28, far below what it had fallen to during the cyclone of 1864. According to his account, 11.05 inches of rain had fallen (Harrison to Buckland, 20 October 1874, Collection. 4——3/4).[2] Two more reports also came from Contai, one from Taylor, an executive engineer in the Irrigation Department, and another from the police. All these reports provided a picture of the contemporary climate of the Contai. The storm raged from the afternoon to midnight on the 15th, although the rain continued to fall heavily a week after the cyclone (Harrison to Buckland, 12 November 1874, Collection. 4——8/9). After Contai, the storm progressed to the next station, Tamluk, situated on the banks of the Rupnarayan, approximately thirty-seven miles northeast of Contai. Harrison obtained detailed information about the gale in Tamluk from H. W. J. Bamber, the district superintendent of police. The 'Narrative on the cyclone of the October 15, 1874, as gathered from the Police Reports'[3] showed that the wind increased in power during the afternoon of the 15th. At approximately 2:30 a.m. on October 16, the wind blew furiously and reached its peak, causing severe injury to houses and other property. The gale broke out at 4 a.m. In Midnapore town, the storm was violent. We have a valuable account of the storm from collector Harrison

[2] This letter (ltr), along with the following letters cited in the text without any further reference, is from the General Department Proceedings (January 1875), Branch V. Industry & Science, Head No. 3. —— Meteorology, stored at the Directorate of State Archives, Higher Education Department, Govt. of West Bengal, Kolkata.

[3] This report was in the letter from Harrison to Buckland (12 November 1874).

(vide the ltr October 20, 1874). By 6 p.m. on the 15th, the wind was blowing almost from due north with heavy rain and had become a gale. In another hour, it was apparent that a cyclone was approaching. By 9 p.m., the storm blew in furious gusts; the rain fell in torrents. Nevertheless, it continuously increased in force and changed its direction very slowly from north to north-north-west. It was midnight when the cyclone reached its height and blew at an angle of 15 to 20° from the north. Large trees were uprooted and fell south by the southeast. By daybreak on the 16th, the rain came to an end. The rainfall during the last 24 h amounted to 10 inches or more. Harrison (vide the ltr 20 October 1874) tried to keep C. T. Buckland informed of the catastrophe. Buckland was then the commissioner of the Burdwan division.

The eastern side of the gale, passing from Midnapore northwards, touched a small portion of Hooghly. The centre passed near the thanas of Krishnanagar, Haripal, and Dhaniakhali late at night on the 15th, killing nine people and many cattle (O'Malley and Chakravarti 1912, p. 156). Houses and trees were seriously injured throughout the district. Moreover, the storm also brought severe harm in the northern part of this district, where the subdivision of Kalna of Burdwan bounds Hooghly. Many boats and their cargoes were wrecked on the Hooghly River (*Report on the Administration of Bengal: 1874-75* (*RAB 1874-75*), 1876, p. 161).

We also have information about the gale's progress through the Burdwan district from E. H. Whinfield, the district collector. The wind continued to increase in force from the evening of the 15th; at 11 p.m., it began to blow with hurricane force, and at 5 a.m. on the 16th, the vortex passed over the district town, where the storm raged with exceptional violence. The centre of the hurricane was more violent than that of the 1864 hurricane (Willson 1875, p. 64). Moreover, the high-velocity wind, which reached at least 92.5 miles per hour, devastated the district (Peterson 1910, p. 99). At this time, the wind was approximately due E. After a calm of nearly an hour, commencing at half past 5 or 6, the storm again raged from the west but never reached the same height before the calm. Denobundoo Dutt, an assistant surgeon, observed the barometric readings during the storm. The lowest reading recorded was 28.44, or, to reduce this reading to sea level, 28.54, at 5:51 a.m., presenting a depression of 1.36 inches lower than the normal atmospheric pressure, he noticed (Willson 1875, p. 63). The gale abated at noon. Large trees were collapsed or broken from N.E. and E. More than 21,000 huts were damaged in the district (Buckland 1902, p. 621). Whinfield immediately reported the incident to Buckland on the day after its occurrence (Whinfield to Buckland, 17 October 1874, Collection No. 4——2). The town suffered severely. The tower of the church and the portico of the Burdwan Raj's palace were blown down. Thatched houses became unroofed. Several government offices and European-owned houses, including the Circuit House, lost their doors and windows. The main door of the civil jail was broken, but no escapes were noted. Some government grain golas were unroofed, and it was assumed that much grain had been spoiled. Additionally, Whinfield mentioned in his report a thrilling incident resulting from the storm's fury: 'The No. 10 down chord line passenger train, of twenty-five carriages, was completely blown over and upset between Mancoor and Kanoo, an occurrence which is', he believed, 'unprecedented in this country' (Ibid.). The storm was accompanied by torrential rain, amounting to 6.65 inches, which caused flooding in the surrounding areas of Banka, Bhagirathi, and Darakeswar (Willson 1875, p. 59). However, this rain would be beneficial for the *aman* and potato crops in the district, the collector expected (Whinfield to Buckland, 24 October 1874, Collection No. 4——15/16). In this context, it is necessary to note that while the centre of the storm was moving through the district of Burdwan, the eastern part of the cyclone had reached Nadia, and the western part successively touched Bankura and Birbhum. However, the effects of the storm were experienced to only a slight degree in these districts.

