



## Mapping territories and documentation of knowledge: the intention of early Cartographers in Colonial India

NILANJAN PANDE

Doctoral Researcher,

Department of History, Vidyasagar University, West Midnapore-721102, West Bengal

### Abstract:

*The paper provides the objective on which the early cartographers penetrated the Indian subcontinent especially at the beginning of the colonial subjugation. With the inception of colonialism in the South Asia, many Europeans arrived to this part of the world as travelers and they documented their journey. Later on the colonial government created the post of company's surveyor and appointed them to survey the territories they have conquered. The geographers were at the forefront of this operation as they mapped the landscapes and also studied the population.*

*Under the British East India Company surveyors were appointed to help in the understanding of riverine navigational routes so that it would be beneficial for the trade and commerce which was their sole purpose at least in their initial years. The requirement changed later on when administrators were allotted for documentation of the rivers and the better understandings of the navigation throughout the year for administrative and military purposes. Knowledge achievement and antagonism in the Indian Subcontinent between different colonial powers was in its pick during 1750s. 1760s saw a large number of survey maps being created and has been termed as the era of the scientific surveying in India. The era of scientific surveying was not limited to understand the geography and the topography, it brought numerous other surveys conducted thorough the disciplines of Geology, Botany, forests and other natural resources archeology as well as antiquities.*

---

**Keywords:** *Cartographer, mapping territories, scientific survey, surveyor-general, colonial antagonism, documentation of knowledge*

---

### 1. Introduction

The documentation of the riverine base of the Indian subcontinent started under the European colonizers. With the inception of colonialism in the Indian subcontinent, many Europeans came to this part of the world as travelers or appointed as surveyors or administrators. As the imperial rule spread its roots in India, understanding the riverine base became a concern for many reasons. Since all religion has a purpose for water, the river became important for the populace. The state kept itself informed regarding the flow of the river and also had vital information regarding the movement of the watercourses. The colonial state was vigilant as well regarding the river water and its flow, just as it would keep a close watch on the populace. For an imperial control, the understanding of watercourses and constructions related to the fluvial channels were significant just as any other natural, human, and even economic possessions.<sup>1</sup>

---

<sup>1</sup> Bhattacharya, U. (2017). From Surveys to Management: The Early Colonial State's Intervention in Water Resources of Bengal. *Indian Historical Review*, 44(2), 226.

The British subjugation of South Asia that had followed for a hundred years since 1750 was a mammoth task. The East India Company's military and civilian officials had the major responsibility on their shoulders to alter the inexplicable land into an empire which was understandable. The geographers were at the forefront of this operation as they mapped the landscapes and also studied the population. Their study included the understanding of the economy, society, and culture and also involved the collection of various geological and botanical specimens to gain in-depth knowledge on the ecological and social habitat.<sup>2</sup> Under the British East India Company surveyors were appointed to help in the understanding of riverine navigational routes so that it would be beneficial for the trade and commerce which was their sole purpose at least in their initial years.

The requirement changed later on when administrators were allotted for documentation of the rivers and the better understandings of the navigation throughout the year for administrative and military purposes. Apart from understanding the riverine base, Britishers were also concerned about the coastal areas and the seas. Understanding of this area was important, as the sea was used by traders, who conducted voyages for trading purposes and also by empire builders. Thus, controlling the seas was important for commercial and strategic purposes. Initially, the studies of maritime and inland waters were separated for administrative purposes. However, they were converged as common surveyors conducted the maritime and riverine surveys. The surveyors under the East India Company utilized their knowledge of marine survey to explore the riverine base. This experience collected by surveying the rivers and knowledge of the maritime surveys helped surveyors in hydrographic surveys, as it was common to both the sea and the river. Trying to discover passages between the sea coast and the river delta and gaining knowledge of the composition of the water body and the waterbed was important to the riverine survey.<sup>3</sup> These data and facts were collected and represented by the colonizers from their perspective that is what is left of the records and the documents of the pre-independent riverine base of India.

Travelogues of European travels in India constitute a significant source in this discipline. History and Geography are both indebted to them for their recording for posterity, minute observation of events which, otherwise, might have been slighted as 'everyday, common things'. Many European travelers have, not only left graphic accounts of the places, forts, and palaces they visited, but have also described people, their customs, traditions, and so on, which immensely help us understand the India of the foregone era.<sup>4</sup> Apart from their travelogues, the contributions of the various cartographers and their writings are also equally noteworthy.

