2

Responses and Responsibilities in Emergency Relief

Introduction: Disrupted Communication

The damages of sudden disasters often have a paralysing effect on local government structures and systems, and at the same time, a rapid response is essential to save lives and minimise damage.[1] In this chapter, I discuss the local colonial government's response in the immediate aftermath of the 1934 earthquake and the subsequent criticism of its inadequacy in responding to the needs of the disaster-stricken population. The government's capacity and responsibilities in the aftermath revealed weak spots regarding preparedness for a major disruptive event: its security-oriented response reflected not only a fear of chaos as a possible springboard for adverse human behaviour but, perhaps more importantly, it revealed the importance of communication in maintaining control of the area. Even though the disrupted communication complicated relief and rescue work in practical terms, as discussed throughout this chapter, the central role of (disrupted) communication and (lack of) information in the government's narrative of the aftermath reflected above all the importance of communication infrastructure to the local government.

The government's response in the 1934 earthquake, S. N. Mukherjee describes, as slow and less occupied with clearing debris, saving lives and giving relief than in protecting and restoring government properties and factories. As he notes, such a security-oriented response may have been related to the Government of Bengal's concurrent efforts to strike down what were perceived as increasingly violent nationalist groups,[2] or a general apprehension towards nationalist political rivalry in the region.[3] Taking notice of the administration's priorities, Tirthankar Roy comments on the government's response in the immediate aftermath: 'Before saving lives, the civil administration had to guard the jails, the banks and the

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Treasury.' As Roy notes, the government's priority was one of the reasons for criticism of its relief effort in saving the lives of those injured by or buried under debris.[4]

Mukherjee's and Roy's explanations of the local government's security-oriented response and subsequent criticism by contemporary nationalists have support in the two conflicting master narratives of the earthquake aftermath. The government's master narrative, *A Report on the Bihar Earthquake*, published by Relief Commissioner W. B. Brett, addresses every aspect of the earthquake's aftermath in a dense summary account of damages and government action in 1934. Brett based his report on an unofficial report to the Home Department in Delhi, written by P. C. Tallents, Chief Secretary to the Government of Bihar and Orissa, in August 1934.[5] Brett added excerpts from later communiqués issued by the Reconstruction Department,[6] but the summaries of the district officers' accounts of the aftermath, data from official communiqués and an outline of the response by the local government in Tallents' report formed the central narrative in Brett's report. In effect, both Tallents' and Brett's reports were collated versions of internal reports from the local government's headquarters and the district administration of affected areas, later to be further watered down in the widely available yearly report of the province, *Bihar and Orissa in 1933–34*.[7] Like Tallents' report, Brett's report described the movement of both military and armed police in the first three days after the earthquake as partially motivated by the government's fear of crimes in the aftermath: 'One of the first anxieties of [the] Government was lest there might be outbreaks of disorder and looting in the shattered towns.'[8] Unlike Tallents' report, Brett's report did not mention that the local government in Patna declared 16 and 17 January holidays, motivated 'principally' by the collapse of many banks and partially to prevent 'a run on the banks', a measure that in effect kept official institutions closed for a week.[9] The district administration in Monghyr, Muzaffarpur, Darbhanga and Motihari, and the sub-divisions Sitamarhi (Muzaffarpur district) and Madhubani (Darbhanga district) in general also prioritised exceptional security measures before organising relief. In Muzaffarpur, for instance, the administration set in motion a chain of precautionary security measures such as guarding the damaged jail and prevention of looting, for which the police were deployed, before the organisation of clearing debris. The first action by the District Officer in Monghyr was to mobilise the armed police and to arrange for an extra guard on the treasury: he then 'saw the main bazar in ruins'. Once the precautionary security measures had been taken, 'the available police and officers *then* went to help in rescue work in the town' (emphasis added).[10]

The security-oriented response reflects a belief in one of the most enduring disaster myths in public and official imagination according to sociological research on disaster aftermaths.[11] Panic, ensuing unrest, looting and the breakdown of social orders are proven to be 'exceedingly rare' following a disaster.[12] However, another perspective from disaster research argues that specifically earthquakes, with their rapid onsets, can heighten feelings of frustration more than disasters with slow onsets, such as droughts, and therefore may be more likely to stimulate conflict.[13] That does not appear to have been the case in the 1934 earthquake. Contrary to the government's expectations, Brett's report described how 'the emergency exhibited the people in a very favourable light', except for the odd case of profiteering among traders promptly put down with the support of the 'public opinion' and a few reports of looting. The absence of crimes, according to Brett, was due to 'the state of dazed stupefaction' prevailing after the earthquake and the prompt arrival of police and price control.[14] In general, apart from a request for police reinforcement by an eyewitness as 'bad characters' had attempted to create 'trouble',[15] instances of crimes were not reported in newspapers. The BCRC's *Devastated Bihar*, the official master narrative from the nationalist point of view, also reported that public order had prevailed. It did, however, state that it was maintained by 'people themselves' while the police had guarded jails, banks and government treasuries,[16] thereby implicitly criticising the unnecessary presence of the police at those sites when rescue and relief operations ought to have been a priority. According to this report, the government's response created the disaster by choosing wrong priorities, which is not an uncommon form of politicised critique of a disaster.[17] Such a critique was from the outset espoused in the nationalist counter-narrative in response to information carried in government communiqués in the newspapers. Editorials and eyewitness accounts in the *Amrita Bazar Patrika*, *The Statesman* and the *Behar Herald* called on more relief provisions, listed numbers of casualties conflicting with official data and published personal narratives criticising the government's response. The tensions and contradictions in these narratives—on the one hand were the nationalist accounts and eyewitness reports, and on the other the official version in newspaper articles and government communiqués—converged at several points in terms of damages and their impact, but disagreed regarding essential data pertaining to deaths, priorities in giving relief and the government's ability to respond in the interest of the people affected. The conflicting perspectives on the material experience of the earthquake represented a politics of narration that went beyond the aftermath.[18] Narratives of the aftermath offered a lens for criticising or advocating the current forms of governance or suggesting alternatives.

Rather than focusing on the security-oriented response of the government as a plausible *cause* of its lackadaisical approach towards relief and aid, this chapter argues that the destruction of communication infrastructure in the earthquake was the primary cause of a security-oriented response. By addressing the local colonial government's response, this chapter discusses how the government perceived communications as a fundamental part of governance. Communication served, in Bihar as elsewhere, as an important argument and tool of governance throughout the colonial period.[19] As Christopher Bayly has persuasively argued, the colonial government's initial success in the Indian subcontinent owed much less to military superiority, and was more a result of the deployment of a vast network of intelligence gathering to secure military, political and social information by using modern technological resources. 'Information panic' was characterised by 'the feeling of the fledging colonial administration that it knew nothing of the local society and that the locals were combining to deny it information'.[20] As a result, during moments of crises such as the 1934 earthquake, once the formal system of information gathering broke down, the government launched a security-oriented response. In this way, the disaster response addressed the crisis of the local government rather than that of the victims of the earthquake. In addition to the disrupted communication and flow of information, 'rumours' circulated in the immediate aftermath and although foremost concentrated on explanations of the cause of the earthquake, they were a sign of concern to the local government.[21] Rumours are a well-known phenomenon in the aftermath of a disaster, some would even argue that rumours are a universal response; most commonly, they identify scapegoats or blame the authorities for hiding information about the event that has occurred or of future disasters. These 'rumours', scientific speculations or bold new theories on metaphysics can stem both from the out-of-the-ordinary experiences that compromises a disaster and the chaos of distorted communication and governance.[22]

Communication was also a part of colonial governance that had found its way into what Upamanyu Pablo Mukherjee calls 'the classic paradigm of British administrative writing, where disasters are explained as governance glitches that can be removed as the modes of communication, knowledge gathering and self-reflection are improved'.[23] The impact of the breakdown of communication on the government's response highlights its importance in governance as well as in the colonial government's perception and interpretation of disasters. Both these aspects underline how the earthquake's aftermath was historically produced as an outcome of governance and previous experiences with disasters. The local government's emergency response highlights its dependence on communication

in upholding efficient governance as well as in disaster management. As Beck has argued in his thesis on risk society, modernisation contributed to institutionalised scientific knowledge and technical expertise that exacerbate vulnerability;[24] the colonial perception of modernisation in the form of communication infrastructure shaped its notion of risk and how it responded to the earthquake.

In the following two sections, I will first examine how narratives of the aftermath addressed the disruption of communication networks and damages by the earthquake with the purpose to discuss the effect on the flow of information on the relief response. Both in Patna and in district towns, the breakdown of communication and information was central to the security and relief response. In the next two sections, I will discuss how the earthquake showed both the limits and the capacities of the government in its coordination of resources around security, relief and rescue work. The disaster response discussed in this chapter includes foremost the organisation of search and rescue teams and meeting the survivors' basic needs of medical care and shelter.[25]

The Slow Emergence of Disaster

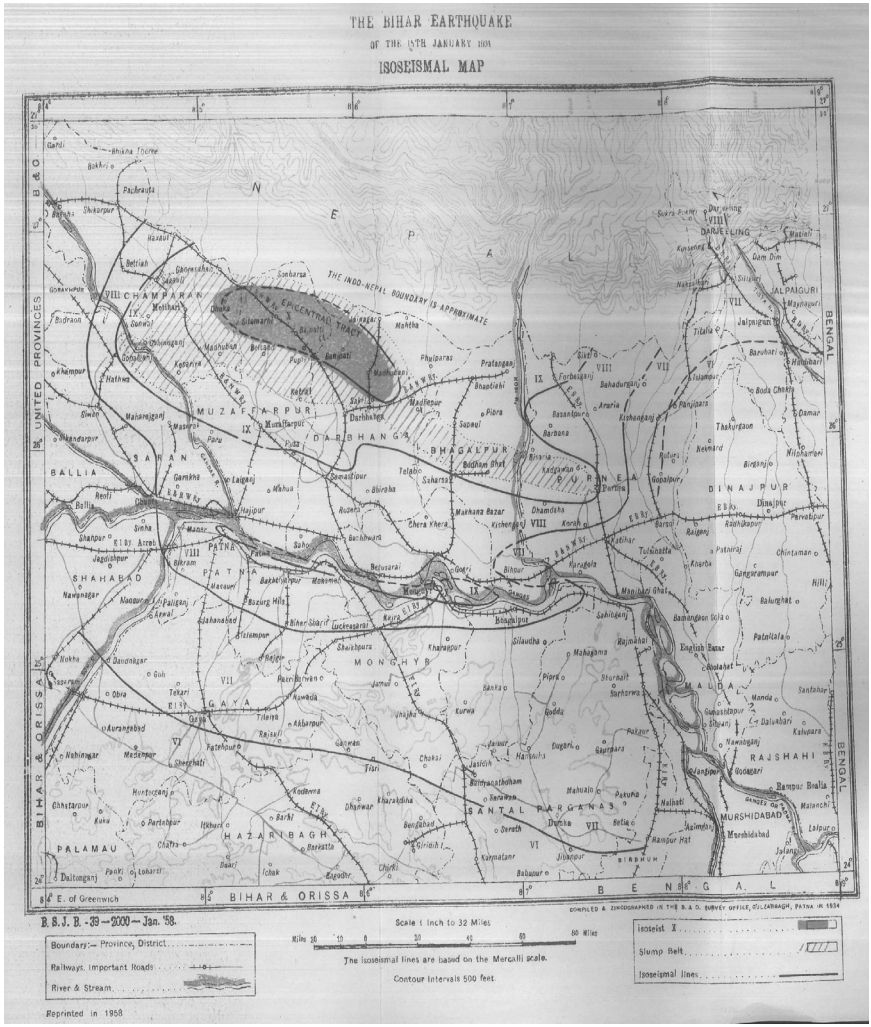
> Clear the line.
> Home [Department], New Delhi.
> Serious earthquake shortly after 2 p.m. today. Extensive damage caused to buildings especially High Court and General Hospital. 10 deaths known in Patna 9 in Gaya, but information still incomplete.[26]

In its brief composition, the quoted telegram informed the Secretary of State in New Delhi about a 'serious' earthquake that had struck Bihar. In the first telegrams on the day of the earthquake, the incomplete information available to the local government pertained to Patna, the provincial capital, and Gaya, an important town and railway hub. This initial communication mentioned the destruction of government buildings in Patna, the dispatcher yet to learn about the destruction in the worst-affected towns of Monghyr, south of the Ganges, and Darbhanga and Muzaffarpur in the Tirhut division in north Bihar. The first uncertain figures of the number of dead would gradually increase as the scope of the disaster gradually dawned on the local government and the public.

In the government's narrative of its relief response, the collapse of the communication system on all fronts—the telegraph system, roads and railway lines—effectively cut off the headquarters in Patna from the towns in north Bihar

and from Monghyr, south of the Ganges. At the same time, the government in part explained its inability to address the earthquake aftermath adequately as the result of Bihar lacking infrastructure and the volatile 'natural' condition of its landscape. From an administrative point of view, the earthquake area was divided into three zones out of which the northern and north-eastern zones proved the most difficult to access, while the zone located south of the Ganges was, even under normal circumstances, easier to access from Patna or Calcutta.[27] In the rural and fertile agricultural land of the Tirhut division in the north, 97 per cent of its almost 11 million population resided in 14,000 villages. The division's two largest towns, Darbhanga with a population of 60,000 and Muzaffarpur with 43,000 inhabitants, had been severely hit by the earthquake. Compared to Muzaffarpur and Darbhanga, the smaller town of Motihari with about 17,000 inhabitants in the remote district of Champaran had fared better. The second earthquake zone located in the north-eastern part was less fertile and more sparsely populated than Tirhut, with the district towns Purnea and Katihar being the only towns of importance to the government. The third seriously affected zone was located in south Bihar, between the Ganges and the hills of the Chota Nagpur plateau, where Patna, the towns Monghyr, Bhagalpur and Arrah lay on or were in close proximity to the southern bank of the Ganges. Monghyr, with its 53,000 inhabitants, located 100 miles east of Patna on a peninsula in the Ganges, suffered severely in terms of loss of lives and material assets. Another 35 miles further to the east near the Ganges, Bhagalpur, with its population of 84,000 inhabitants, was less affected.[28] In Patna and its suburb Dinapur, with nearly 200,000 inhabitants and 40,000 houses spread along the Ganges, many buildings were ruined in the earthquake, but only in Monghyr did the GSI record an isoseismal reading of 10 (Map 2.1).[29]

The earthquake's effect on all forms of communication—the telegraph system, roads and the railways—and the landscape of the region both played a significant role in explaining the relief response of the local government. In the government's narrative, the pre-existing environmental conditions in north Bihar, especially the rivers, were factors contributing to slow communication and delays in sending relief from south to north Bihar.[30] North Bihar was, and still is, one of the most flood-prone areas of the region.[31] The branches of the river Kosi, known for its troubled history of floods,[32] were described as dominating the area. The north-eastern earthquake zone between Supaul in the north and Purnea in the east was, according to the local government, 'a tract entirely devoid of roads'.[33] The railway network connecting Tirhut with Patna had gradually expanded via Muzaffarpur and Motihari to reach Bettiah but the lines mainly catered to



Map 2.1 Isoseismal map of the epicentre tract and Bihar by the Geological Survey of India. The shaded oval shape in the northern part of Bihar demarcates the worst affected area (isoseismal 10 area). Monghyr, situated to the east of Patna, on the south bank of the Ganges, is also marked isoseismal 10.* The striped area demarcates the so-called slump belt, which was badly affected by the earthquake in terms of damages but experienced less shaking.

