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Chapter 3

Ganga-flow: The Riverine and Overland Routes

*There is no river in the world, unless those of China be exceptions, on which there is so large a navigation as on the Ganges and its tributary streams.*¹

*And truly the Grand Trunk Road is a wonderful spectacle. It runs straight, bearing without crowding India's traffic for fifteen hundred miles—such a river of life as nowhere else exists in the world.*²

Introduction

The previous chapter discussed migration in the Ganga plain and raised questions about the tripartite geographic division of the plain and proposed a division based on aridity and rainfall. The interface between the drier and humid zones continues to inform our analysis. Though this chapter takes the entire Ganga plain into account, the focus remains on the transitional zone between the dry and the humid ecological zones of the Ganga plain in Bihar. To prepare the background for analysing the economic dynamic and political processes of the early modern period, the present chapter discusses the main riverine and overland routes on which pilgrims proceeded, cash, credit and commodities circulated, and armies mustered. The Ganga connected the local marts and regional towns of Bihar with Kasimbazar, Murshidabad, Hugli and Calcutta with manifold implications for the economy and polity. Such connections also facilitated interaction between sedentary agricultural society and mobile merchants and brought about important changes in society. The transformation of agricultural surpluses into liquid capital played an important role in early modern state formation.³ But what were the historical processes that made this interaction between agrarian society and mobile forces possible on the Ganga plain?

¹ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, Note by the Secretary on the introduction of steam navigation on the Rivers in Bengal by H. T. Prinsep, Fort William 15th August 1828, not foliated (hereafter n.f.); Appendix to the report from the Select Committee of the House of Commons on the affairs of the East-India Company, 16 August 1832, vol. II: Finance and Accounts – Trade, Part 2, Commercial (London: 1833), 916.

² Rudyard Kipling, *Kim* (1901; repr. New Delhi: Rupa, 1999), 67.

³ The chieftains' efforts to accumulate large resources by centralizing their fiscal and military administration were very much on the lines of the military fiscal state in early modern Europe. Some of these chiefs along the Ganga maintained an impressive number of cavalry and armed riverboats. For the military fiscal state in Europe, see Charles Tilly, *Coercion, capital, and European states, AD 990–1992* (Cambridge: Blackwell, 1992), especially Chapter 4.

Agricultural expansion and long distance trade were mutually reinforcing in commercializing the economy. As we noted in Chapter 2, the Ganga delta underwent significant land reclamation and agricultural expansion from the late first millennium onwards. Geographical factors favoured certain areas within the delta more than others. For example, the “paradelta” region of Varendra, near the Ganga in north Bengal, has an elevation between about 90 and 300 feet and is relatively dry (receiving about 55 inches rainfall) in comparison to the eastern delta and the northern Terai, both of which receive rainfall between 60 to 95 inches.⁴ It was in this region that the famous medieval cities such as Pandua, Nudiya, and Gaur (Lakhnauti) flourished during the first half of the second millennium AD. This upland, dry location would have been the point from where the agrarian frontier was constantly pushed eastward, toward the wet and marshy zones of the eastern delta. Meanwhile agricultural expansion in the delta received a boost from the long distance trade. Mainly Persian and Arab maritime traders were procuring textiles from eastern Bengal during the tenth century, but after the Turko-Afghan groups of the arid zone conquered the delta in the thirteenth, the region became more closely incorporated into Indian Ocean and overland trade networks.⁵

In Chapter 2 we also noted instances of agricultural expansion in the delta during the eleventh- and early twelfth-century reign of Ram Pala. The advent of Muslim conquerors brought a greater push to extend the agrarian frontier eastward, a process that continued for the next five centuries. Since the sixteenth century, when the direct maritime route linking Europe with Asia became operational, the process of agrarian and economic growth accelerated, and the demand for local commodities grew and trade expanded in the seventeenth and eighteenth centuries. While the agrarian frontier continued to move eastwards, the deeper hinterlands came within the commercial radius of the delta. Therefore, the transitional zone of the Ganga plain in Bihar got more closely linked to the maritime networks operating from the Bay of Bengal.

Geographically Bihar is considered landlocked, but we should ask whether it was so in the past. If we define a landlocked region to be far removed from the sea-coast then Bihar, several hundred miles from the Bay of Bengal, is a landlocked region. But this great distance was shortened by the Ganga, which brought the seacoast and the hinterlands of Bihar much closer than it would appear otherwise. Economically speaking, during the early modern period, Bihar was very much a part of the maritime economy of the Bay of Bengal. In the seventeenth and eighteenth centuries, the thriving maritime trade of the Asian merchants and the European Companies had direct access to the economy of Bihar. The riverine and overland routes, and the urban centres along

⁴ O. H. K. Spate and A. T. A. Learmonth, *India and Pakistan: A general and regional geography* (1954; repr. London: Methuen, 1967), 575; for a table showing rainfall, see also Malabika Chakrabarti, *The famine of 1896–1897 in Bengal: Availability or entitlement crisis?* (New Delhi: Orient Longman, 2004), 46.

⁵ Richard M. Eaton, *The rise of Islam and the Bengal frontier, 1204–1760* (1993; repr. New Delhi: Oxford University Press, 2006), 11–12. Unfortunately the scholarship on pre-Mughal Bengal’s maritime contacts is under explored. We do not know much about the scale of trade during that period.

them, facilitated trade and related commercial operations. The region was rich in agricultural, craft and mineral resources that found markets worldwide thanks to the long-distance trade routes that passed through Bihar and linked the entire Ganga plain. Since we lack systematic data on the overland trade to the northwestern parts of India and to Central and West Asia, this study turns its perspective on the region's linkages with the maritime commerce through the Ganga River.

In the historiography of early modern South Asia, little attention has been directed to the riverine and overland routes that passed through the transitional environmental zone of the Ganga plain and their role in the political and economic development of the region.⁶ As we already noted in Chapter 2, Bihar constitutes a transitional zone where the dry parts in the south overhang the large fertile tracts in the north.⁷ While the Ganga formed a loose boundary between north and south, people from both regions exploited the river as a transportation corridor. Another linkage between these disparate ecological zones was the long established pilgrimage to Gaya, performed by the Hindus in order to propitiate the departed souls of their ancestors, and to Deoghar Baidyanath, the site of an important Hindu temple.⁸ Communication with the pilgrim centres and to major towns along the Ganga was maintained by the riverine and overland routes. By describing the route systems, I shall underline the implications of interaction between the two ecological zones and argues that such interactions were of critical importance for state formation in the history of the Ganga plain.

The factors associated with the “horse-warrior revolution” were probably responsible for the westward shift of the political frontier of the Ganga plain towards

⁶ Havaladar Tripathi compiled the data on cultural and historical aspects of the rivers and rivulets in Bihar. Though the information is valuable, it does not help answer the questions on the political economy of the rivers. See Havaladar Tripathi “Sahridaya”, *Bihar ki nadiyan: aitihasik evam sanskritik sarvekshan* (Patna: Bihar Hindi Granth Akadami, 2003), in Hindi; A. K. M. Farooque, *Road and communications in Mughal India* (Delhi: Idarah-i Adabiyat-i Delli, 1977) hardly discusses rivers and focuses mostly on the overland routes without shedding much light on their strategic or economic importance. See also Jean Deloche, *Transport and communications in India prior to steam locomotion*, vol. 1, *Land transport*, and vol. 2, *Water transport*, trans. James Walker (Delhi: Oxford University Press, 1993 and 1994). Both volumes present rich data on land and river transport but the economic and political implications of the route system are beyond their scope. Recent work by Tilottama Mukherjee addresses some of the issues related to the economy of river transport in Bengal but her focus remains primarily on the delta in the latter half of the eighteenth century, see “Of rivers and roads: Transport networks and economy in eighteenth-century Bengal,” in *Coastal histories: Society and ecology in pre-modern India*, ed. Yogesh Sharma (Delhi: Primus Books, 2010).

⁷ In the eighteenth century, soil in Bengal and Bihar sustained four times more people than the same quantity of land could do in England. See William Tennant, *Indian recreations: Consisting chiefly of strictures on the domestic and rural economy of the Mahomedans & Hindoos*, 2 vols. (Edinburg, 1803), 2:6–7.

⁸ While the pilgrimages of local importance do exist in northern Bihar, there is none that can rival the importance of Gaya or Deoghar Baidyanath or the Ganga. Thus, the sacred geography of Bihar seems to have been organized in such a way as to ensure greater interaction between the humid and dry zones. For a description of the local pilgrimage in north Bihar, see Hetukar Jha, ed., *Tirhut in [the] early twentieth century: Mithila Darpan of Ras Bihari Lal Das* (1915; repr. Darbhanga: Maharajadhiraj Kameshwar Singh Kalyani Foundation, 2005), in Hindi.

Kannauj and Delhi starting in the late first millennium AD.⁹ Between this time and the early modern period, the political frontiers were centred on the western parts of the Ganga plain, where there was greater access to the mobile resources of the “arid zone” such as horses, seasoned militia, and liquid capital. On the other hand, the humid zone of the eastern Ganga plain underwent significant agrarian and economic expansion during the same period. To tap the agrarian wealth of the humid zone, rulers in Delhi and Agra maintained a string of garrison towns along the important trade routes of the Ganga plain, as we will see in the present chapter. It was only with an effective exercise of power and military control that they were able to share in the resources of Bihar and Bengal. During the age of maritime commerce (roughly from the sixteenth to eighteenth centuries), in order to meet the growing international demands for the commodities, an unprecedented agrarian expansion occurred in the eastern Ganga plain. This economic transformation of the Ganga plain had significant political implications. As the region’s economic fate got more closely linked up with the maritime commercial economy, by the eighteenth century the eastern Ganga plain slipped away from the political economy of the Mughal heartland in northern India or Hindustan.

This chapter is organized in three sections. Section one discusses three key issues, namely, the morphology of the Ganga and its important tributary rivers, their exploitation for trade and navigation, and the rivers in the political economy of the Ganga plain. Although I take the entire Ganga plain into account, gradually focus shifts once again to the transitional zone of the plain in the seventeenth and eighteenth centuries, a period for which Dutch sources enable us to view the rhythm of traffic along the Ganga in detail. Early-nineteenth century British colonial documents also have interesting data on riverine networks and they help us extrapolate and corroborate pre-nineteenth century river navigation. Section two begins with a description of the overland routes in north India and the Ganga plain before focusing on the routes that pass through the transitional zone of Bihar toward the delta. Some of these routes linked the agricultural centres of the humid zone with regional towns located on its margins. The third section asks why the Mughal towns in the eastern Ganga plain were located in the interstices of the agricultural heartland to the north of the Ganga and the dry, hilly and forested areas to the south of the river.

⁹ On horse-warrior revolution, see Michael Chamberlain, *Knowledge and social practice in medieval Damascus 1190–1350* (Cambridge: Cambridge University Press, 2002), 28–36; see also, R. J. Barendse, “The Feudal-Mutation: Military and economic transformations of the ethnosphere in the tenth to thirteenth century,” *JWH* 14:4 (2003): 503–29, see esp. p. 512–14. The inability of the Bengal rulers such as the Palas and Senas (which flourished between the eighth and thirteenth centuries) to gain uninterrupted access to warhorses decisively changed the political geography of the Ganga plain. Chakravarti suggests an importation of Kohi horses from the mountainous northeast regions since the Sena-period (1096–1225 AD) and their re-export to China, Southeast Asia as well as southern India. In spite of the references to their sturdiness, Kohi horses failed to alter the geo-strategic significance of the Ganga plain where the polities having access to and supply of warhorses from Central and West Asia dominated the region. On Kohi horses, see Ranabir Chakravarti, “Early medieval Bengal and the trade in horses: A note,” *JESHO* 42:2 (1999): 196, 199–203.

Section I: The Ganga River Systems, Navigation Networks and the Rivers in the Political Economy of the Region

Traditionally the rivers in the Ganga plain had performed two important economic functions. First, they contributed to agricultural productivity by bringing fertile silt and by providing irrigation. Second, they offered navigation to transport the surplus production to the markets to be sold and exchanged for other commodities or cash. Until the railways overtook transportation and the boring-canal and motor-pumps partially displaced the rivers' role for irrigation and food production, the pre-modern states were critically dependent on the rivers. This section by focusing on the Ganga river-systems and by reconstructing the transportation networks highlights the role of rivers in the region's political economy.

The Geomorphology of the Rivers

The Ganga River rises in the high Himalayas at Gomukh in the Gangotri glacier, a mountain of around sixty square kilometres surrounded by snowy peaks of twenty to twenty four thousand feet. From this glacier the Bhagirathi and Alakhnanda Rivers flow southwards and meet at Devprayag, where the combined stream becomes known by the name Ganga.¹⁰ After winding generally southwest through the Himalayas for about 250 kilometres, the Ganga emerges from the mountains at Rishikesh. After descending onto the plain, from Haridwar the river follows the general slope of the plain in a south-south-easterly direction. James Rennell, the eighteenth century British Surveyor General, remarks that after entering the plain the Ganga "flows with a smooth navigable stream" to the sea.¹¹ Below Haridwar, the Ganga is joined by the Ramganga near Kannauj.¹² After this confluence the river passes through Farrukhabad and Kanpur before reaching Allahabad where it meets the Yamuna. The confluence of the Ganga and Yamuna is known as *Prayag* (literally, the place of sacrifice). Sacred to Hindus,

¹⁰ James Bell, *A system of geography, popular and scientific or a physical, political and statistical account of the world and its various divisions*, vol. 4 (Glasgow, 1832), 469; H. T. Colebrooke, Esq., "On the sources of the Ganges, in the Himádrí or Emodus," *Asiatic Researches Comprising History and Antiquities, the Arts, Sciences, and Literature of Asia*, vol. 11 (1818; repr. Delhi: Cosmo Publications, 1979), 443; Sharad Kumar Jain, et al., *Hydrology and water resources of India* (Dordrecht: Springer, 2007), 336; see also Bimla Churn Law, *Historical geography of ancient India* (Delhi: Ess Ess Publications, 1976), 31.

¹¹ James Rennell, *An account of the Ganges and Burrampooter rivers* (London, 1781), 5. Rennell notes the bounty provided by the Ganga River, the facility of communication along the river and also its military and strategic importance.

¹² Nanigopal Roy and Rajiv Sinha, "Understanding confluence dynamics in the alluvial Ganga-Ramganga valley, India: An integrated approach using geomorphology and hydrology," *Science Direct/Glomorphology* 92 (2007): 182–97. See also, *Military report on the Ganges river system* (Simla: Government Monotype Press, 1913), 3, 32.

