International Journal of Applied Social Science Volume 5 (8), August (2018) : 1347-1353 Received : 22.06.2018; Revised : 08.07.2018; Accepted : 25.07.2018 **RESEARCH ARTICLE** ISSN: 2394-1405 (Print)

Myth and reality of the Adi Ganga: A Paleodistributary of the Ganges in West Bengal, India

ATANU MANDAL

Contractual Whole-time Teacher (Government Approved) Department of Geography, Fakir Chand College, Diamond Harbour South 24 Parganas (W.B.) India

ABSTRACT

The Adi Ganga, once glorious riverine navigational channel is a palaeodistributary of the Bhagirathi-Hugli River. It had floated hundreds of merchant's fleet in those glorious days from the local and hinterland areas to the islands of unknown as mentioned by many tales. It was also considered as the holy path as it was one of the direct free flowing distributaries of the Bhagirathi-Hugli River or the mythical Ganga as mentioned in the epic of the *Ramayana*. But constant siltation process and unscientific encroachment to the river have dwindled the freeness of flow. Again, these activities have unearthed many problems such as drainage congestion, flooding and so on. Moreover, the discharge of effluents and other solid wastes have deteriorating the sanctity of this once holy distributary. Many literatures methodically studied for collecting detail information about the Adi Ganga River. This endeavour is dealt with familiar the myth and reality of the palaeodistributary which was famous and active navigation channel and the present decaying status.

Key Words : Palaeodistributory, Myth, Drainage congestion, Decaying, Flooding

INTRODUCTION

The sage Bhagiratha, of the epic *Ramayana* had brought the River Ganges down to the Earth. So, the river as myth revealed, is the holy flow in this Earth. Adi Ganga is the heritage river of the city of Kolkata and southern part of West Bengal, a link to the glorious past of Bengali culture and civilization. As stated in the Mediaeval Bengali literature, the Adi Ganga is a palaeodistributary of the Bhagirathi-Hugli River and it was an important navigational channel. According to the Ancient and Mediaeval historical records the river Bhagirathi-Hugli was trifucated near Tribeni into three branches (Jamuna, Hugli and Saraswati) of almost equal width. The Saraswati flowed in a south-westerly direction, past Saptagram. The Jamuna flowed in a south-easterly direction to Buram (Borhan, in the 24 Parganas). The Hugli is flowing till date in the middle, glided down to the place where Kolkata now stands and then flowed through the Adi Ganga, via Hastings, Alipur, Kalighat, Tollygunge, Garia, Sonarpur, Baruipur and Surjyapur (22°18'N, 88°28'E) to the sea. During the reign of Nawab Alivardi Khan (1739-1756), he hired the Dutch engineers and excavated the path between Garden Reach and Sankrail (*i.e.* Saraswati to Adi Ganga with a length of 1.00 kilometre) to increase the depth for smooth journey of ships, vessels and cargo towards the port of

How to cite this Article: Mandal, Atanu (2018). Myth and reality of the Adi Ganga: A Paleodistributary of the Ganges in West Bengal, India. *Internat. J. Appl. Soc. Sci.*, **5** (8) : 1347-1353.

ATANU MANDAL

Calcutta (now Kolkata). It is also evident that there are no crematoriums along the *Kati* Ganga (excavated path) and people belonging to the Hindu religious group were not collecting the holy water (for ceremonial purposes). Previously the middle path also exhibited the main path like the River Bhagirathi-Hugli. Adi Ganga was excavated by Major William Tolly (who was in service of the East India Company at Fort Williams) during 1775-1777 with a loan from the Government. In British period, many foreign ships, vessels also engaged in import and export of goods via Adi Ganga to Calcutta Port. During the 16th century, the main flow of the Hugli, which earlier used to flow through the Saraswati, began to change its course. As a result, the Saraswati is now in a state of decay and the Hugli has abandoned the Adi Ganga channel and adopted its course to empty its water to the Bay of Bengal.

