



Comparing the Cartographic Gaze of European Colonizers in Mapping Colonial Towns in India

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Introduction

“Every map is someone's way of getting you to look at the world his or her way”

(Lucy Fellowes, Smithsonian Curator, quoted in Henrikson 1994 - taken from 'Thinking about Maps', Dodge, et al, 2011)

India has been mapped incessantly with the advent of European colonizers initially by the Portuguese, followed by the Dutch, Danish, French and English colonizers since the fifteenth century. The European colonization process projected maps as a pre-requisite tool to gain possession before venturing into a foreign land. As a consequence, the project of mapping their colonies in India and using those maps for serving other interests of the colonizers gained currency. As navigation along sea routes was the chief mode of transport for the European colonizers, they began mapping of coasts and ports of call along peninsular India first, with little or vague representation of the interior of the sub-continent. This was followed by the mapping of their fortified territories and creating their own urban world within those spaces. The cartographic gaze of their early maps portrayed a picturesque gaze of what the sailors would have seen

while arriving towards those fortified town from the sea front. In others, the strategic location of the towns, the ordered features of defensive establishments, residential buildings, roads, churches, administrative and business houses, gardens, rural vistas, and dramatic vistas formed the elements of cartographic gaze. Their use of symbols of identity on the space as their own was done with the use of emblems, flags, royalty seals, directional Cross Rose and religious symbols. Those emerged as another dimension of cartographic gaze which were categorized under 'map aesthetics' of those maps. Though the mapping exercises were constantly shaping, modifying and transforming the cartographic gaze from time to time by the colonizers, the 'hegemony of visualization' was often selective and unrealistic. The initial involvement of the Portuguese, Dutch, Danish, French and English East India Company was primarily linked with trade and later empire building activities were adopted by the British colonizers. Their cartographic depiction of India also bore similar imprints on their maps. The basic mapping exercises pioneered by the Portuguese focused on depiction of detailed coastlines and relevant ports, followed by detailing of



colonized establishments such as forts, walls and churches. The British cartographers' scientific approach superseded the rest through the Great Trigonometrical Survey and cadastral mapping of local administrative areas.

The intrinsic characteristics of maps shaped by the three basic elements - the map maker, the subject of mapping and the objective to be served by mapping, allows scope for enquiry into the distinct cartographic gaze of the five European colonizers, namely, Portuguese, Dutch, Danish, French and British. Since, the colonial towns established by them were the pinnacles of political and commercial life in colonial India, mapping Indian urban spaces became a tool for claiming, organizing and appropriating the new colony. The colonizers' basic cartographic approach was focused on familiarization of the newly conquered region through navigative and accessibility maps; territorialization of place through mapping of enclosed urban spaces such as forts, town plan maps and promoting supremacy of their culture through language, pictographs and symbols. The paper aims to compare and critically analyze the varying cartographic gaze applied while depicting urban India by the successive streams of colonial powers.

The Background of Mapping in India

Mapping is a continuous process and it varies with time and space representing the uniqueness and dynamics of its character. According to Kitchin, Perkins and Dodge (2011), the historical cartographic investigations are not static and moribund exercise as cartographic theory and praxis have varied to a large extent in time and space. They asserted that 'Mapping is epistemological but also deeply ontological'. Anderson (1991) asserts that in new cartographic discourse, historical maps are designed to demonstrate the antiquity of specific, tightly bounded territorial units that had not previously existed. Thereby, mapping legitimized the claim to inherit ancient geo-bodies (Thongchai Winichakul, 1997). The historical cartography of India has evolved with successive colonial invasions and mapping projects with particular priorities, limitations, experiences and cultural biases of the map makers.

Subrahmanyam (2017) opines that though political, military and diplomatic contacts between the spaces denoted as Europe and India date back at least to the times of Alexander the Great (356-323 BC); but it was only after 1500 AD an intensification of these dealings were observed. With the rolling in of the second quarter of the century, the Portuguese began collecting and compiling literary knowledge of the natives in India. Joao de Barros (1496 - 1570) wrote 'Decades de Asia' and began the process of representing India to Europe could be made by compiling objects and written materials. Allen (2017) traces out the word 'Coromondel' on Portuguese maps which were later used by the Dutch, the French, the Danes and the British. The word has its roots in the word Cholanmandalam, or the region of Chola Empire. Similar is the story behind the naming of Malabar with its origin in 'malai' or mountains. Portuguese were different from the English and the Dutch as their missionary impulse was more intense; and that also impacted in how India was viewed. The Dutch Company employee Francisco Pelsaert prepared a *Kronick* and a *Remonstrative* (contemporary description) which was the key source for the Leiden based geographer and humanist Johannes de Laet for writing De

Imperio Magni Mogolis in 1631. The Dutch missionary Jan Huyghen van Linschoten travelled to Goa between 1583 and 1589. It is during this time that he collected information and on his return to Amsterdam, prepared maps of South Asia (India in particular) which were referred to by sailors for their subsequent voyages. Linschoten's maps stood out for his compass rose, rhumb lines and sailing ships on the Arabian Sea. His depiction of crypto zoological creatures like sea monsters routinely found space in his maps.