Prayag is the site of the Kumbh pilgrimage, a great bathing festival attended by millions of pilgrims, which takes place every twelve years.¹³

After winding for about two hundred kilometres in the lower Himalayas, through the Shiwalik Range and Garhwal, the Yamuna enters the Indo-Gangetic plain and runs southward parallel to the Ganga, the land between the two rivers being a fertile doab. In the course of its 1,376-kilometre run the Yamuna passes through important historical cities such as Delhi, Mathura and Agra. The communication networks through the river and overland routes and the fertility of the well-watered areas in the doab sustained these cities. The Yamuna is fed by a number of tributaries as a result of which its water volume far exceeds that of the Ganga in Allahabad.¹⁴ At Prayag the Yamuna River joins the Ganga from the west and causes the latter to swell. During the rains the Ganga broadens to two to three miles, which eases the passage of large boats heading downstream from Allahabad towards Patna and Calcutta.¹⁵

After Allahabad the Ganga is joined by the Gomati and Ghaghara Rivers from the north. The Ghaghara is an important river, and apart from the Yamuna the longest of the Ganga's tributary streams.¹⁶ The total length of the Ghaghara is 1080 kilometres and it merges with the Ganga at Doriaganj near Chhapra in Bihar. According to Jean Deloche, the Ghaghara was navigable throughout the year and barges of 44 tonnes could operate below Bahramghat, near where the river leaves the Nepalese forests.¹⁷ These tributaries to the Ganga facilitated communication with comparative ease in the regions of eastern Uttar Pradesh and northwestern Bihar. These Himalayan rivers also created many fertile flood plains on which the earliest states formed, as we noted in Chapter 2. In the early modern period too, the region produced many agricultural commodities and was linked to downstream regional markets through the Ganga.

As the Ganga flows eastward through Bihar many more rivers join it from the north and south. Seen on a map, these river-confluences present a view of the Ganga as

¹³ H. R. Neville, *Allahabad: A gazetteer being volume XXIII of the district gazetteers of the United Provinces of Agra and Oudh* (Allahabad: Government Press, 1928), 151–52. See also George Smith, *The geography of British India: Political and physical* (London, 1882), 24–25.

¹⁴ Jain, et al., *Hydrology and water resources of India*, 346. See also Walter Hamilton, *A geographical, statistical, and historical description of Hindostan and the adjacent countries*, vol. 1 (1820; repr. Delhi: Oriental Publishers, 1971), 290–95. Hamilton notes that after Delhi the Yamuna flows parallel to the Ganga at a distance of 80 to 120 kilometres until they gradually merge at Allahabad where the stream of the Ganga is a little inferior to the Yamuna. The total length of the Yamuna including winding is estimated at about 1255 kilometres.

¹⁵ Neville, *Allahabad: A gazetteer*, 8; Irfan Habib, *An atlas of the Mughal empire: Political and economic maps with detailed notes, bibliography and index* (Delhi: Oxford University Press, 1982), maps 8B and 10B, also pp. 32, 41.

¹⁶ Hamilton, *A geographical, statistical, and historical description*, vol.1, 347. Hamilton notes that James Rennell thought of the Ghaghara to be the Agoramis of Arrian. For a succession of boats lined up in the Gomati River, see George Forster, *A journey from Bengal to England, through the northern part of India, Kashmire, Afghanistan, and Persia, and into Russia, by the Caspian-Sea*, vol. 1 (London, 1798), 82.

¹⁷ Deloche, *Transport and communications*, 2:22. For the problems of navigation and shoals in the Ghaghara, see BL, APAC, IOR, V/23/120, pt. 31 Art. 1, *Report on the navigation of the river Gogra by R. Taylor, 1858* (Calcutta, 1858), 1–4, in microfilm.

the main trunk of a great funnel. Since the general elevation of the northern plain of Bihar is between less than a hundred and a little more than three hundred feet and has a gradual southeast slope, the rivers also follow a southeasterly course and join the Ganga.¹⁸ One of the major tributaries such as the Gandak River rises near the Nepal-Tibet border and after winding 630 kilometres meets the Ganga at Hajipur, north of Patna.¹⁹ After the Shiwaliks, at Tribeni-ghat the river was plied by small boats and wooden rafts. However, during the rains vessels of 37 tonnes could ply upriver as far as Lalganj.²⁰ The Bur Gandak or the Little Gandak, another tributary to the Ganga in Bihar, originates in the Someshwar Hills in Champaran district of northern Bihar. Its course follows the south and southeasterly direction through Muzaffarpur district and drains into the Ganga near Munger town after traversing about 320 kilometres. The tonnage of the boats varied in different stretches of the river. For example during the monsoon a boat of 74 tonnes could ply as far as Russera; 37 tonnes up to Muzaffarpur; 19 tonnes to Bariyapur; and, 4 tonnes further up the river. During the winters the tonnage was reduced to 4 to 8 tonnes to be able to reach Muzaffarpur.²¹ Further east, the Kosi River originates in the Himalayas and flows through Nepal to India. The main tributaries of the Kosi are the Baghmata and Kamla, which also originate in Nepal. The Baghmata was navigable throughout its course up to southern Nepal. By contrast, the rivers to the south of the Ganga—including the Karamnasa, Son, Punpun, and Kiul—were inadequate for navigation. For irrigation too, these rivers offered limited resource.

After flowing through the transitional zone of Bihar the Ganga gets divided into two main branches in the delta. In the western delta, the Cossimbuzar and Jellinghy (Jalangi) Rivers unite and become the Bhagirathi-Hugli River, which is a western branch of the Ganga. As James Rennell wrote in the late-eighteenth century, the Bhagirathi-Hugli was the only navigable branch of the Ganga and the Cossimbuzar and Jellinghy Rivers offered rather limited navigation except during the rains. According to Rennell the only subordinate channel of the Ganga, called the Chundnah, was navigable throughout the year.²² Further down the stream the eastern branch of the Ganga known as Padma receives the Brahmaputra and Meghna rivers.²³ These rivers and their branches in the delta contributed to the economy and commerce by facilitating transportation of goods and the movement of people.²⁴

¹⁸ Joseph E. Schwartzberg, ed., *A historical atlas of South Asia* (New York: Oxford University Press, 1992), 3.

¹⁹ Jain, et al., *Hydrology and water resources of India*, 358.

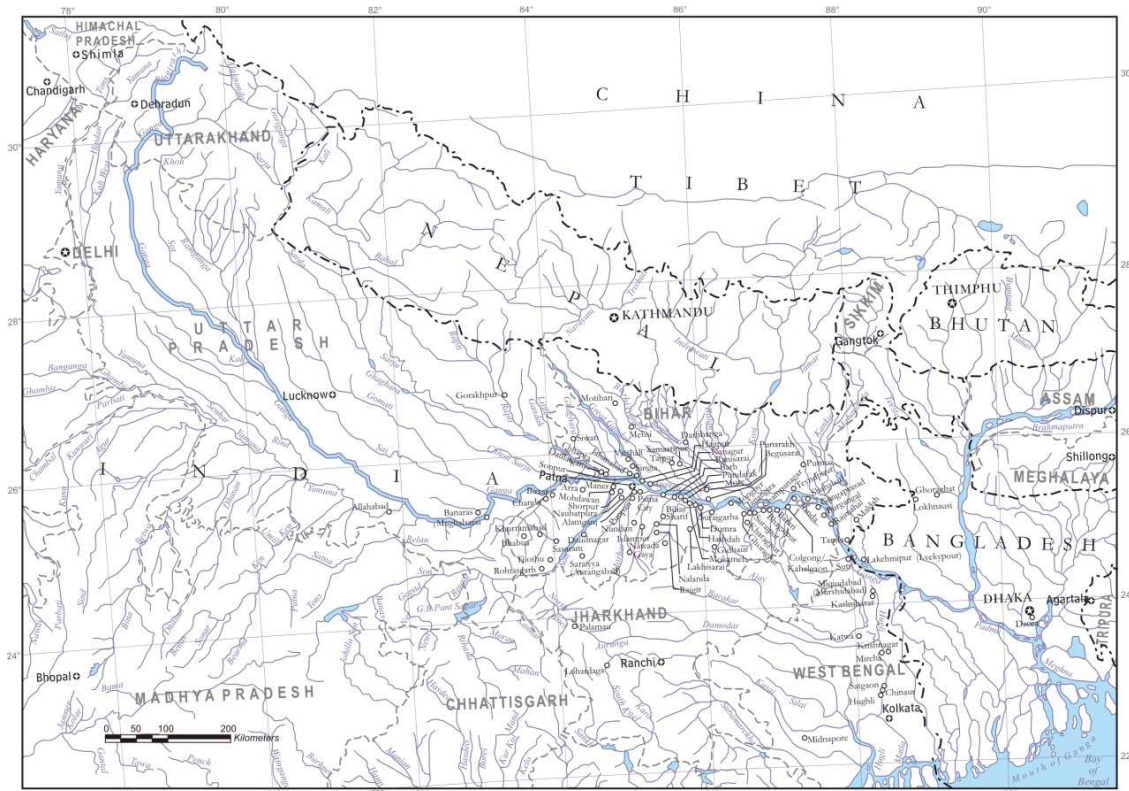
²⁰ Deloche, *Transport and communications*, 2:22.

²¹ Deloche, *Transport and communications*, 2:22–23.

²² Rennell, *An account of the Ganges and Burrampooter rivers*, 7–8.

²³ Spate and Learmonth, *India and Pakistan*, 572–74.

²⁴ For the navigation in the Bengal delta, see Deloche, *Transport and communications*, 2:117–26.



Map 2. Navigation in the Ganga.

Navigation

Travel accounts and other conventional sources give but a dim picture of navigation in the Ganga and Yamuna in the semi-arid zone of the Ganga plain. As is evident from the English sources discussed below, river navigation was not an invention of British colonists and probably it had a long history judging from the instances of river navigation and merchant traffic given in early Buddhist literature.²⁵ However, the Buddhist and other indigenous sources throw little light on the organization of voyages in the Ganga. Similarly, early modern European travellers may have overlooked such riverine traffic because it was no more exotic than what they knew at home, and hence we have relatively few references to that effect.

During the age of maritime commerce, the first reference to commercial navigation on the Yamuna comes from the account of an English merchant, Ralph Fitch, who started his journey for Bengal from Agra in the company of a large merchant fleet in 1585.²⁶ In 1611, John Jourdain wrote that every year barges with a

²⁵ Steven G. Darian, "The economic history of the Ganges to the end of Gupta times," *JESHO* 13:1 (1970): 72, 74. Numerous Buddhist *Jatakas* talk of the Ganga River route for trade and travel. As Darian shows, the convergence of overland routes on the main riverine ports of the Ganga probably signifies the importance of river for trade.

²⁶ William Foster, ed., *Early travels in India 1583–1619* (1921; repr. New York: AMS Press, 1975), 18. Fitch reported that he travelled "in the companie [sic] of one hundred and fourescore boates [sic] laden with salt, opium, hinge [asafetida: Hindustani *hing*], lead, carpets, and divers other commodities, down

capacity of 400 to 500 tonnes carried a total of 10,000 tonnes of salt (mined from the Salt Range of the Punjab) from Agra to Bengal.²⁷ A few decades later, Peter Mundy observed river navigation, though he himself travelled on the overland route. From the Dutch *Generale Missiven* (general letters), we learn that in December 1655, Hindustani merchants procured enough silk of Kasimbazar to load eight to ten boats for the passage from Patna to Agra.²⁸ Clearly, the river route connecting Bengal with Agra via Patna was very much in use in the seventeenth century and earlier. In fact, the river was used by large barges and vessels and as Irfan Habib notes in his *An Atlas of the Mughal Empire*, while overland routes were preferred (although he does not give any reason for such a preference), the Yamuna was navigable for boats of 100 to 500 tonnes between Agra and Allahabad, and from Allahabad to Patna on the Ganga.²⁹

In 1832 the Yamuna River constituted the boundary between the British held territory and Awadh. A colonial administrative paper written in 1832 proposed facilitating navigation on the Yamuna and Ganga by removing the excessive number of customs posts and promoting revenue collection.³⁰ From this source we learn both that the Yamuna was navigable as far as Padshamahar, where it leaves the hills, and that the British had set up dozens of customs posts on the riverbanks to generate revenue and to control and regulate the commodity flows. For example, there were no less than seventy-three river *chowkies* (customs posts) within the Agra division. In the Delhi territory, from Karnal to a place midway between Delhi and Agra, there were thirty-five customs posts where boats were liable to be checked by the authorities. As frequent inspections of boats led to inconveniences, traffic diminished and customs posts had to be closed down. The British paper noted that huge quantities of salt, cotton, *ghee* (clarified butter), asafoetida and so on were imported to “Jugadree, Shamlee, Bhowanee, Delhi Rewarree and other commercial towns of that quarter” but remarked with regret that these items were not carried on the Yamuna. Instead, the merchants used the slower and more expensive land transportation to Mathura, located

the river Jemena”; see also Donald F. Lach, *Asia in the making of Europe*, vol. 1, bk. 1, *The century of discovery* (Chicago: University of Chicago Press, 1965), 480.

²⁷ John Jourdain, *The journal of John Jourdain, 1608–1617, describing his experiences in Arabia, India, and the Malay archipelago*, ed. William Foster (Cambridge: Hakluyt Society, 1905), 162; and Mundy talks of many “great lighters” or barges of three to four hundred tonnes which connected Agra and Bengal and transported salt, see Peter Mundy, *The travels of Peter Mundy, in Europe and Asia 1608–1667*, vol. 2, *Travels in Asia, 1628–1634*, ed. R. C. Temple (London: Hakluyt Society, 1914), 87–88. Akbar used the Yamuna for travelling between Delhi and Agra, see Abu’l-Fazl Allami, *The Akbarnama of Abu-l Fazl*, trans. H. Beveridge, in 2 vols. (1910; repr. Delhi: Rare Books, 1972), 2:117, 187; for the prevalence of navigation in the Ganga and Yamuna see also Deloche, *Transport and communications*, 2:19–21.

²⁸ W. Ph. Coolhaas, ed., *Generale Missiven van Gouverneurs-generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 3, 1655–1674 (’s-Gravenhage: Martinus Nijhoff, 1968), 33, Maetsuyker, Hartsinck, enz. VIII, 24.12.1655.

²⁹ Habib, *An atlas of the Mughal empire*, maps 8B and 10B, also pp. 32, 41.