* *On isoseismals, see Chapter 1, note 12.*

Source: Dunn et al. 'The Bihar–Nepal Earthquake of 1934', pl. 2 (reprinted map from 1958 with blue and red colours; also in Brett, *A Report on the Bihar Earthquake and on the Measures Taken in Consequence thereof up to the 31st December 1934* [1935]).

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professional trade and the rural north remained accessible by cart roads and rivers until the early twentieth century.[34] Much of the communication with the districts and outlying areas normally took place via Muzaffarpur; however, since the town's communication with Patna via road, rail and telegraph was cut off, it meant in effect that contact with the whole division initially was disrupted, according to a government communiqué published a week after the earthquake. Since Motihari was located in the division's north-western corner towards the border of Nepal, it was difficult to access even before the earthquake.[35] According to the local government's yearly report, communication across the region 'had always been bad' due to the lack of infrastructure, which could be explained by the province's environment, for instance, the Ganges remained unabridged for a stretch of 200 miles. The 35-mile journey from Patna to Muzaffarpur usually lasted for over four hours, and in order to reach the northern parts, the report lamented how 'even more tedious' travel was required.[36] Notably, the government viewed pre-existing environmental conditions as the reason for a vulnerable communication network that contributed to a delay in sending relief and rescue teams. In the government's narrative, its success or failure in providing relief depended on access by roads, railways or telegraph and knowledge gathering about the situation. The breakdown in road and telegraph communication left Patna unaware of the earthquake's scope until the morning of 16 January 1934. The first reports from Muzaffarpur, in a letter 'sent down by hand', reached the local government in Patna at approximately the same time as a much-delayed telegram from Bhagalpur arrived. It had been sent on behalf of Monghyr, requesting help, in the afternoon of 15 January but had remained undelivered until the morning of 16 January 1934.[37] The local government upgraded the earthquake from 'serious' to 'very serious' in a telegram to the Secretary of State in New Delhi after having received more extensive information about damages, and most importantly, after realizing that information could not be obtained from several places:

> Further reports received show very serious situation created by earthquake. Sixty-one deaths hitherto officially reported from Patna district, ten from Gaya town. Not detailed report from Arrah but known that buildings have suffered severely. Bhagalpur reports six deaths in town and extensive damage to buildings including Central Jail. Damage more serious at Monghyr and Jamalpur but details not available. Police assistance has been sent and medical assistance is being sent to Monghyr. Communications cut with north of river [Ganges] and aeroplanes summoned from Calcutta. Much loss of life reported from Muzaffarpur. No reports from other districts in Tirhut

> or Purnea. Earthquake felt in Chota Nagpur and Orissa but such reports as received suggest less heavy damage than in Bihar.[38]

The news of not much being known—'no detailed report from Arrah', 'details not available', 'communications cut', 'no reports'—communicated a lack of information about the situation in many places. What was known, however, was the gravity of the earthquake—'[a] very serious situation', towns and people had 'suffered severely', 'much loss of life', 'less heavy damage', 'bill for repairs will run to lakhs of rupees'—and although described in vague terms such rough estimates of its impact confirmed the event of the disaster. As the solution to the breakdown in communication with north Bihar, the local government in the same telegram requested two aeroplanes from Calcutta for reconnaissance of the area north of the Ganges at midday of 16 January 1934, almost 22 hours after the earthquake had hit.[39] To its surprise, however, within hours of having sent the request, a private aeroplane from Captain Barnard's Air Circus arrived at Patna at 5 p.m. with news from Muzaffarpur and Tirhut.[40] As the earthquake happened, Captain Barnard and his India Air Pageants were on an air circus tour with 92 shows, including parachute performances, aerobatic displays and stunts with a number of aeroplanes, in north and central India in 1933–34.[41] The aeroplane had by chance flown over Muzaffarpur on its way to Calcutta, and in response to the message 'Earthquake Take Care'[42] chalked in white across the ground, it had landed among the fissures at Sikandar maidan. Mr W. Fairweather, a manager of an engineer company and resident of Muzaffarpur, had before the sight of an aeroplane assisted the district administration in preparing a landing ground with the message.[43] Mr Fairweather and not a government official was on the same day (16 January) taken on an air reconnaissance towards the subdivision Sitamarhi in Muzaffarpur district and Motihari in Champaran district (Image 2.1), and afterwards continued with the crew of the aeroplane to Patna.[44]

The same day, the local government at Patna perceived the situation in Tirhut as 'far worse than anticipated' after hearing the aeroplane crew's descriptions of collapsed bridges, water standing over large tracts of land usually dry, ground fissures with grey mud forced through in many places, large buildings in ruins, including parts of the Imperial Agricultural Research Institute at Pusa, destroyed sugar factories and heavy death tolls.[45] The damage to the grand buildings of the Imperial Agricultural Research Institute at Pusa was taken as a sign of total destruction in the area, so severely damaged was the institute that it had to be transferred to Delhi after the earthquake.[46] This first air reconnaissance on 16 January 1934 was in the district gazetteer wrongly accredited to the

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Image 2.1 Aerial view of Muzaffarpur town. The crew of an aeroplane flying over Muzaffarpur on 16 January 1934 was among the first to report the scope of the earthquake's destruction in north Bihar.

Source: 'The Indian Earthquake: An Aerial View—Taken by the Air Survey Co., Ltd—of the City of Muzaffarpur, Bihar State, Showing Many of the Buildings in Ruins', *Flight*, no. 1311 (8 February 1934): 119.

government, whose survey was not conducted until one day later.[47] According to the GSI, the magnitude of the disaster in north Bihar 'became known as a result of aerial surveys undertaken by the Bihar Government and by private enterprise'.[48] BCRC also gave credit to the local government's air reconnaissance for being 'the very first act of the government in connection with the earthquake'.[49] Like the government, the BCRC's account claims that the lack of communication left the residents of Patna unaware of the earthquake's scope in Tirhut until the day after the earthquake when the aeroplane crew broke the news,[50] but this was a private initiative. Two days after the earthquake, on 17 January, the government administration in Patna, for the first time, accessed the area by using the aeroplane of Captain Barnard's Circus for an official air reconnaissance over Bettiah and Motihari.[51]

In Calcutta, the press had no consistent news from north Bihar until *The Statesman* reported the eyewitness accounts by the members of Captain Barnard's Circus two days after the earthquake.[52] For the inhabitants of Calcutta, the pilot's

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impression from the air published on 17 January 1934 was, like for the government administration in Patna, the first indication of the disaster's scope in north Bihar. News had, until 17 January, been confined to death and destruction in other areas, mainly Patna, Jamalpur and Gaya, with reports from various locations in northern and north-eastern India of damages to houses and large buildings such as temples in Assam, Lucknow, Allahabad and Benares.[53] In Calcutta, the earthquake caused cracks in buildings of masonry and important government buildings, and larger structures such as churches had sustained damages that would need repairs, but no heavy collapses involving casualties had been reported.[54] The government's official narrative—that the breakdown in communication was the major obstacle in receiving information and sending aid—was supported by the fact that the disrupted information flow between Tirhut and Patna or Calcutta clearly influenced reports on the earthquake damages. On 17 January, the focus of *The Statesman* in Calcutta shifted to the scope of the disaster in north Bihar from having so far reported damages on tea estates managed by Europeans in Darjeeling, the death of 'coolie women' and 'extensive damages', as well as destruction in Calcutta, Gaya and Jamalpur on 16 January 1934.[55] Initial reporting had also focused on Jamalpur,[56] an important town and well-connected railway hub next to Monghyr, geographically close to and financially connected with Calcutta.[57] The strong presence of Bengalis and Europeans in the railway workshops[58] damaged in the earthquake held considerable news value to Calcutta's urban Bengali and European readership, reflected in the separate counts of destruction and deaths for the railway colony and the bazaar.[59] The importance of a functional communication network for information about the disaster was underlined by the newspaper's reporting of the earthquake through eyewitness accounts of survivors, received by telegram or in person after having arrived in Calcutta by train.[60]

The lack of news in Calcutta about Tirhut immediately after the earthquake was lamented by the Maharajadhiraja of Darbhanga who at his residence in the city anxiously awaited information. The Darbhanga Raj was the largest of three major estates affected by the earthquake, the others being the Bettiah Estate in Champaran and the Hathwa estate in Saran. The Bettiah Estate, with 1,800 square miles yielding a rental of almost 2 million rupees, was as the second-largest *zamindari* in north Bihar after the richer and larger Darbhanga Raj which possessed more than 2,400 square miles of land and had an annual income of approximately 4 million rupees.[61] About two hours after the earthquake, the Maharajadhiraja learned that Jamalpur had 'suffered very badly',[62] but the 'gruesome tale that the airmen had reported to the press about Muzaffarpur' was the first news of the earthquake's magnitude in north Bihar.[63] Overall, the

dramatic description of 'the streets strewn with corpses' and 'hundreds left buried under the debris' was an apparent eyewitness account of the disaster unfolding in front of the pilot.[64] After reading the news the Maharajadhiraja sent an aeroplane to Darbhanga on the evening of 17 January, but upon returning from the town's polo grounds, one of its wheel got stuck in a crevice and the plane was stranded.[65] Consequently, extensive information about the situation was not obtained until five days after the earthquake when a brother-in-law of the Maharajadhiraja arrived from Darbhanga.[66]

Judging from the content of initial telegram correspondences and narratives of the aftermath, 24 hours elapsed before the government in Patna realised the gravity of the earthquake with the help of Captain Barnard's aeroplane. In the afternoon of 16 January, the local administration in Patna knew of serious damages in the Tirhut division from an air reconnaissance by the same aeroplane, which was again used on 17 January by government officials to review the situation in Bettiah and Motihari in Champaran. Once the requested aeroplane arrived, officials from Patna also visited Muzaffarpur in the afternoon of 17 January.[67]

Facing severe restrictions in communication by land and telegraph, the use of aeroplanes became an important mode of communication with Tirhut, which was considered a distinctively modern force deployed by the government. The Indian Red Cross described aeroplanes as 'a striking feature' in the aftermath; by 24 January aeroplanes were still the only means of communication as well as carriers of newspapers, medical stores and urgent communications from anxious relatives to several towns in north Bihar. Daily flights between Patna and Muzaffarpur served to transport correspondence and government officials as well as medicine, distributed to Darbhanga, Motihari and Sitamarhi by light motorcars.[68] The very limited number of aeroplanes, at most three, as well as the lack of landing grounds due to land damages, restricted air traffic. Once the first aeroplane requested by the local government had arrived in the afternoon of 17 January, from the Indian Air Survey and Transport Company in Calcutta, it left for Muzaffarpur and Tirhut.[69] Captain Barnard's aeroplane left for Calcutta the next day, and on 19 January, the second aeroplane requested by the government arrived; a private aeroplane from Cossipore close to Calcutta was also placed at the disposal of the government.[70] Aeroplanes were also important as the means for the Revenue Department to conduct an initial survey of damages to agricultural land in Tirhut, born out of concern for the sugar cane harvest and the consequences of the earthquake on agricultural production in the division considered most populous and fertile.[71] An aeroplane, a D. H. Moth from the Royal Air Force, was stationed in Patna and used for morning and afternoon

flights to Muzaffarpur, carrying official correspondence and government officials from 25 January 1934 until 11 February 1934 when it was wrecked while taking off from Darbhanga.[72] In this way, aeroplanes served to support correspondence and communication when roads and telegraphs failed in the aftermath of the earthquake. Patna's General Post and Telegraph Office suffered cracks in the earthquake yet remained functional until an aftershock badly damaged the building.[73] Although Muzaffarpur's telegraph line was reopened relatively soon—at 10 a.m. on 16 January—the local government could not manage to get telegrams through to Muzaffarpur.[74] The town's telegraph office normally connected outlying districts in north Bihar with Patna and Calcutta via certain nodes, which meant that once the Muzaffarpur telegraph line was out of function, the outlying districts remained isolated. The office first became dysfunctional due to electricity failure and the staff being 'panic-stricken' or absent while looking for their family members. The main line and important side-lines were reopened once batteries and additional staff had arrived after a couple of days, but by then the huge backlog of telegrams and current traffic was far beyond the office's capacity.[75] Apart from outgoing messages, a 'flood of messages' overburdened Muzaffarpur's telegraph office after anxious relatives in Calcutta had read about the destruction in the newspapers on 17 January 1934, resulting in the suspension of all normal telegraph traffic between Calcutta and north Bihar.[76] In order to speed up the transmission of the 3,000 express and 4,000 ordinary messages waiting in the morning of 25 January 1934, the government's aeroplane transported the backlog of outward telegrams from Tirhut to Patna. Ten days after the earthquake, all telegraph lines from Darbhanga to Jayanagar were still cut off, as were several other towns. The telegraph line between Patna and Monghyr appears to have been re-established on 17 January, and so were the connections between Muzaffarpur and Motihari and with Darbhanga on 19 January. Less affected was the post office's main services that continued, although irregularly and with delays, by means of lorries, *ekkas* (a two-wheel light buggy pulled by a pony) and runners.[77]

As the accidents of the government's aeroplane in Darbhanga on 11 February and of the Darbhanga Raj's aeroplane on 17 January proved, using aeroplanes in the damaged polo grounds or cracked fields was a risky undertaking.[78] Many open spaces, such as the landing grounds in Patna, were covered with people camping out in the open, escaping their ruined or damaged houses.[79] The lack of even grounds, mainly being restricted to the polo grounds at Muzaffarpur, Motihari, Bettiah and Bhagalpur, hampered access by aeroplane, and at the end of January, it would take a minimum of another week to arrange for access, if at all possible,

in selected towns. To use aeroplanes for the transport of the large quantities of supplies was not possible by practical or economical means, according to a lieutenant in charge of transporting a limited amount of medical supplies, in addition to correspondence and government officers. The sole aeroplane in use was appreciated as sufficient for the transport of medicines and vaccines in case of 'abnormal outbreaks' of a disease.[80]

'Delayed Relief Is Denied Relief'