Apart from representation of motives on maps, certain techniques like use of colour were judiciously applied on maps by European cartographers. Monmonier (1996) identified colours to be a source of attraction as well as distraction in a map. Colours provide visual appeal as well as offer contrasting categories separating features like the roads, geological formations and the likes. Apart from the sensory effect on the viewers, colours also transmit ideas of visual perceptions and the cultural preferences of the map maker. This fact throws light on the colonial mapping exercise as successive streams of colonial cartographic exercise have showed distinct colour preferences while mapping the new territories colonised by them. The element of exoticism that was innate to the European depiction of the Oriental lands, colours on maps abetted to perpetuate the vibrancy of the region to the armchair travelers in the Europe.

Madan (2001) refers to the time period 1600 - 1800 AD, as the 'Age of Romance'; and it was during this time period that the interest of the European cartographers shifted from mapping the coastline to focusing their attention on inland features. In the phase that followed, which began in the nineteenth century and continued till mid- twentieth century, which Madan terms as the 'Modern Era,' the science of map making became more sophisticated and perfect accurate topographical surveys took precedence with triangulation or trigonometrical surveys. With the successive entry of Portuguese, Dutch, Danish, French and English in India, the palimpsest of India's topography on paper began to take shape. Changing technologies helped in circulation of images and lithographs became popular. Maps began to be used as a political tool specifically with British maps by James Rennel in Bengal Atlas in 1781 followed by Colin Mackenzie in 1800 and Arrowsmith's mapping exercises in 1822.

The British maps in the 1830s and 1840s projected India as an imperial possession and a significant element of British identity, at the same time underlying the need for a rational control of territory (Barrow, 2003). Thus, in 1858, British East India Company's power was transferred to the Parliament and the British crown for empire building. The many maps fundamentally reflected a Europeans' view of India obscuring the true picture of India. Edney (1997) has categorized British cartographic gaze into two types:

- i) Scientific gaze: Topographical Survey, Trigonometrical Survey and Revenue Survey and
- ii) Picturesque gaze: Idealized representation of landscape and communities.

Sarkar (2012) notes that apart from shaping colonial India, the British exercise of the Great Trigonometrical Survey (GTS) gave the technological thrust in replacing conventional mapping methods. However, critics of British mapping process have



given the view that the over ambitious approach was subjected to criticism as many aspects of India's societies and cultures remained beyond British experience (Edney, 1997) and their depiction of colonized society were subjected to biases and omissions (Kalpagam, 1995).

According to Virmani (2013), mapping was an imperial strategy adopted by all streams of colonizers; yet Indian Cartographic Studies have not paid enough attention to the variety of colonial cartographic initiatives made by different streams of colonizers. NATMO (2007) in its compilation of the Historical Atlas of India, briefly mention the Portuguese settlements and the aspiring British traders to establish contact with the Mughal Court during 1556 to 1605 AD. The maps have no demarcation of the regions occupied by colonial traders. The following period of 1605 to 1707 mentions emergence of British, Dutch and French having established factories in southern part of India. The map depicting the time period has no mention of the colonial trading posts. It is during the period of 1707 to 1766 AD, that the Atlas assigns space for British possessions on the map of India 1857 to 1859 onwards. In the map depicting Territorial and Administrative Changes from 1857 to 1904; clear demarcation of French and Portuguese colonies along with British colonies were shown. It is interesting to note that the Dutch, Danish territories did not find space in the maps as their colonial possessions were already on the decline by the late nineteenth century.

Database and Methodology

The cartographic gaze of the European colonizers with regard to urban spaces in India has been critically analyzed with the help of the maps prepared by them. As case studies, two colonial towns each mapped by the respective colonizers in India have been selected for this paper. The attempt to analyze the cartographic gaze is an effort to ponder upon the two questions here, i.e., where does the cartographer wants the viewer to focus; and what is the purpose or objective of mapping?

The following characteristic features in the colonial map have been selected to analyze the emphasis of the cartographer providing the viewer with the information it wants to portray through the maps:

- a) Foreground features,
- b) Background features,
- c) Fortified settlements,
- d) Natural Landscape features,
- e) Territory depiction,
- f) Transport Accessibility,
- g) Trade related depiction,
- h) Rural vistas,
- i) Dramatic vistas,
- j) Emphasis on colours,
- k) Cross Rose, Scale, Legends, Emblems, Flags, Seals and Symbols.

The Table-1 shows the colonizers and the list of towns whose maps have been selected for analysis. The maps of the selected towns have been critically examined to study the cartographic gaze of the respective colonizers in power during the time period mentioned above. The maps have been obtained from a wide variety of sources ranging from online archival library websites and national museum websites. The advantage of these sources

is that many of these provide a closeup view of the maps. Maps prepared by British cartographers have been taken from published texts.

Cartographic Endeavours of Successive Streams of Colonial Rulers

This section presents maps constructed by each European colonizer. The colonial rulers as well as the towns they laid control over have been organized and presented in a chronological order.