The storm blew with terrific force all over the Murshidabad district. It was at its highest in this district between 8 a.m. and 4 p.m. on the 16th (Buckland 1902, p. 621). W. Wavell, the officiating district collector, reported the incident in detail to the government (Wavell to the assistant secretary to the government of Bengal, 21 November 1874, Collection. 4——40/41). The vortex passed over various areas, namely, Beldanga, Kandi, Choa, Berhampore, Murshidabad, Azimgunge, and Akhrigang, but missed 'the most northerly portion' probably owing 'to the easterly inclination of the storm' (Ibid.). As a result, Malda, just north of Murshidabad, was also not affected by the storm. 'There was no cyclone in this district', F. Wyer, officiating collector of Malda, reported to the government on October 29 (Wyer to the secretary to the government of Bengal, Statistical Department, 29 October 1874, Collection No. 4——29/30). The remnants of the cyclone produced only stormy weather across Malda on 15 and 16 October. However, vast destruction was observed in Murshidabad. The collector's account revealed considerable loss of life, including both human and cattle. Several boats were sunk in the river. The number of houses damaged by the cyclone in this district was not estimated but was likely quick high. Old thatched houses with their mud walls were either unroofed or fallen. Additionally, the damage to the til, mulberry, and advanced portion of the winter rice crop was severe. While acknowledging the extensive damage, Wavell, in measuring its overall effect on the district in his report, emphasized the benefit of the stormy weather. Against the background of a year of scarcity and pressure, a large amount of the principal crop of the year benefited greatly from the extraordinary rainfall, which amounted to

16 inches at Murshidabad (Buckland 1902, p. 621). It would not be right to forget this, Wavell argued.

After Murshidabad, the storm lost its ferocity very rapidly; moving in a more easterly direction, it crossed the Ganges; blew over the Rajshahi district; passed to the west of Bogra at approximately 10 p.m.; crossed the junction of two rivers, namely, the Teesta and Brahmaputra, likely at 2 a.m. on the 17th; and finally subsided on the western edge of the Garo Hills, proceeding towards Goalpara, Assam, but dissipating before arriving there.

Coastal Bengal has long been familiar with mass mortality due to cyclonic disasters. The contemporary cyclone, which was 'one of the most violent storms that has been experienced for many years' (Report on the Administration of Bengal 1874-75 1876, p. 170), left significant and horrible destruction in the cyclone-stricken districts. A significant loss of 3392 lives was reported, and the actual number of deaths was probably far more than the estimate (Buckland 1902), as one of the reports itself noted: 'This number is probably under the mark' (vide the ltr. of Wavell 21 November 1874). Of the reported deaths, 9 were in Hooghly, 29 in Burdwan, 27 in Murshidabad, 7 in the Nadia district, and 4 in Rajshahi (Buckland 1902)—all such statistics are alarming. However, in reality, the combined losses in these districts were still less than those in the district of Midnapore. In terms of the number of deaths, in this case, all other districts were significantly far behind Midnapore, where approximately 90% of the total deaths occurred.