### **Scientificity and Cartography during the early phase of colonial encounter**

The competition between the French and the British East India Company to conquer the Indian subcontinent was at its peak during the middle of the 18<sup>th</sup> century. Both the contenders had to rely heavily on maps and surveys and thus they advanced towards its creation. Determining the latitude and the longitude was not an easy process back then. "At the middle of the 18th century latitude could be readily determined by observing the meridian altitude of sun or star, but the determination of longitude was a very different matter; observers had to wait for some favourable phenomenon, such as an eclipse of the sun, moon, or Jupiter's satellites in a clear sky; the observation was then of little value unless it

---

<sup>2</sup> Edney, M. H. (1997). *Mapping an Empire: the Geographical Construction of British India, 1765-1843* (p. 2). Chicago: University of Chicago Press.

<sup>3</sup> Bhattacharya, U. (2017). *op. cit.*, pp. 226-227.

<sup>4</sup> John, J. K. (1997). *The Mapping of Hindustan: A Forgotten Geographer of India, Joseph Tieffenthaler (1710-1785)*. *Proceedings of the Indian History Congress*, 58, 400. Retrieved 15 September, 2018, from [www.jstor.org/stable/44143931](http://www.jstor.org/stable/44143931)

corresponded with a similar observation at some known place, and even the tables available for working out results were far from correct.”<sup>5</sup>

Determining the latitude and longitude was a mammoth task back then as it depended on the observation of the celestial bodies and their position. As the observation of longitude was further difficult there was seldom the practice of observing it. James Rennell and his contemporaries were frequent with the latitudes and less so with the longitude. Rennell made use of any available data, however for longitude he relied on actual measurement by ground survey. In his own words Rennell has mentioned, “With respect to the particulars of this survey, which was executed between the years 1763 and 1777, it is unnecessary to say more than that the distances were measured, and that they accorded with the observations of latitude and longitude: with the former minutely, and with the latter so nearly, that it was unnecessary to make any correction.”<sup>6</sup>

The British government gave a lot of importance to ascertaining the longitude, due to its significance for navigation. The government even passed an act in the British parliament offering rewards for determination of longitude and also for improved solar and lunar tables. According to the Historical Records of the Survey of India, Volume I, “An Act of Parliament was passed as late as June 1774, offering rewards for either ‘a Timekeeper, the Principles whereof have not hitherto been made public’, or for ‘improved Solar and Lunar Tables’, the reward to be 5,000 pounds. If such method determines the said Longitude to one Degree of a Great Circle, or Sixty Geographical Miles; ... 7,500, if it determines the same to two-thirds of that Distance; and..& 10000 pounds, if it determines the same to one half of the said distance.”<sup>7</sup>

### **Knowledge achievement and Antagonism in the Indian Subcontinent**

Jean Baptiste Bourguignon d'Anville, the famous French geographer and cartographer, 1752 published *Carte de l'Inde*, at the request of the French East India Company. d'Anville was able to produce advanced work. He took a full account of different materials, going deep into the past and consulting Arab and Greek historians and geographers. He also made use of astronomical observations by various Jesuit Missionaries and detailed routes of European travelers, which were the most priceless materials available to him. d'Anville also published a special map of the Southern Peninsula of the Indian Subcontinent. The competition between the French and the British East India Company intensified when Dupleix was appointed as the Governor of Pondicherry in 1749. This struggle continued till Pondicherry fell in the year 1761.<sup>8</sup> From this intensified competition both contenders gain better geographical knowledge of the Indian subcontinent.

---

<sup>5</sup> Phillimore, R. H. (1945). *Historical Records of the Survey of India, Volume I, 18th Century. The Surveyor General of India: Dehradun*, p. 151. Retrieved 17 June, 2020, from <https://ia800306.us.archive.org/21/items/HistoricalRecordsOfSurveyOfIndiaVol1ByColRHPhillimore/Historical%20Records%20of%20Survey%20of%20India%20Vol%201%20by%20Col%20%20R%20H%20Phillimore.pdf>

<sup>6</sup> Rennell, J. (1788). *Memoir of a map of Hindoostan; or The Mogul Empire: with an introduction, illustrative of the geography and present division of that country: and a map of the countries situated between the head of the Indus, and the Caspian Sea*. London: M. Brown, p. 48. Retrieved 16 April, 2016, from <https://ia800306.us.archive.org/15/items/memoirofmapofhin00renn/memoirofmapofhin00renn.pdf>

<sup>7</sup> Phillimore, R. H. (1945). *op.cit.*, p. 151.

<sup>8</sup> *ibid.* p. 210.