Portuguese: Casa da India (1434-1883); Portuguese East India Company (1628-1633)

The towns of Calicut and Goa have been selected for analysing the Portuguese mapping endeavours.

Calicut: The 1572 map of Calicut, titled 'Calechut Celeberrimum Indiae Emporium' is composed of a coastal settlement of prominence (Fig.1). The spectacular 'bird's eye view' of Calicut was a treat to the armchair traveler which portrayed the town of Calicut where the Portuguese had first set foot in their quest to arrive at India. The map is a depiction of what the sailors would have seen while arriving towards the town from the sea front.

The foreground of the map depicts the advantages of natural harbour facilitating the accessibility of Portuguese ships to Calicut. Portuguese visitors are seen approaching the fortified Portuguese settlements in small boat displaying the feasibility and ease of reaching. The presence of other varieties of native boats in picture depicts the genial atmosphere of pursuing trade. The Portuguese settlements appear as red thatched roofed houses, forts and watchtowers. A small watchtower or fortress protects the city from invaders approaching through the sea route. The map portrays a vibrant native coastal community as their everyday lives are depicted in snapshots. A woman head loader with her little child carrying out their daily chores, as well as a ruler being transported on a palanquin portrays a glimpse of their social characteristics while the fishermen with nets drawing fish from the ocean, workers constructing and repairing boats, Mahauts (elephant riders cum trainers) riding elephants used in carrying loads of wood from jungle depicts the natural resources and economic characteristics of the coastal communities. Moreover, the image of soldiers marching on the land creates an image of the prosperity of the land.

The coast and beyond shows swaying palm trees, and hill ranges which romanticizes the tropical landscape. The presence of a river and another small stream flowing from the hills add up to the visual treat. These rivers and streams flow from the Western Ghats and drain into the Arabian Sea and the coastline is dotted with sailing ships and boats. Natural colors of green, brown and red have been used in the map. Bold brown lines define the land and sea front. The map is devoid of any Cross Rose, Scale, Legends, Emblems, Flags, Seals and Symbols bearing testimony to the fact that the maps constructed during that time period were of rudimentary form.

Goa: The sixteenth century map engraved by J. Huyghen van Linschoten in the year 1595, shows the Island and metropolitan city of Goa, which was the capital of the Portuguese East India Company. Linschoten was a Dutch merchant, trader and historian. He also served as the Portuguese viceroy to Goa from



1583 to 1588. His personal knowledge of Goa was later added on to these base maps and was circulated among the Dutch, French and English too. Later versions of detailed maps of Goa clearly reveal the base map to have been compiled from the original maps.

The map (Fig.2) is a perspective diagram, which positions itself on an elevation in terms of an island with reference to the rivers and seas encompassing it. Representations of forts, palaces, gardens, monuments, prisons and harbour found space on the map. The foreground of the map portrays the navigational advantage showing a fleet of ship carrying Portuguese flags endorsed with a red bordered white 'Cross of Christ' in the centre, entering the waters of the city of Goa. They could be reached directly to the grand bazaar or market along the banks of the waterways. The map depicts the defensible island site of Goa with harbor facilities of big ships. The background of the map is surrounded by hilly terrain. The central theme is focused on the Portuguese city of Goa with details of layout depicting the Viceroy's territory, row of settlement houses encircling spacious gardens and groves, grand bazaars, well defined streets named after Portuguese colonialists, religious establishments named after saints, pillories showing the nature of disciplining acts executed by the Portuguese. The Portuguese territorial security of Goa is emphasized with natural boundaries marked with bold borders. The main fort faces the sea at entry points and watch towers erected at the corners. The urban map also depicts the religious evangelist nature of the Portuguese through symbols of 'the Cross' on top of settlement buildings and at all sides of the territory can be observed, asserting cartographically their possession of territory.

The landscape detailing portrays the potential availability of natural resources in the colony, with emphasis on the diverse nature of crops in agricultural field, abundance of palm trees and forests for timber, and lagoons with swans, adding to the dramatic vistas on the map. The image of domesticated elephants, boat construction activities along the shores shows the vibrant nature of the native community and their everyday activities. Shades of green, red, yellow and blue has been used to depict a natural view of the landscape. The landscape is in shades of brown and green and the land is bordered with blue. The bold blue border lines have been used in this map to define the land territory of Portuguese possession.

Typical Portuguese symbology of Portuguese coat of arms, shields and royal crowns, cardinal hat on top of the Portuguese arms has been used in the map. The compass rose figure with head arrow, with the symbol of 'lily's flower' to represent north that is used for depicting orientation of geographical objects on the map in relation to cardinal and intermediate directions on maps. The sixteen direction compass rose illustrates another significant aspect - a coalesce of geographical and religious representation with 'East' marked by the sign of Cross, symbolically the direction towards Jerusalem, the Christian holy city. The other pictographic decorations have enhanced the map aesthetics of the Portuguese map of Goa.

Dutch India (1605 - 1825)

The towns of Hughli-Chinsura and Cochin have been selected for analyzing the Dutch mapping endeavours.