Now the question is what had happened in Midnapore. As expected due to its exposed location, Midnapore was hit by two types of natural forces. The first was a terrible wind that blew until 4 a.m. on the 16th. Second was the storm wave, the sudden and unusual incursion of the sea, which rose 13.5 feet above the high-spring flood level, or 2 feet higher than that of 1864, and burst with extreme force through the centre of the sea-dyke. Thus, Midnapore witnessed the most violent part of the 1874 cyclone: the storm's intensity and wave height far exceeded those of the also devastating cyclone of 1864 (O'Malley 1911, p. 98).

Within a few days after the storm, although the exact details of what had occurred were not still available, Harrison, who had already informed Buckland of the matter semiofficially, shared two brief accounts of the cyclone on October 20 and November 12 based on reports from local officers and the police. The loss of life in the town was significant, with many deaths caused by falling trees and houses, Harrison stated in his report (vide ltr 20 October 1874). The ruthless forces of nature blew away children and even women; others were pushed by the current into tanks or wells and drowned. The losses were increased because of the *khal* (water channel) flowing through the centre of the town. During the cyclone, the rainfall was so intense that the *khal* 'converted into a considerable stream', carrying off branches from its banks and thus blocking the bridges. The water's path was thus clogged and rerouted by passing down the side lands. The force of the current swept away all before it. On the other hand, the gale's force at its height was too high for the outer wall of the Central Jail, which faced the current. There were two breaches in the wall of approximately fifty yards each. The upper twelve feet had been blown down, and the remaining way stood only about four feet high. It was unfortunate that there were 1200 prisoners in the jail, and there was one escape that of an imprisoned sirdar with less than 2 years out of sixteen left to serve. Inside the jail, the nursery of superintendent Dr Sconce, where seven *seers* of Carolina seed had been sown, was totally devastated (Report on the Administration of Bengal 1874-75 1876). The details of the damage do not end here. The thatched roof of the charitable hospital attached to the dispensary in the town was blown off (vide the ltr of Harrison 20 October 1874). The Midnapore distillery was blown down (Report on the Administration of Bengal 1874-75 1876, p. 356). Harrison (vide ltr 20 October 1874) stated that most of the *cutcha* houses in town were damaged. The copious rain had caused the mud walls to melt away, while the force of the wind had lifted the thatched roofs off and thus turned the houses in complete ruins. Moreover, the destruction of trees alone was the most disheartening. Usually, trees have no deep roots in the laterite soil, and magnificent mangoes, peepuls, and many other trees with their roots spreading horizontally over many yards of ground were torn up by the root and levelled to the ground. Many years of arboriculture labour had been rendered futile in a single night. Most likely, one-third of the trees in Midnapore town had blown down, and the face of nature seemed changed, Harrison observed during his inspection on the morning of October 16.

Several places in the district had suffered seriously. At Contai, a two-storey house was smashed by the force of the wind. A high number of *cutcha* houses had been brought down by the tremendous power of the wind with heavy rain. The injury extended even to *pucca* houses. Consequently, people lost their houses, their cattle, and their savings. Their furniture was broken. Their clothes were blown away. Harrison had briefed Buckland (vide ltr October 20, 1874) about this description of Barber, the subdivisional officer of Contai.

After receiving the letter (20 October 1874), the commissioner confessed that such a vast disaster must have also involved a large number of injured and provisions should be made for those whose limbs were broken or whose injuries required medical treatment (Buckland to Harrison 24 October 1874, Collection. 4——5/6). The district superintendent of police, H. W. J. Bamber, also pointed out that there were still many unreported deaths (Bamber to Harrison 9 November 1874, Collection. 4——8/9). Therefore, the actual mortality was greater than what is shown in Table 1.