The way that the earthquake had severed roads and railway lines and cut off communication with the Tirhut division in the north as compared to the relatively less destructive effect it had on the southern bank of the Ganges, with the tragic exception of Monghyr, had a geological explanation. The geological investigations by the GSI recorded 'slumping' and severe fissuring to the ground in the worst affected area in the Tirhut division. The so-called slump belt area that recorded an isoseismal reading of 10 in Tirhut was 20 miles in width and stretched for 80 miles in the east-south-eastern direction from Motihari through Sitamarhi and Madhubani (Images 2.2 and 2.3). Wholesale sinking and tilting of large areas made houses slump rather than tumble down, and ruined waterways, embankments and roads. What further aggravated the situation was the fact that fissures in the ground had emitted sand that covered the floors of houses, streets and choked drains and wells. Land damages, which caused severe disruptions to the roads and railway lines in north Bihar, were by the GSI explained by proximity to the epicentre and the alluvial soil base of the land, composed mainly of loam and layers of water-bearing sand of unknown depth. In the slump belt area, embankments had sunk from an elevation of 6 feet to ground level and houses in general tilted and slumped. South of the Ganges, the alluvium was chiefly made up of clay and to some extent mixed with rocks. As a result, many buildings collapsed with devastating effects in Monhgyr.[81]

The extraordinary scenery of the damages to the landscape and flooding in north Bihar were iterated in eyewitness accounts by prominent persons. The Governor of Bihar gave a first-hand account of damages and how the earthquake had destroyed and 'actually obliterated' some roads, rendering Tirhut 'largely impassable'.[82] The Viceroy visited the area 18 days after the earthquake and recounted a story about a peasant getting his thighs crushed in a fissure only to be shot up onto the roof of his house the next second by a gush of water as 'easily credible'.[83] The staff of Captain Barnard's Circus had first reported the

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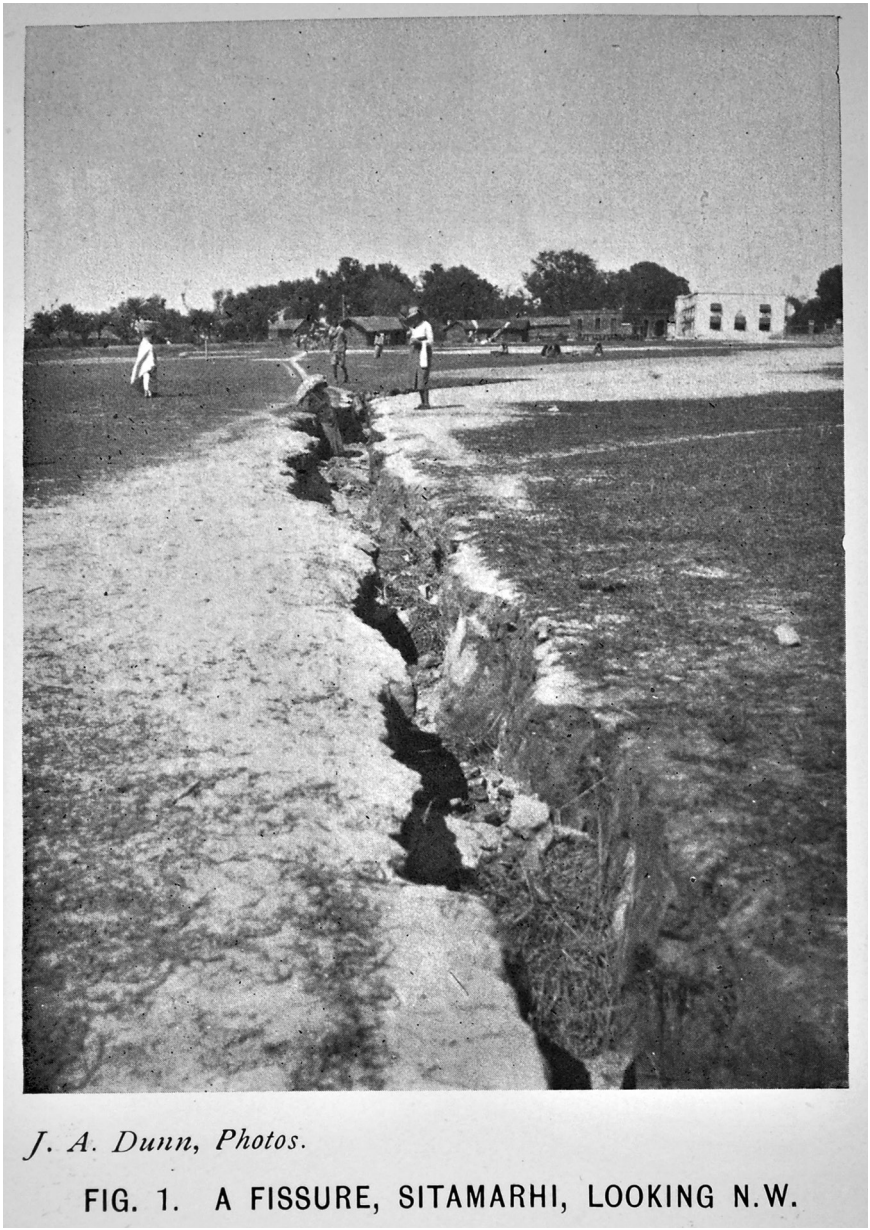

J. A. Dunn, Photos.

FIG. 1. A FISSURE, SITAMARHI, LOOKING N.W.

Image 2.2 A fissure in Sitamarhi documented by the Geological Survey of India officer J. A. Dunn. A woman is standing with a parasol in the fissure to illustrate its depth.

Source: Fig. 1, 'A Fissure, Sitamarhi, Looking N. W.', in Dunn et al, 'The Bihar–Nepal Earthquake of 1934'.

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Image 2.3 Slumping of the ground along the lake in Motihari documented by the Geological Survey of India officer J. B. Auden.

Source: Fig. 1, 'Motihari. Slumping along Margin of the Lake', in Dunn et al., 'The Bihar–Nepal Earthquake of 1934'.

large fissures in the ground out of which water 'spouted out in terrifying fashion, inundating whole areas'.[84] According to Nehru's observations from a tour of the area at the beginning of February, the towns were impressive in their extensive ruins but even more so, 'the garden of Bihar', as the plains of north Bihar was called, 'had desolation and destruction stamped upon them'.[85] The author Rahul Sankrityayan (1893–1963), who had experienced the earthquake in Allahabad and had gone to Patna to join relief work in north Bihar, testified to the trials of travelling across the ruined landscape and broken bridges to Muzaffarpur.[86]

Considering the extensive damages to infrastructure, one of the first actions of the local government was to authorise the District Boards in Tirhut to overdraw to the extent of Rs 600,000 in order to start work on the damaged roads. About a week after the earthquake, the government apprehended that it would take another month to regain road access to many areas in north Bihar. A damaged road was the only accessible land route to Muzaffarpur until the government restored the railway-line connection with the town by the end of January.[87] Out of the 2,100 miles of rail comprising the Bengal and north-western and Tirhut system, 900

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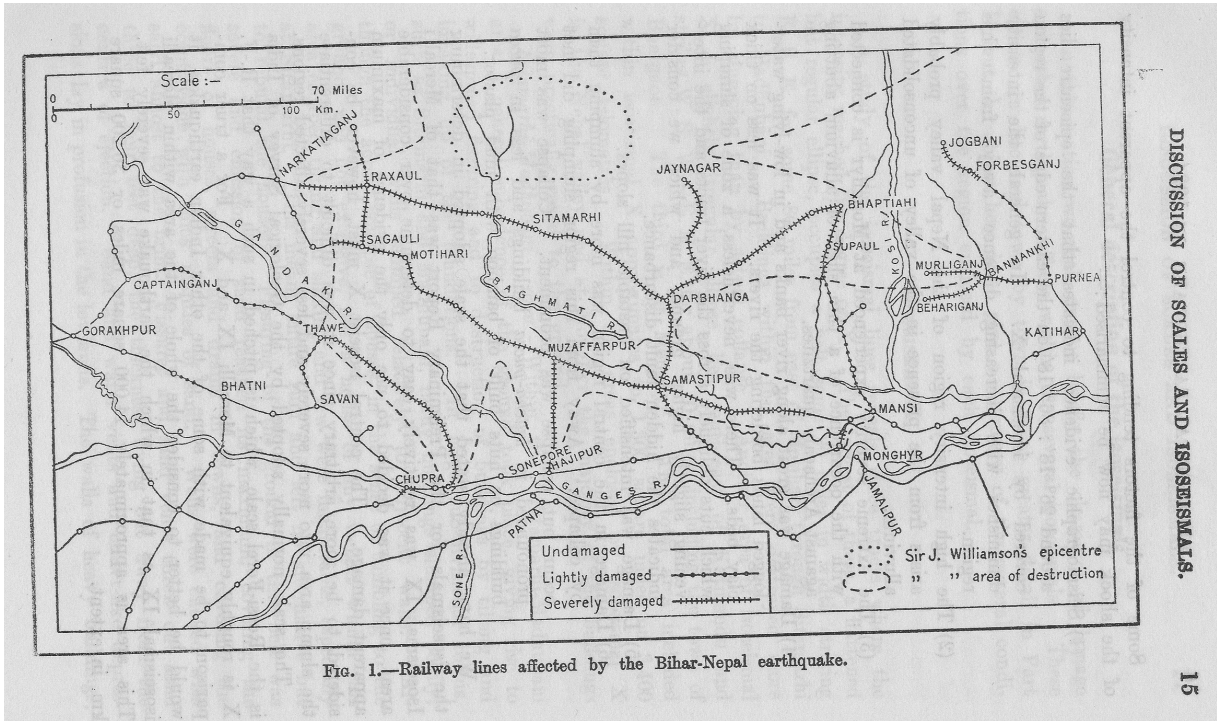

FIG. 1.—Railway lines affected by the Bihar-Nepal earthquake.

Map 2.2 Railway lines affected. Based on data by the GSI and J. Williamson, Agent of the Bengal and North-Western Railway. The map shows damages to the railways accurately, but the isoseismals and the epicentre marked by Williamson were based on 'arbitrarily selected localities' according to GSI.

Source: Fig. 1, 'Railway lines affected by the Bihar–Nepal earthquake', in Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 15.

miles traversed north Bihar and the eastern United Provinces and hardly a mile of track out of those 900 miles was undisturbed (Map 2.2).[88] Tirhut remained isolated by rail from the neighbouring province since all trains to the east of Gorakhpur, a railway town located approximately 140 kilometres west of Tirhut, stopped running after the earthquake and a number of trains remained stranded between stations for days.[89] In Brett's report, the interruption of communication between Patna and the affected areas, via land and across the Bagmati and the Bur Gandak basin, was a 'central difficulty' in the immediate relief operations. The delayed dispatch of medical relief to Monghyr and Tirhut was also explained in the same report by the breakdown of telegraph communication, resulting in the government having difficulties in finding accurate information.[90]

While the local government explained disrupted communication as the main obstacle in assessing the scope of the disaster, it was at the same time able to mobilise the police and military to the affected areas. Significantly, the police would, in addition to acting as a force of security, be the central actor in the government's relief response. According to the local government's reports, the police was readily available to move at notice. In Monghyr, the administrative stronghold in the area, and perhaps the worst-affected town due to the intense collapse of buildings in the Chowk area of the bazaar, the police arrived from nearby Bhagalpur within hours, and about 250 police officers arrived in the emergency phase. It would take three days for 200 policemen to move across the Ganges into Tirhut. Even if communication with Muzaffarpur town had been severed in the earthquake, its geographical location and its strategic importance as the administrative headquarters in north Bihar meant that the police, as well as relief and rescue teams, arrived sooner than in Darbhanga, Motihari and at the sub-divisional headquarters. Muzaffarpur was, however, difficult to access and neighbouring towns had been severely affected, unlike in the case of Monghyr, where the fast arrival of medical relief, goods and staff were facilitated by communication with nearby areas and access by rail from both Patna and Bhagalpur, since damages to connecting railways lines could be repaired relatively soon. Besides, Bhagalpur, Jamshedpur and Jamalpur had valuable resources at hand. The Tata Iron and Steel Company Ltd in Jamshedpur sent medical relief, workers, technical staff and a sanitation unit as well as materials and food by a special train in the immediate aftermath.[91] Bhagalpur was considered 'lucky' with a final number of eight recorded deaths,[92] and private relief parties from the town reached Monghyr already on 16 January and during the first crucial days of rescue work. Overall, the district administration's response in Monghyr became more efficient thanks to functional communication and access to nearby

resourceful areas unaffected by the earthquake, clearly facilitating the erection of shelters for hospital patients, arrangement of relief centres, arrival of medical aid and distribution of food and blankets among other things. Access to Monghyr via road and availability of manpower led to more resources reaching the town, for instance, there was help that came in the form of coolies from nearby Jhajha, Dumka and Jamui, and workers, staff and tools from the East Indian Railway workshops in Jamalpur, which also supplied electricity for three days after the earthquake. Additionally, a lorry and officers with 270 men arrived to help with the clearance of debris from the Imperial Tobacco Company's factory.[93] At the instance of the first shock, the whistle in the railway workshops in Jamalpur had blown and 'all the workers rushed out', a measure that was thought to have saved many lives.[94] The functional roads and rail, coupled with Monghyr's proximity to places that were relatively less damaged and in a position to supply equipment and workers, explained the fast inflow of assistance from nearby stationed police, relief societies and industries.

Even if Monghyr was the town best facilitated by a steady inflow of help from neighbouring areas, the district administration's difficulties in clearing the bazaar of debris in the immediate aftermath resulted in the local government's call on the military to help. It was difficult to find workers willing to participate in the rescue work in the bazaar: according to Brett's report 'labour was frightened' after the death of a coolie, who was killed by a collapsing building in an aftershock one day after the earthquake, and on top of it a fire raged in the ruins, yet fortunately, Monghyr's water tower was undamaged. Also, after the second tremor (10.30 a.m. on 16 January), the workers continued working until dark. Notably, the 200 coolies available were not enough and only after 300 coolies 'had been collected' did the work progress under the supervision of the Superintendent of Police.[95] Since the workers hesitated to enter the bazaar, the district administration had to ask for assistance[96] and consequently the local government requested the Government of India to send the 'expert help' of Sappers and Miners to clear debris on 17 January 1934. In Muzaffarpur, too, Brett's report acknowledged 'a shortage of coolies' to have delayed clearing debris.[97] Apart from requesting Sappers and Miners from the military, the government administration did not specify how the difficulties in finding labour were addressed, but a narrative of the earthquake aftermath by Reginald Reynolds, a vocal criticizer of British imperialism, claimed that the military used force in order to coerce people to clear debris.[98] In general, it is unclear how the police responsible for counting bodies found volunteers or workers for the often hazardous undertaking of clearing the sites and removing bodies. For instance, no information revealed if the 'posse of

Santals', members of a regional tribal group, whom a Member of the Legislative Council 'collected … and took to Monghyr' to help in clearing debris,[99] received compensation, or whether they had volunteered or been coerced to help. The task of removing dead bodies was described by local relief workers as one that 'even paid labourers would not touch for love or money', necessitating volunteers to bring the bodies to the burning *ghat* in Monghyr.[100] The local branch of the BCRC claimed to have removed more than 2,000 bodies with the help of volunteers.[101]

Like in the case of the arrival of the police in the earthquake-affected towns, the military's arrival at Monghyr four days after the earthquake depended on geographical location, accessibility and the urgency to commence work, while the inaccessibility and location of Muzaffarpur and Darbhanga delayed the clearing of debris which did not happen until the sixth and seventh days after the earthquake, respectively.[102] The military brought lorries and carried tents, which were used as shelters for the homeless and injured, and, according to the local government's request to the major garrisons, such equipment was considered the first and most urgent requirement.[103] Functional communication and road networks evidently played a role in efficiently mobilising aid, but equally important if not more crucial in the arrival of help, whether by police, military, medical relief or relief societies, were the towns' geographical locations and proximity to unaffected areas.