METHODOLOGY

Present study mainly based on secondary data collected from different old books, epics, religious books, published journals and ancient maps are the sources of the modern history and also deeds for ancient civilization. Several Bengali literatures like *Manasâ-Bijay* or *Manasâr Bhâsân* or *Manasâmangal* (latest 15th century-c.1496), *Chaitanyabhâgabat* or *Chaitanyamangal* (1535-1536), *Chandimangal* (1594-1606), *Râymangal* (1686), described the course of the Adi Ganga as a palaeodistributary channel of the Bhagirathi-Hugli River. Many Mediaeval authors and critiques also wrote different articles about the river Adi Ganga, its significance and the neighbouring people. From all of these the author tried to find historical perspectives, myth and reality of the river.

RESULTS AND DISCUSSION

Being the heritage river, Adi Ganga has its own historical past. As a navigational cannel (a palaeodistributary of the Bhagirathi-Hugli River) its importance and relation with Bengali culture is known to everybody. The researchers view and Mediaeval literatures about the Adi Ganga have systematically been analyzed below.

Critiques' view of the Adi Ganga as a palaeodistributary channel:

According to Holwell (1771), Kalighat an ancient Pagoda dedicated to Kali, stands close to 'a small brook' near Kalighat was 'deemed to be the original course of Ganges' by the local Brahmins (Holwell, 1771, Bandyopadhyay, 1996). The Calcutta Review (1852) reported that, "...the Ganges itself, which now flows by Bishop's College, once took its course on the site of Tolly's Nullah. With the natives, to the south of Calcutta, Tollygunge is a scared place of cremation, and so is Baruipur, where there is not a drop of water, because they believe the stream of the Ganges rolled there once: the travelers never see any funeral pyres smoking near Hugli south of Calcutta, as the natives have a notion that this is a Kataganga or a modern channel - the ancient channel, and not merely the water is accounted scared by them" (Bandyopadhyay, 1996). According to Sherwill (1858) own words "This branch is considered by *Hindoos* as the most scared stream of *Bhagirathee* or Ganges, and no other finds such favour in their eyes" (Sherwill, 1858). The Adi Ganga, in its lower course below Basantapur (south of Surjyapur), used to be 'broken into numerous mouths' the principal ones being Baratala, Saptamukhi and Thakuran. The first among these reached the sea at Gangasagar, 'where orthodox Hindoos agree that the Ganges mingles its waters with the oceans' (Bandyopadhyay, 1996). Hunter (1875, 1876) identified the Adi Ganga and observed how 'the Hindus still consider the route of the channel, sacred, and burn their dead on the sides of the MYTH & REALITY OF THE ADI GANGA: A PALEODISTRIBUTARY OF THE GANGES IN WEST BENGAL, INDIA

tanks dug in its bed' (Bandyopadhyay, 1996, Hunter, 1875, 1876).

According to O'Malley (1914, 1917), when the British rule begun, boats from the eastern districts could only approach Calcutta by a route close to the sea face, which brought them into the Hugli by the Baratala creek, 70 miles below Calcutta; this route was not only circuitous, but also impracticable for country boats during the monsoon. The pioneer of the present system was Major Tolly, who in 1770 canalized an old bed of the Ganges from its confluence with the Hugli at Hastings, a little to the south of Fort William, south-eastwards to Garia, a distance of 8 miles. From this point the river (which was called Tolly's Nullah after his name) was carried east to meet the Bidyadhari River at Samukpota, and thus gave access to an inner route which leads eastward from Canning. Mr. O.C. Lees of the Public Works Department proposed in 1902 that Tolly's Nullah should be canalized so as to provide a channel, from the Bidyadhari River to the Hugli, capable of being used by the large inland streamers and boats employed in the trade with Assam and eastern Bengal. In 1904 the proposal was placed before the Government of India, the total cost (including dredging plant) being estimated of US\$ 176128. That government, while agreeing the improvement of Tolly's Nullah was desirable in order to provide direct access to Calcutta, held that the provision of funds for so costly an undertaking prevented its acceptance. This discussion was subsequently reopened in 1906, and since that time various proposals and revised estimates have been made (O'Malley, 1914, 1917).