Table 1 Mortality statistics in the affected areas in Midnapore district beginning with the west (Willson 1875, p. 48)

Places		Loss of human life	Estimated loss of cattle
Jungle Mehals	Binpur		
	Jhargram	Nil: only a high wind extended to these thanas	
	Gopiballabhpur		
West of the vortex	Garhbeta	196	1000
	Salbani	83	285
	Keshpur	693	3000
	Midnapore	396	2100
	Narayangarh	187	1491
	Dantan	341	2344
Intersected by vortex	Chandrakona	24	106
	Debra	72	219
	Sabang	147	300
	Pataspur	62	No estimate
	Egra	92	1750
	Raghunathpur	212	1700
East of vortex	Ghatal	44	No estimate
	Daspur	49	270
	Panskura	52	172
	Bhagabanpur	133	329
	Contai	175	2123
Further east, only partially within destructive belt	Tamluk	20	70
	Muslundpur	04	27
	Nandigram	67	No estimate
	Sutahata	…	…
	Khejuri	…	279
Total of 25 thanas		3049	17,565

These figures indicate that after the vortex struck the mainland in Midnapore, it turned easterly. Adding to this, the force of the wind was the greatest west of the vortex, followed by the vortex itself and then east of it (vide ltr of Harrison 12 November 1874). However, according to Harrison (vide the ltr November 12 1874), the loss caused by the disaster in Midnapore in 1874 was much less than that in 1864. How was that possible? Although it has been mentioned that the intensity of the storm and the height of the storm waves were higher than those in 1864. The study suggests that two factors contributed to the relatively low damage from 1874 cyclone. The first was completely natural. The area over which the storm blew with hurricane force was less than 50 miles in diameter according to Harrison (Willson 1875, p. 88) and even less, closer to 20 miles, according to Buckland (1902, p. 621). Apart from this, the role of the colonial government in preventing losses due to storm waves has to be mentioned. According to O'Malley (1911, p. 98), thankfully, after 1864, not only had the renovations of the sea-dyke been accomplished, but all the great *khals* leading into it had been sluiced; the large Pichaboni sluice had 22 vents and was finished in 1872. As a result, after the 1874 cyclone, the dyke suffered a slight injury from the rising sea wash, but the dyke itself and its sluices escaped danger. But a review of the government's motive behind taking these measures shows that the primary objective was to keep up the inflow of revenue instead of protecting the lives and properties of their subjects. In 1874, Midnapore thus would have avoided flooding entirely if the open Pichabani *khal*, due to repair, remained locked, O'Malley (1911) argued.

However, extensive crop damage could not be prevented in the affected area. Moreover, in 'the area which was exposed to the full fury of the tempest', according to the *Report on the Administration of Bengal 1874-1875* (p. 170), 'the destruction of the crops was almost total'. Realizing the dire situation in Midnapore, the government deputed Mohanda Gupta and C. P. Macaulay to comprehensively inspect the cyclone-hit areas. While Macaulay inquired about the cyclone in the south of the district, he (Macaulay to Harrison 4 November 1874, Collection. 4——8/9) reported about four separate blocks in the Contai subdivision, namely, Egra, Contai and Birband, which had been submerged by the action of the storm wave, and Bhagwanpur, which had been submerged by the bursting of the banks of the Kaliaghai. The rice crop in this portion, especially on the Bhagwanpur block, had been destroyed. At Sujamuta pargana, 'no crop at

all can be looked for, as a good deal of rice had rotten even when I was there', noticed Macaulay (vide the ltr 4 November 1874). Similarly, at the Balighai bazaar, shops were swamped by the rising of the *khal*. Thousands of maunds of rice were damaged. This damage consequently affected the markets. The price of rice 'had risen very suddenly in the neighbourhood to almost famine prices immediately after the cyclone', Macaulay observed during his visit to Contai. Executive engineer Taylor's report also painted a serious picture. According to his report, the devastation caused by the cyclone in the Hijli division was terrible, and the price of rice rose abnormally after the storm. Harrison (Harrison to Buckland, 21 October 1874, Collection. 4——5/6) detailed this description to Buckland. Another officer, Mohanda Gupta inquired about the damage in the district's northeast. Here, the more advanced paddy crops, usually reaped in the month of *Kartick*, suffered much. The sugarcane and rabi crops, such as til, had been destroyed (Gupta to Harrison, Collection. 4——8/9). Along with this, after observing the destruction that occurred in the Ghatal subdivision, Gupta presented an interesting analysis. Despite being located in the same subdivision, the Narajole village was comparatively less damaged than Chandrakona, Gupta (vide the ltr from Gupta to Harrison) observed. Gupta identified that this was mainly because large trees surrounded the village of Narajole. The current study suggests that his analysis highlighted the importance of trees in reducing the destructive effect of natural disasters. In addition, Gupta identified another reason for the high loss in Chandrakona, which was mainly inhabited by weavers and other artisans. Most of the houses in this village were frail, as the weavers had not been able to repair them for the previous 2 or 3 years because of the distress caused by drought and malaria. Therefore, the damage here was very significant. One more affected village in this portion should also be mentioned in this context. The village of Anandapur was famous for its unique town planning, as the houses in this village all touched each other and ran in long rows on each side of the numerous streets and alleyways. Nevertheless, it suffered the most from the storm. Approximately two-thirds of the houses were blown down, and the whole area became a heap of ruins (Oldham to Buckland, No. 460, 22 December 1874, Proceedings No. 13).