According to accounts by eyewitnesses and by organisations, both in the immediate aftermath as well as in later publications, the delay in calling on the military to help in clearing debris was the primary fault in the government's response since it allegedly resulted in a number of deaths that could have been avoided if assistance had arrived sooner. If the difficulties caused by the breakdown of communication played a decisive role in the government's narrative of the aftermath, the nationalist press criticised the local government for the delayed call on the military. An article in the nationalist Bengali newspaper *Bande Mataram*[104] pinpointed recurring criticisms regarding the local government's organisation of rescue, and questioned why it had not despatched the army:

> Though the Government of Bihar have not been inactive it does not appear that they have been able to make necessary arrangements. It would not be too much to say that we have been disappointed in our hope of seeing prompt action taken by the Government of Bihar. Why are not the soldiers being called upon to give relief and clear away debris? In any civilised country the soldiers would have been entrusted first of all with such work. The Government of Bihar are only busy with making police arrangements. However preoccupied the Viceroy and the Commander-in-Chief might be,

> their duty was to dispatch the soldiers and Sappers and Miners under them to the affected areas without delay. It will not do to depend on the police alone. The police cannot be expected to attend to all the various duties they are called upon to perform in view of the situation.[105]

Bande Mataram accused the government of lacking organisational capacity, and highlighted its inability to handle the situation by providing manpower in clearing debris. At the same time, it also acknowledged the police's multifunctional role in conducting relief tasks, which it was insufficiently equipped to perform. A call for the military to take action and a similar critique of the government's response was provided with the example of Japan after the 1923 Kanto earthquake when sappers and miners had been released from the army to help in clearing debris.[106] Ironically perhaps, the military and police in Japan were, according to secondary sources, not called on for the purpose of clearing debris but to quench disorder and restore order before relief and rescue work could begin.[107] Another critical voice in *Amrita Bazar Patrika* claimed that the government's insufficient organisation was to blame for letting poorer people die under the debris in Muzaffarpur since only a 'fortunate few' could afford to hire coolies for three rupees per day.[108] This was a large amount compared to the agricultural wage labour rate for adult males of approximately 4 annas per day in the area in the early 1930s.[109] Like the article in *Bande Mataram*, the newspaper criticised the government's arrangements for clearing debris which started only on 21 January in Muzaffarpur as the chance of finding survivors decreased with each day that passed. It questioned why the local government, one week after the earthquake, had stated communication as the main obstacle in providing relief according to two recent communiqués but was yet to despatch the military. Rather than disrupted communication, the newspaper blamed negligence on behalf of the government for the delay.[110] It agreed with Rajendra Prasad that 'delayed relief is denied relief' and urged for concerted action by the government.[111] The local government's organisation of rescue operations in Monghyr was subject to harsh criticism in nationalist eyewitness accounts that ascribed 'martyrs' death' to victims who were trapped under the debris crying for help but left to die due to the insufficient number of workers available.[112] Supporting criticism of the slow-paced work in the bazaars, the Marwari Relief Society in its report from 1935, claimed more people could have been saved had the clearing of debris and rescue efforts in Monghyr been more efficiently organised.[113] Several dramatic and tragic eyewitness accounts in *Bhūkamp pīḍitoṃ kī karuna-kahāniyāṃ: Bihār ke bhūkamp-pīḍitoṃ kī param āścarya-janak aur karunāpūrṇ saccī ātma-kathāeṃ* (Hindi, Stories of the Victims

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of the Earthquake: Bihar's Earthquake Victims' Most Astonishing and Pitiful True Narrations) from May 1934, testified to a lack of assistance in often futile attempts at digging out family members in Muzaffarpur, Sitamarhi, Motihari and Monghyr.[114] This publication may, however, have highlighted, if not exaggerated, the particularly tragic circumstances in view of its reliance upon a dramatic narrative rather than images. Published by the leader of the Akhil Bhartiya Goshala Sammelan (All India Cow Shelter Conference), the sale proceeds went towards the reconstruction of cow shelters damaged in the earthquake.[115]

Such stories of suffering and the Marwari Relief Society's report were still relatively modest in their criticism of the government's relief effort compared to Jawaharlal Nehru, who decried its lack of effort in mobilising help by, for instance, calling on the army, labourers or railway workers from Jamalpur.[116] His slim book based on a tour of the area was sold in direct support of the BCRC: its sale proceeds went towards the BCRC, and it was edited by Mohanlal Saksena (alt. Saxena), a Congressman based in Patna who would later become the president of the Provincial Congress Committee.[117] Even thirteen days after the earthquake, living persons were rescued from the debris according to Nehru, and many bodies were also recovered of people who, the doctors testified, must have died a day or two earlier. Nehru had, according to his retrospective account, criticised the local government in Patna for inactivity especially in Monghyr where he noticed debris still lying untouched on his second visit to the town in February 1934. While castigating the government, Nehru at the same time offered one of the harshest criticisms against the local population, both in villages and towns, who, he said, had waited for help from the government and relief organisations rather than taking action. Among those who did take part, he blamed foremost a group of urban residents who 'thought that work meant ordering people about'. [118]

A look at the resources and organisation available in the Darbhanga Raj throws further light on the local government's response. In Darbhanga, the presence of the Darbhanga Raj and the colonial government administration provided two sets of parallel and partly collaborative relief operations. The colonial government administration's delay in organising workers for clearing the bazaar is mentioned in its report by Brett as well as in *The Bihar Earthquake and the Darbhanga Raj* by Kumar Ganganand Sinha, a semi-official account of the aftermath authored with 'help' from the central administrative office of the Darbhanga Raj.[119] Contrary to the government's response, the Raj is described to have immediately mobilised about 1,000 coolies to clear debris and tear down dangerous and damaged buildings, while the colonial government administration issued proclamations calling for labour to clear debris only after two days had passed.

While waiting for the government's organisation of labour, the men hired by the Darbhanga Raj worked 'not only in the Raj area but also in the bazars for about a week, after which the Government could get their own men to work outside the Raj lands'.[120] Despite its hagiographic approach to the Darbhanga Raj's organisational expediency, the account gives an idea of the actions undertaken and the resources available to the Raj administration, partly also the Raj's role in assisting the local government's relief response which it also acknowledged. The delay by the government administration in Patna in mobilising labour for the removal of debris was, in its report, explained by the District Officer's absence until 17 January.[121] Not until on 22 January 1934, did the Sappers and Miners from Samastipur arrive in lorries borrowed from the Raj administration. The Raj administration also assisted the government hospital in Laheriasarai with medical equipment and lent the first tent to be set up for hospital patients at the polo ground.[122] In comparison with the Raj's administrative capacities, the local government's response appeared disorganised and limited in scope in terms of material resources and manpower.

Medical Relief: The Official Organisation of Volunteer Societies

The police was the government's principal organisation for providing relief according to its own report of the earthquake's aftermath. The police, a force of control and at the same time rescuer in the local government's narrative, was, however, inadequately equipped for the task. The police was responsible for counting bodies, the organisation of medical relief, sanitation and food control, and later in charge of the 'special organisation' of transport via alternative routes to the northern parts in cooperation with the railways. Far from a domain of the government, as subsequent appeals in newspapers and the yearly report by the Indian Red Cross showed, medical relief depended on resources of cooperating organisations and mobilisation of medical volunteers. Even if damages to the communication system created delays in delivering aid to the affected areas, the local government did not despatch medical relief to Muzaffarpur, the nodal point for Tirhut Division, until 17 January—approximately 24 hours after the first news of destruction in the area had reached Patna. A message delivered by hand had arrived at Patna from Muzaffarpur on the morning of 16 January 1934 and the government sent seven public health doctors on 17 January. In Monghyr, the Civil Surgeon's request for medical supplies on 16 January resulted in a party

of four doctors and five senior medical students from Patna being sent there.[123] This scant provision of medical relief should be seen in the light of the local government's call on philanthropic organisations to carry out emergency relief, as will be discussed later. The total or partial collapse of hospitals complicated medical care as both equipment and facilities were left buried or ruined, and patients needed alternative accommodation in all the affected areas. The General Hospital in Patna was shattered; the Sadr Hospital in Motihari was ruined, and in Monghyr patients had to be accommodated in shelters.[124] In Sitamarhi, 'every patient' was killed in the collapse of the hospital, except for one who was left with both legs broken and a fractured skull, afterwards cared for in one of the temporary sheds of bamboo for the injured organised by the sub-divisional officer.[125] The Darbhanga Raj hospital was in ruins[126] and about 34 patients and staff had died.[127] Another source claimed 200 patients had been killed in the collapse of the same hospital and another that 200 patients had succumbed in the ruins of the government hospital at Laheriasarai.[128] As a result, first-aid stations were opened at the police lines and on the Darbhanga Raj maidan, and camp hospitals set up on the polo ground at Laheriasarai and in the Darbhanga Raj's football ground. A private individual in Calcutta (Messrs. B. K. Paul) sent an ambulant 'relief hospital' to work together with the Darbhanga Raj hospital. As a general relief measure to address both the damaged hospitals and the need for medical relief, the government's immediate response, according to its own report, was to authorise civil surgeons to order additional medical stores at their discretion and to provide 6,000 rupees for emergency relief to each district magistrate in the affected areas.[129]

If damages to hospitals to a certain extent explain the lack of medical relief provided by the government, it must be noted that the government at the same time did not perceive a great need of doctors. The local government in a message to the Home Department and the Secretary of State on 17 January 1934 clearly stated that medical relief was sufficiently provided for as doctors despatched to the affected areas 'were in excess of the requests by local officers' and more doctors were 'standing by' in Patna. In Champaran, 'isolated and largely destroyed', the District Magistrate of Motihari by telegram communicated 'no doctors required' two days after the earthquake.[130] According to the official death toll, 455 people were killed in the district Champaran.[131] When, from the air, the Commissioner of Tirhut estimated damages to land and crops one week after the earthquake, he did not regard damages to water supplies or houses as grave enough to address or call for medical assistance to rural areas.[132] At the end of January, the same lack of a need for more doctors was reiterated in a confidential report to the

central government: 'The measures taken for relief are proceeding satisfactorily. Confidence is returning. No epidemic has occurred. There are more doctors than are required (…)'.[133] At that point, for example, the qualified extra medical staff sent to Darbhanga was restricted to three public health doctors who had arrived from Patna via Muzaffarpur on the evening of 18 January, out of whom two continued to Samastipur and Madhubani.[134] A month later, a confidential report claimed unofficial reports of epidemics to be 'highly inaccurate' and that there was 'nothing in the nature of an epidemic'.[135] However, the situation in Motihari changed in early March when plague broke out in Bettiah town and the Public Health Department in Patna sent two doctors and 'plague vaccine' by aeroplane in order to bring the epidemic, with only fourteen cases reported, under control.[136] Again in August, the earthquake was seen as the cause of another outbreak of an epidemic in Darbhanga, and the local government sent vaccines from Patna.[137]

Medical relief was to a considerable extent carried out by medical associations, a provision of philanthropic activities encouraged and appealed for by the local government. The Bihar and Orissa branch of the Indian Red Cross Society worked with the local government, as well as independently, to provide medical relief and humanitarian assistance. The close cooperation with the local government was facilitated by the philanthropic engagement by Sir James Sifton, Governor of Bihar and Orissa, who acted as President of the Bihar and Orissa Red Cross Society Branch, and his wife, Lady Sifton, Chairman on its Executive Committee, along with the principal of the Medical College, the Director of Public Health and the Secretary of the Local Self Government Department on its sub-committee.[138] The local Red Cross branch distributed its entire Epidemic Relief Fund to the District Boards in the most severely affected areas for prevention of epidemics.[139] The fund provided a convenient reserve since the local Indian Red Cross societies normally depended on public appeals every time a disaster occurred. At the same time, the resort to the Epidemic Relief Fund served to justify the establishment of a disaster relief fund. The need for an actor to provide emergency relief expanded the domain of the Indian Red Cross to also cover disaster relief. According to its President, the earthquake showed that the society 'badly needs a Disaster Relief Fund which can be drawn upon at once without waiting for the result of a public appeal'. The proposal to establish such a fund with the St John Ambulance Association was announced in the Annual General Meeting in 1935 and was realised with the help of contributions to King George's Silver Jubilee Fund, the Patron of the British Red Cross Society. Before that, in April 1934, cooperation between the St John Ambulance Association and the Indian Red Cross was formalised in an agreement where the former, in

exchange for financial support, was to handle all ambulance responsibilities that the Red Cross had agreed to under the Geneva Convention. The agreement was seen as a more structured and professional approach towards disaster relief for both organisations, with St John Ambulance as the provider of trained personnel for the Red Cross disaster relief programme.[140] In total, the local Red Cross branch spent 76,529 rupees on earthquake relief and collected 'more than a lakh' in cash and 'thousands of bales of stores'. The society's yearly report mentions the sum of 34,000 rupees to the Commissioners of Bhagalpur, Tirhut and Patna for medical comforts, plus an additional 14,000 rupees at the disposal of a sub-committee for purchasing medical comforts unavailable locally,[141] but these sums may partially have been taken from the epidemic fund. In view of the 6,000 rupees granted by the government to each district magistrate for medical relief, the amounts provided by the local Red Cross were substantial.