³⁰ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, from Secretary to Governor General and to Secretary General Department, dated 9th September 1832, No. 2, p. 13.

on the Yamuna or to Farrukhabad on the Ganga before putting their goods in boats.³¹ In the early nineteenth century, Walter Hamilton noted that in the doab the stream of the Yamuna is broader and deeper than the Ganga except at one place between Culpee (Kalpi) and Etawah where, particularly in the dry season, the passage becomes difficult because of a bank of limestone. He states that before the British acquisition of the doab, merchants from the western parts used land carriage for reaching Futtehghur where the goods were embarked on boats bound down the Ganga to Allahabad. Hamilton further remarks that the merchants avoided the Yamuna in those parts because of the numerous bands of robbers that lined the banks of the river.³²

To promote navigation, the British administrative paper proposed doing away with the large number of chowkies but to retain five major customs posts on the Yamuna at Karnal, Delhi, Agra, Culpee or Hameerpore (Hamirpur) and Allahabad. The customs post at Mathura could be dispensed with because it was thought that most of the boats passing Mathura were bound down to Agra anyway. The Yamuna also facilitated trade with the towns of western India such as Dholpur. The paper noted that a considerable trade in commodities such as iron, cotton, and cloth passed towards “Dhaulpoor” and “Chumbul.”³³ For the import of commodities from Bengal, Bihar, and Allahabad into the western provinces it was suggested that the examination and endorsement of *rawanas* (orders or permits for the free passage) should be done only at the place of loading and unloading.

The Ganga was navigable from Haridwar where the river entered the plain and Hamilton notes that important towns in the doab were supplied with the merchandise and production of the northern and western countries.³⁴ There were a number of chowkies in the Bareilly, Meerut, Farrukhabad, Allahabad, and Banaras divisions for controlling merchant traffic in the Ganga.³⁵ From another British document of the early nineteenth century, we learn that merchant boats sailed to the upper stretch of the Ganga too. This document urged the governor general to exert his authority to clamp down on the illegal exactions by zamindars and *amils* (revenue officials) from merchants transporting their commodities on the Ganga between Farrukhabad and Allahabad through the Nawab’s territory of Awadh.³⁶ The claims of maladministration

³¹ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 15–16.

³² Hamilton, *A geographical, statistical, and historical description*, 1:295.

³³ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 22–29; There seems to have been trading contacts with central India too as the document states, “The general Trade therefore with Gwalior and the Kora Keerut Sings Country passes through a double line of Chowkies while that from Rajwarra is not stopped till its arrival at the Jumna itself,” p. 29.

³⁴ Hamilton, *A geographical, statistical, and historical description*, 1:450. See also Deloche, *Transport and communications*, 2:19. According to Deloche, in the upper Ganga plain the river was navigable by barges of 18 to 37 tonnes depending upon the season and the flow of the river.

³⁵ BL, APAC, IOR, Board’s Collections, F/4/1506/59052, Fort William the 20th April 1833, pp. 41–47.

³⁶ BL, APAC, IOR, Board’s Collections, F/4/1117/29973, Extract Bengal Judicial Consultations 14 December 1826, pp. 31–36. Farrukhabad, literally “a happy abode,” stood at a little distance from the west bank of the Ganga. It was an important commercial town and the customs duties collected in 1812 and 1813 stood at 252,183 and 194,000 rupees respectively. See also Hamilton, *A geographical, statistical, and historical description*, 1:78, 379.

by the Nawab's officials may be an example of British propaganda against the Nawab's government, but the use of the Ganga for commercial traffic stands out very clearly in this document. Both the British papers discussed above shed ample light on the existence of navigational networks in the rivers through the semi-arid zone of the Ganga plain and they give an indication of how these riverine networks might have been exploited in the pre-British period.³⁷ River navigation was no less conspicuous downriver from Allahabad.

A report on the introduction of steam navigation in the Ganga informs us that the Ganga and Yamuna to the west and south in Hindustan and the Brahmaputra and Meghna to the east the entire country constituted an intricate web of navigable rivers that facilitated trade and traffic.³⁸ Indeed, information on navigation and transport in this zone was handy during the colonial period yet such facilities already existed during pre-colonial times.

In the early nineteenth century, British customs officers were very concerned about merchants' avoidance of paying duty and their "illicit" trade in salt on the rivers. It was reported that the Patna and Tirhut districts imported salt from the "Bullia Pergunnah" in Jaunpur (eastern Uttar Pradesh), which had become a chief depot for the salt imported from the Western Provinces. In Tirhut salt was carried to Hajipur, and then up the great Gandak in order to be distributed throughout the district from different *ghats* (posts on the river-bank).³⁹ While illicit salt was transported to Tirhut and other areas using the navigable channels, the merchandise of Tirhut such as indigo often "floated down the Bugmatee [Baghmata] River to the Moorshedabad Custom House" and skipped paying duties at the Patna customs post.⁴⁰ These examples of illicit salt distribution and indigo transportation show that there existed an extensive web of riverine network north of the Ganga. Although we do not have much evidence for navigation in the rivers discussed above during the pre-colonial period, there is no doubt the merchants of Bihar used these rivers to transport goods to the local towns and port cities in Bengal.

Citing James Rennell, H. T. Prinsep states that in 1780 no less than 30,000 boatmen found their livelihood from navigation, and Prinsep estimated that this number

³⁷ In the doab, areas closer to the Ganga such as Kursat (modern Kursut Buzurg) in Hardoi district of Uttar Pradesh produced cotton textiles and emerged as an important procurement zone for the VOC since the 1630s and for the English Company around the 1650s. Sources are silent on the river communication, but proximity to the Ganga would have certainly played a role in linking these rural areas to important towns, such as Farrukhabad, see Hiromu Nagashima, "Development of periodic markets in the central part of northern India – Especially during the Mughal period –," in *Markets and marketing in north India*, ed. Hiroshi Ishihara (Nagoya/Japan: Nagoya University, 1991), 142–43, Nagashima cites NA, VOC, Collectie Geleynssen, Nr. 75, Dagregister W. Geleynssen, 12.05.1637 and William Foster, ed., *The English factories in India 1655–1660* (Oxford: Clarendon Press, 1921), 70. The area is in the semi-arid zone with the annual average rainfall less than 35 inches. According to Nagashima, these weavers were primarily of peasant background, p. 142.

³⁸ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, n.f. *Reports from Committees*, 678.

³⁹ BL, APAC, IOR, P/111/68, Bihar and Benares Revenue Proceedings (hereafter, BBRP) (Customs), Camp Arrah Zillah Shahabad 31st May 1816, n.f.

⁴⁰ BL, APAC, IOR, P/111/68, BBRP (Customs), Camp Arrah Zillah Shahabad 1st March 1816, n.f.

had at least doubled since Rennell's time.⁴¹ If the qualitative evidence is any guide, we have an early nineteenth century remark about boats congesting the riverbanks for a considerable length at a town in the Bengal delta. A British officer on his way to Patna by river noted, "we broke ground at day break this morning, still tracking, and, in consequence of the vast number of Boats of all sorts, from the dingy to the Wullack, extended along the shore of Culna which is a great emporium of the Burdwan trade of grain etc. and is at least two miles in length, we did not pass it till about 7 a.m."⁴² This evidence indicates substantial boat traffic even in smaller towns such as Khulna in the delta.⁴³ Apart from the towns in the delta the hinterland of Bihar was also frequented by fleets operated by the European Companies.

The Pattenase Togt, or Journey to Patna

The journals kept by the Dutch captains during their river travel between Patna and Hugli constitute the invaluable genre of sources to visualize the rhythms of traffic on the Ganga during the first half of the eighteenth century. The data found in these journals provide fascinating details not only about navigation but also the general political and security related issues. These journals mention the locality of toll posts on the riverbanks when the fleet passes through them. Information on weather, cyclones, and the problems of navigation are minutely entered into the journal. From these, it seems that the Dutch experience might not have been radically different from that of other Asian or European groups on similar voyages in the Ganga, especially in terms of the boats used, hazards of navigation, exploitation of the winds and river currents, and so on.

The Dutch were regularly sailing the Ganga by at least the mid-seventeenth century, when they established their Patna factory. Around 1670, at the time of the ship's surgeon and draftsman Nicolaus de Graaff's trip, the number of boats in such fleets appears to have been rather modest, twenty boats in all.⁴⁴ Seventy years later the number of boats in the fleet increased, sometimes reaching upwards of 150 boats, and every year the fleet made two round-trip voyages between Hugli and Patna, a clear

⁴¹ BL, APAC, IOR, P/12/37, Fort William 15th August 1828, n.f.; *Reports from Committees*, p. 677. For the Mughal period, it has been estimated that there were more than 200,000 boatmen on the river route between Delhi and Bengal. See C. A. Bayly, "Knowing the country: Empire and information in India," *MAS* 27:1 (1993): 8. Bayly cites Hameeda Khatoon Naqvi, *Urban centres and industries in upper India, 1556–1803* (Bombay: Asia Publishing House, 1968).

⁴² BL, APAC, IOPP, Mss. Eur. E271, Journal (anonymous author) of a voyage up the river Ganges to Patna, 1821, p. 12.

⁴³ Such heavy traffic of boats at Khulna, which probably constituted a third rung town, is noteworthy. The towns of the first rung were Calcutta, Dhaka, Murshidabad and Patna. Those of the second rung included Chittagong, Midnapur, Munger, Purnia, Rangpur and Sylhet, see Mukherjee, "Of rivers and roads," 28.

⁴⁴ Nicolaus de Graaff, *Reisen van Nicolaus de Graaff, na de vier gedeelten des werelds, als Asia, Africa, America en Europa: behelsende een beschryving van zijn 48 jarige reise en aanmerkelykste voorvallen, die hy heeft gesien en die hem zyn ontmoet.... als ook een nette, dog korte beschryving van China.... hier agter is by gevoegd d' Oost-Indise spiegel, zynde een beschryving van deselve schryver van geheel Oost-Indiën* (Hoorn, 1701), 91.

indication of the VOC's growing commerce in Bihar and of the region's capacity to meet the Company's growing demands. In the following paragraphs I shall describe the organization of the Dutch fleet as gleaned from the *instructie* or instructions given to the captains and crew.

The Hugli Council periodically issued the captain of the Patna fleet a document called *instructie*, or instructions about river navigation and especially the precautions to be taken. Generally, the *instructie* was issued only to a new captain taking charge of the fleet for the first time. Additions and changes to the *instructie* were generally modest, as a comparison of the documents issued to Capt. Jacob Willem van den Brughen in 1730 and to Lieutenant Captain Jan Geldsack in 1734 shows.⁴⁵ These two instructions hardly differ from each other except in the name of the captain and prominent crew to whom the document was addressed. There were a number of guidelines to which the captain and crew of each fleet were ordered to adhere. It is interesting to note some of the guidelines issued by the Hugli Council in the *instructie*.

Particular emphasis was put on the order in which different boats were arranged in the fleet: "When you have boarded the fleet with all your crew, you have to start your journey in the name of God, having placed the vessels with merchandise, ammunition and supply in good order in the middle of the escort."⁴⁶ Clearly, safety of the cargo and weaponry was the foremost concern. The captain of the fleet was instructed to set sail without delay and to proceed without making unnecessary stops, as was the practice of English and indigenous merchants. Weather permitting, each day they were to sail at daybreak and continue the journey until half an hour before sunset. Afterwards, they were to halt at a place determined by the *darogha* (overseer or superintendent, or head of any department).⁴⁷ The service of the *darogha* was crucial for ensuring the safety of the fleet. Being from the local society, he knew best where to stop the fleet for the night. The *darogha* sailing with van den Brughen was Kesari Singh, whose title suggests his Rajput or Bhumihar identity. The *darogha* was not the only one from the local society. Among the crew and soldiers there were many indigenous people on the boats and the captain was instructed to ensure that no one,

⁴⁵ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," signed by Jacob Sadeliijn at Hugli on 23.08.1730, p. 1046. Pp. 1046–80 contain the instructions given to Jacob Willem and the crew of the Patna fleet in the year 1730. For the instructions of the year 1734 see NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den manhaften Capitain Luijtenant Jan Geldsak," signed by J.A. Sichterman etc. at Hugli on 10.09.1734, pp. 694–748; NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den vaandrig Jan van Ingen vertrekkende althans, met een Corps militaire voor aff na Pattana," signed by J.A. Sigterman [spelt differently] at Hulgi on 21.07.1734, pp. 679–689. For similar instructions compare those issued to Jacob van der Helling and other crew of the Patna fleet in 1729, see NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, "Instructie voor den Manhaften Luijtenant Commandant Jacob van der Helling," signed by Jacob Sadeliijn at Hugli on 01.09.1729, pp. 195–230.

⁴⁶ NA, VOC, Inv. Nr. 8777, From Hugli to Batavia 30.11.1734, "Instructie voor den manhaften Capitain Luijtenant Jan Geldsak," p. 701: "Waneer uE dan [zijn?] met alle de manschapp in de vaartuijgen gestapt zijn zullen uE de reyse met goed ordre plaatsend de negotie ammonitie provisie vaartuijgen in't midden van het escorte in godes Name aanvangen."

⁴⁷ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1047–48.

particularly Europeans, board the boat where their food was prepared because if a European touched their food, they would throw it into the river and desert the fleet.

Wherever the fleet stopped, it created an opportunity for local petty traders to sell foodstuffs and otherwise cater to the needs of the people on the boats. The captain was enjoined to ensure that his crew and soldiers not behave in a hostile manner and that they use no violence against the “blacks” or take goods without paying for them. Such acts would create problems not only with the small traders but also with the authorities. The traders would stop coming to the fleet with the foodstuff, which might hamper efforts to provision the fleet, causing great inconvenience.⁴⁸ Clearly, all these points suggest a fair degree of interaction between the Dutch fleet and local people along the Ganga. But interactions with indigenous boats sailing on the Ganga could be a source of difficulty too. Therefore, the captain was warned not to allow strange boats to join the convoy, which might create issues with the customs officials or jeopardise the safety of the Company’s goods. Furthermore, the captain was ordered not to let his crew or soldiers buy any slaves.