The storm also led to extensive damage to government-owned real estate in the Hijili and Cossye divisions. In the former, the damage to the embankments and buildings was particularly serious, while in the latter, the worst damage occurred to the canal works, particularly to the Midnapore Canal. The Midnapore Canal had been the main route between Calcutta and Midnapore since it opened in November 1873. After its opening, the monthly receipts from the tolls on the canal topped Rs. 6000 in July and continued to exceed Rs. 5000 until the occurrence of the storm. The damage from the cyclone ruined the traffic as large portions of the canal were closed (Report on the Administration of Bengal 1874-75 1876, p. 307). Consequently, the colonial government faced substantial financial losses.

4 The administrative response

4.1 State response to the immediate crises

The question was now how the authorities would respond. On the morning of October 16, the whole of the police force was engaged in clearing the town of Midnapore and rescuing the persons pressed under the demolished houses. In addition, a gang of fifty prisoners was utilized daily to remove the trees blocking every town road. Five of those fifty convicts were engaged to restore the affected telegraphic communication. All subinspectors over whose *thanas* (police stations) the cyclone had passed were instructed to feed children who had lost their parents and were destitute, Harrison (vide the ltr 20 October 1874) noted. As soon as the information regarding the distress of the Contai subdivision reached Midnapore, a sum of five thousand rupees was sent to Barber for the instant relief of the victims (Buckland to the secretary to the government of Bengal, Revenue Department, 30 November 1874). In Burdwan, the injured persons, due to the overturning of the No. 10 downchord line passenger train, were all immediately admitted to the hospital. However, at the same time, there was evident negligence on the part of the colonial administration in the recovery in Burdwan. Road cleaning work only started 48 h after the cyclone. In this case, the government's excuse was that coolies were busy repairing their houses on the day after the cyclone (vide the ltr Whinfield to Buckland, 17 October 1874). However, the alarm and damage caused by the cyclone were so immense that the Calcutta Central Committee sent a lakh of rupees to relieve the victims (Buckland to the secretary to the government of Bengal, Revenue Department, 30 November 1874, Collection. 4——8/9).

4.2 Challenges faced by the administration

But there was a considerable difference between the proposed relief scheme and its actual activation. One immediate difficulty was a personnel shortage. The coincidence of the storm with the Dussehra vacation made the government's response to the cyclone more complicated. Most of the *amlahs* (officers) were not present at the station. Resultantly, there was a problem promptly organizing compensatory measures and issuing orders, Harrison confessed (vide the ltr 20 October 1874). In addition, many government buildings had been damaged. Some fifteen police stations were levelled to the ground. Along with the office buildings had gone many government records. Records of the *cutcherries*

(public office for administrative and judicial purposes), treasury, land acquisition and irrigation offices, police stations, and so on had been at least somewhat affected. There were also problems maintaining communication, as telegraphic communication with Calcutta had been affected, Harrison stated (vide the ltr 20 October 1874). Furthermore, the roads from Keshpur to Jhalka, Ghatal to Khirpai and Burdwan were severely damaged (vide the ltr Gupta to Harrison). The communication system was severely disrupted in the Burdwan district as well. The effect of the wind force hindered all telegraphic communication, as the telegraph posts in the district had blown down in all directions. There was no road, including the Grand Trunk Road, that was passable by horses, as they were all blocked up by the fallen trees (vide the ltr Whinfield to Buckland, 17 October 1874). Moreover, traffic on the East Indian Railway was disrupted for a fortnight due to the heavy floods carrying away a considerable length of track (*RAB 1874-75*, p. 328). All of these were impediments to the government quickly providing relief.