The Bihar and Orissa branch of the Indian Red Cross Society became the most prominent actor among the medical organisations, a position encouraged and gained by its close cooperation with not only the local government, but also the Patna Medical Association[142] and the Indian Medical Association (IMA) from Calcutta that participated with staff and equipment. By 20 January, the IMA, alongside the Red Cross and St John Ambulance, had begun giving medical assistance in Muzaffarpur, Darbhanga and Monghyr.[143] In Calcutta, the IMA's appeal for a range of trained medical staff and in particular the need for 'medical men with administrative experience' indicated a shortage of qualified senior medical staff.[144] Similarly, appeals by pharmacists and companies in Calcutta indicate a need for medicine.[145] These philanthropic initiatives were welcomed by the local government in communiqués appealing for so-called self-contained units, medical units or field hospitals.[146] The District Magistrate in Monghyr appealed through public announcements in newspapers for 25 volunteers to carry out ambulance work, and for stretchers, tents and tarpaulins to shelter the wounded in hundreds.[147] 'Self-contained' meant that the respective organisations provided resources and staff while the practical provision of medical care remained under the supervision of the District Magistrates. This type of relief and philanthropy was greatly in need according to communiqués in the newspapers.[148] The Bengal Red Cross in cooperation with the Bengal branch of the St John Ambulance Association received special recognition for sending a 'fully equipped medical unit',[149] which included tents, medical stores, rations and a team of more than 30 medical professionals, to Monghyr (Image 2.4).[150] The Bengal Branch gave substantial financial support with a 'special contribution' of 10,000 rupees distributed at the relief centres.[151]

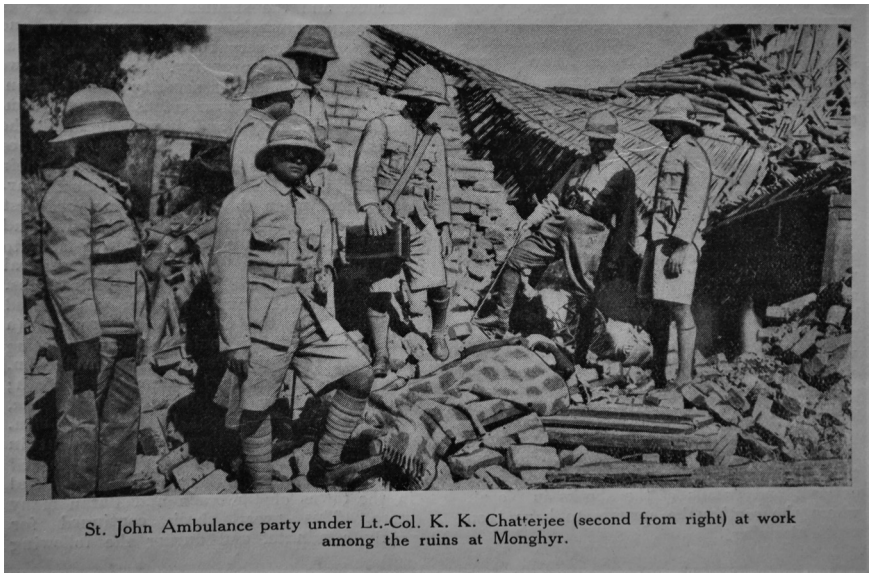

Image 2.4 St John Ambulance and a Red Cross relief party at work in Monghyr.
Source: Moore (ed.), *Record of the Great Indian Earthquake*, 44.

The local Red Cross held a central function in managing the collection and distribution of charitable relief goods at a depot in Patna from 21 January. Small and large provisions sent from around India arrived in response to appeals by the local government,[152] as well as by Indian Red Cross branches, for blankets, clothing, food, bandages, tents and medical stores.[153] The most urgent relief provision, according to an emergency meeting, was blankets for the homeless who had been left stranded in the winter cold. This resulted in 20,000 blankets being collected and distributed. In addition to this act of humanitarian relief, Lady Sifton organised 'work parties' to roll bandages and make dressings and pneumonia jackets for the injured.[154] The local government facilitated transport to the districts' distribution centres, to Monghyr or to the northern regional depot in Muzaffarpur by providing free tickets and free carriage for relief materials and the transport of staff, tents and medical supplies.[155] The local government ensured that travel concessions were also granted to the St John Ambulance, the IMA[156] and a few other relief societies.[157] The governments of the United Provinces and Punjab were especially prolific at contributing by sending blankets, clothes and tents, so much so that they had to be approached twice in order to stop sending supplies when the depot at Patna closed down at the end of March in 1934.[158]

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Transports to north Bihar remained limited until 22 January 1934 after which the amount of emergency and provisional relief increased considerably. Not until then could the IMA in Calcutta send heavier medical equipment[159] and relief teams of trained staff to the affected towns.[160] By 24 January, the local government had sent doctors and medical students to Muzaffarpur, Darbhanga and Motihari but not yet to rural areas and small towns outside the district headquarters—again explained by a breakdown in communication.[161] By this time relief societies such as the Indian Red Cross Society, St John Ambulance, the local government and companies sent staff and resources in the form of provisions for medical relief, food, blankets and iron sheets to build temporary shelters.[162] On 27 January, the IMA sent two self-contained medical units equipped with X-ray machines to Sitamarhi and Motihari.[163] One of its units carried out surgeries on behalf of the BCRC in north Bihar in February.[164]

Official Death Toll: Contested Data

The number of people dead or injured was contested in the aftermath of the earthquake and until today the final death count varies between the official government figure of 7,253 deaths[165] and the approximate number of 20,000 deaths claimed by the BCRC.[166] The latter is closer to the accepted figure among historians,[167] while recent scientific publications rely on the official data.[168] The BCRC's considerably higher estimates of the number of deaths challenged the official narrative. The committee estimated 3,000 deaths in Muzaffarpur town, three times more than the official figure of 956 deaths; and 6,000 in Muzaffarpur district, while the government recorded 1,583 deaths.[169] The starkest discrepancy was recorded in Monghyr town where the BCRC questioned the government's official number of 1,260 deaths with an estimate of 10,000 deaths.[170] The local government's report claimed the final official figure to be a rough estimate, but did not concede to the general appreciation that it was too low; instead, the government described it as 'surprisingly small'.[171] Adding to the confusion, deaths in Nepal were sometimes included in the final figures, as, for example, in the case of the GSI publication from 1936.[172] The same publications fail to mention an appreciation of the number of injured,[173] except for approximate numbers in a few areas.[174] An indication of the large number of injured people can be inferred from the treatment of 4,500 cases by 30 medical professionals in the medical unit sent to Monghyr by the Bengal Red Cross and the Bengal branch of the St John Ambulance Association. The total number of people in need of treatment,

or those who were fatally injured, may have been much larger, in particular considering that patients left Monghyr to seek medical care in nearby relatively undamaged towns or Calcutta.[175]

The government's underestimates of the death toll were in the press perceived as attempts to downplay the severity of the disaster, thereby reducing a need for relief and financial assistance. The first official number of 2,500 deaths was regarded as a 'gross underestimate' which 'un-official' reports countered with statements by anonymous eye-witnesses and newspaper correspondents of 'far larger' numbers.[176] *Amrita Bazar Patrika* reported that 'non-official reports were unanimous' about the death toll to exceed the government's estimates at Muzaffarpur, Monghyr and Darbhanga.[177] Government communiqués cautiously added numbers to the districts of Darbhanga, Muzaffarpur and Champaran in Tirhut until the end of January. For instance, the official figure in Muzaffarpur changed from 'about' 600 deaths by 18 January[178] to 'about' 800 deaths four days later.[179] The yearly report of the Indian Red Cross Society noted how the number of deaths multiplied with each government communiqué: 'the first estimates of the number killed was 2,000, then 4,000, then 6,000 and the last figure mentioned officially was between 7,000 and 8,000'. As the death toll had increased from 2,500 to 4,000 in the 10 days following the earthquake, the government recognised the official figures as incomplete and the number of dead was expected to increase after the debris had been removed.[180] On the last day of January, two weeks after the earthquake, a government communiqué reported 6,041 deaths[181] and the final official number of 7,253 deaths was almost three times the initial official estimate of 2,500,[182] which the Government of Bihar and Orissa repeated in the first week after the earthquake.[183]

If the government's official number of deaths was an underestimate, the unofficial numbers were disparate and exaggerated, provided scant information about data collection and often appeared in connection with a critique of the government's relief and rescue work. For instance, the official death toll was 600 to 800 in Muzaffarpur town on 20 January, while the unofficial figure quoted in the press stated 3,100 deaths.[184] Several eyewitness accounts came from Congress leaders such as Rajendra Prasad who said the official figure underestimated the disaster and instead claimed the earthquake to have killed 20,000,[185] a statement supported by Jawaharlal Nehru who said that the government deliberately 'tried to minimise the loss'.[186] Although 'unofficial' reports may have contained exaggerated data in terms of deaths and destruction, an editorial in *Amrita Bazar Patrika* pointed out that the government at the same time ignored eyewitness accounts from Europeans and people with no interest in falsified accounts,[187] indicating

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a general perception of relief and rescue operations as insufficient in relation to injuries and people buried in debris. Despite these persistent reports of widespread damages, the local government did not perceive a need for any larger mobilisation of rescue. Its response resembled an 'information panic' in the sense that it trusted neither the information provided by nor the intentions of the local society.

In Monghyr, the number of deaths remained contested and unofficial estimates of 10,000 deaths[188] stood in sharp contrast to the final official figures of 1,260 deaths.[189] As in other towns, 'unofficial' eyewitness accounts gave disparate numbers without details regarding the data, and the discrepancies were large: 5,563 deaths recorded on 21 January or 1,700 bodies disposed of by 22 January,[190] compared to the official figure of between 400 and 500 dead reported by 23 January 1934.[191] Most of the deaths were supposed to have happened in the lanes of the two old bazaars, Chowk bazaar and Madhupura bazaar, where approximately 3,000–4,000 people resided,[192] though the actual numbers of residents were unknown, according to the municipality, since many holdings held two families.[193] Satish Chandra Das Gupta, a member of the Congress party from Bengal and part of a relief team, apprehended that one-fourth of the population were dead or buried under debris,[194] thereby insinuating a much larger death toll of around 12,000–13,000.[195] This number is close to the 'unofficial' figure of 10,000 deaths out of the town's more than 50,000 residents, as mentioned in Jawaharlal Nehru's personal account, and the same figure as quoted in *Devastated Bihar* by the BCRC.[196] The accusation of downplaying the number of deaths in Monghyr bazaar resulted in a house-to-house enquiry by the government that in the end confirmed the official number. The official number was, like in the other areas, based on data collected by the police who was responsible for recording bodies and subsequently burnt them at the *ghat* under the supervision of a gazetted officer.[197] As two newspapers pointed out, the official number represented bodies registered, a procedure that not everyone followed in the exceptional circumstances of the aftermath.[198]

According to Tirthankar Roy, the victims formed a 'selective group' of women, city-dwellers, Indians and merchants, who lost more lives than men, villagers and Europeans.[199] Initially, injuries and deaths among the Indian public were reported separately from the European, Anglo-Indian and Indians employed in official positions in the press and government correspondence.[200] The 'Indian death-roll' was estimated to exceed a thousand while 'no European had been killed' in Muzaffarpur.[201] Planters of European descent, residing in north Bihar, and European and Anglo-Indian staff in Jamalpur made *The Statesman* assume it for 'certain that Europeans must have been among those who have perished' and kept a record of the 'Indian death-roll' separately,[202] which in the end proved to

be a pointless practice since Ms Francis Christian, a resident of Monghyr, was the only officially recorded 'European' victim of the earthquake.[203]

One explanation for why more women[204] than men had succumbed, claimed that the practice of purdah kept women indoors and made them victims of collapsing buildings.[205] If not the practice of purdah, household work and child-rearing made it more likely for women than men to be indoors at the time of the earthquake. As research on gendered vulnerability in disasters has shown, class, financial means and religion, among other variables, intersect with gender, and it is therefore problematic to apply the practice of purdah to the female population as a group.[206] Since demographic data of the fatalities is missing, one can only conclude that many of the female victims lived in towns and in houses of bricks that belonged to merchant, trader or professional communities which, judging from causalities in the bazaars, formed a sizeable group among the victims.

In general, the occurrence of the earthquake in the afternoon, when people were awake, and its slow onset, reaching peak intensity after about two and a half minutes, helped many take refuge in the open.[207] The number of deaths was more than expected in Monghyr since in the afternoon, when the earthquake happened, the Chowk bazaar was unusually full of visitors shopping for the occasion of observing the new moon, Mauni Amavasya. Adding to the crowd, many Muslims were making purchases in the bazaar for the festival of Eid al-Fitr on the following day.[208] While the narrow lanes in the bazaars became a death trap for consumers as well as residents and traders, like in the bazaars of Muzaffarpur and Darbhanga, the wide roads in Motihari saved people from getting crushed under falling debris, which was given as an explanation for the relatively few deaths there.[209] Similarly, Jamalpur's less congested buildings and lower population density probably saved lives, considering that 130 houses out of the railways' 150 houses had been completely ruined.[210] In the reconstruction of the bazaars in Darbhanga, Muzaffarpur and Monghyr, widening of roads was a measure promoted with earthquake safety in mind (discussed in Chapter 6).

Conclusion: Communication Panic

This chapter has examined how the disruption of information and communication in the earthquake shaped the government's narrative of the aftermath as well as its immediate response. The earthquake caused a severe disruption of the transport and communication system, cutting off the affected areas from the reach of the local government headquarters in every possible way. While the conventional

means of communication by road, rail and telegraph were dysfunctional, the local government had to rely on a limited number of aeroplanes for communication with north Bihar, a method that had obvious limits and constraints regarding access and frequency of correspondence. As discussed in this chapter, there is ample data on deaths in the press and in government communiqués that show how the local colonial government's initial estimates of the death toll severely misjudged the impact of the earthquake by ignoring information available in reports from the public and civil society.

Although it should be recognised that the disrupted infrastructure and a lack of information caused obvious problems for the government in providing aid, its communication panic resulted in a security-oriented response that increased vulnerability. Compared to the 'information panic' persuasively argued by Bayly,[211] the physical destruction resulted in a 'communication panic' as the established infrastructure of communication was destroyed. While the government's master narrative of the aftermath explained the delayed response with the breakdown in communication and lack of information about the scope of the disaster, the disrupted communication infrastructure per se made the government prioritise security before emergency relief. In the official narrative of Relief Commissioner Brett's report, however, the earthquake became the cause of potential disorder and looting. According to his narrative, the earthquake was used to justify the local government's security-oriented response as well as blamed for disrupting communication, and thereby indirectly held responsible for the failure of the local colonial government in making a rapid impact assessment of the need for relief.[212] The local government's perception of technical advances, that is, roads, telegrams and railways, as essential for an adequate response reflected a misplaced faith in the capabilities of infrastructure. If we recall Ulrich Beck's argument that modernisation contributed to institutionalised scientific knowledge and technical expertise that exacerbate vulnerability,[213] a colonial perception of communication infrastructure as integral to governance shaped its risk perception and thereby how it responded to the earthquake. The ineptitude of the colonial government in dealing with the aftermath resulted from its perception of risk: its agency to govern was circumscribed by failing infrastructure, a technological breakdown caused by the earthquake.

As pointed out in Brett's report and corroborated by the report of BCRC, the function of the police in the immediate aftermath was first to ensure that law and order were upheld, and second, to provide assistance in the relief work and organisation of medical relief. In this dual role, its traditional responsibility to act as the long arm of the law took priority over its extraordinary duties as

rescuer and relief organiser. For the provision of emergency medical relief, the government cooperated closely with the Indian Red Cross Society and encouraged medical relief teams like the St John Ambulance and medical staff from nearby Calcutta to help. The role of high government officials as patrons of the Bihar and Orissa Red Cross Society was likely to have been instrumental in decisions to tap the society's fund meant for epidemics and hand it over to the government administration to use for emergency relief. Medical relief and emergency relief in the form of food and shelters were in this way sourced from philanthropic organisations while the government's contribution to relief operations was first represented by the police forces, which formed the core of the local government's relief apparatus in the immediate aftermath. As the primary emergency force of the local government, its role was to coordinate the crucial resources and participation of local and regional companies and relief associations in rescue operations. Such private contributions in the aftermath played a major role in the implementation of the local colonial government's relief operations, as seen, for instance, in Monghyr. The inability to respond according to the needs of the citizens' well-being in the face of disaster reflected not only a lack in infrastructure to deal with the earthquake, but above all an over-reliance on communication and information as essential factors in responding to the disaster.