Hughli-Chinsura: The map of Hughli (Fig.3) was prepared by

the French author and novelist Aantonio Franchoise Pervost as a part of *Historie Generale Voyages Atlas 1721*. Hughli was already an established trading centre. The map gives an impression to the viewer of seeing the European settlement while travelling by ship on the river. The Portuguese arrived in Hughli in 1537 and the town at Hugli Chinsurah, was founded in 1579. In 1625, Dutch Vereenigde Oosrendische Company established a 'loge' or a small settlement at Chinsurah, to the south of Portuguese Hugli. They received their trading rights from the Mughals. In 1653, the Dutch founded a factory at Chinsurah, and Van den Broucke became its first governor. The Dutch put their efforts on building up Chinsurah into a pleasant and spacious town with gardens and well-constructed roads. In 1774, they made further efforts to fortify the town.

The foreground of the map shows a variety of Dutch ships carrying Dutch flag with symbol of Dutch Republic Lion and boats approaching the Dutch trading and factory town of Hugli-Chinsura. The map depicts the bounded nature of settlement, gardens, groves and fields. The map is alphabetically coded with an index which provided the explanations and helps in ordering space representation by eliminating jumbles and simplifying harmonious viewing. The explanations of the index depict the location guide relating to Dutch industrial, administrative and accommodation units with bounded gardens setting a favourable atmosphere for undertaking and pursuing the trading operation. The features of the landscape portray order and harmony making a picturesque gaze.

The map is drawn in natural colors and bold red lines in the map define the Dutch territory - the boundary of Dutch settlements, gardens and agricultural fields. The map has a scale showing the introduction of quantification used by the Dutch cartographers. The 'Cross Rose' is similar to those used by the Portuguese cartographers in their maps of Goa, except that it shows eight directions in comparison to their sixteen directions compass rose. The decoration of the 'legend box' adds to the map aesthetics.

Cochin: The Dutch displaced the Portuguese from Cochin in 1663, demolished the old city laid by the Portuguese and built a new one. The new town is depicted in the map of Cochin (Fig.4) presented below dates back to 1665 AD. The map comprises of a coastal setting with a large neatly arranged fortified settlement and native villages with agricultural fields and forests. Ships stationed along the coast depict the availability of natural harbor facility of the town. The central theme of the map is the tightly bound Dutch occupied territory of Cochin. The pattern of settlement inside the fort is quite distinct with gardens encircled by row of houses and religious buildings and watch towers. The pattern is quite similar to the Portuguese settlement of Goa, reflecting the Portuguese influence of town planning in the past. An outer boundary wall beyond the fort wall signifies the double layer defensive protection of the Dutch communities.

A close scrutiny of the map reveals a well organised method of planning that went into the spatial organisation of Cochin by the Dutch colonisers. The extreme western parts of the map show area reserved for 'Coofers' or Dutch men placed in very high administrative ranks. The South Central part was designated for 'Werfs' or shipyards, which were christened with names bearing association with the metropolis; like, Bolwerck Gelderlandt,



Bol Bolwerk Groningen among others. Marking the spaces with such names on the colony, created a feeling of living in a home away from the homeland among the settlers and the map exuded familiarity to the Dutch living in Netherlands, who wished to migrate to the colony for trade.

The native rural communities residing outside the fort represents the presence of local communities living alongside the acquired Dutch territory. The native settlements with distinct house pattern when compared to the settlements located inside the fort are set in a natural setting evident from the presence of palm trees and forests in its vicinity. The details of the island in the northern portion have been depicted in faded tone color. Colonial dominance in terms of religious establishments is shown in the big and small islands. Natural shades used with prominence of green shows the rich flora of the coastal landscape providing a visual treat to the viewer. An eight directional Cross Rose with symbol of 'lily's flower' representing north and Christian Cross symbol representing east direction. The map is devoid of any Scale, Legends, Emblems or Decoration.

Danish India (1620 - 1869)

The towns of Tranquebar and Serampore have been selected for analysing the mapping endeavours of the Danish colonizers.

Tanquebar: Tranquebar is a small settlement in the Carnatic coast, north of Karaikkal. The Fort Dansberg was set up at Tranquebar by the Danes in 1620. It was sold to the British in 1845 as the Danes incurred huge losses in their trading company. The Danes took cognizance of the fact that they were unable to maintain safe trading posts in India.

The 1730 map of Tranquebar (Fig.5) prepared by cartographer Matthias Seutter shows the layout of the Danish township, and garrison prominently marked out through fortification of the town. The map is a composite picture of two sections. The bottom section shows the cityscape of the fortified Danish territory of Tranquebar with Danish flag flying high and swaying palm trees along the coast; presenting the map as a picture as seen by a sailor from a distance while approaching the land. The Beach Masters Office, Flag Staff house and store houses were marked well on the map, denoting the fact that any approaching ship could be seen from the fortified zone of the township. Boats are seen lying idle on the sand banks along the fort. A wide banner on the skyline shows the territory being projected as a property labeled by Danish ownership.