4.3 Official relief

In the meantime, W. B. Oldham, the newly appointed collector of Midnapore, made a quick tour through the most affected part of the country to inform himself of the wants and needs of the people. Upon his return to the station at Midnapore, he met with the District Relief Committee on November 27 and determined the following measures to be adopted to provide relief: (a) free relief would be given to those incapable of working, (b) relief would be offered to the able-bodied in return for labour in the test works, such as cleaning tanks and repairing village roads, and (c) relief would be distributed in the form of small donations, not exceeding ten rupees, to the destitute, whose houses had been blown down in the villages in which the crops had been totally destroyed. Furthermore, in recognition of the distress of the people in the Contai subdivision due to the great inconvenience caused by the silting up of the Kaliaghai, it was decided to increase the river's depth (Oldham to Buckland, 10 December 1874). In addition, officials again sent five thousand rupees to Contai. Oldham (vide the ltr 22 December 1874) sanctioned the same amount to be distributed in the north of the district, and out of this, one thousand five hundred rupees was for Chandrakona alone. In Burdwan, orders were also issued to the relief officers to provide relief freely to the destitute who had been left homeless by the recent cyclone (Whinfield to Buckland, 24 October 1874, Collection No. 4——15/16). Indeed, the focus of the relief efforts was to prevent people from falling into extreme poverty (Buckland to the secretary to the government of Bengal, 4 December 1874, Collection. 4——10). What mattered most was that the victims at least received something.

5 Signs of anomalies in the official response

As the rulers of colonial India, the British administration had a general responsibility for the welfare of their subjects. Thus, the question of whether the government performed its duty truly in the postcyclone period arises. The official sources show signs of divergence in the response to the relief operations. The natives were always considered unreliable by the Europeans and usually barred from higher position in the administration (Kingsbury 2018). For this reason, the government deputed Risley, an assistant magistrate, to supervise the relief operations. The commissioner of the Burdwan division, Buckland, also approved C. P. Macaulay and his assistant's employment on general supervision duty in addition to Risley. However, if we thoroughly analyse the government's reports and letters, it becomes clear that the relief programmes were not arranged by the Europeans alone. From Macaulay's letter, we learned about the activities of Koochil Khan, the subinspector of police of Bhagwanpur Pargana, the most affected portion of the Midnapore district. Khan was 'an officer of whose discretion and trustworthiness I am quite assured', wrote Macaulay (vide the ltr 4 November 1874). Like Macaulay, the collector was similarly impressed by Khan's efficiency. According to Oldham (vide the ltr 10 December 1874), '[Khan] is the only officer in any department at Contai who has made an attempt to recover from the effects of the storm'. In addition to Khan, the activities of Mohanda Gupta, a deputy magistrate, during the disaster have already been discussed. Even though these officials, such as Khan and Gupta, knew their motherland better than the Europeans, being natives, they were not given the same responsibility as Risley and Macaulay.

There are many other examples of negligence on the part of the government in the postdisaster era. Indeed, the lower officials had far more reliable information about the disaster. However, they were being overruled by their superiors at the higher levels in the administration whose main concern was government finances. For instance, while Taylor, an executive engineer from Contai, noticed that the bodies of men and cattle swarmed along roads and embankments after the cyclone, commissioner Buckland thought that Taylor's view was less reliable than his own. Interestingly, Buckland made this assumption before he toured the affected area. According to him (Buckland to the officiating secretary to the government of Bengal, 24 October 1874, Collection. 4——5/6), Taylor's 'statement is [was] probably based on the information of his native subordinates' as Buckland, like most British officials, believed that the natives had been grossly overestimating the number of deaths. However, Buckland's assumption is proven wrong when we review the accounts of C. P.