The Patna fleet was generally divided into two *smaldelen*, or fleets, both of which made one round-trip voyage in the second half of the year when the Ganga swelled. The first *smaldeel* left the Dutch factory at Hugli for Patna in July/August and the second left no later than September. For the upriver journey to Patna, the fleet benefited from the eastern winds that prevailed during these months. For the downstream voyage, the Hugli Council expected that both fleets should return to Hugli by the end of November, when the eastern winds slackened. Keeping to this time frame, the fleet of Samuel Martinus left Hugli on 15 August 1728 and reached Patna on 2 October, a passage of about 800 kilometres in more than six weeks. For the downstream journey, the fleet left Patna on 10 November and arrived at Hugli eleven days later.⁴⁹

Normally a fleet consisted of between twenty-five and fifty vessels of various kinds, although sometimes the number of boats was over a hundred. The sailing journals, which are in the form of a *dag register* or diary, and the instructions issued to the captain of the fleet, give the number of boats and crew of the fleet. In 1729, an instruction letter given to Jacob van der Helling mentions 114 boats in the fleet. Among the crew and soldiers, 312 were European and the local employees, including soldiers, numbered 46. Since the general practice was to hire the boats from local boatmen, the number of rowers and indigenous steersmen is not specified. It is further reported that the number of Europeans was 34 less than the previous year. The edited source *Generale Missiven*, however, gives a figure of 157 boats with 344 European military in

⁴⁸ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, “Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen,” pp. 1048–49.

⁴⁹ NA, VOC, Inv. Nr. 8760, From Hugli to Batavia 18.12.1728, “Dagregister gehouden door den Capitain Samuel Martinus Hogerwerf, gedurende den optogt naar Pattena in het Jaer 1728,” signed by Samuel Martinus Hogerwerf at Hugli on 21.11.1728, entry of 14.09.1728, pp. 33–66.

a fleet going upriver to Patna in 1731.⁵⁰ In 1734, Jan van Ingen commanded 33 boats and the same year, Jan Geldzak sailed to Patna with 49 boats.⁵¹ The instructions of 1734 mention 79 Europeans and 17 indigenous employees on a fleet of 33 boats. Among 79 Europeans, there were 59 soldiers or *gemeene soldaten*, and among 17 indigenous, there were 6 “*pions*” (used as local informants, messengers or militia) and one darogha. In the same year another larger fleet with 63 boats had 109 Europeans, including 83 soldiers, and 44 indigenous servants, 18 of whom were soldiers.⁵² We do not have a clear idea as to where in Bihar these boatmen, pions, and soldiers were recruited. However, it was feared that if the European crew and soldiers harassed the boatmen they might desert the boats and run toward the land.⁵³

The journals include some casual remarks about where boats were built. In the delta, “Bagorganjs” (Bakarganj?) is mentioned as a great centre for indigenous boatbuilding where a great number of big and small boats were built throughout the year. Here one could also purchase the required materials for the building of indigenous barks. Lubertas Vermeer, the captain in charge of surveying the delta to find the new

⁵⁰ J. van Goor, ed., *Generale Missiven van Gouverneurs-Generaal en Raden aan Heren XVII der Verenigde Oostindische Compagnie*, vol. 9, 1729–1737 (’s-Gravenhage: Nijhoff, 1988), 380, Dirk van Cloon II, 08.12.1732: “Bij heen- en terugtocht was de vloot verdeeld in twee smaldelen. Heen stond hij onder commando van kapitein Van der Bruggen en het nieuwe opperhoofd van Patna Nicolaas de Munt, terug onder dezelfde kapitein en het oud-opperhoofd Gerardus Pelgrom. De vloot omvatte op de heenweg 157 vaartuigen onder escorte van 344 Europese militairen en was voorzien van 6000 ropia reisgeld; terug 33 vaartuigen (12 pattalas en 21 oulaks).” (On the onward and return journey the fleet was divided in two parts. Captain Van der Bruggen and the new chief of Patna, Nicolaas de Munt, commanded the fleet on its onward journey and during its return voyage it was under the same captain and the outgoing chief, Gerardus Pelgrom. The onward going fleet consisted of 157 boats and 344 European military and was provided with 6000 rupees as travel cost. The returning fleet had 33 boats (12 [pattalas] and 21 oulaks).

⁵¹ NA, VOC, Inv. Nr. 8776, From Hugli to Batavia 25.03.1734, “Journaal oft dagregister gehouden bij den Lijutenand Jan Geldzak van Bankenesse Ao: 1733,” signed by Jan Geldzak van Bakenesse [spelled differently] at Hugli on 08.02.1734, entry of 22.07.1733, p. 786 for Jan Geldzak’s fleet consisting of forty-nine diverse types of boat; NA, VOC, Inv. Nr. 8778, From Hugli to Batavia 10.03.1735, “Journaal oft dagregister gehouden bij den vaandrig Jan van Ingen anno 1734,” signed by Jan van Ingen at Hugli on 10.09.1734, entry of 22.07.1734, see p. 485 for Van Ingen’s fleet consisting of thirty three boats; NA, VOC, Inv. Nr. 8777, “Instructie voor den vaandrig Jan van Ingen,” p. 688 and NA, VOC, Inv. Nr. 8777, “Instructie voor den manhaften Capitain Lijutenant Jan Geldsak,” p. 746 for another fleets of boats in 1734.

⁵² NA, VOC, Inv. Nr. 8777, “Instructie voor den vaandrig Jan van Ingen,” p. 687 and “Instructie voor den manhaften Capitain Lijutenant Jan Geldsak,” pp. 744–46.

⁵³ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, “Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen,” p. 1048. “Ook sullen uE alle de Europeanen ten scherpsten dienen te verbieden de inlandse stuijrlieden ende roeijers der vaartuijgen geene de minste molesten aandoen met slaan stooten ofte wel met hen te steuren en aan te raken in het koken harer potjes dewijl sulx gedaan werdende zijlieden en insonderheijd de heijdenen volgens haren godsdienst dat eeten met [niet?] te moogen nuttigen maar genoodsaakt zijn het selve weg te werpen tot hare droefheijd en schade behalven dat als dan ook te dugten sij niet alleen dat sijl: gelijk se bij de Engelsen weergedaan hebben, de vaartuijgen verlaten en landwaards in vlugten sullen.” (Also Your Honor will strictly prohibit the Europeans (crew and soldiers) from molesting by hitting and disturbing the local boat-steersmen and rowers and by touching the cooking pots. If they have food touched by the Europeans, particularly the heathens (Hindus), according to their faith will not suffer to eat that food but would be compelled by grievances to throw that away. We have also to fear that they will leave the boats and take flight towards land, as they did with the English again and again.)

navigable channels and routes through the Sundarbans to Patna, had anchors and ropes made in Bagorganjs. It is not clear from Capt. Vermeer's testimony whether Bagorganjs built only riverboats or whether the workforce could also build vessels for long-distance sea trade.⁵⁴ Another report, "Memoritje van alle zodanige Vaartuijgen," or the report of the boats used by the VOC in the Bengal directorate, lists the types and sizes of the small number of boats employed by the Company on the Ganga.⁵⁵

Between Hugli and Patna there were many halting places where the Mughals or local chiefs had established chowkies. These included, between Hugli to Rajmahal, Aziemgens, Morcia, Nerangaabad and Dobera.⁵⁶ Beyond Rajmahal, the most important places were Sakrigali, Gangapoursaat, Schabaad (or Shahabad), Chanda, Tjyndpour, Jahangeera, Munger, Singia, Laalpour, Surajgarha, Rouanella (or Ruwanalla), Derriapour, Nawada, Fatuha, and Patna. Shipwrecks were not uncommon, and at places such as Sakrigali, Gangapoursaat, Jahangeera, Munger, and Ruwanalla, there were difficulties in taking the boats across because of the shallow waters, sandbanks, and strong currents. Apart from these, there were innumerable unnamed islands and shallows that posed further difficulties for navigation.

The Dutch sources include many references to accidents and loss of cargo while sailing in the river. Navigation on the Ganga was not free from hazards. Reefs, sandbanks, shallow water, and strong water currents posed threats to the boats. Danger always lurked, and boat-wrecks occurred quite frequently in the Ganga. However, after reading selected sailing journals it appears that major incidents involving shipwreck occurred mainly on the upstream journey, the downstream journey being comparatively smooth with fewer incidents reported.

At Sakrigali, a strong current posed a serious threat to boats sailing upriver. Here, the boats had to be taken to another bank by crossing the currents of the channel and this was done by pulling the boats across with a rope. The same procedure was often repeated at Barari near Bhagalpur, where the Chandan River enters the Ganga giving additional force to the stream and making navigation that much more hazardous.⁵⁷ Junctions of rivers such as the Bur Gandak in Munger and the Kiul at

⁵⁴ NA, VOC, Inv. Nr. 8772, From Hugli to Batavia 05.03.1733, "Daghverhaal van de Reijse met 's E Compagn: Chialoupen en Bassura als eenige Oulacken, bevracht met Militaire Manschappen tot convoij en Ze[e?]varende Perzoonen, tot opsight over de Artelerij dienende voor de Pattenase Toght," signed by Lubertus Vermher at Hugli on 5.01.1733, entries of 15, 16, 17 and 18.12.1732, pp. 1469–71. An early nineteenth-century source talks of the woods in Bengal that ensured "an inexhaustible supply of timber for fuel, boat-building, and other purposes." See *The London encyclopaedia, or universal dictionary of science, art, literature, and practical mechanics*, 21 vols. (London, 1829), 21:410.

⁵⁵ NA, VOC, Inv. Nr. 8762, From Hugli to Batavia 08.11.1729, "Memoritje van alle zodanige vaartuijgen als er in dese Directie," signed by C. de Wind at Hugli on 01.10.1729, p. 267.

⁵⁶ NA, VOC, Inv. Nr. 8765, From Hugli to Batavia 30.11.1730, "Instructie voor den Manhaften Capitain D: E Jacob Willem van der Brughen," pp. 1059–60.

⁵⁷ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luytendan Jan Geldzak," for the strong river current below Sakrigali, see the entry of 08.08.1733, p. 791. For difficulties in getting the boats across the river near Barari, see the entry of 18.08.1733, p. 797: "Met den light moest ik even boven Barrarij alle vaartuijgen met drie touwen onder kragt van volk door een zeer sterke stroom laten

Surajgarha created difficult points for the riverboats to get across. Between Sakrigali and Bhagalpur, sandbanks in the river posed threats to the safety of boats. When Lt. Jan Geldzak travelled upriver in August 1733, one of the merchant boats of the fleet was wrecked due to the current along the channel near Shahabad above Sakrigali. Sergeants Herman Velting and Cornelis van Aken and the darogha, who were sailing behind the wrecked boat, told Geldzak that the *manjhi* (boat-captain), Ramoth, had handled the boat carelessly and because of that it drifted along the strong current and got wrecked at a sandbank near the shallow waters. Geldzak informed the Patna factory officials that some merchandise such as pepper, mace, and cinnamon was washed away in the incident.⁵⁸

Apart from the dangerous streams, the cyclonic weather and storms formed yet other sources of navigational hazards. The monsoon weakens in September and October, but this is the season of periodic cyclones and storms that pose additional threats to boats. A major shipwreck was reported on 20 October 1730 at Rouanella when a fleet under Jacob van Helling was only a few kilometres from Patna. Cyclonic winds and rain and the resulting strong currents destroyed almost all the boats.⁵⁹ During this turbulent weather, it is reported, the British, with their hundred or so merchant- and military-boats, along with three treasure-boats, stayed put between Jangiera (Jahangeera) and Coedercatta. Whether they sustained any damage is not reported.⁶⁰

Reefs posed another threat to the boats. There were reefs along Sakrigali, Bhagalpur, Jahangeera, and Sitakund near Munger where outcrops of southern hills encroached upon the Ganga. In the course of the journey, sounding the water was a routine practice and after ascertaining the depth of the *canael*, or channel, the fleet advanced. Soldiers and the darogha were regularly employed for this purpose and they used to sail ahead of the fleet with some *pollewaers* (*pulwar*, a type of boat) and report the river conditions to the fleet captain. Sometimes other problems occurred. Near Gangaprasad, it was reported in October 1734 that the channel of Terriagully had become unnavigable due to the floodwaters from the mountains as also by the whirlpools and the washing away of some corners/banks. Therefore, some pions were sent to explore another route through the Purnia's territory.⁶¹

slepen." (In order to cross the very strong current above Barrarij, at sunrise I had to get all the boats dragged by the men using three ropes.)

⁵⁸ NA, VOC, Inv. Nr. 8776, "Journaal oft dagregister gehouden bij den Luitenant Jan Geldzak," entry of 12.08.1733, p. 793–94.

⁵⁹ NA, VOC, Inv. Nr. 8762, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," entry of 20.10.1729, pp. 78–79.

⁶⁰ NA, VOC, Inv. Nr. 8762, "Journaal in form van een dagregister gehouden door den Luitenant Commandant Jacob van der Helling," entry of 25.10.1729, p. 83.

⁶¹ NA, VOC, Inv. Nr. 8778, From Hugli to Batavia 10.03.1735, "Journael of dagregister gehouden bij den Capitain Luitenant Commandant Jan Geltsak van Baknesse Anno 1734/35," signed by J. Geltsak van Baknesse at Hugli on 4.03.1735, see the entry of 05.10.1734, pp. 508–9: "en ontfang verders berigt van de uitgesonden water pijlers dat de spruijt van Telijagerrij oft Gangapoursaat soo door het sterke afvliedend waeter uijt het gebergt gemengd med swaare draaij kolken als mits het weg spoelen van eenige hoeken voor de presente tijd daardoor onbevaarbaar was geworden." For the rocks of Jahangeera, the cause of several accidents in the Ganga, see De Graaff, *Reisen van Nicolaus de Graaff*, p. 95.

In the eighteenth century, it was in these troubled waters that zamindars began to assert on the river traffic and demanded “customs duty” from the merchants transporting their goods. As the Mughal authority became practically ineffective along the Ganga, the zamindars began to augment more resources in their hands. Also, on account of profits gained from the cash crops, mineral and forest products from the adjoining hills and jungle, some zamindars were able to mobilize large resources. In order to appreciate these political processes, it is important to underline the pivotal role of the Ganga in facilitating the trade and transportation of commercial goods produced in the areas controlled by the zamindars.

Rhythms of Production and Transportation around Patna

In a normal monsoon year in the Ganga plain, two crops, i.e. autumn or *kharif* and winter or *rabi*, were produced as we noted in Chapter 2. Marketable winter crops included wheat and oilseeds, which were harvested in April-May. Autumn crops such as paddy, cotton, and sugarcane, which could be ready from December-January, were sold in the local markets in the subsequent months. Since the commodities produced from these autumn crops could be stored and preserved for several months or more, peasants and local merchants waited for a better price for their goods, usually until the second half of the year when communication by rivers eased. During the winter and spring, the Himalayan glacier did not melt to any significant degree and thus the river streams continued to be weak until the summer monsoon. At the onset of the summer monsoon when river traffic eased, it offered relatively smooth communication to the market towns and the marketable crops could fetch an even better price from the merchants trading in relatively distant markets.⁶² The Dutch Patna fleet, as we shall see below, started to operate during the summer monsoon as it was then easy to navigate the swollen Ganga. During the first half of the year and until the monsoon, the Dutch and other merchants at Patna could purchase and store their merchandise to be shipped to Bengal from July/August onward.