The other half of the map shows a cross sectional detail layout plan of the Dansburg Fort. It shows the Ground Rift and Prospect of the Royal Danish on the coast of Coromandel in East India. The layout depicts a neat urban plan of ordering of houses based on defensive functions, administrative, hierarchical residential living, layout of open spaces and gardens. The river drainage system provides a defensive advantage as a channel is seen connected to a moat circled around the fort. The fifteen watch towers, marked in Roman numbers, can be seen all along the four corners of the Dansburg fort and eleven along the boundary walls of the fortified settlement shows a system of order and discipline in town planning and defense management.

The map is painted in natural colors. An eight directional Cross Rose with symbol of 'lily's flower' representing north direction is shown. The map is devoid of any 'Scale'. The faces of angles

used in map decoration signify the orthodox nature of the Danish colonizers in matters of religion.

Serampore: The map dated 1762, is the earliest existing map of the Danish town of Serampore (Fig.6). An ideal plan for the development of Frederiksnagore indicates how the place was planned with streets and different zones. The location of the Danish administrative quarter and future European quarters has been depicted in the layout map.

The history of Serampore dates back to 1755 when in October 1755, Frederiksnagore was established at Serampore to the south of Chandannagore on the Hugli river. The town was located on the opposite direction of the British settlement of Barrackpore. Frederiksnagore was a well laid out city with impressive structures and manicured gardens.

The cartography undertaken for Serampore was conducted with great detail with geometric boxes showing the segregated quarters of residence, business and religious buildings. The road network was meticulously depicted and important landmarks such as the Danish Church, Roman Church, Baptist Church, Mission premises including its' college, Printing Office and paper engine was marked on the map. European, Portuguese, Mussalman and Baptist burial grounds too were specified on the map. Sociologically, the map was one of its kind making contribution to spatial segregation on the basis of delineation of residential quarters of different communities of Indians and Europeans. The map has a graphical scale, indicating adoption of scientific method.

French India (1668-1954)

The towns of Pondicherry and Mahe have been selected for analysing the French mapping endeavours.

Pondicherry: The 1705 map of 'Plan de Pondicherry' shows the French ruled territory of Pondicherry (Fig.7). Pondicherry continued to remain the cornerstone of French activities till 1954. Pondicherry was built on the land which was purchased from the Sultan of Bijapur by the French trading company. In 1791, the British razed and destroyed Fort St. Louis, and completely plundered the precincts. The weavers, bleachers, dyers painters and other related to textile industry were shifted out of Pondicherry after the British mayhem took place.

The foreground of the map of 1705 depicts the location of the French territory of Pondicherry. Important landmarks such as the Fort of Pondicherry, the Fort of St Laurent, houses of navy officers and administrative and law offices, churches, bazaars, fountains, Company's office, gardens, homes of well-known gentlemen found space in the map. The map depicts the fortified city as well as the rectilinear road network. The plan of the fort also clearly shows five bastions. The map portrays the adjoining countryside vistas of villages with trees, Hindu temples, agricultural fields growing a variety of crops, forest area, river of Pondicherry meeting the Indian Ocean. Roads that led out of the city showed the destinations like Veldour (Vellore) to the west, Goudeloure (Cuddalore) to the east; Madras (Chennai) to the north.

The map is painted in natural colors. An eight directional Cross Rose with symbol of 'lily's flower' representing north direction is shown. The map has a 'scale' showing the application of scientific approach in French cartography. The title and legend



boxes are ordained with decorative borders indicating attention paid to raise the aesthetic value of the map. As was observed in maps prepared by the earlier European colonial traders, the French cartography too showed caste groups in their segregated quarters housed in the Black city, of whom the largest community was that of the weavers.

Mahe: The map of Mahe prepared in 1726 shows the French territory of Mahe (Fig. 8), a small town on Malabar coast, located on the mouth of River Mahe. The French named river Ramatally to Mahem and was an important spice trading point especially for pepper and cardamom.

Analysis of the map reveals that the composition of the map revolves around the location of the fort amidst a larger view of the countryside with flat topped hilly terrain and low-lying valleys cultivated with rice fields. The foreground of the map shows the sea front location of a fort at the entrance of the town which was protected by rocks and boulders. Apart from the primacy of the fort, several military related information too can be gathered from the map. The map also shows the position vis a vis the Arabian Sea, the river coming through the Ghats leading to Fort St George to the north of the river which also was the limit of the French territory. Beyond that point, the British domain may be seen. Detailing of physical features especially elevation is shown with hachures which is unique when compared to previous colonial techniques of cartography. The physiographic features were best represented by the French. The geometrical description of rice fields in the lowland valleys. All these show the improvement of measuring techniques and height description. The map is painted in natural colors with the predominance of yellow shade. The circular 'Cross Rose' is replaced by only the symbol of 'lily's flower' representing north direction. The map has a 'scale' showing incorporation of the scientific approach in French cartography.

British East India Company (1612-1757); Company Rule (1757 1858); British Raj (1858 - 1947)

The towns of Calcutta and Delhi have been selected for analyzing the mapping endeavours of the British.