After the victory of Plassey in 1757, the British East India Company had the first opportunity for conducting a regular survey in Bengal. They had obtained grants from the Nawab of Bengal, of various parts like 24 Parganas, Chittagong, Midnapore which comprised the whole of lower Bengal. This enormous mathematical survey conducted by the East India Company of the Indian subcontinent can be compared to the extent of France and England taken together. Plaisted was the first surveyor employed for his skill in observing latitudes. He surveyed the Chittagong coast during 1760-61 and Sundarbans in and around the same time. Then Hugh Cameron was given the responsibility to survey the new lands of the 24-Parganas. But On Hugh Cameron's sudden death in 1764, Rennell was appointed as a surveyor in his place. His primary responsibility was to survey the river Ganges and search for a waterway for upstream navigation from Calcutta that should be navigable throughout the year. Before Rennell stepped into Bengal, their geographical knowledge was confined to the Banks of the Ganges and Hooghly. This was depicted in d'Anville's Carte de l' Inde given in plate 13.<sup>9</sup>

The necessity of a survey on the newly possessed lands was planned by the local council and encouraged from London. There were multiple motives behind carrying out these surveys. Firstly, it was done to determine the area of cultivable land and the value of their revenues. It should be kept in mind that the British East India Company received Diwani rights of Bengal, Bihar and Orissa in 1765. Secondly, the communication through sea and river was to be regularized and made safe.<sup>10</sup> Various rules were issued from time to time to prevent senior officials and military commanders from taking private possession of maps and surveys prepared under their official orders at Government expense, and to prevent such maps from being published for private profit in England.<sup>11</sup>

Rennell was first employed for the survey of the Ganges delta with the special object in view of finding a shorter passage suitable for large vessels from the mouth of the Ganges to Calcutta, than that through the Sunderbans and the Meghna. The book- 'Memoir of a map of Hindoostan', gives a detailed account of this voyage and of three subsequent expeditions, during which he surveyed a great part of Northern and Eastern Bengal, penetrating beyond Goalpara on the Brahmaputra which was then on the frontier of the Assamese kingdom. It was while he was engaged on this duty on the frontier of Cooch Behar that he met with the accident. He was surrounded by a party of Sannyasi-Fakirs, a fanatic tribe then in rebellion, and was desperately wounded, barely escaping with his life.<sup>12</sup> In 1767 he was appointed as surveyor-general of the East India Company's command in Bengal, by the then Governor of Bengal and Bihar, Lord Robert Clive. A general investigation was done regarding the newly acquired lands of the East India Company through the mapping project. In 1773 when Warren Hastings was appointed as the Governor-General the work gained a wider scope. For taxation of revenue, Hastings started a quick survey of property, land, people, and culture. Much like a military survey Rennell's part in this project was to search for a safe passage through the territory, with information gathering as a secondary object of the survey.

---

<sup>9</sup> *ibid.* pp. 1-2.

<sup>10</sup> *ibid.* p. 1.

<sup>11</sup> Phillimore, R. H. (1950). *Historical Records of the Survey of India, Volume II, 1800 to 1815. The Surveyor General of India: Dehradun.* p.287. Retrieved 19 June, 2020, from <https://ia800503.us.archive.org/14/items/HistoricalRecordsOfSurveyOfIndiaVol2ByColRHPhillimore/Historical%20Records%20of%20Survey%20of%20India%20Vol%202%20by%20Col%20R%20H%20Phillimore.pdf> accessed on 19.06.2020

<sup>12</sup> La Touche, T. H. D. (Ed). (1910). *The Journals of Major James Rennell, First Surveyor-General of India: Written for the Information of the Governors of Bengal During His Surveys of the Ganges and Brahmaputra Rivers, 1764 to 1767.* Calcutta: The Asiatic Society, p. 3. Retrieved 9 September, 2018, from <https://ia801408.us.archive.org/31/items/journalsofmajorj00renn/journalsofmajorj00renn.pdf>

## Conclusion

1760s saw a large number of survey maps being created and has been termed as the era of the scientific surveying in India. Rennell's Map of Hindoostan based on the surveys done on the Ganges during 1764 and survey of Bengal and Bihar in 1765 had followed Plaisted's survey done on the coast of Chittagong in 1761 and Cameron's survey of the 24 Parganas. Together these surveys inaugurated the scientific process of mapping the territories of colonial India. Scientific surveying made its progress during the early decades of 19<sup>th</sup> century and that too within the Southern parts of India. It is however to be noted that Rennell was appointed as Surveyor-General of Bengal on 1767, but proper progress in this field came much later. After defeating Tippu Sultan, the company acquired vast territories, which required proper surveying and settlement. The company's advancement towards the central and North-Western parts of India created the requirement to understand its geography. The commander of the British East India Company's troop had little knowledge of the topography of the country.<sup>13</sup>

There were individual surveyors who had to acquire the knowledge of various roads and areas. These bits of information were to be passed over to the Surveyor-General. However, the surveyors could not envision the map that was being created with the help of their accumulated knowledge. The totality of the country was not known to any of the surveyors. Under such circumstances numerous methods of conducting survey was applied, like the military, the topographical, the trigonometrical and the revenue surveys. The era of scientific surveying was not limited to understand the geography and the topography, it brought numerous other surveys conducted thorough the disciplines of Geology, Botany, forests and other natural resources archeology as well as antiquities. Even though the population survey was not their prime concern of the company it however had been a part of the statistical surveys conducted during the beginning of the 19<sup>th</sup> century under Colin Mackenzie. During the mid-19<sup>th</sup> century, population study became a major concern and surveying and mapping began to extend itself to the understanding of population and its characteristics. The epistemological and administrative concerns soon shifted to the mapping of the population from that of the territories.