Thus, it appears that the rhythms of navigation and the traffic in the river closely followed the rhythms of production and trade. For example, as Anand Yang has shown, in the nineteenth century one of the main winter or *rabi* crops of Bihar (harvested in March-April) such as oilseeds dominated the commercial traffic to Calcutta from July throughout the monsoon and even during later months. During this period, oilseeds and rice together constituted more than half of the traffic on the Ganga. Furthermore, while ghee, indigo, sugar, hides, wheat, saltpetre and oilseeds flowed downstream, commodities such as rice, opium, and tobacco made up the bulk of the traffic bound upstream beyond Patna towards the north-western provinces.⁶³ Another indication of the voluminous river trade comes from a petition written on 30 June 1816

⁶² Kumkum Chatterjee, *Merchants, politics and society in early modern India: Bihar, 1733–1820* (Leiden: Brill, 1996), 52–53.

⁶³ Anand A. Yang, *Bazaar India: Markets, society and the colonial state in Gangetic Bihar* (1998; repr. New Delhi: Munshiram Manoharlal, 2000), 30.

by seventeen Bihari merchants seeking an exemption from having to take the rawana at Patna. From this petition we know that they used to purchase mustard seeds, linseed, ghee, mutter (peas?), cloth, among other things, in Tirhut, Bhagalpur and Purnia districts and took their merchandise on the Ganga to Murshidabad for sale. The petition claims that these seventeen merchants paid one hundred thousand rupees every year as customs duty at the Murshidabad customs house where they also took the rawana. But the new regulation required them to take the rawana at Patna causing the merchants some inconvenience. The trade plied by the local merchants appears to have been large. The customs rate was normally 5 percent, so a payment of one hundred thousand rupees means that the total value of trade of these seventeen merchants was two million rupees, or two hundred thousand pounds sterling. This suggests that rich commercial traffic linking the interiors of Bihar suba existed with the large markets such as Murshidabad and Calcutta in the Bengal delta.⁶⁴ There were of course other merchants carrying out similar trade from Bihar and this commercial traffic would have existed during the previous centuries also.

In the eighteenth century, however, textiles, opium, and saltpetre were important commodities for the Dutch Patna fleet and their production rhythms were synchronized with the traffic rhythms in the Ganga. Cotton was a rabi crop harvested by December–January at the latest (although considerable quantities of cotton were brought from western India). Afterwards, the moist winter weather was more suitable for processing the raw cotton to make threads and for weaving. Thus the bulk of the textiles were ready for sale in the Patna market well before the arrival of the monsoon. Similarly, poppy being a rabi crop, its finished product (opium) entered the market from May/June and the sale of the commodity matched the traffic rhythm perfectly. Bihar also produced a prodigious quantity of saltpetre, a kind of salt that was the chief ingredient for manufacturing gunpowder. Towards the end of the rainy season the salt evaporated and crystallized on the surface of the land. The entire procedure from collection of the white substance from the earth's crust to refining it for sale commenced during the winter season and the commodity was ready to be shipped before the dispatch of the Patna fleet.

The Dutch merchants' *Pattenase Togt*, or voyage to Patna, underlines the significance of the linkages between the productive hinterlands of Bihar and the maritime economy of Bengal. These voyages by the Dutch and other merchant groups commercially integrated the hinterlands of Bihar with the more extensive maritime trade. Such integration of markets and the influx of bullion had important implications for the economy and polity of Bihar, as we will see in the next chapters. And at the centre of all these activities, the Ganga as a navigable trade route played a pivotal role.

We have seen above the transportation of merchandise through an intricate web of navigable channels in the Ganga plain. While the rivers propelled the economic

⁶⁴ BL, APAC, IOR, P/111/68, Behar and Benares Revenue Proceedings (Customs), Camp Culwar Zillah Shahabad, 3 August 1816, n.f.

activities they were no less important in the political processes of the region. The northern part of the Ganga was intersected by a number of Himalayan rivers which provided water for irrigation and most of the rivers were perennially navigable. By contrast, the rivers to the south of the Ganga hardly offered any navigation and hence the southern regions were integrated politically and economically mainly by overland routes. By the eighteenth century, the Mughal state had become weak for a variety of reasons and was unable to collect tribute from the chieftains. Strategically located along the Ganga, particularly at places where the hills and jungle approached the river, the zamindars successfully defied Mughal authority. As I shall show in Chapter 7, Mughal control over the Ganga and overland trade routes were increasingly infringed upon and zamindars and warlords appropriated many of the profits from the customs and duties levied on the merchants passing through the Ganga or overland routes.

In the above paragraphs I described the Ganga River system, navigation, and interactions between the people and resources of the semi-arid and humid zones. By linking the hinterland of Bihar with the maritime zone in the delta, the Ganga reoriented the regional economy toward the sea and connected two different ecological zones. In the age of maritime commerce the overseas demands for merchandise of Bihar brought more liquid money into the region and propelled the growth of the commercial economy. Boost to the commercial economy also came through the overland routes of the Ganga plain.

Section II: Roads

Cost-effective though they were, the rivers were not the only means of communication along the Ganga plain. The seasonality and hazards involved with river navigation often left merchants no alternative than to use overland routes. While rivers formed an intricate web of communication especially in the wet season, during the dry months the overland routes facilitated the movement of pilgrims, merchants, and military forces. As we noted above in the case of Farrukhabad and Mathura, at many places the overland routes complemented the river routes. Perhaps the Uttarapatha was the most ancient and recognisable overland route linking the Ganga plain with northwestern India and Central Asia. The Turko-Afghan conquerors reached the Ganga plain following the same ancient route, and it became the primary land route of the Mughal Empire and, later still, the Grand Trunk Road of the British Raj.

What explains the remarkable longevity of this land route? People select a route by giving close consideration to the natural and geographical factors, and as Lucien Febvre points out, the existence of a network of routes is not possible without active and earnest co-operation between nature and humans.⁶⁵ Even many contemporary Indian railways and highways are laid down along routes used since antiquity. In

⁶⁵ Lucien Febvre, *A geographical introduction to history*, in collaboration with Lionel Bataillon, trans. E. G. Mountford and J. H. Paxton (London: Kegan Paul, 1932), 316.

consequence, these routes can help us identify the historical geographic factors that necessitated their alignment and continuous use. We might ask, for example, what logistical needs encouraged people to favour one route over another. In the pre-automobile age, animals were widely used as beasts of burden and pullers of carts. As an automobile requires refuelling, so do animals, the availability of fodder along the route must have always been a requirement for a practical route. Furthermore, a road cannot cut across dense jungle, which makes the movement of animals and carts difficult and hides threats from predatory animals and bandits. Routes therefore developed more easily along the margins of agriculturally fertile tracts as well as along the uncultivated riverbanks where obstacles were relatively few and food, water, and fodder could easily be obtained. In the following paragraphs I discuss the major trunk routes of the Ganga plain and describe the ecological zones they crossed and connected. After describing the routes of the Ganga plain, I will zoom in again to the transitional zone in Bihar. By describing the overland route systems of Bihar I examine the interactive relations between different ecological areas. As we saw in Chapter 2, such interactions proved crucial for economic growth and state formation in the past. In the early modern period, their importance for the economy and polity was unmistakable.

The Great Northern Road

We have already discussed the early migratory routes along the Yamuna and Ganga rivers and through the Ganga plain. These routes were found on the border between dry and humid zones. The great northern road linked the entire Ganga plain with the northwestern parts of the Indian subcontinent. On the basis of Buddhist sources, Eggermont suggests that the northern road ran from Taxila to Mathura, which was a junction of four crossroads. One road branched off towards Ujjain, following the Yamuna. Those travelling to Pataliputra (Patna) might follow the eastern bank of the Yamuna until Prayag where they followed the northern banks of the Ganga. In the doab an alternate route followed the western banks of the Ganga via Samkassa and Kanyakubja before it reached Prayag.⁶⁶ In the third century BC, Megasthenes described the Mauryan highway connecting the northwest to Pataliputra through Mathura.⁶⁷ Kharosthi-Brahmi inscriptions of the early centuries AD from the delta and also from Chunar, to the west of Banaras, likewise attest to the northwestern overland communication through the Ganga plain.⁶⁸ During the Kushana period, the northern road and parts of Central Asia came under the suzerainty of a single empire. As a result of the political and administrative unification under the Kushanas, the northern road of the Ganga plain became an important extension of the Silk Road. These developments

⁶⁶ P. H. L. Eggermont, "The Murundas and the Ancient Trade-Route from Taxila to Ujjain," *JESHO* 9:3 (1966): 293–94.

⁶⁷ Himanshu Prabha Ray, "Early historic trade: An overview," *IESHR* 26:4 (1989): 439. For the long routes connecting Pataliputra to different towns and ports, see Prakash Charan Prasad, *Foreign trade and commerce in ancient India* (New Delhi: Abhinav Publications, 1977), 70–71.

⁶⁸ Ranabir Chakravarti, "Relationships and Interactions in the Economic Sphere," in *A social history of India*, ed. B. D. Chattopadhyaya (New Delhi: Pearson Education India, 2009), 146.

had a positive effect on long-distance trade and it has been suggested that some commodities such as bamboo from Yunnan passed along the northern road of the Ganga plain en route to Bactria.⁶⁹ Recent research by Bin Yang and Sun Laichen sheds additional light on the overland connections between Yunnan and mainland Southeast Asia and South Asia.⁷⁰ However, we do not know the extent to which commodities circulated between southwestern China and the Ganga plain.

During the Mughal period, the alignment of the ancient Uttarapatha underwent a little modification. In the northwest, the Mughals diverted the old route away from the Himalayan foothills and linked Rawalpindi and Peshawar with a route oriented more towards the Indus plain downstream. They controlled this route from their strategic forts at Atak on the Indus and Rohtas on the Jhelum. Between Rohtas and Lahore, the Mughal route ran across the plains of the Jhelum, Chenab, and Ravi Rivers, while from Lahore to Ambala, in the Punjab, the route shifted more towards the Shiwalik Hills and crossed the Bias and Sutlej Rivers upstream. This route previously linked Lahore and Panipat through the relatively dry and well-drained areas of Bhatinda and Karnal, as the eleventh-century Arab geographer and traveller to India, Alberuni, informs us.⁷¹

After the eleventh century, the northwestern route was re-oriented towards the Indus plain, possibly because that route would have been more practicable for cavalry and dromedaries (a recent introduction in the Indian subcontinent) than one that skirted the foot of the mountains. Food, water, and fodder were easily available and the route through the plain could be more easily controlled from forts such as Atak and Rohtas (not to be confused with the Afghan stronghold of the same name in southern Bihar) while the route through the foot of the mountains was often vulnerable to attacks from the hill tribes.

The shift from the Lahore-Panipat to Lahore-Ambala route in the post-eleventh century period is more difficult to explain. If we believe the data for the Medieval Climatic Anomaly (900/950 to 1250/1300), it probably would have been relatively moist when Alberuni visited India.⁷² A more propitious rainfall and the availability of fodder and food along the plain between Lahore and Panipat would make that route system more feasible. When the rainfall diminished after the thirteenth century, this

⁶⁹ Moti Chandra, *Trade and trade routes in ancient India* (New Delhi: Abhinav Publications, 1977), 2.

⁷⁰ Bin Yang, "Horses, silver, and cowries: Yunnan in global perspective," *JWH* 15:3 (2004): 281–332. Yang has brought into focus the route he calls the Southwest Silk Road. He has also given the alignment of overland routes linking Yunnan to mainland Southeast Asia and South Asia. See also Sun Laichen, "Military Technology Transfers from Ming China and the Emergence of Northern Mainland Southeast Asia (c. 1390–1527)," *JSAS* 34:3 (2003): 504–6. Laichen has briefly reflected on the military contacts between the northeastern parts of India and mainland Southeast Asia and China.

⁷¹ Alberuni, *Alberuni's India: An account of the religion, philosophy, literature, geography, chronology, astronomy, customs, laws and astrology of India about 1030*, ed. Edward C. Sachau, in 2 vols. (London: Kegan Paul, 1920), 1:205–6, 211. See also Deloche, *Transport and communications*, 1:32–36, see map facing p. 38 for the alignment of route during Alberuni's travel.

⁷² Victor Lieberman and Brendan Buckley, "The Impact of Climate on Southeast Asia, circa 950–1820: New Findings," *MAS* 46:5 (2012): 1056–66; see also Ashish Sinha, et al., "A global context for megadroughts in monsoon Asia during the past millennium," *Quaternary Science Reviews* 30 (2011): 47–62.

route shifted more towards the foothills and crossed the Bias and Sutlej Rivers. Another factor may have been the rise of the Bhattis—Rajputs, Jats and other groups—who from the eleventh century onward emerged as formidable and well-armed horse-breeders in the Lakhi jungle and subsequently threatened the security of the Lahore-Panipat route.⁷³

The Mughal trunk route followed the western banks of the Yamuna from Ambala to Agra, where it crossed to the eastern banks before continuing on to Allahabad. Subsequently, the route followed the northern banks of the Ganga to Banaras where it again crossed the river and led through Mughal Sarai, Sasaram, and Daudnagar to Patna. Throughout its length from Ambala to Patna in the Ganga plain, the trunk route kept to the drier areas and followed the watercourse. This segment of the trunk route largely remained unchanged since the first millennium BC. Thus, the geo-logistics along the Uttarapatha in the Ganga plain guided migrants, travellers, and merchants to the southeast. We have already discussed the Indo-Aryan speakers' migration along this route in Chapter 2. From the first millennium BC to well until the early modern period, when caravans of pack animals, bullock carts, and horses tread the great northern road, the same riverbanks of the Yamuna provided food, water, and fodder to merchants and armies and their animals. The road through the semi-arid marches along the Yamuna was within easy reach of the resources of the fertile agricultural tracts that lie to the east and also the pastoral resources from the semi-arid zone to the west. Thus, the great northern road also became a critical feature for the processes of state formation that unfolded over the course of two millennia or more. Below I focus more on the transition zone of the Ganga plain along the trunk road. I shall examine the extent to which the dynamics of route systems described in the above paragraphs inform our understanding of the historical processes in the eastern tract of the Ganga plain. It is obvious that the Trunk Route along the Ganga in Bihar passed through the intersecting margins of fertile agricultural fields to the north and the drier areas to the south.