Calcutta: The map of Calcutta prepared in 1842 by British cartographer shows the colonial town of Calcutta. By the mid nineteenth century, a paradigm shift in European approach of map making and Empire building of India can be observed. The shift was towards quantification and universalization of depicting the location of a point in terms of latitudes and longitudes. The cartographic gaze of the British shifted from trade related activities towards governing and controlling India. The urban spaces gained prominence as they became the centres of administration, military activities, trading and residential stations over viewing the adjoining regions of British control. Apart from the coastal towns, inland towns became centres of British power. Calcutta was established as the centre of governance of British Raj in India.

The map of Calcutta in 1842, shows the closely built up city area adjoining the Hugly river (Fig.9). The Fort William is surrounded by open spaces segregating the British and native urban spaces. The details of road network with British road names, ghats, public buildings and churches shown on the town map depict a British influence of domination and control.

The Circular Road or the main thoroughfare that ran through northern and southern parts of the city has been clearly plotted. Colonial grand structures constructed in Calcutta like the Victoria Memorial, St Paul's Church (which was nearing completion), the Governor's house, the Ochterlony Monument (presently known as the Shahid Minar) and Esplanade Row are also shown prominently in the map. The cartographer included vignettes from the cityscapes to very subtly create mental maps of the newly constructed colonial capital in the minds of the potential viewers from the metropole.

The illustrations that appear on the map are ones depicting the urban life emerging within the milieu of the exotic landscape. The cranes and men relaxing with the backdrop of the Governor house as well as the Writer's Building and the Ochterlony Monument. The palanquins bearers resting by Esplanade row along with views of the banks of the Hugly river also evokes similar emotions. The 'Cross Rose' used by the Portuguese, Dutch, Danish, and French can be seen fully replaced by a 'north line' as the depiction of geographical direction shifted from astronomical and religious norms to a more universal grid pattern of latitudes and longitudes with Greenwich as the main reference point. The map has been prepared to scale.

Delhi: Stanford's map of Delhi in 1857 and its environment is a thoughtful construction to give the viewer a comprehensive location in terms of physical features that exist around Delhi (Fig.10). The map depicts the ridge, the river (Yamuna) and the positioning of the main roads, city forts and position of the British troupes in the light of the Revolt of 1857. The map has its own limitations with regard to accuracy of location of places. The Plan of the British Position in Delhi 1857 was prepared by the Military Department of the Government of India based on records collected by the military. The scale of the map was 'Four Inches to One Mile'; and it was published by the Survey of India Office, Calcutta in 1904. This map was perhaps the most comprehensive map of the old city produced at the time. The map recorded not only the road network but also the canal routes that intersected the city.

The Najafgarh and Jeel Canals can be seen on the map as water channels passing through Chandni Chowk. The Western Jumna Canal too was plotted on the map which traversed the regions around Begum Bagh. The other prominent fortified feature of the map was the depiction of the Red Fort. The map highlights the coexistence of the Old Mughul city and the New British city. The four directions, north line has been used in the map to show the direction. The map was prepared to scale.

Urban Mapping Techniques of Colonial Rulers

Cartographic gaze employed by the European colonisers, namely, the Portuguese, Dutch, Danish and French for mapping urban spaces was mainly from sea (outside) to land (inside) view with a focus on navigational accessibility, fortified territory; creating their own world set in fascinating setting within oriental environment, conducive atmosphere for trade operations and projection of a missionary approach. The maps portrayed the urban spaces located along the peninsular coasts and the banks along the Hugly river. The cartographic gaze of the British colonizers was centered around the East India Company's forts, military cantonments, esplanade as in case of Calcutta,

administrative buildings, public buildings, commercial buildings, religious buildings and recreational centres. Their maps of Calcutta (1842) and Delhi (1857) laid equal emphasis in mapping native old settlements and rural spaces adjoining the British establishments. Subsequent mapping exercise of these two towns showed their expansionist and empire building legacy such as the maps listed in the Constable's Hand Atlas of India, 1893 and the Imperial Gazetteer of India Atlas, 1931. Similarly, the 1910 map of Delhi represented the old existing city in black color and newly constructed imperial city in red color.

Analysis of the cartographic gaze of the five European colonizers appears to have some similarities as well as some differences. Almost all maps attempted to situate gardens within the settlements, wide roads, churches, watch towers. Active ship building works with the use of elephants formed the distinct characteristics of Portuguese cartographic gaze. Symmetrical and ordered settlement patterns with fine architectural details of houses inside the forts and harmonious landscape features in the map were the characteristics of the Dutch cartographic gaze. The depiction of picturesque gaze or post card picture has gradually shifted towards more schematic forms in Danish cartographic gaze with organized layout plans and laying the foundation of segregated quarters for European and native population. The physiographic depiction of elevation of topography with hatchures and depiction of valleys where rice cultivation is most dominant have been distinctly introduced by the French cartographic gaze. The British cartographic gaze was more intensive, scientific, objective and was projected space as a commodity of possession and imposition of British identity.