Notes

1. Yi Lu and Jiuping Xu, 'The Progress of Emergency Response and Rescue in China: A Comparative Analysis of Wenchuan and Lushan Earthquakes', *Natural Hazards* 74, no. 2 (2014): 421–44, 422.
2. Mukherjee, 'Afterword', 191–92.
3. Papiya Ghosh, *The Civil Disobedience Movement in Bihar, 1930–1934* (New Delhi: Manak Publications, 2008).
4. Roy, 'State, Society and Market', 278. The BCRC criticised the government's lack of organisation in clearing debris and saving lives. BCRC, *Devastated Bihar*, 52.
5. 'No. 2628-P. R.', untitled report (printed), 15 pp., P. C. Tallents to the Sec. to the GOI (Home Dept, Simla), Political Department, Ranchi, 17 August 1934, File: 'Bihar and Orissa Earthquake 1934. Publicity, Relief and Reconstruction Measures in Connection Therewith. Accounts of the Bihar Central Relief Committee's Fund', NAI HP 34/1/1934. The same report is also found in 'Report of the B&O Government on the Earthquake Which Occurred in Bihar in January 1934', NAI Dept of Education, Health and Lands, Agricultural Section, 17/28/1934-A.

6. A longer communiqué of eighteen pages about damages and plans for reconstruction of infrastructure and buildings has been used extensively in Brett's report. 'Communiqué', R. D., Patna, 8 February 1934, forwarded to Home Dept, GOI, by the Governor of B&O, NAI HP 34/1(B)/1934.
7. Wilcock, *Bihar and Orissa in 1933–34*, 13. P. C. Roy Chaudhury, *Monghyr* (Bihar District Gazetteers, Bihar, Patna: Superintendent Secretariat Press, 1960), 544–45.
8. Brett, *A Report on the Bihar Earthquake*, 19.
9. The days of 18 and 20 January 1934 were notified holidays for Eid ul-Fitr and Basant Panchami, respectively. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
10. Brett, *A Report on the Bihar Earthquake*, quote from 11, 13.
11. Henry W. Fischer, III, *Response to Disaster: Fact versus Fiction and Its Perpetuation: The Sociology of Disaster* (Lanham, MA: University Press of America, 1988), 20–21.
12. Robert A. Stallings, 'Methodological Issues', in *Handbook of Disaster Research*, ed. H. Rodriguez, E. L. Quarantelli and R. R. Dynes, 55–82 (New York: Springer, 2006), 65.
13. Dawn Brancati, 'Political Aftershocks: The Impact of Earthquakes on Intrastate Conflict', *Journal of Conflict Resolution* 51, no. 15 (2007): 715–43, 737.
14. Brett, *A Report on the Bihar Earthquake*, 16, 19.
15. Interview with the Manager of the Darbhanga Circle, four days after the earthquake in Calcutta. 'At Darbhanga', *ABP*, 20 January 1934.
16. BCRC, *Devastated Bihar*, 26–27.
17. Michael Guggenheim, 'Introduction: Disasters and Politics—Politics as Disasters', in *Disasters and Politics: Materials, Experiments, Preparedness*, ed. Torini, Rodriguez-Giralt and Guggenheim, 1–16 (Oxford; West Sussex: Wiley Blackwell, 2014), 10 (originally published in *The Sociological Review* 62, S1 [2014]: 1–16).
18. For a compelling account of cultural politics, or the culture and politics of disasters, see Mark D. Anderson, *Disaster Writing: The Cultural Politics of Catastrophe in Latin America* (ProQuest Ebook Central; Charlottesville and London: University of Virginia Press, 2011).
19. On the role of colonialism and communication in Bihar, see Nitin Sinha, *Communication and Colonialism in Eastern India: Bihar, 1760s–1880s*, Anthem Modern South Asian History (London: Anthem Press, 2012). The English East India Company Trade increased its regional influence by trade and transport along the Ganga. Murari Kumar Jha, 'The Political Economy of the Ganga River: Highway of State Formation in Mughal India, c.1600–1800', doctoral thesis, Leiden University, Institute for History, 2013.

20. Christopher Bayly, *Empire and Information: Intelligence Gathering and Social Communication in India, 1780–1870* (Cambridge: Cambridge University Press, 1996), 174.
21. Eleonor Marcussen, 'Explaining the 1934 Bihar-Nepal Earthquake: The Role of Science, Astrology, and "Rumours"', in *Historical Disaster Experiences: Towards a Comparative and Transcultural History of Disasters Across Asia and Europe*, ed. G. J. Schenk, Transcultural Research—Heidelberg Studies on Asia and Europe in a Global Context, 241–66 (Heidelberg: Springer, 2017).
22. Geneviève Massard-Guilbaud, 'Introduction: the Urban Catastrophe—Challenge to the Social, Economic, and Cultural Order of the City', in *Cities and Catastrophes: Coping with Emergency in European History*, ed. G. Massard-Guilbaud, Harold L. Platt and Dieter Schott, 9–42 (Frankfurt am Main: Lang, 2002), 23–25. Kitao Abe, 'Levels of Trust and Reactions to Various Sources of Information in Catastrophic Situations', in *Disasters: Theory and Research*, ed. E. L. Quarantelli, 147–58 (Beverly Hills, California: SAGE Publications, 1978).
23. Mukherjee, *Natural Disasters and Victorian Empire*, 43.
24. Beck, *Risk Society: Towards a New Modernity*, 26–27.
25. Disaster response can also include mitigating the impact of further hazardous events, such as aftershocks and secondary infectious diseases. Alpaslan Oezerdem and Tim Jacoby, *Disaster Management and Civil Society: Earthquake Relief in Japan, Turkey and India* (New York: I. B. Tauris & Co. Ltd, 2006), 11.
26. Telegram from the Govt of B&O to Sec. of State (London), and Home Dept (New Delhi), Patna, 15 January 1934, File: 'Report of Earthquake to Secretary of State', BSA RE 500/1934.
27. Brett, *A Report on the Bihar Earthquake*, 3.
28. Population of Tirhut Division, 10,739,274, and 830 persons to the square mile (Table III); Darbhanga town, 60,676; Purnea, 15,474; Katihar, 15,864 (Table V); Monghyr, 52,863; Bhagalpur, 83,847; Muzaffarpur town, 42,812; Motihari, 17,545 (Table IV). W. G. Lacey, Census of India, 1931, vol. VII, *Bihar and Orissa Part II–Tables* (Patna: Superintendent, Govt Printing, 1932).
29. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 216–19.
30. Brett, *A Report on the Bihar Earthquake*, 1–4; Wilcock, *Bihar and Orissa in 1933–34*, 13–14.
31. See introduction in Singh, '"Colonising the Rivers": Colonial Technology, Irrigation and Flood Control in North Bihar, 1850–1950'.
32. Hill, *River of Sorrow*.
33. Brett, *A Report on the Bihar Earthquake*, 3.

34. Jacques Pouchepadass, *Land, Power and Market: A Bihar District under Colonial Rule, 1860–1947* (New Delhi: Sage, 2000), 386.
35. 'Communqué', *ABP*, 23 January 1934.
36. Wilcock, *Bihar and Orissa in 1933–34*, 13–14. The journey was about 25 miles according to BCRC, *Devastated Bihar*, 26.
37. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
38. 'Telegram', Govt of Bihar and Orissa to Sec. of State, New Delhi, 16 January 1934, BSA RE 500/1934.
39. Ibid.
40. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934. Brett, *A Report on the Bihar Earthquake*, 18.
41. Captain Charles Douglas (C.D.) Barnard (8 December 1895–7 August 1971). Lord Sempill, 'Private Flying: Developments in India', *Flight*, no. 1360 (17 January 1935): 75. The aeroplane carried A. Auden, Captain A. H. Dalton, and Palmer, the two latter were partners of Barnard. 'Ruined Muzaffarpur', *The Statesman*, 18 January 1934. 'Capt. C.D. Barnard for India', *Flight*, no. 1298 (9 November 1933): 1130–31. 'The Barnard Tour' (Correspondence), *Flight*, no. 1323 (3 May 1934): 448; 'The "Jupiter" in India', *Flight*, no. 1334 (19 July 1934): 754.
42. Captain Dalton's account in 'Ruined Muzaffarpur', *The Statesman*, 18 January 1934.
43. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934. Mr Fairweather's experience was accounted in 'Muzaffarpur's Night of Terror', *The Statesman*, 18 January 1934. Reproduced as 'A Night of Terror: Earthquake in Muzaffarpur', *The Leader*, 20 January 1934.
44. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934. Contrary to Tallents, Brett omits Fairweather's role.
45. Telegram from the Government of B&O ('Draft, corrected with notes included'), to Sec. of State, and Home Dept (New Delhi), Patna, 16 January 1934, BSA RE 500/1934.
46. David Arnold, *Science Technology and Medicine in Colonial India* (Cambridge: Cambridge University Press, 2004 [2000]), 137, 151–3.
47. P. C. Roy Chaudhury, *Muzaffarpur*, Bihar District Gazetteers (Patna: Superintendent Secretariat Press, 1958), 183.
48. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 3.
49. See BCRC, *Devastated Bihar*, 26.
50. Ibid.
51. From Muzaffarpur over Bettiah, the crew were accompanied by E. L. Marriott, Deputy Inspector-General (D.I.G.) of Police (Northern Range), 'Rescue Work by Plane [aeroplane]', *ABP*, 19 January 1934. Brett, *A Report on the Bihar Earthquake*, 15.

52. 'Hundreds Perish in Earthquake; Floods Ravage Districts in North Bihar: Houses Swept Away; Bodies Strewn in the Streets of Muzzafarpore; Thousands Dead in Ruined Town: Railways Destroyed; Mounting Death-Roll in Patna and Jamalpur', *The Statesman*, 17 January 1934. Captain Dalton interviewed in *The Statesman*, 16 January 1934. 'Scenes of Stark Desolation', *The Statesman*, 17 January 1934.
53. 'India Earthquake Kills Many, Deaths in Patna, Gaya and Jamalpore; Station Collapses on Goods Train; Severe Damage in Darjeeling District', *The Statesman*, 16 January 1934.
54. 'Calcutta's Big Shake; Damage Done to Buildings; Citizens Rush into Streets; Shocks Last for 8 Minutes', *The Statesman*, 16 January 1934.
55. 'India Earthquake Kills Many…', *The Statesman*, 16 January 1934.
56. '17 Dead: 48 Injured' (referring to Jamalpur); 'Howrah Station Scene; Mrs. Majumdar's Dead Body Brought to Calcutta', *ABP*, 17 January 1934. 'India Earthquake Kills Many…', *The Statesman*, 16 January 1934. A series of photos, 'the first to reach Bombay' from Jamalpur, were published four days after the earthquake. 'Exclusive Pictures of Jamalpur Earthquake Havoc', *Times of India*, 19 January 1934.
57. For a brief history of Jamalpur, see Nitin Sinha, '*Entering the Black Hole*: Between "Mini-England" and "Smell-Like Rotten Potato", the Railway Workshop Town of Jamalpur, 1860s–1940s', *South Asian History and Culture* 3, no. 3 (2012): 317–47.
58. So-called home-born Europeans made up as many as 20 per cent of the subordinate posts in the Indian railways by 1934. Sarmistha Dey, *Marginal Europeans in Colonial India: 1860–1920* (Kolkata: Thema, 2008), 4.
59. 'Jamalpore', *ABP*, 20 January 1934.
60. '17 Dead: 48 Injured'; 'Howrah Station Scene; Mrs. Majumdar's Dead Body Brought to Calcutta', *ABP*, 17 January 1934.
61. Kumkum Chatterjee, *Merchants, Politics, and Society in Early Modern India: Bihar, 1733–1820* (Leiden: E.J. Brill, 1996), 216–17. Anand A. Yang, *Bazaar India: Markets, Society, and the Colonial State in Gangetic Bihar* (Berkeley: University of California Press, 1998), 69. Henningham, 'Bureaucracy and Control', 43, 47, 53.
62. Narrated by the Maharajadhiraja in the newspaper *National Call*, Delhi, in March 1934, mentioned in Kumar Ganganand Sinha, *The Bihar Earthquake and the Darbhanga Raj* (Calcutta: Thacker's Press and Directories, Ltd and published by the Darbhanga Raj, 1936), 5.
63. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 5–6. The Government of Bengal also appears to have been informed about the scope of the earthquake in Tirhut in the morning of 18 January 1934, 'Magnitude of Disaster: Messages of Sympathy from Secretary of State', *ABP*, 20 January 1934.

64. 'Scenes of Stark Desolation', *The Statesman*, 17 January 1934.
65. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 5. R. D. Bilimoria, 'Bombay Parsi's Thrilling Experiences; Eye-Witness of Earthquake at Darbhanga Relates Story of Terrible Happenings on Fateful Monday', in Syed Abdullah Brelvi and B. G. Horniman (eds.), *Earthquake Number: Which Hand Is Yours*, special issue by *Chronicle-Sentinel*, Bombay, March 1934.
66. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 7.
67. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
68. Press Communiqué from the Organizing Secretary, Indian Red Cross Society, temporarily at Patna, enclosed with letter from the Indian Red Cross Society, New Delhi, to the Chief Sec., St John Ambulance Association (St John's Gate, Clerkenwell, London, E. C. 1), 24 January 1934 (copy), Museum and Library of St John, Clerkenwell, London.
69. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
70. The private aeroplane, which was used until 28 January, was provided by H. I. Matthews, M. C., Superintendent of the Gun and Shell Factory, Cossipore, who offered both the aeroplane and his own services to the government. He was a member of the Bengal Flying Club in Calcutta. 'The Bengal Flying Club', *Flight*, no. 1318 (29 March 1934): 302. The club had 359 members and altogether six aeroplanes at its disposal by the end of January 1934. 'Bengal Flying Club', *Flight*, no. 1309 (25 January 1934): 78.
71. The first report contains the Commissioner's observations from an aeroplane survey made from 8:40 a.m. to 1:45 p.m. on 21 and/or 22 January 1934: D.O. J-297, 'Notes of Reconnaissance by Aeroplane from Muzaffarpur to Bettiah and back via Raxaul and Sitamarhi' (6 pp.), J. E. Scott to P. C. Tallents, Muzaffarpur, 21–22 January 1934, File: 'Sugarcane Situation and General Economic Condition in Tirhut', BSA RE 23/1934. Unpublished government report by the Director of Industries, S. Lal [alt. Lall] and Director of Agriculture D. R. Sethi, submitted 26 January 1934 (21 pp.), in D. O. 223, P. C. Tallents to J. E. Scott, Patna, 9 February 1934. File: 'Staff-allotments of Grants Required for Relief Engineers of Town Engineers', BSA RE 76/1934.
72. V. E. Groom, Flight Lieutenant, Royal Air Force, to Headquarters, Royal Air Force (New Delhi), Patna, 28 January 1934, NAI HP 34/1/1934. John Tarlton (J. T.) Whitty, member of Legislative Council, was seriously injured in the accident. Tallents, 'No. 2628-P.R.', 17 August 1934, NAI HP 34/1/1934.
73. Several aftershocks around midnight, 3 a.m. and 10 a.m. were reported by eyewitness on 16 January in Patna. 'More Earthquake Shocks', *The Statesman*, 18 January 1934. The aftershock taken into consideration in the seismometric

study appeared on 19 January 1934. Roy, 'Seismometric Study', in 'The Bihar–Nepal Earthquake of 1934', ed. Dunn et al., ch. 4, 64–67.