The Grand Trunk Route

From Patna to Rajmahal the old Trunk Route (I shall call it the Ganga Route) along the banks of the Ganga covered a distance of about 320 kilometres.⁷⁴ A physiographic overview of this route enables us to understand its significance for state-builders, merchants, and travellers. The northern fringe of the Chhota Nagpur Hills paralleled the Ganga from Kiul to Rajmahal and at many places this route is sandwiched between the river to the north and the hills to the south. There are many narrow passes of great strategic significance along this route. For example, in Munger the distance between the hills and the Ganga is little more than two miles, while at places like Sakrigali, Teliagarhi and Udhanala (this last one after Rajmahal) the passes are narrower still; in

⁷³ J. J. L. Gommans, "The silent frontier of South Asia, c. A.D. 1100–1800," *JWH* 9:1 (1998): 17–20.

⁷⁴ BL, APAC, IOPP, Mss. Eur. Orme OV 134, p. 185.

the past they proved to be of great military and strategic importance in blocking the passage of hostile armies coming from either the west or the east.⁷⁵ From “Siclygully” the Ganga Route reached “Terriagully” and then “Shawabad.” From Shahabad one branch followed the Ganga to Pointy while another branch took a strait route to “Colgong” (Kahalgaon), thus avoided Pointy and the semi-circular curve of the Ganga.⁷⁶ Logistically speaking, this route lay in close proximity to sources of food and fodder. The grassland along the banks of the Ganga provided excellent grazing for cattle, horses, and other beasts of burden, which could easily be fed while on the march with armies or in the caravans of *banjaras*, or traders.⁷⁷

However, references to caravans of pack animals transporting goods between the delta and the Ganga plain via this overland route are hard to come by. The obvious explanation seems to be the cost effectiveness and relative ease of navigation on the Ganga in transporting bulk goods. Therefore, riverboats made the caravan traffic rather uneconomical. Instead, references to the strategic importance of the Ganga Route come more frequently. For example, the eighteenth-century Jesuit missionary Joseph Tieffenthaller called the Teliagarhi Pass on the Ganga Route the “key to Bengal.” At this pass, east of Bhagalpur, the distance between the riverbank and mountain is about three quarters of a mile and even a small contingent of soldiers could easily block the passage of the largest enemy army.⁷⁸ According to C. E. A. W. Oldham, it was at Teliagarhi that the Afghan emperor of Hindustan Sher Khan (the future Sher Shah) was stopped when he marched against Gaur in 1536. Just two years later, in 1538, it was here that Sher Khan’s son Jalal held the pass against Humayun.⁷⁹ During the fratricidal wars of the Mughal succession in the mid-seventeenth century, Sultan Shuja used the Munger Pass in a similar fashion. In many such wars, the outcome was decided by the routes approaching the Ganga Route from the surrounding Chhota Nagpur Hills and scrub jungles. Thus, the physiography of the Ganga Route makes it easy to comprehend why this route was highly contested by centralizing political forces and local powers, especially as the Mughal state weakened in the early eighteenth century and its authority was challenged by the zamindars who asserted their control over these passes and the routes.⁸⁰

⁷⁵ C. E. A. W. Oldham, “Routes, old and new, from lower Bengal ‘Up the Country.’ Part 1, Old highways and by-ways,” *Bengal Past and Present* (BPP) 28:55–56 (1924): 24.

⁷⁶ BL, IOR, X/995, Map no. 4. See also James Rennell, *A Bengal atlas: Containing maps of the theatre of war and commerce on that side of Hindoostan* (London, 1781), Map no. 2 at Leiden University Library, Bijzondere Collecties (Special Collections), COLLBN Atlas 89. See the reference of “verdant banks” along the Ganga Thomas Twining, *Travels in India: A hundred years ago with a visit to the United States being notes and reminiscences by Thomas Twining*, ed. William H. G. Twining (London, 1893), 114.

⁷⁷ The physiography of the riverbanks from Allahabad to the delta is shown dotted with swamp and grassland on Rennell’s map. These swamps and grasslands would have been a good source of fodder for the beast of burden. See Rennell, *A Bengal atlas*, map nos. 14, 15.

⁷⁸ Deloche, *Transport and communications*, vol. 1:39, note.

⁷⁹ Oldham, “Routes, old and new, Pt. 1,” 25.

⁸⁰ An assertive Murshid Quli khan the *Diwan* (revenue minister) of Bengal had refused to send treasure to Delhi in 1712. As a result, a battle was fought between the imperial army and Murshid Quli’s men

The route through the drier, well-drained southern parts of Bihar was extremely significant in countering the strategic importance of the Ganga Route. In the second half of the eighteenth century the British quickly recognized the strategic value of the southern Bihar route, which was unmapped and relatively less frequently used by the Mughals. As Oldham suggests this southern route may have been in use by pilgrims and merchants when the Chinese Buddhist pilgrim I-tsing visited in the seventh century AD, but its subsequent history is even less clear. More than a millennium after I-tsing, in the 1760s and 1770s the English East India Company government surveyed the Chhota Nagpur region to lay a “New Road” from Calcutta to Chunargarh in the heart of the Ganga plain. In the early 1780s, this New Military Road (as it came to be called) penetrating the Chhota Nagpur region was laid down by the British in an effort to contain the Marathas, who were encroaching from Orissa in the south, and to have better control over the newly conquered province. Fifty years later saw the opening of the Grand Trunk Road, which ran parallel to and north of the New Military Road.⁸¹ After some alignments, the Grand Trunk Road followed a straight line from Hugli to Sherghati in Bihar where it merged with the earlier New Military Road and proceeded through the doab toward the northwest. By the mid-nineteenth century, the Grand Trunk Road ran for more than 2400 kilometres from Bengal to Peshawar.

Apart from its military and strategic significance, the Grand Trunk Road facilitated the movement of travellers, pilgrims, and merchants. According to an eighteenth-century source, a caravan of 100,000 oxen carrying broad cloth, tin, pepper, spices, and other commodities started from Radanogore in Bengal in March and within two months’ time reached Delhi.⁸² Anand Yang has estimated that in the 1840s the Grand Trunk Road facilitated the carriage of between nineteen and twenty two thousand tonnes of freight between Banaras and Calcutta, with freight charges being almost double that for goods carried by river. On the other hand, about 81,000 tonnes were carried on the Ganga (cargo sufficient for about a hundred merchant vessels sailing between Europe and Asia!) and the freight cost was two pence per ton per mile. The overland route was better suited to commuters, pilgrims, and travellers than to merchants travelling with their goods. In the early nineteenth century no less than 435,000 people annually travelled on the Grand Trunk Road and yet another 30,000 to 40,000 passengers travelled by one or other sort of conveyance such as palanquin, litter, bullock carts, horseback, and elephants. However, fewer than sixty thousand (58,378) people travelled by river between Banaras and Calcutta.⁸³ While the Grand Truck Road furnishes information on the quantity of merchandise and number of travellers, we hardly know anything about the goods or people who moved through the Ganga Route

who had taken the Sakrigali pass. See, BL, APAC, IOR, P/1/2, Bengal Public Consultations (hereafter, BPC), fos. 240r–v.

⁸¹ Oldham, “Routes, old and new, Pt. 1,” 22, 30–35. See also C. E. A. W. Oldham, “Routes, old and new, from lower Bengal “up the country,” Part 2, “The ‘New Military Road’ and Grand Trunk Road,” *BPP* 30: 59–60 (1925): 18–34; for I-tsing see p. 18.

⁸² BL, IOPP, Orme Mss. OV. 134, fo. 112 cited in Mukherjee “Of rivers and roads,” 26.

⁸³ Yang, *Bazaar India*, 44–45, for the freight charges see note on p. 44.

even though the Mughals seem to have kept the records of travellers at Munger and other places.⁸⁴ Although the Grand Trunk Road served the military needs of the British Empire, it crossed the barren scrub jungle and areas of marginal agricultural importance and as a result failed to attract commercial traffic from the Ganga Route, which continued to be the pivot of economic and political dynamism well into the nineteenth century.

Between Patna and the delta, the Ganga Route ran parallel to the Ganga River and the two routes complemented each other. The Ganga Route was connected with a number of feeder routes that linked the hinterlands or production areas. As we have seen, the rivers of southern Bihar were largely unsuitable for navigation and the overland routes were more in use. In the following paragraphs I shall sketch the local routes that originated from southern and northern Bihar and converged with the Ganga Route.

Feeder Routes

To the south of the Ganga an important road ran from Fatuha on the banks of the Ganga and reached Sherghatti via Hilsa, Rajgir, and Gaya. Another feeder route started from Nababgunj on the southern banks of the Ganga and linked the countryside of southeast Bihar as it ran southward to Jamui and then took the southeast direction via Cakai, Deoghar, Sarath, and Nagar. From Nagar, one road branched northeast towards Murshidabad and another ran in the direction of Hugli.⁸⁵ These networks of subsidiary routes linked the countryside with the Ganga Route and facilitated the transportation of the agricultural and craft products to the main artery of trade. Some of these southern Bihar routes gave an access to the delta through Deoghar and Sarath.

On a map drawn by a Dutchman Jan de Wall in 1755, three secondary routes are shown descending almost vertically from Gaya and Nawada to the Ganga Route. The route coming from Gaya is shown as passing through “Perisila”, “Tikarij” (Tekari), and “Kinzer” (?) where it got aligned with a route linking “Cira” on the southern banks of the Punpun and “Nabetpour” through “Baripour.” At Naibatpur it joined the Ganga Route coming from Daudnagar along the eastern banks of the Son, and from Naibatpur it ran almost parallel to the Ganga to Patna. From “Tsua” near Nawada (written “Barika Nawada”) a small route passed through “Baremkund” in the hills and reached “Razigir” (Rajgir). From Rajgir the route branched into two, converged at Magra, and branched out again before both reached “Fettua” (Fatuha). Another small route is shown linking Patna and “Seidabath” (Saidabad) to the south. The map is drawn at a scale of 50 “kos pakka” and 30 *kos* for one degree (*kos* was a measurement of distance that varied from region to region; the “kos pakka” in the Ganga plain measured 3.21 kilometres). However, the precision of the map is doubtful and it appears more like a decorative map with colours and flags intended to advertise the commercial strength of the VOC

⁸⁴ John Marshall, *John Marshall in India: Notes and observations in Bengal 1668–1672*, ed. Shafaat Ahmad Khan (London: Oxford University Press, 1927), 124.

⁸⁵ Deloche, *Transport and communications*, vol. 1, see map 5, facing p. 43.

in comparison to the rival English East India Company. The map shows nine Dutch posts and factories in and around Patna in 1755, but only one English settlement. Even so, many of the routes and towns mentioned on the map are real even if the map was intended more for propaganda purposes.⁸⁶

A decade later, Samuel Dun drew a map with more details and greater precision based on British survey reports. Except for the “Seidabath” route, the British map shows most of the southern routes depicted on the de Wall Dutch map.⁸⁷ The Dun map shows at least three important southern routes vertically joining the Ganga Route and the Ganga River between Fatuha and Munger. All three are shown descending from the southern routes that ran eastwards through the hill country, following the Buraker, Ajay and Damodar rivers towards the towns in the delta. James Rennell’s *A Bengal Atlas* shows a succession of feeder routes vertically linking the Ganga Route in the north and the southern hill routes.⁸⁸

Many of the southern routes joined the Ganga Route to the north with the main southern route that became the Grand Trunk Route. These routes provided the vital linkages between dry and hilly southern Bihar and the more productive Ganga plain. Southern Bihar belonged more to the mobile spheres in which boatmen, militiamen, porters, and banjaras offered their services. The Ganga Route was the most convenient meeting point for the exchange of goods and services between these two different environmental zones. At another level, as the dynamics of such interaction between the drier and humid zones suggests, the settled agrarian society was often vulnerable to the mobile forces from the southern drier parts, probably as early as the fifth century BC, when the Magadha king Ajatshatru defeated the Vajji ganasangha. Later, the emergence of Pataliputra as an imperial capital of Magadha attests to the political aspirations of the empire builders to control the rich agrarian resources of northern Bihar.⁸⁹ Probably a similar motive was at work when Sher Shah decided to build a fort at Patna, which testifies to the strategic importance of the area during the sixteenth century. During the Mughal period, Patna and Munger remained key strategic administrative and military posts along the Ganga Route.

⁸⁶ NA, The Hague, HaNA_4VEL H 121; J. J. L. Gommans, Jeroen Bos and Gijs Kruijtzter, *Grote atlas van de Verenigde Oost-indische Compagnie / Comprehensive atlas of the Dutch United East India Company*, dl. 6: *Voor-Indië, Perzië, Arabisch Schiereiland* / Vol. 6, *India, Persia and the Arabian Peninsula*, with contributions by Pauline Lunsingh Scheurleer, Geert Stroo and Elsbeth Vorstenbosch, (Voorburg: Atlas Maior, 2010), sheet 408. For different measurements of kos in South Asia see Deloche, *Transport and communications*, 1:288–92.

⁸⁷ BL, Map Room, Maps K. Top. 115.31. “A map of Bengal, Bahar and Orissa, laid down by Samuel Dunn from original surveys and journals kept by Henry Vansittart, c. 1765–1770.” See also BL, IOR, X/995. Map no. 3 shows a well-marked road from Sultanganj on the Ganga to “Deugarh.” This route passed through Tarapur shown as a large town. This would have been the pilgrim route linking the Ganga and Deoghar Baidyanath. On the map of Rennell the Seidabath route is shown linking Patna and Jahanabad and further to Lucknow (Lakhawar, the famous cotton textile production centre near Patna), see Rennell, *A Bengal Atlas*, map no. 3.

⁸⁸ Rennell, *A Bengal atlas*, maps no. 2 and 3.

⁸⁹ Dilip K. Chakrabarti, “Relating history to the land: Urban centers, geographical units, and trade routes in the Gangetic and central India of circa 200 BCE,” in *Between the empires: Society in India 300 BCE to 400 CE*, ed. Patrick Olivelle (New York: Oxford University Press, 2006), 14.