The angle of view of urban mapping shifted from a low angle view with landscape and horizon detailing to a more vertical view with the progress of time. The shift to vertical view with details of built up and planned zones, giving information related to area, position, association and direction information. The maps also subtly promoted the supremacy of their culture through language, pictographs and symbols. The textual descriptions on the maps were in their own native languages. The maps had their own nationalistic elements such as seals and emblems. The compass rose figure with head arrow being depicted with the symbol of 'lily's flower'(religious meanings and nobility); North have been used for depicting orientation of geographical objects on the map in relation to cardinal and intermediate directions by Portuguese, Dutch, Danish, French and English colonizers. East was marked by the sign of Cross, symbolically the direction towards Jerusalem, the Christian holy city in the compass rose on the town maps by Portuguese and Dutch colonizers. Decorations of the maps were often indulged in to increase map aesthetics. Compass roses were replaced by the north line during nineteenth century British maps. There has been a subsequent reduction in decoration relating to map aesthetics with the ascension of scientific techniques of map making adopted by the British.

Conclusion

The cartographic representations of the urban spaces undertaken by the European colonizers are a repository of information about how India was mapped over five centuries. Analysing the maps both temporally and also on the basis of the particular European

metropolis that commissioned them bear testimony to the rise in sophistication of map making, the importance those maps commanded, and also the associated map-characteristics specific to a particular metropole's cartographic project. While the cartographic gaze of the Portuguese, Dutch, Danish and French were mainly picturesque, imaginative, qualitative and focused in nature, the British gaze was more scientific, ordered, objective and political. The maps prepared by the Portuguese, Dutch, Danish and French were concerned with the establishment and protection of trade routes (with ships and fortified settlements) as trade was their only motive in India and were not deeply involved with the conquest of territories. On the contrary, the British mapping approach was associated with expansionist ambitions of empire building. Their depictions were associated with assertion of supremacy, domination and subordination of the Indian communities. Mapping the colonial urban locations that were established by the successive streams of colonial powers in India have not only depicted, created and imposed their own identities through their cartographic gaze but have also influenced the development of cartographic exercises in general and mapping and shaping India in particular. The comparative analysis of the cartographic gaze of the five European colonizers brings out a narrative of the change and continuity of the colonial cartographic projects that led to the imagination of the 'geo-body' of India.

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Table -1: Selected Towns, Colonizers and Period of Rule

No.	Colonizers	Towns	Period of Rule
1	Portuguese	Calicut	1498 – 1663
		Goa	1510 – 1961
2	Dutch	Hugly-Chinsura	1650 – 1759
		Cochin	1663 – 1773
3	Danish	Tranquebar	1620 – 1845
		Serampore	1755 – 1845
4	French	Pondicherry	1674 – 1954
		Mahe	1720 – 1954
5	British	Calcutta	1690 – 1947
		Delhi	1803 – 1947

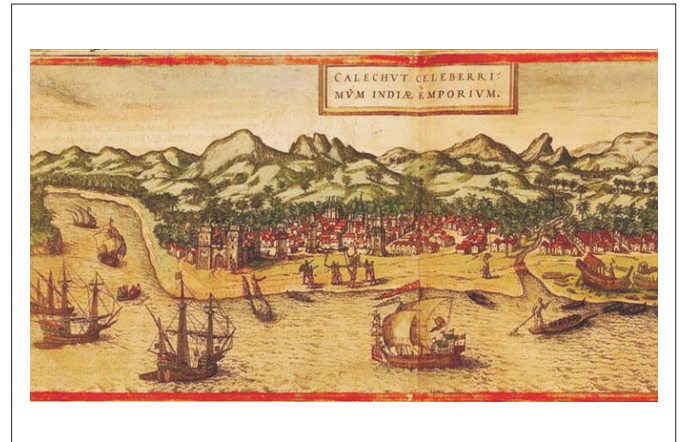


Fig.1: A Panorama of Calicut, 1572

Source: A panorama of Calicut from the atlas Civitates orbisterrarum, 1572
https://img.theculturetrip.com/840x440/smart/wp-content/uploads/2018/01/0-featured_image-1.jpg



Fig.2: Island and city of Goa, Capital of the Portuguese East Indies, 1595

Source: <https://www.agefotostock.com/age/en/Stock-Images/Rights-Managed/DAE-11194876>



Fig.3: Plan de la Loge Hollandoise d Ougly A. 1721

Source: http://www.columbia.edu/itc/mealc/pritchett/ooroutesdata/1600_1699/calcutta/chinsura/plan1726.jpg



Fig.4: "De stadt Couchijn" Plattegrond in opstand van Couchin/Cochin, India 1665

Source: <http://www.gahetna.nl/collectie/afbeeldingen/kaartencollectie/zoeken/weergave/detail/q/id/af87c38e-dob4-102d-bcf8-003048976d84>



Fig.5: Map of Tranquebar by Matthias Seutter, 1730

Source: <https://en.natmus.dk/historical-knowledge/historical-knowledge-the-world/asia/india/tranquebar/collections-in-the-national-museum-of-denmark/maps-and-sketches-from-tranquebar-c-1670-1845/>