## References

1. Bhattacharya, U. (2017). From Surveys to Management: The Early Colonial State's Intervention in Water Resources of Bengal. *Indian Historical Review*, 44(2), 225-251.
2. Bhattacharyya, A. (Ed). (2019). F.D. Ascoli: Early Revenue History of Bengal and The Fifth Report, 1812. London: Routledge.
3. Colebrooke, M. R. H. (1803). On the Course of the Ganges, through Bengal. In *Asiatic Researches, or transactions of the Society, instituted in Bengal, for inquiring into the History and Antiquities, the Arts, Sciences, and Literature of Asia*, volume- VII (pp. 1-31). London: (Printed Verbatim from the Calcutta Edition). Retrieved 22 March, 2018, from <https://archive.org/details/s3id13278180>
4. Edney, M. H. (1997). *Mapping an Empire: the Geographical Construction of British India, 1765-1843*. Chicago: University of Chicago Press.
5. John, J. K. (1997). The Mapping of Hindustan: A Forgotten Geographer of India, Joseph Tieffenthaler (1710-1785). *Proceedings of the Indian History Congress*, 58, 400-410.
6. Kalpagam, U. (1995). Cartography in Colonial India. *Economic and Political Weekly*, 30 (30), PE87-PE98.
7. La Touche, T. H. D. (Ed). (1910). *The Journals of Major James Rennell, First Surveyor-General of India: Written for the Information of the Governors of Bengal During His Surveys of the Ganges and Brahmaputra Rivers, 1764 to 1767*. Calcutta: The Asiatic Society. Retrieved 9

---

<sup>13</sup> Kalpagam, U. (1995). Cartography in Colonial India. *Economic and Political Weekly*, 30(30), PE 89.

- September, 2018, from  
<https://ia801408.us.archive.org/31/items/journalsofmajorj00renn/journalsofmajorj00renn.pdf>
8. Marshall, P. J. (1987). *The New Cambridge History of India. Volume II, Bengal: The British Bridgehead, Eastern India 1740-1828.* Cambridge: Cambridge University Press.
9. Phillimore, R. H. (1945). *Historical Records of the Survey of India, Volume I, 18th Century.* Dehradun: The Surveyor General of India. Retrieved 17 June, 2020, from <https://ia800306.us.archive.org/21/items/HistoricalRecordsOfSurveyOfIndiaVol1ByColRHPhillimore/Historical%20Records%20of%20Survey%20of%20India%20Vol%201%20by%20Col%20R%20H%20Phillimore.pdf>
10. Phillimore, R. H. (1950). *Historical Records of the Survey of India, Volume II, 1800 to 1815.* Dehradun: The Surveyor General of India. Retrieved 19 June, 2020, from <https://ia800503.us.archive.org/14/items/HistoricalRecordsOfSurveyOfIndiaVol2ByColRHPhillimore/Historical%20Records%20of%20Survey%20of%20India%20Vol%202%20by%20Col%20R%20H%20Phillimore.pdf>
11. Rennell, J. (1788). *Memoir of a map of Hindoostan; or The Mogul Empire: with an introduction, illustrative of the geography and present division of that country: and a map of the countries situated between the head of the Indus, and the Caspian Sea.* London: M. Brown. Retrieved 16 April, 2016, from <https://ia800306.us.archive.org/15/items/memoirofmapofhin00renn/memoirofmapofhin00renn.pdf>
12. Rogers, J. D. (1916). *Voyages and Exploration: Geography, Maps.* In H. Milford (Ed), *Shakespeare's England: an account of the life & manners of his age*, (pp. 170-197). London: Oxford University Press. Retrieved 11 June, 2019, from <https://ia800303.us.archive.org/8/items/shakespearesengl01raleuoft/shakespearesengl01raleuoft.pdf>
13. Ryley, J. H. (1899). *Ralph Fitch, England's pioneer to India and Burma; his companions and contemporaries, with his remarkable narrative told in his own words.* London: T. Fisher Unwin. Retrieved 18 October, 2017, from <https://archive.org/details/ralphfitchengla00ralpgoog>
14. Stewart, C. (1813). *The History of Bengal: From the First Mohammedan Invasion until the Virtual Conquest of that Country by the English, A.D. 1757.* London: Black, Parry and Co.