The routes from the northern agrarian heartland also approached the Ganga River and overland Ganga Route. North of the Ganga, many rivers could be used for the transportation of grain and other merchandise except during the dry season, especially from December to May, when traders with pack animals and travellers took to the road. The maps of James Rennell show that at least nine routes converged at the town of Darbhanga, which was connected with the Ganga through the Bur Gandak. To the east of Darbhanga, Purnia is also shown at the junction of about nine feeder routes.⁹⁰ All these subsidiary routes connected the agriculturally productive rural areas to the bigger towns which had an access to the river or overland route for transporting merchandise to the regional towns and from there to the maritime port cities.

Patna was also linked with Nepal and Tibet by the overland route that traversed the humid Ganga plain of northern Bihar. This route followed the eastern bank of the Great Gandak up to Motihari, from where the track crossed the Terai through Cisopani Garhi before reaching Kathmandu.⁹¹ According to John Marshall, the Patna-Nepal route through Motihari reached Bhutan and Tibet. Another route to Nepal passed through Banaras.⁹² Commodities of Nepal such as borax and musk among others gravitated towards the Ganga for their access to the maritime trade.

The web of overland routes discussed above linked different ecological zones with the major trunk route that provided long-distance links. In order to find markets, commodities, and resources of the humid and dry zones to the north and south of the Ganga respectively gravitated towards the highways. As goods moved on these routes and generated revenue, control over the routes became crucial for the state formation process. These routes were not the preserve solely of merchants and their goods; they were also used by travellers of various sorts.

Travellers

Whenever the political situation provided some security to travellers, a whole range of people travelled by road. Most notable among these itinerants were pilgrims, merchants, and soldiers. Already in the seventh century AD the Chinese Buddhist pilgrim I-tsing (Yijing) travelled on the road connecting Nalanda with Tamruk (Tamralipti) in the company of a party of hundreds of merchants.⁹³ Almost a millennium later the English merchant Peter Mundy, who travelled in the early seventeenth century, also attested to the pilgrims' traffic at Allahabad, Banaras, and Gaya. He guessed the number of pilgrims who came across his way to be more than

⁹⁰ BL, IOR, X/995, Map nos. 1 and 4. See also Rennell, *A Bengal atlas*, Map no. 4 on which only seven overland routes are shown directly entering Darbhanga town and the other two routes join in the western route in the outskirts. On map no. 5, nine overland routes are depicted to be converging at Purnia.

⁹¹ Deloche, *Transport and communications*, 1:19–20.

⁹² Marshall, *John Marshall in India*, 161; the folk tales also hint at the merchant caravan linking different parts of Bihar and the Himalayan Terai, see Catherine Servan-Schreiber, "Indian epics of the Terai conquest: The story of a migration," *Diogenes* 46/1:181 (1998): 77–93.

⁹³ Oldham, "Routes, Part 1," 22.

one hundred thousand.⁹⁴ In the mid-eighteenth century when Mustapha was on his way to Ramgurh from Calcutta, he saw a huge number of sanyasis going to Sagar as we noted in Chapter 1. In the early nineteenth century Francis Buchanan reported “[m]any pilgrims, very few other passengers” on a route to Barh east of Patna, south of the Ganga.⁹⁵ Indeed, pilgrim traffic appears to have a long continuity since the ancient period, although written descriptions are more forthcoming from the eighteenth and nineteenth centuries. Such references to the large number of pilgrims can perhaps be explained partly in terms of population growth compared to the previous centuries. The number of pilgrims also increased because the political authorities took an interest in regulating pilgrim traffic for generating extra income at pilgrimages. The English Company invested in road building projects primarily for military purposes but pilgrims also benefited. The new regime also made an effort to ensure safety on roads through the local zamindars and police.⁹⁶

Not only pilgrims, even general folk and labourers took to the roads in search of employment and livelihood. While traversing the Ganga Route in 1671, Marshall came across “many poor people” coming from Patna and resting in a mango orchard at high noon in May.⁹⁷ They may have been the hapless victims of the draught and famine that devastated the region around Patna in 1670. In the eighteenth century, Hodges talks of a variety of travellers moving on the road including soldiers, a company of merchants, a party of pilgrims, fakirs or mendicants with “savage appearance”, many palanquin bearers and sometimes even entire families “travelling up and down the country, forming most beautiful picturesque groups.”⁹⁸ Indeed, these roads were “the river of life,” to use Rudyard Kipling’s expression. For the travellers, infrastructure and support systems were available along the road.

Some of the travel accounts of the seventeenth and eighteenth centuries give a lively first-hand account of the roads and travelling conditions. On his way to Patna from Hugli, John Marshall followed the land route and travelled on a palanquin. When he reached Plassey, at that time a considerable town of thatched houses on a riverbank, he remarks that he “here lay this night by a Surray [*sarai*, or inn].”⁹⁹ Marshall notes passing more than fifteen *sarais* on the way Hugli to Patna, and he gives a particular account of a *sarai* at Burrajungull near Rajmahal, which was situated on the banks of the Ganga and could accommodate around eight hundred people.¹⁰⁰ More than a century later, Hodges also talks of many such *sarais* to be found along the road built by

⁹⁴ Mundy, *The travels of Peter Mundy*, 2:182–83.

⁹⁵ V. H. Jackson, ed., *Journal of Francis Buchanan kept during the survey of the districts of Patna and Gaya in 1811–1812* (Patna: Superintendent Government Printing Bihar and Orissa, 1925), 3.

⁹⁶ Nitin Sinha, “Mobility, control and criminality in early colonial India, 1760s–1850s,” *IESHR* 45:1 (2008): 27–29.

⁹⁷ Marshall, *John Marshall in India*, 114.

⁹⁸ William Hodges, *Travels in India during the years 1780, 1781, 1782 and 1783* (1794; repr. New Delhi: Munshiram Manoharlal, 1999), 31.

⁹⁹ Marshall, *John Marshall in India*, 112.

¹⁰⁰ Marshall, *John Marshall in India*, 118.

charitable people or government and maintained at public expense.¹⁰¹ Francis Buchanan, on his way to Patna from Munger, writes of Dariyapur that it “is a very large village with many shops and a very large inn.”¹⁰² Dariyapur appears to be an important halting place for the boats too as the place is frequently mentioned in the Dutch river fleet journals of the eighteenth century.

As Hodges notes, the resources and initiative for the maintenance and running of these *serais* came from the ruling elite and charitable and pious people. The authorities also earmarked the revenue of some villages for the upkeep of the inns. Local zamindars, affluent people, and religious institutions formed the support network and provided facilities to the travelling folks.¹⁰³ About the condition of roads, Hodges remarks that between Bhagalpur and Munger, a stretch of about thirty-five miles, the roads were good.¹⁰⁴ A century before Hodges, Nicolaus de Graaff had walked on the same road between Jahangeera and Ghorghat and noted that the road and the landscape were very pleasant and enjoyable for travellers.¹⁰⁵ About the modes of conveyance used and the scenery on the road, Hodges observes, “sometimes with camels loaded with goods; some of the party riding on bullocks, the females in heckerries [bullock carts?], and the younger part of the company on small horses.”¹⁰⁶ Like the river, the road too was a special little world, to use Lucien Febvre’s phrase.¹⁰⁷

Although the road was a mute geographical entity, people and animals gave it an animated appearance. For a route system to be operated by the commuters, it needed to pass through areas where resources could be easily brought. As noted above, the Ganga Route succeeded in drawing goods, services, and peoples from the drier and humid areas. While both the Ganga and south Bihar routes were used during the early modern period, the existence of the Mughal garrison towns along the former route signifies its strategic importance. In fact, the Mughals used the southern routes through the Chhota Nagpur Plateau sparingly and they had little familiarity with those terrains. Occasionally, when the Mughals needed to use the southern routes to punish rebellious chieftains or other military purposes, they depended on local chieftains to guide them across the hills and jungles. From the viewpoint of Mughal control and authority, the towns along the Ganga Route served a great strategic purpose for the Mughal Empire.

Section III: Towns

The relatively large towns such as Patna, Munger, Bhagalpur and Rajmahal were not located deep in either the productive hinterlands to the north of the Ganga or the hilly and forested zone of the Chhota Nagpur Plateau to the south of the river. Rather they

¹⁰¹ Hodges, *Travels in India*, 25.

¹⁰² Jackson, *Journal of Francis Buchanan*, 1–4.

¹⁰³ Mukherjee, “Of rivers and roads,” 28.

¹⁰⁴ Hodges, *Travels in India*, 28–30.

¹⁰⁵ De Graaff, *Reisen van Nicolaus de Graaff*, 95. The cover page of the dissertation carries the drawing of the riverbanks of the Ganga at Sultanganj, very close to Jahangeera, made by De Graaff.

¹⁰⁶ Hodges, *Travels in India*, 31.

¹⁰⁷ Febvre, *A geographical introduction*, 302.

were situated along the riverbanks that formed the interstitial bordering areas between the two regions. As I shall discuss below, these towns were instrumental for the military-administrative control exercised by the Mughals and it was from these garrison towns that the mobile forces of rebellious warlords of the southern tracts were kept in check. These towns were centres of administrative authority from which officials exacted tribute and collected revenue from the productive hinterlands.

To borrow the terminology of modern power generation, Patna, Munger, and Rajmahal were like the transformers that fed electric current through the long power-grid from the delta to upper Hindustan, the heartland of the Mughal Empire. These towns played a critical political and economic role for the Mughals; Patna and Rajmahal serving as provincial capitals, while Munger was a major garrison town. Their economic importance can be deduced from the fact that Patna and Rajmahal had mints that issued coins to facilitate commercial transactions. Patna had an economically and strategically important position astride the crossroads of rivers and overland routes. As Pataliputra had for the Magadha, Patna projected the Mughal power of the dry zone towards the agriculturally productive region north of the Ganga. Other towns along the route such as Munger, Bhagalpur and Rajmahal also derived economic and strategic importance on account of their location. On the one hand they projected Mughal power, while on the other hand they attracted resources from the surrounding regions and facilitated trading and transportation to long-distance markets.

Patna

Thanks to Patna's strategic location, Sher Shah built a fort there in the sixteenth century, and the Mughals later made it the provincial capital of Bihar suba.¹⁰⁸ Apart from being an administrative and strategic centre for the Mughals, the rise of Patna as a trading hub was closely linked to the growth of commercial traffic conducted by the Asian and European merchants. Portuguese merchants seem to have frequented Patna in the sixteenth and early seventeenth centuries and their presence was noted by the English merchants who were trying to establish a factory there in the 1620s.¹⁰⁹ Being positioned at the crossroads of the long-distance riverine and overland routes, Patna was ideally situated to emerge as a major river port. In the early seventeenth century, Central Asian merchants operating on the overland route network, connecting Lahore, Delhi and Agra sometimes led their caravans up to Patna for transshipment to river boats.¹¹⁰ Patna derived economic benefits from the merchant traffic and it gradually

¹⁰⁸ H. M. Elliot and John Dowson, eds., *The history of India as told by its own historians*, vol. 4 (London, 1872), 477–78; see also M. P. Singh, *Town, market, mint and port in the Mughal empire, 1556–1707* (New Delhi: Adam Publishers, 1985), 3–4.

¹⁰⁹ BL, APAC, IOR, G/28/1, Patna Factory Records (hereafter, PFR), vol. 1. pp. 3–4, 18. See also R. C. Temple, Bart, ed., "Documents relating to the first English commercial mission to Patna, 1620–1621," *The Indian Antiquary: A Journal of Oriental Research*, 43 (1914): 71, 73, 83.

¹¹⁰ H. K. Naqvi, *Urbanisation and urban centres under the Great Mughals* (Simla: Indian Institute of Advance Study, 1971), 80. Also BL, APAC, IOR, G/28/1, PFR, pp. 3, 5, for the trade in textiles which were taken to Lahore and thence to Persia by the Asian merchants.

became an important trading centre. The commercial activities of the European Companies led to the growth of the volume of trade handled between Patna and the port cities of Bengal. It was to procure commodities such as saltpetre, borax, musk, various types of textiles and opium that the Dutch organized their annual fleet from their factory at Hugli to Patna, as already discussed above. Patna remained one of the most prominent river port-cities in Hindustan until the mid-nineteenth century, when the railways diverted commercial traffic away from the Ganga.¹¹¹

Munger

The riverine traffic on the Ganga and the complementary overland route required one to pass through Munger, Bhagalpur, and Rajmahal before reaching Murshidabad and Calcutta. For the Mughals, Munger and Rajmahal were primarily administrative-cum-garrison towns but these also played a significant role in facilitating trade and commerce. Oldham traces Munger's antiquity back to the *Mahabharata* age, when warring Pandavas marched eastwards to kill a mighty king who lived in Modagiri.¹¹² Elsewhere he ascribes the re-emergence of Munger, the ancient Modagiri, during Muslim rule to the strategic advantages of its location. He observes that Munger commanded a narrow neck between the Kharagpur Hills and the Ganga, a major choke-point on the only practicable east-west military route as we have noted above.¹¹³

The fortress of Munger was built along a bend in the Ganga. In the rainy season the fortress projected towards a vast sheet of water northwards. Thus, from this fortress, one could easily command both the overland route and the Ganga. Thus, for the Mughals it was natural to make Munger the seat of a high ranking officer and a military station. In the seventeenth century, Sultan Shuja strengthened the fortification and about a century later it became the centre of Nawab Kasim Ali Khan's (r. 1760–64) resistance against the English Company. Indeed, Munger was of critical military and strategic significance, yet from time to time its strategic superiority was undermined by those familiar with the hill and jungle routes of the Kharagpur Hills descending from the south. After the British built the southern New Military Road in the second half of the eighteenth century, the strategic importance of the Ganga Route was undermined.

Apart from its strategic importance, Munger functioned as an administrative centre and customs post for the river and overland traffic. In the mid-seventeenth century, the Portuguese traveller Manrique witnessed the vigilance of the Mughal customs official in charge of the riverine traffic firsthand. When his boatmen tried to evade and bypass the customs office at Munger, they were severely reprimanded by the authorities.¹¹⁴ They were just as attentive to the land route. When John Marshall was passing through the Munger town he was asked his name and the official wrote it

¹¹¹ Yang, *Bazaar India*, 52.

¹¹² C. E. A. W. Oldham, "An Old Description of the Monghyr Fort," *BPP* 27:53–54 (1924): 154.

¹¹³ C. E. A. W. Oldham, *Journal of Francis Buchanan: Kept during the survey of the district of Bhagalpur in 1810–11* (Patna: Superintendent, Government Printing, 1930), v–vi.