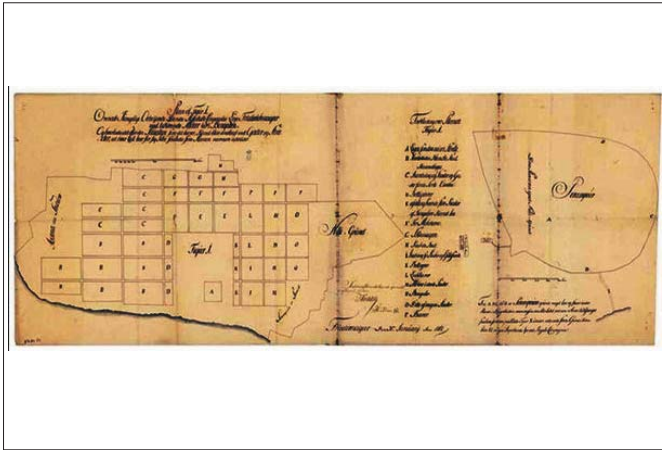


Fig.6: Serampore, 1762

Source: <https://en.natmus.dk/historical-knowledge/research/research-projects/the-serampore-initiative/historical-background/>



Fig.7: Plan de Pondichery, 1705

Source: <https://www.raremaps.com/gallery/detail/31394/plan-de-pondichery-a-la-cot-de-coromandeloccupee-par-la-comp-de-fer>

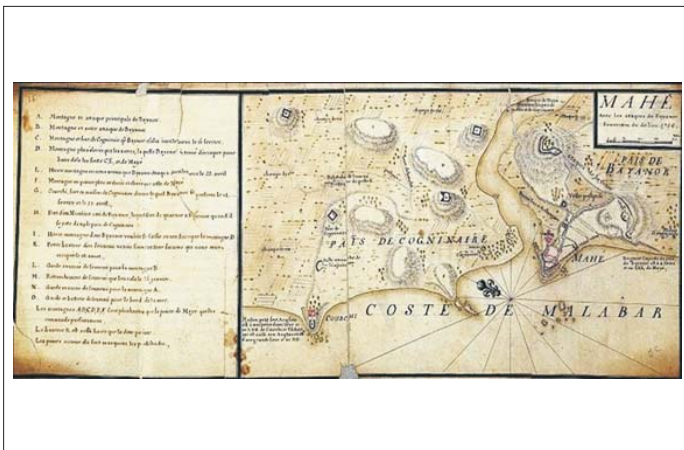


Fig.8: Plan de Mahe avec les attaques de Bayanor souverain du lieu, 1726

Source: Archives de l'outre-mer : <http://anom.archivesnationales.culture.gouv.fr/sdx/ulyse/>

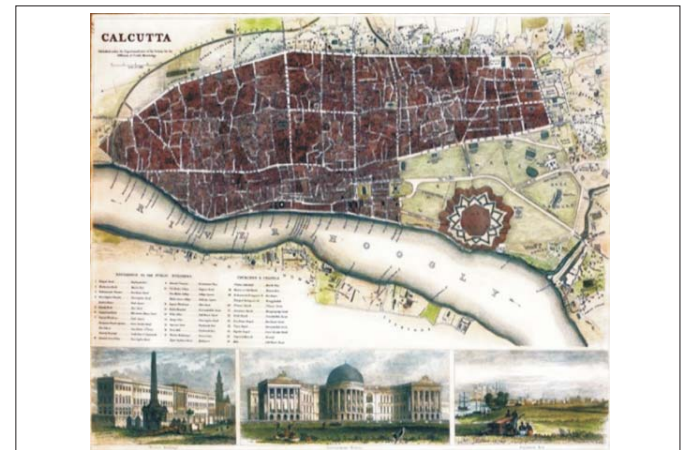


Fig.9: Calcutta, 1842

Source: Lahiri, M (2012): Mapping India. Niyogi Books, New Delhi.

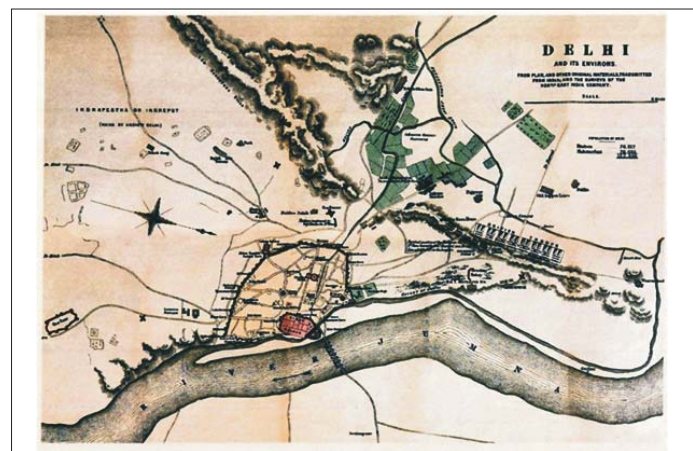


Fig.10: Delhi and Its Environs-Surveyors of EIC, 1857

Source: Lahiri, M (2012): Mapping India. Niyogi Books, New Delhi.



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