74. Brett, *A Report on the Bihar Earthquake*, 3, 18. 'The destruction of communications was one of the principal obstacles the local Government had to meet in their relief operations' (Wilcock, *Bihar and Orissa in 1933–34*, 14).
75. 'Information regarding the present state of telegraph and postal communication in the region principally affected by the earthquake', Dept of Industries and Labour, no. 423/34, 25 January 1934, NAI HP 34/1/1934.
76. 'Telegraph Office Queues; Anxious Relatives; Flood of Messages in Calcutta', *The Statesman*, 18 January 1934. 'Telegrams Stopped; Only Express Messages to Muzaffarpur', *The Statesman*, 18 January 1934. Another newspaper cites 17 January, 'North Behar' (editorial), *ABP*, 18 January 1934.
77. Public announcement by the Postmaster-General, Patna: 'Booking Traffic for N. Bihar Suspended'; 'Information regarding the Present State of Telegraph and Postal Communication in the Region Principally Affected by the Earthquake', Dept of Industries and Labour, no. 423/34, 25 January 1934, NAI HP 34/1/1934.
78. V. E. Groom, Flight Lieutenant, Royal Air Force, to Headquarters, Royal Air Force (New Delhi), Patna, 28 January 1934, NAI HP 34/1/1934.
79. *Illustrated Weekly* in Bombay commissioned an aeroplane with a pilot who was also a photographer (N. Vincent, manager of Tata Sons Aviation Dept) to fly back and forth to Bihar from Bombay. M. H. B. 'On the Trail of the Earthquake', *Illustrated Weekly of India*, 28 January 1934.
80. V. E. Groom, Flight Lieutenant, Royal Air Force, to The Headquarters, Royal Air Force, New Delhi, dated Patna, 28 January 1934, NAI HP 34/1/1934.
81. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 17–19, 38–39.
82. 'Note on the Bihar Earthquake by Sir James Sifton', 2, enclosed in telegram from Viceroy to Sec. of State, New Delhi, 21 January 1934, File: 'Short Notice Question in the Legislative Assembly Regarding the Recent Terrible Earthquake in North Bihar', NAI HP 1/3/1934.
83. Telegram R. No. 258 (Immediate), Viceroy to Sec. of State for India (London), New Delhi, 4 February 1934, NAI HP 34/1/1934.
84. 'Scenes of Stark Desolation', *The Statesman*, 17 January 1934.
85. Jawaharlal Nehru, *An Autobiography: With Musings on Recent Events in India* (London: The Bodley Head, 1949 [1936]), 487.
86. Rahul Sankrityayan wrote under the pseudonym Rahul Vangmaya. Rahul Vangmaya, *Jīvan Yātrā*, Pt I, 4 Vols (New Delhi: Radhakrishna Prakashan Private Limited, 1994), 5.

87. District Boards in the province were responsible for maintaining roads, bridges, dispensaries, schools, ferries and *ghat*s, public health provisions such as vaccinations and the maintenance of a number of wells. The work was financed by taxes and road cess. Roy, *Monghyr*, 339, 341–42. 'Communiqué', *ABP*, 23 January 1934. The railway to Muzaffarpur was restored by 27 January 1934. Brett, *A Report on the Bihar Earthquake*, 21.
88. 'Extracts from a Report by Sir J. Williamson', in Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 14, 192–96. Photos documenting damages to the railways are found in Satow Collection: 'B. & N.W. Railway. Views of the Great Behar Earthquake of 15th January 1934', Mss Eur F290, Photo 1082/6. Collection by Jonathon Satow; East India Railway, *Report on the Earthquake on 15th January 1934* (Calcutta, 1934), 36; D. W. Ravenhill and G. Wilson, 'The Reconstruction of the Inchcape Bridge, Bengal and North Western Railway', *Journal of the ICE* 7, no. 1 (1 November 1937): 49–56. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 193.
89. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 192.
90. Brett, *A Report on the Bihar Earthquake*, 3, 18.
91. Brett, *A Report on the Bihar Earthquake*, 11–14, 19–20, 75. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934. The Hazaribagh armed police was sent to Bettiah, the large estate in Champaran close to Motihari. 'Communiqué', *ABP*, 23 January 1934.
92. BCRC, *Devastated Bihar*, 22.
93. Brett, *A Report on the Bihar Earthquake*, 8, 11–12, 16. Medical staff mentioned in 'Communiqué', *ABP*, 20 January 1934.
94. 'Jamalpore', *ABP*, 20 January 1934. Brett, *A Report on the Bihar Earthquake*, 8.
95. Brett, *A Report on the Bihar Earthquake*, 11–13. The fire was in the Halwaipatty Mohalla part of the bazaar and, according to *ABP*, had not yet been brought under control five days after the earthquake. 'Deadbodies [*sic*] Decomposing; Incalculable Loss of Lives and Property', *ABP*, 21 January 1934.
96. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
97. Brett, *A Report on the Bihar Earthquake*, 13, 19.
98. Although Reynolds confused the Bihar earthquake with the 1935 Quetta earthquake, where the government used more overt force and the military, the source he cites refers to the aftermath in Bihar and was published 17 February 1934. According to a passage quoted from a newspaper, a Second Lieutenant in the 'East Yorks Regiment' in Muzaffarpur had stopped 'every native' on the road and forced him to work with clearing debris for '10 minutes': if he refused 'a bayonet is stuck into him'. Reginald Reynolds, *The White Sahibs in India* (London: M. Secker and Warburg, 1937), 339.

99. Correspondence from W. B. Brett to Mainwaring, 20 February 1934; J. T. Whitty to W. B. Brett, 19 February 1934, File: 'Publicity in the matter of relief given by Govt to the sufferers (clearing debris by Santals in the district of Monghyr)', BSA RE 2/1934.
100. The document of eight pages (carbon copies) is likely to have been written by a person in charge of the local BCRC branch office in early February 1934. It describes the local BCRC's work, cooperation with other relief parties and rates paid for goods and materials. Last date mentioned is 22 January 1934. 'Monghyr', Anonymous, s.l., s.d., s.a., in BCUL PC 1028.
101. BCRC, *Devastated Bihar*, 20.
102. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934. Brett, *A Report on the Bihar Earthquake*, 13, 19–20. 'Quick! Quick!! Quick!!!' (editorial), *ABP*, 23 January 1934. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 19.
103. 'Request Sent to Allahabad, Rawalpindi, Lahore and Fort William, Calcutta, for Help', N.N. (Private and Personal, General Staff) to M. G. Hallett, Sec. Home Dept, GOI, 'Copy of telegram dated 19 January 1934 from the M. G. O. in India to Ordnance, Allahabad, Fort William, Calcutta, etc. and Chief Sec., Patna', New Delhi, 19 January 1934, NAI HP 34/1/1934.
104. *Bande Mataram*, branded an 'extremist' newspaper, displayed 'extremism though mostly softened' in political matters in 1934. Its circulation was relatively modest (2,000) in 1934. Government of Bengal, *Annual Report on Indian Papers Printed or Published in the Bengal Presidency: For the Year 1934*, 1, 5, 10.
105. Extract from article number 28 'The Earthquake and the Duty of the Army', *Bande Mataram* (Calcutta), 22 January 1934. Government of Bengal, *Report on Newspapers and Periodicals in Bengal 1934* (Superintendent, Government printing, Bengal Government Press: Alipore, Bengal, 1935).
106. Two articles comparing the government's response with that of the Japanese government were published in *ABP*: 'What Japan Did', 21 January, and 'Quick! Quick!! Quick!!!' (editorial), 23 January 1934.
107. J. Charles Schenking, '1923 Tokyo as a Devastated War and Occupation Zone: The Catastrophe One Confronted in Post-Earthquake Japan', *Japanese Studies* 29, no. 1 (May 2009): 111–29, 115–19.
108. Three rupees per day as the rate for hiring coolies was also quoted in another article by the correspondent at Patna, 'Stark Desolation: Numberless Deadbodies [*sic*] Still under Debris; Difficulties in Rescue Work; What People Immediately Need Is Food and Shelter', *ABP*, 21 January 1934.
109. This estimate is based on nominal agricultural wages in Champaran, which according to Pouchepadass was 4 annas and 6 pice in 1924, after which it 'decreased somewhat during the 1930s' as an effect of the Great Depression, and stood at

4 annas in 1935–39 (1 rupee equals to 16 annas and 64 pice). Pouchepadass, *Land, Power and Market*, 494. As a further indication of the real value of the salary, the purchasing power of the rupee according to the yearly local government report stated the price of rice as 15.04 seers in the rupee in February 1934, that is, about 14 kilos. Samuel Solomon, *Bihar and Orissa in 1934–35* (Patna: Superintendent, Government Printing, 1937), 18. These figures should, however, only be seen as rough indicators of earnings and food costs since cheaper grains of less nutritional value were available locally. Tirthankar Roy, *Rethinking Economic Change in India: Labour and Livelihood* (London and New York: Routledge, 2005), 87.

110. 'Stark Desolation; Numberless Deadbodies [*sic*] Still Under Debris', *ABP*, 21 January 1934. 'More about the Earthquake' (editorial), *ABP*, 23 January 1934.
111. Rajendra Prasad quoted in 'Appeal', *ABP*, 23 January 1934.
112. 'Wanted More Sappers and Miners', *ABP*, 2 February 1934.
113. The Marwari Relief Society, *Report of the Behar Earthquake Relief Work* (Calcutta: March 1935), 18.
114. For instance, in Monghyr, a man recounted how family members struggled to dig out the living and dead for at least four to five days after the earthquake. Ramchandra Varma (ed.), *Bhūkamp pīḍitoṃ kī karuna-kahāniyāṃ: Bihār ke bhūkamp-pīḍitoṃ kī param āścarya-janak aur karunāpūrṇ saccī ātma-kathāeṃ* [Stories of the Victims of the Earthquake: Bihar's Earthquake Victims' Most Astonishing and Pitiful True Narrations], Compiler, Radhanath Mishra (Kashi [Varanasi], Rajmandir: Chunnilal Malviya, May 1934], 74–5.
115. Varma (ed.), *Bhūkamp pīḍitoṃ kī karuna-kahāniyāṃ*, 2, and cover page.
116. In Mohanlal Saksena, *Devastated Bihar through Jawaharlal's Lenses/Bihār-bhūkamp Javāhar lāl ke citroṃ dvārā* (Lucknow: Mohanlal Saksena; Allahabad: Mahendra Nath Pandey, Allahabad Law Journal Press, 1934), 32–34. Nehru first visited Patna and Muzaffarpur on 21 and 22 January 1934, respectively, after which he travelled to Allahabad where he issued press statements and appealed for funds for the Allahabad Earthquake Relief Committee. He again toured the earthquake area from the Nepal border to Monghyr in order to document the relief activities of the Allahabad Earthquake Relief Committee from 3 to 11 February 1934. Nehru was arrested at Allahabad on 12 February 1934 for 'seditious speeches' made in Calcutta on 17 and 18 January 1934. Anonymous, 'Trial and Imprisonment of Pandit Jawaharlal Nehru', *The Modern Review (A Monthly Review and Miscellany)* Ramananda Chatterjee (ed.) 55, no. 3, whole no. 327, March 1934: 351–53, Calcutta. Nehru, *An Autobiography*, 487–92.
117. B. R. Tomlinson, *The Indian National Congress and the Raj, 1929–1942: The Penultimate Phase* (London; Basingstoke: The MacMillan Press, 1976), 39, 94.

118. Nehru, *An Autobiography*, 484–85, quote in 488.
119. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 4. 'Sreenagar Ruined by Earthquake; Kumar Leaving Calcutta in Hurry', *ABP*, 19 January 1934. Kumar Ganganand Singha (alt. spelling of Sinha) was president of Bihar Provincial Hindu Sabha. Henningham, *A Great Estate and Its Landlords in Colonial India*, 132.
120. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 2, 4, 19.
121. Brett, *A Report on the Bihar Earthquake*, 14.
122. Copy of telegram, Govt of B&O, Political Dept, to India Office, London and to Sec. to the GOI, Home Dept, 22 January 1934, NAI HP 34/1/1934.
123. Brett, *A Report on the Bihar Earthquake*, 16, 18, 20–21. 'Nine extra medical men' mentioned in 'Communiqué', *ABP*, 20 January 1934. According to another account, the government had sent nine additional doctors 'at once' from Patna to Monghyr, three of them soon went to Darbhanga and three doctors with six senior medical students were sent to Muzaffarpur. J. W. Houlton, Patna, 26 January 1934, in 'Indian People's Famine Trust Fund', NAI F&P Foreign 302-P/1934.
124. Brett, *A Report on the Bihar Earthquake*, 12, 15. 'Patna Advocate; Succumbs to Quake-Injuries', *Behar Herald*, 20 January 1934.
125. According to the General Manager of the Sursand Raj, C. H. Gordon, who arrived in Sitamarhi on the afternoon 16 January, he counted 200 'dead and dying' dug out from the debris, and final non-official estimates for Sitamarhi sub-division amounted to 1,000 deaths. Gordon's account of the earthquake from 'Chapter XII: Some Reports by Eye-Witnesses', Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 185–87, quote from 186. Speaker Chandreshvar Prashad Narayan Sinha, Muzaffarpur, 14 February 1934, *BOLCP* 30, no. 1, 107. BCRC, *Devastated Bihar*, 12. The hospital and some other government buildings later had to be re-erected half a mile away because of damages and fissures in the ground. J. A. Dunn, 'Advisory Observations on Reconstruction', ch. X (161–81) in Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 164.
126. Sinha, *The Bihar Earthquake and the Darbhanga Raj*, 10–12.
127. 'At Darbhanga', *ABP*, 20 January 1934.
128. 'Patients under Debris; Two Hospitals Collapse in Darbhanga: Id Bazar Tragedy', *ABP*, 20 January 1934.
129. Brett, *A Report on the Bihar Earthquake*, 14, 21.
130. 'Cable' (Telegram), Govt of B&O to Sec. of State, London, and Home Dept (New Delhi), Patna, midnight 17 January 1934, BSA RE 500/1934.
131. Brett, *A Report on the Bihar Earthquake*, 15.
132. D.O. J-297, 'Notes of reconnaissance by aeroplane', Scott to Tallents, Muzaffarpur, 21–22 January 1934, BSA RE 23/1934.