¹¹⁴ Fray Sebastien Manrique, *Travels of Fray Sebastien Manrique 1629–1643*, vol. 2 (Oxford: Hakluyt Society, 1927), 136–37.

down.¹¹⁵ At Munger, Marshall wished to visit the fort but the authorities denied permission because two months earlier De Graaff and Cornelis van Oosterhoff secretly tried to draw the plan of the fortress, for which they were imprisoned and sent to the Nawab at Patna.¹¹⁶ But these instances of administrative alertness are from the seventeenth century. In the eighteenth century, the Ganga and the overland routes seem to be less rigorously controlled by the Mughal authorities, and many of the chieftains started asserting themselves on the river and overland routes in this area.¹¹⁷

De Graaff's description suggests that Munger was also a centre of handicrafts and a market for other merchandise as well. De Graaff informs us that before the East Gate, outside the chief customs house, there was a great market for foodstuff and other commodities.¹¹⁸ In the seventeenth century, Munger was probably not a big commercial town. It appears to have become commercially more significant in the eighteenth and nineteenth centuries. According to an estimate of the early nineteenth century, its population was approximately thirty thousand and Buchanan reported that the town was comprised of many markets such as Barabazar, Puranigunge, Faujdari Bazar, Garar or Goddard Bazar and Batemangunge.¹¹⁹ These markets handled the grain traffic as well as the commercial and cash crops produced in the region. Walter Hamilton writes that the place was famous throughout Bengal for its gardeners.¹²⁰ Other workmen included tailors, carpenters, and blacksmiths. Trade and crafts seems to have picked up in the late eighteenth and early nineteenth centuries as is evident from Bishop Heber and Major John Luard's travel accounts and Buchanan's survey report. Heber and Luard both comment on the metal work and manufactures found in the town. Luard states that the water from the hot spring "is bottled and sent down in great quantity to Calcutta" where it was taken on board ships leaving for England to supply drinking water to the passengers.¹²¹

Bhagalpur

About 58 kilometres east of Munger was Bhagalpur. The Dutch boat journals of the early eighteenth century make frequent mention of Bhagalpur as a city, but they

¹¹⁵ Marshall, *John Marshall in India*, 124.

¹¹⁶ De Graaff, *Reisen van Nicolaus de Graaff*, 91, 95–100, 107; see also Oldham, "An old description of the Monghyr Fort," 154–63.

¹¹⁷ BL, APAC, IOR, P/1/2/BPC, fo. 211. See for the reference of an unsafe road between Singia and Rajmahal around 1712. "The zamindars having Plundered the Kings own Boats and the King cannot move till after the rains." There are many such references from the early eighteenth century.

¹¹⁸ De Graaff, *Reisen van Nicolaus de Graaff*, 100.

¹¹⁹ Chatterjee, *Merchants, politics and society*, 24–25. Buchanan Eur. Mss. D83, vol.3, Oriental and India Office Records, London, cited by Kumkum Chatterjee. Bishop Heber who travelled in the early nineteenth century writes that the "shops are numerous" and the metal works so impressed him that he called it tiny Birmingham, see Reginald Heber, *Bishop Heber in northern India: Selections from Heber's journal*, ed. M. A. Laird (Cambridge: Cambridge University Press, 1971), 109. See also, L. S. S. O'Malley, *Bihar and Orissa district gazetteers: Monghyr* (Patna: Superintendent, Government Printing, 1926), 243–44.

¹²⁰ Walter Hamilton, *The east India gazetteer*, vol. 2 (London, 1828), 237–38.

¹²¹ Major John Luard, *Views in India, Saint Helena and Car Nicobar, drawn from nature and on stone* (London, 1838), n.p.

otherwise shed little light on the source or extent of its commercial strength. Given the fertile flood plains in its immediate hinterland and the town's location on the Ganga highway, Bhagalpur must have been an important trading centre. On the banks of the Ganga only a few kilometres west of Bhagalpur, Champanagar, the ancient seat of Anga mahajanapada, was a pilgrimage centre for the trade-oriented community, the Jains. Here the pilgrims assembled "in great numbers from many parts of India" during the month of February to worship Vasu Paduka.¹²² The English East India Company's army officer and orientalist scholar, William Francklin, assumed this pilgrimage to have great antiquity. At the time of his survey in the early nineteenth century, this pilgrimage centre was maintained by the maharajas of Jaipur, in western India, and the royal patronage would have had some connections with appeasing the west Indian merchants such as the Jains/Marwaris.

Buchanan Hamilton who surveyed Bhagalpur in the early nineteenth century, reports that in the *Thana* Kotwali division there were 69 dealers who controlled capitals of between 300 and 2000 rupees and were active in the retail and wholesale trade of cotton cloth and chintz. In the district town of Bhagalpur the total number of such traders was 117. These merchants also exported Bhagalpuri clothes to Calcutta and other places. Apart from them, there were four "Mogul merchants" with a total capital of one hundred thousand rupees who dealt in Bhagalpuri cloth and left Bhagalpur after purchasing their cargoes.¹²³ The instances of the commercial activities and the adequate amount of capital in the hands of these merchants indicate the degree of trade, which the town and routes sustained well into the early nineteenth century.

Rajmahal

Nearer the delta, Rajmahal was another important town on the Ganga Route. Just like Munger, Rajmahal was a garrison town of military importance. It was situated on the southern banks of the Ganga and it was protected from the south by a ring of hills, and it guarded the strategic Udhanala Pass, which gave it a strategic importance not unlike that of Munger. The foundation of the town came from the decision of Akbar's celebrated general Raja Man Singh, the governor of Bengal. As a result of repeated raids and harassment of the Mughals by the Portuguese and Magh (Arakanese) pirates, Man Singh decided to shift the provincial capital from Gaur to Rajmahal in the 1590s. At Rajmahal there already existed the ruins of an earlier fortress, which attests to the strategic significance of this place in the past.¹²⁴ However, Man Singh's initiative for making this place the provincial capital, followed by the building activities and the assemblage of an army and administrative staff, contributed to its political and economic importance.

¹²² William Francklin, *Inquiry concerning the site of ancient Palibothra, conjectured to lie within the limits of the modern district of Bhaugulpore, according to researches made on the spot in 1811 and 1812* (London, 1815), 13–15.

¹²³ BL, APAC, IOR, Mss. Eur. D 83, Buchanan Hamilton Ms, Index to the Map, Bhagalpur, pp. 2–12.

¹²⁴ James Heitzman, *The city in south Asia* (London: Routledge, 2008), 77; Eaton, *The rise of Islam*, 149.

Before these initiatives could increase Rajmahal's profile as a major town, the provincial capital was relocated to Dhaka in 1610, only to be restored to Rajmahal by Sultan Shuja, governor of Bengal, in 1639. It is believed that during Shuja's viceroyalty the town attained great importance and functioned as the metropolis of the Bengal and Bihar provinces.¹²⁵ A new round of building activity began when Shuja took up residence there and built an enormous palace. De Graaff was particularly impressed with the artwork, paintings, and fountains of the palace, and called it a "wonder of this land."¹²⁶ Marshall also noted that "[t]he towne is very large and hath many stone houses terrassed at top."¹²⁷ Building in Rajmahal continued in the latter half of the seventeenth and eighteenth centuries, but the city began to decline in the later eighteenth century, when Calcutta, Murshidabad and other towns in the delta became more important. In the early nineteenth century Buchanan Hamilton commented upon the ruins of Nagesvara Bag and Phulbag, the *makbara* or tomb of the widow of Shaista Khan, which he describes as "a handsome building", the monument of Mirza Muhammad and the palace built by Kasim Ali Khan during the mid-eighteenth century.¹²⁸ These buildings and the *bags*, or gardens, had added grandeur to the town of Rajmahal and given it the lustre of the aristocratic quarters during the seventeenth and eighteenth centuries.

In the age of maritime commerce, the trade passing through the Ganga and the overland route was controlled and regulated from Rajmahal. In the year 1640, Manrique witnessed hectic activities and a huge assemblage of boats from all the surrounding regions at Rajmahal on account of the presence of Sultan Shuja at the court in that "City." He was very impressed to see "enormous number of vessels and also the great crowd of people" which made Rajmahal "an attractive and beautiful City." There was an abundance of every kind of merchandise and foodstuffs were very cheap. It was also a place where river travellers could clear through customs.¹²⁹ When Tavernier

¹²⁵ Hamilton, *The east India gazetteer*, 2:444. Around 1650 Rajmahal had become the focal point of the diplomatic activities of the Dutch and English. The Dutch chief merchant, Thomas van Cuijck, was successful in procuring a *farman* (a royal order) for the free and unhindered transportation of their merchandise between Hugli and Patna from Prince Shuja in 1646, see NA, VOC, Inv. Nr. 1162, Missive door de oppercoopliijden Pieter Sijme, ende Jacob Junius van Masulipatnam aen de edele heren raden van India naer Batavia, 17.04.1746, see "Translaet uijt fierman bij den Prince Sjoesa," fo. 84r. The Englishman Mr. Gabriel Boughton, who was surgeon to the Prince Shuja at Rajmahal and was endeavoring to get a farman for the English Company which "may outstrip the Dutch in point of Privilege and freedom, that soe they may not have cause any longer to boast of theirs." Rajmahal remained an important centre for the provincial government in the first half of the eighteenth century as we find the English in Rajmahal carrying out hectic negotiations with the authorities to secure the free trade rights in Bengal after the death of Aurangzeb. When Azim-sh-shan became the Mughal emperor and Prince Farrukhsiyar was representing him at Rajmahal, the English with the help of their trusted aid and governor of Hugli, Zain-ud-din Khan, were successful in obtaining a favourable letter from Farrukhsiyar in 1710. See C. R. Wilson, *The early annals of the English in Bengal: Being the Bengal public consultations for the first half of the eighteenth century*, vol. 1 (London, 1895), quote is from pp. 26–27; about Farrukhsiyar at Rajmahal see p. 186.

¹²⁶ De Graaff, *Reisen van Nicolaus de Graaff*, 93.

¹²⁷ Marshall, *John Marshall in India*, 70.

¹²⁸ Oldham, *Journal of Francis Buchanan*, 74–77.

¹²⁹ Manrique, *Travels of Fray Sebastien Manrique 1629–1643*, 2:135.

passed through Rajmahal in 1666, the provincial capital had been relocated to Dhaka yet again, partly because the river channel had shifted away from the city and because the authorities needed to relocate their armies to be in a better position to act against the perennial troublemakers, “the King of Arakan and many Portuguese bandits.”¹³⁰ Although Tavernier describes how the considerable trading activities at Rajmahal in former times had diminished after the capital’s removal to Dhaka, the VOC and the English Company still maintained their representatives in the town in the 1670s. The English had maintained a small agency there for converting bullion into coined rupees at the Rajmahal mint.¹³¹ The Afghan convulsions in 1696–1697 destabilized the towns of the delta including Rajmahal and Maldah, but soon the Mughals were able to restore order.¹³² In political terms, such convulsions certainly exposed the vulnerability of the Mughal authority as well as difficulties of wielding strict control over the delta. The fortunes of Rajmahal seem to have been adversely affected in the late-eighteenth century when it ceased to be the strategic centre for controlling the river and overland traffic for the Mughals and was superseded by the towns in the delta which had become more attractive to traders and merchants.¹³³

The towns discussed above were located at the fringe of the agriculturally fertile humid zone to the north of the Ganga. In the fertile northern plain, there were relatively small local towns such as Muzaffarpur, Darbhanga, Hajipur, Chhapra, Purnia and so on, but their existence depended on their ties to larger towns such as Patna, Munger and Murshidabad. Similarly, southern towns such as Gaya and Lakhawar maintained their connections with the bigger towns located on the Ganga Route. The communication between the smaller towns and those located on the Ganga Route was essential for trade and exchange.

Conclusion

In the pre-modern period in South Asia as elsewhere in the world, riverine and overland routes facilitated the movements and flow of people, ideas and merchandise. The key features in the development of the route systems were the interactions and interdependence of the contrasting ecological zones. As already noted, the ancient Uttarapatha and the Trunk Road of the Mughal and British periods may have constituted something of a dividing line between the dry and humid zones. As the main route passed through the transitional areas, the goods, services and people were drawn to it from both ecological zones. As a result, the transitional zone became the seat of pre-modern state formation in South Asia, a pattern discernible already in the age of

¹³⁰ Jean-Baptiste Tavernier, *Travels in India*, ed. William Crooke, vol. 1 (London: Oxford University Press, 1925), 102.

¹³¹ Wilson, *The early annals*, 1:53.

¹³² Wilson, *The early annals*, 1:148.

¹³³ For a description of the deserted ruins of Rajmahal towards the end of the eighteenth century, see Thomas Twining, *Travels in India*, 16–19. See also James Rennell, *Memoir of a map of Hindoostan; or the Mogul empire: With an introduction, illustrative of the geography and present division of that country* (London, 1788), 60–61.

mahajanapadas in the mid-first millennium BC. The case study of the Ganga Route further highlights the historical importance of the transitional zone in Bihar.

In the early modern period, the transitional zone in Bihar formed the real hub of economic growth. The fertile Ganga plain supplied commercial goods, and surplus food production not only supported dense population but also those involved with crafts and non-agricultural sectors of the economy such as transport. Economically the most important segment of “greater Bengal” constituted the floodplains of the Ganga from Patna through Rajmahal to Hugli on the Bhagirathi.¹³⁴ The emergence of this segment as an economically and commercially dynamic zone owed in large measure to the Mughal political integration since the late sixteenth century. Thus, political, economic and environmental factors necessitate a closer examination of this transitional zone in Bihar.

The micro-level interactions between the dry and humid zone outlined in Chapter 2, were amplified when we find the humid and productive parts of the eastern plain interacting with the maritime zone on a large scale during the early modern period. We discussed above the impressive efforts of the Dutch merchants on the Ganga River to reach the productive hinterlands and buy commodities with bullion there. Other Europeans, notably the English and French, and indigenous merchants actively participated in the economic life of the eastern Ganga plain and purchased commodities from Bihar for the long-distance markets primarily with cash. As a result of the growing demands for goods produced in the region, the economy of the eastern Ganga plain became increasingly monetized. Given the importance of liquidity in facilitating revenue collection and payment to the military and bureaucracy, the state could not remain aloof from the commercial activities of the merchants and it tried to promote production and trade. Did the bullion flows and increasing prosperity of the region create the circumstances which, in the long run, altered the political trajectory of eastern India? In order to explain this question, the next chapter begins to describe the commercial economy of the Ganga plain.

¹³⁴ Tirthankar Roy, “Where is Bengal? Situating an Indian region in the early modern world economy,” *Past and Present* 213 (2011): 115–146, see p. 126.