Macaulay and Mohanda Gupta successively in this regard. Macaulay's report clarifies that no place seemed to suffer more from the disaster than the Contai subdivision. He had been shocked at its condition. Water tanks were filled with debris, and the plains were strewed with carcasses, Macaulay noticed during his inspection of this cyclone-stricken area of the subdivision. 'The misery of the people of this tract baffles description', said Macaulay (vide the ltr November 4 1874). One inevitable consequence was the emergence of epidemics. As it happened, at Contai, there was a severe outbreak of cholera shortly after the cyclone hit, and it spread rapidly. On November 12, Harrison informed Buckland of some fifty deaths from cholera, although the disease had not disappeared even by then. In fact, it did not subside for some months (*RAB 1874-75*, p. 170). On the other hand, another eyewitness, Gupta (vide the ltr from Gupta to Harrison), also gave a grim picture of the postcyclone situation in the northeast of the district. The noxious smell from the putrefaction of vegetable matter came from almost every pond. Both air and water seemed poisoned to him. Malaria would be the inevitable consequence of this cyclone, predicted Gupta. Upon examining the register of the endemic dispensary at Chandrakona, Gupta saw an increase in the number of patients. When Oldham visited the area in December, he found that the situation had worsened. There were three epidemic dispensaries then at Chandrakona, and the total daily attendance at those dispensaries was over 1000, he reported (vide the ltr 22 December 1874). He found that six of the ten constables were down with a fever at the *thana*. Oldham thought it to be a general condition. The question now is what steps the government had taken to check the spread of epidemics. Official sources have not shed much light on the matter. Usually, the treatment during the epidemic was mainly being done by the native doctors. But in the medical service, like the civil service, these Indian doctors were subordinate to the British surgeons, though these natives were also trained in Western medicine from Calcutta Medical College (Kingsbury 2018, p. 114). However, the accounts of Macaulay (vide the ltr 4 November 1874), Gupta (vide the ltr from Gupta to Harrison), and Oldham (vide the ltr 22 December 1874) prove in some way that the government had done little to improve the condition of the people after the cyclone.

The attitude of another high-ranking officer can also be mentioned in this context. Like Buckland, the district magistrate of Midnapore, the district most affected by the current calamity, Oldham had a similar view of the local officers. He was upset about subdivisional officer Barber's view of the calamity. '[Barber] has taken a most exaggerated view of the calamity from the first and still does so, being apparently pledged to his original expression of opinion', Oldham wrote (vide the ltr 10 December 1874), adding, 'Mr. Barber proposed to meet the distress by giving increased rates'. As a result, Oldham, who was more concerned with the government's financial condition than the sufferers' plight, had no confidence in Barber. Therefore, he wished to depute Risley, whom he trusted more than Barber.

In fact, within a few days, the colonial government began underestimating the survivors' suffering, as the rulers believed that people should manage their needs independently. Harrison's intervention resulted in a list of rules being issued on October 20, 1874, to all subinspectors of his district over whose *thanas* the cyclone had passed: 'To people who ask for help the Sub-Inspector must say that as everybody is in the same state help from others is impossible. Each person must help his neighbour and get help from his neighbour as best as he can, and everyone thus re-erect their own houses' (vide the ltr 20 October 1874).

Thus, the official position, after the cyclone, was that most of the relief work would be done by the affected people themselves, and a relief fund was to be the only external addition. This attitude of the rulers is reflected in the review of government expenditure accounts of Midnapore. That district was most affected by the calamity and was, naturally, the district to which the government gave the greatest importance in providing relief, ultimately revealing the government's pathetically small contribution to the relief programme after the disaster. Oldham (vide the ltr 22 December 1874) reported an expenditure of 31,709 rupees, 14 ánas, and 9 paise for postcyclone relief in Midnapore up to December 22, 1874. However, regarding this catastrophe, Buckland (1902, p. 621.) had said 'that the whole country coming under its influence was wrecked, its intensity far exceeding that of the cyclone of 1864'.

Indeed, the postcyclone period had turned out to be bad for the inhabitants of the cyclone-stricken areas. Many parts of the province had not recovered from the adverse effects of the cyclone. After inspecting the impact of this disaster in the northeast of the Midnapore district, Gupta (vide the ltr from Gupta to Harrison) gave a poignant account of this area. Even when Oldham toured the district's north in late December, he observed the same situation. 'Throughout the fever-stricken tract there is distress, which varies in degree, and in some places [it] is very great', he (vide the ltr 22 December 1874) wrote. The condition became progressively worse. Survivors experiencing poverty had long suffered from want, with particularly bitter suffering from the drought of 1873–1874, which dispossessed them of everything 'they [needed] to keep their body and soul together' (vide the ltr from Gupta to Harrison). Furthermore, the fever epidemic raged on, rendering them weak and useless members of society, and finally, the cyclone left them homeless. Although the labour price had doubled from before the cyclone in some areas, the labour class was still suffering from a lack of shelter. Because their earnings were