133. 'Fortnightly Report for the Second-Half of January 1934' (Confidential), Public and Judicial (P&J) (S) Department, B&O Local Government's Reports, Patna 1934, IOR/L/P.J/12/743.
134. Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
135. 'Fortnightly Report for the Second-Half of February 1934' (Confidential), P&J (S) Dept, B&O Local Government's Reports, Patna, 1934, IOR/L/P.J/12/743.
136. 'Progress Report for the Week Ending 1 March 1934', District officer S. L. Marwood to J. E. Scott, Commissioner of Tirhut, Motihari, 2 March 1934, BSA RE 13/1934.
137. File: 'Vaccination in Darbhanga Epidemic Caused by Earthquake', BSA LSG Dept, Sanitation branch S/IV/7/1934.
138. Indian Red Cross Society, *Annual Report 1934* (Delhi: Government Printing at the Delhi Printing Works, 1934), 20–21, 73. 'Lady Sifton's Lead; Help from Bihar Red Cross Committee', *ABP*, 23 January 1934; Indian Red Cross Society, *Annual Report 1934*, 21; Brett, *A Report on the Bihar Earthquake*, Appendix II: List of Officers; Tallents, 'No. 2628-P. R.', 17 August 1934, NAI HP 34/1/1934.
139. Indian Red Cross Society, *Annual Report 1934*, 21. Rupees 4,500 was distributed to the District Boards in Muzaffarpur, Darbhanga, Monghyr and Champaran. Indian Red Cross Society, *Annual Report 1934*, 21, 73. Also mentioned in 'Lady Sifton's Lead; Help from Bihar Red Cross Committee', *ABP*, 23 January 1934.
140. Indian Red Cross Society, *Proceedings of the Annual General Meeting 1935* (New Delhi. Delhi: Thakur Das and Sons, Government Printing at the Delhi Printing Works, 1935), 9. Indian Red Cross Society, *Proceedings of Annual General Meeting 1936* (Delhi: Thakur Das and Sons, Government Printing at the Delhi Printing Works, 1936), 1.
141. The headquarters in Delhi could not provide exact figures in the yearly report since collections had been sent directly. Indian Red Cross Society, *Annual Report 1934*, 20–21, 73–74.
142. 'I. M. A. Undertake Relief Fund', *Behar Herald*, 24 January 1934.
143. 'Earthquake Havoc: Appeal for *Medical* Relief', *ABP*, 20 January 1934.
144. Dr H. Ghosh, Honorary Sec., IMA, Bengal Branch, 67, Dharamatala Street, Calcutta. *ABP*, 23 January 1934.
145. For example, Ayurveda Pharmacy (Dacca), Bengal Immunity Ltd, Great Asiatic Medicine and Stores. *ABP*, 20 January 1934.
146. The Secretary of the IMA, Dr K. S. Ray, appealed for such units to work under the district administration, in *ABP*, 20 January 1934.

147. The appeal to the public mention the names of two persons authorised to collect donations at Naraingunj and Dacca: Sj. Rajendra Kumar Das and Sj. Phanibhusan Sarkar. 'Appeal', *ABP*, 23 January 1934.
148. 'Communiqué', *ABP*, 23 January 1934.
149. Indian Red Cross Society, *Proceedings of the Annual General Meeting 1934*, 1. 'Medical Relief Work in Bihar', in Moore (ed.), *Record of the Great Indian Earthquake*, 44.
150. Brett, *A Report on the Bihar Earthquake*, 12. J. W. Houlton, Patna, 26 January 1934, in 'Indian People's Famine Trust Fund', NAI F&P Foreign 302-P/1934. Indian Red Cross Society, *Proceedings of the Annual General Meeting 1934*, 1. Indian Red Cross Society, *Annual Report 1934*, 20. A total of 61 men had worked in the unit between 22 January and 19 February 1934. 'Medical Relief Work in Bihar', in Moore (ed.), *Record of the Great Indian Earthquake*, 44.
151. Indian Red Cross Society, *Annual Report 1934*, 73.
152. P. C. Tallents, Chief Sec. to the Govt of Bihar and Orissa, to J. M. Clay, Chief Sec. to the Govt of the United Provinces (U.P.), and C. C. Garbett, Chief Sec. to the Govt of the Punjab, Patna/Ranchi, 22 March 1934, File 'Articles for Relief Purposes Sent from Other Provinces to the Red Cross Depot at Patna', BSA RE 485/1934.
153. Indian Red Cross Society, *Annual Report 1934*, 21, 73–74. The depot and distribution centre distributed over 40,000 blankets, 546 tents and 4,840 bags of *atta* (whole wheat flour) and other articles received in response to the society's and the government's appeals. Brett, *A Report on the Bihar Earthquake*, 20–21. Appeal for 'blankets, bed sheets, tinned milk, Horlick's malted milk, barley, sago, petdomax [*sic*] lamps, primus stoves, waterproof sheets, tea, sugar, brandy and towels'. 'Communiqué', *ABP*, 23 January 1934.
154. Indian Red Cross Society, *Annual Report 1934*, 20–21.
155. W. G. Lacey, Sec., LSG, to Finance Sec., 22 January 1934, File: 'Railway Concessions on Occasion of Earthquake', BSA RE 33 I/1934.
156. Note by H. C. Prior, Finance Sec., Govt B&O, 22 January 1934, BSA RE 33/1934.
157. Note by J. W. Sinha, 23 January 1934, BSA RE 33 I/1934.
158. D. O. 2919–20 P, 22 March 1934; D. O. 267 P. R., N. N. to H. Bomford, Chief Sec. to the Govt of the U.P., Ranchi, 25 April 1934, BSA RE 485/1934.
159. Notice by Dr H. Ghosh, Honorary Sec., IMA, Bengal Branch, 67, Dharamatala Street, Calcutta. *ABP*, 23 January 1934.
160. 'I. M. A. Undertake Relief Fund', *Behar Herald*, 24 January 1934.
161. Enclosure no. 2, *Hindustan Times*, 25 January 1934. Sir Harry Haig's statement in the Assembly on the recent earthquake disaster in reply to G. P. Singh's question

on 24 January 1934. In letter from M. G. Hallett to GOI, Home Dept (New Delhi), 25 January 1934, NAI HP 34/1/1934.

162. 'Communiqué', *ABP*, 23 January 1934.
163. 'Motihari Situation: Medical Relief Units Start', *ABP*, 28 January 1934.
164. BCRC, *Report for the Period Ending 30th June 1934*, 8.
165. Brett, *A Report on the Bihar Earthquake*, 7.
166. Twenty thousand dead according to the BCRC, *Devastated Bihar*, 2.
167. Ghosh proposes a rough figure of 25,000 deaths. Ghosh, *The Civil Disobedience Movement*, 245. Mukherjee, 'Afterword', 190–91. According to a short note on 'Destructive Earthquakes in 1935', the science magazine *Nature* claims the number of 2,000 deaths is 'too low' (quoting M. Bois, *Nature*, 136, 472, 21 September 1935), while an unnamed 'official report' claimed the number to be 'more than 10,000'. 'Destructive Earthquakes in 1935', *Nature* 136 (1935), 639.
168. Sapkota, Bollinger and Perrier, 'Fatality Rates of the *M*w ~8.2, 1934, Bihar–Nepal Earthquake', 1–2.
169. The highest death toll was found in Muzaffarpur town (956), Muzaffarpur district (1,583), Darbhanga district (1,839) and Monghyr town (1,260). Brett, *A Report on the Bihar Earthquake*, 8.
170. Stark differences in numbers were also recorded in Darbhanga town and Laheriasarai and Darbhanga district where the BCRC recorded altogether 4,000 deaths and Brett only 1,839 for the whole district. BCRC, *Devastated Bihar*, 12, 16, 18, 20. Brett, *A Report on the Bihar Earthquake*, 8.
171. Brett, *A Report on the Bihar Earthquake*, 7.
172. More than 10,000 people were killed in India and Nepal according to L. L. Fermor, 'General Report of the Geological Survey of India for the year 1934', 1–108, in *Records of the Geological Survey of India*, vol. 69 (Calcutta: Geological Survey of India, 1936), 24–25. According to the final GSI report from 1939, 3,400 deaths resulted directly from the earthquake in the Nepal valley, while people who had died in rock falls indirectly caused by the earthquake in other parts of the country were not included in the figures. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 3.
173. The present author was unable to locate files on medical relief in the BSA, which may contain valuable sources.
174. Saran district, 'over a thousand' injured; 48 injured in Jamalpur; 11 persons had died in the bazaar and 200 were injured in the small town of Khagaria, close to Monghyr; Patna, 'a few hundred injured'. BCRC, *Devastated Bihar*, 19, 21, 23.
175. Indian Red Cross Society, *Proceedings of the Annual General Meeting 1934*, 1. Indian Red Cross Society, *Annual Report 1934*, 20.

176. 'More Serious than Believed: Earthquake Havoc in Bihar: Official Figure', *The Leader*, Allahabad, 20 January 1934.
177. 'The Death-Roll', *ABP*, 20 January 1934. The same type of critique surfaced in the weeks following the earthquake, see 'Monghyr Situation. Slow Progress of Clearing Debris: Epidemic Apprehended', *ABP*, 2 February 1934.
178. 'Official Figures: 2,500 Deaths in Behar Province', *ABP*, 19 January 1934.
179. 'Communiqué', *ABP*, 23 January 1934.
180. Indian Red Cross Society, *Annual Report 1934*, 19.
181. 'Mounting Death-Roll', *The Statesman*, 31 January 1934.
182. 'Fortnightly Report for the Second-Half of January 1934' (Confidential), P&J (S) Department, Bihar and Orissa Local Government's Reports, Patna, 1934, IOR/L/P.J/12/743.
183. 'Note on the Bihar Earthquake by Sir James Sifton', 2 pp., enclosed in Telegram from Viceroy to Sec. of State, New Delhi, 21 January 1934, NAI HP 1/3/1934.
184. '3,100 Deaths; Muzaffarpur Practically in Ruins', *ABP*, 20 January 1934. Another similar eyewitness account claimed the loss of life to have exceeded 50,000. 'The Earthquake', *Behar Herald*, 20 January 1934.
185. 'Bihar Leader's Estimate: 20,000 Dead in Earthquake', *The Englishman*, 5 February 1934. The statement was mentioned in the British press. 'New India Tremor: 20,000 Dead in Former Quake', *Daily Telegraph*, 12 February 1934.
186. Saksena, *Devastated Bihar through Jawaharlal's Lenses*, 32–33.
187. The 'Europeans' mentioned were Mr Fairweather and the European crew that took part in the air survey of Tirhut by Captain Barnard's Circus. 'The Government's Responsibility', *ABP*, 19 January 1934.
188. 'Non-official estimates' taken from BCRC, *Devastated Bihar*, 20.
189. An additional 237 deaths were recorded in Monghyr district. Brett, *A Report on the Bihar Earthquake*, 8.
190. A 'special correspondent' for *The Leader* suggested a similar figure according to an unnamed relief party at work. '1,700 dead at Monghyr?' *The Leader*, 23 January 1934. Such an account was given by 'a Pundit Bindanand Jha' who claimed to have counted the bodies extracted from the ruins. Another anonymous report provided the number of 2,315 excavated bodies. 'Monghyr', report by BCRC's Monghyr branch until end of June [July–August] 1934, BCUL PC 1028.
191. 'Communiqué', *ABP*, 23 January 1934.
192. Brett, *A Report on the Bihar Earthquake*, 11–12, 72.
193. Officially there were 700 holdings in Madhupura and Chowk bazaars together. Brett, *A Report on the Bihar Earthquake*, 8. The municipality counted that in 500 holdings in the Chowk bazaar, two families lived in half of them, thereby

counting 750 families. See section titled 'Improving Slums': Planning Bazaars' in Chapter 6.

194. 'At Monghyr', *ABP*, 23 January 1934.
195. The last census recorded a population of 52,863 (Table IV). Lacey, *Census of India, 1931*, vol. VII, part II.
196. Saksena, *Devastated Bihar through Jawaharlal's Lenses*, 23–24. BCRC, *Devastated Bihar*, 20.
197. Brett, *A Report on the Bihar Earthquake*, 8, 12, 14.
198. 'Behar's Hour of Need; Organise Relief; Babu Rajendra's Appeal', *ABP*, 19 January 1934. '1,100 Corpses Disposed of by Police', *The Leader*, 21 January 1934.
199. Roy, 'State, Society and Market', 278–79.
200. 'No European and no Indian of note killed or wounded', Telegram, Govt of U.P., Lucknow, to Home Dept, New Delhi, 24 January 1934, NAI HP 34/1/1934. 'No European or Anglo-Indian has been killed', and lists of details with deaths of Indian officials and their relatives were mentioned. In Motihari, 'no European or Indian official has been injured'. 'Deadbodies [*sic*] Decomposing; Incalculable Loss of Lives and Property', *ABP*, 21 January 1934.
201. 'Scenes of Stark Desolation', *The Statesman*, 17 January 1934.
202. 'Hundreds Perish in Earthquake …', *The Statesman*, 17 January 1934.
203. 'Cable' (Telegram), Govt of B&O to Sec. of State, London, and Home Dept (New Delhi), Patna, midnight 17 January 1934, BSA RE 500/1934. 'European Woman Killed in Saving Dog', *The Statesman*, 19 January 1934. 'Destruction in Bihar: Fourth Press Communiqué', *The Leader*, 21 January 1934.
204. BCRC, *Devastated Bihar*, 20.
205. Brett, *A Report on the Bihar Earthquake*, 8.
206. Elaine Enarson, Alice Fothergill and Lori Peek, 'Gender and Disaster: Foundations and Directions', in *Handbook of Disaster Research*, ed. H. Rodriguez, E. L. Quarantelli and R. R. Dynes, 130–46 (New York: Springer, 2006), 132–33.
207. Dunn et al., 'The Bihar–Nepal Earthquake of 1934', 3.
208. BCRC, *Devastated Bihar*, 20. According to the calendar, Eid was on the 17 January, not 16 January, in 1934.
209. BCRC, *Report for the Period Ending 30th June 1934*, 50.
210. Rai Bahadur Harendra Nath Banarji, Jamalpur, 14 February 1934, *BOLCP* 30, no. 1, 167–68.
211. Bayly, *Empire and Information*, 174.
212. Brett, *A Report on the Bihar Earthquake*.
213. Beck, *Risk Society: Towards a New Modernity*, 26–27.