insufficient to cover the materials needed to build houses, as the price had become too high. The miserable condition of the unfortunate poor who were deprived of dwellings during a season when the nights became chilly was the final aspect of the calamity. In addition, the distress and suffering among the weaver class were severe. The cyclone had made their conditions ten times more miserable than the last drought. Their weaving machines, the only means they had of obtaining food, had been wholly destroyed by the collapsing houses or so damaged that they no longer functioned. Those who had been able to protect their looms did not have a space to work with them. Many of them, who had friends or relatives in Calcutta or other places, were preparing to leave their native land—perhaps never to return.

6 Generation of new meteorological research

It can be said that this type of catastrophic destruction stimulated meteorological investigations in the second half of the nineteenth century. In fact, modern meteorological science was developed in British India at the initiative of colonial experts such as Colonel Capper, Redfield, Colonel Reid, Henry Piddington, and C Meldrum whose primary interest in developing it was of course, to benefit the colonial enterprise. The prime aim was to provide an analysis of cyclonic appearances and therefore to offer sailing ships practical ways to escape rotatory cyclonic storms (Roy 2010; Ghosh 2019). This cyclonological research was improved by human endeavours to understand natural phenomena during the second half of the nineteenth century. Here, the study must mention Henry Blanford, who coauthored a report on the Calcutta Cyclone of 1864 and put forth a theory of local depression as the primary cause of the cyclone's formation and emphasized the introduction of a scientific storm warning system for the sake of the empire's flourishing trade, as the violent storm of 1864 had demolished the ships in the Calcutta port. On the other hand, while surveying the data to determine the origin and progress of the cyclone of 1874, Willson (1875, pp. 79–80) presented a theory of contrary winds, an idea that had previously been put forwards by Meldrum to explain the formation of hurricanes in the South Indian Ocean. Along with this, Willson argued that there was a great deal of uncertainty in the weather indications before any striking fall of the barometer or increase in the force of the wind, as noted by the observatories of Calcutta and Sagar Island in terms of confirming the storm's 'probable position and subsequent course' (Willson 1875, p. 81). However, Willson's views concerning the formation of such terrible storms were of unique value to mariners and thus contributed significantly to the evolution of modern meteorological knowledge.

7 Summary and conclusion

The inhabitants of coastal Bengal had always coexisted with cyclones. The colonial administration had thus adopted some essential steps following the 1864 cyclone to avoid damage due to cyclonic storms and storm waves. For instance, meteorological research continuously sought to enrich mariners' practical knowledge. Along with this, the introduction of a scientific storm warning system, a vital part of the disaster mitigation process, significantly contributed to the security of the empire's trade and maritime activities. Moreover, the completed renovation of the sea-dyke after the 1864 disaster in the coastal areas of Bengal helped maintain the inflow of revenue for the colonial administration. However, as it turned out, all these steps had the same goal—to protect the empire's economic interests rather than saving its subjects' lives and property. Indeed, the suffering of the indigenous people remained more or less unchanged. This article has discussed how the Midnapore and Burdwan Cyclone of 1874 affected human society in the path of the cyclone and caused damage to the traditional rural economy there. Undoubtedly, the hazards brought forth by this catastrophe were primarily the result of extreme natural forces. However, the study also highlights that the colonial administration's apathy towards improving the postcyclone situation increased the magnitude of the disaster. Concerning the official relief policy after the cyclone, this study suggests that the prime concern of the colonial administration was to limit the costs to the empire as much as possible. The policy adopted for this purpose was to intentionally underestimate the suffering of the survivors in the first few days after the catastrophe so that relief would not have to be offered for a long time. Moreover, the relief administration procedure was also flawed, especially when a racist attitude was noticed. Naturally, the horrible conditions during the postcyclone period gave birth to an environment in which diseases flourished as the administration took only nominal steps to improve the postdisaster situation. The result was a further decrease in the standard of living of the poor residents, particularly weavers, in the affected area. When the disaster intensified, the only way for those living in this area to escape it was to migrate.

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Declarations

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