Tolly's Nullah, 17 miles in length, extends from Khidirpur to Tardaha and so connects the Hugli with the Bhagirathi River. It was originally a silted up channel of the Ganges, and was excavated in 1776 by Major William Tolly as a private venture under a temporary grant of land and of the right to levy canal tolls. The Tolly's Nullah was opened to navigation in 1777. In 1790 an advertisement in the Calcutta Gazette (of 18th March) was made offering for sale the remaining term of the lease granted by Anna Maria Tolly to John Wilkinson, from which it appears that the tolls were leased for 10 years of a time. The river was taken over by government in 1804; an official announcement in the Gazette states that the tolls on boats and goods passing through the Tolly's Nullah, formerly levied for the benefit of the Late Mrs. Tolly, are henceforth to be collected for government under the superintendence of the Collector of the 24 Parganas. When first excavated, the river was of insignificant dimensions, but it has since been widened, and is now a much frequented route. It is however very liable to silting, especially near Tollygunge, there the tide meet, and has to be constantly cleared in order to keep it navigable (O'Malley, 1914, 1917).

It is still traceable as far south as the Joynagar Police Station, being known variously, as the Adi Ganga (*i.e.*, the original Ganges), *Burha* Ganga (or the Old Ganga) and Ganga Nullah. It still retains its sanctity in the eyes of Hindus, who burn their dead along its banks, where as the present Hugli river below Tolly's Nullah is not considered a sacred stream. The old channel may still be made out at various places, such as Baruipur, Dakshin Barasat, Joynagar and Rajpur in the Sadar Division and Multi and Hansghar in the Diamond Harbour sub-division. Even in places where it is entirely silted up, tradition points to old tanks, still called Ganga, as having been excavated along its cause while it was an active stream. Such tanks may be found at Joynagar and Vishnupur (Bistupur) and Khari in the Mathurapur Police Station that at the place last named has a special sanctity, and is known as Chakratirtha or Chakraghata. Their water is accounted as sacred as that of the present Ganges, and Hindus bathe in them and burn their dead bodies on their banks with the same assurance of spiritual benefit (O'Malley, 1914, 1917).

The Adi Ganga used to 'emerge out of Sundarbans' at Kakdwip on the Baratala and then used to follow the same river before turning west into Sagar island between Manasadwip and Dhablat

ATANU MANDAL

areas and again turning south upto its confluence at Gangasagar (Bandyopadhyay, 1996). According to Hirst (1916), the stream (Adi Ganga) used to flow westwards from Surjyapur along the existing Surjyapur and Diamond Harbour tidal creeks to meet the Hugli at Diamond Harbour (Bandyopadhyay, 1996). Reaks (1919) also agreed to Sherwill (1858) by stating that, before reaching the sea, the Adi Ganga used to 'split up into a number of branches one running into the lower Hugli at Diamond Harbour' (Bandyopadhyay, 1994, 1996, Sherwill, 1858, Hirst, 1916).

Subsequently, the course of the Adi Ganga between Surjyapur and the Baratala was traced by Dutt (Dutt, 1934, 1952, 1963). Lahiri (1936) elaborated that the Sagar island stretch of the Adi Ganga, beyond Kakdwip, followed parts of the existing tidal creeks of Shikarpur, Chemaguri, Manchkhali (may be Marichkhali), and Gangasagar (all N-S) and went through the present day localities of Rudranagar, Bishnupur, Narendrapur, Narayaniabad, Magra and Gangasagar (Bandyopadhyay, 1996, Lahiri, 1936). Mukerjee (1938) was accepted the view of O'Malley (1914, 1917). In another map Mukerjee (1938) showed the course of the Adi Ganga as slightly offset from the present day tidal channels all along. However, the basic path was identical to that of Lahiri (1936). According to Mukerjee (1938), the suggested course was established on the basis of Mangalkavyas, toposheets and field evidences which were not specified (Bandyopadhyay, 1994, 1996, Mukerjee, 1938). According to Mukherjee (1976, 1983, 2003) the well-known 1552 sketch map of Jao de Barros also showed the Adi Ganga as flowing westwards a short distance after crossing Khari (Mukherjee, 1976, 1983, 2003). Later, in a seemingly modified version of the above, the Palaeochannel was shown by Mukherjee in 1976 to approximately follow the existing railway track from near Bishnupur upto Laksmikantapur and then the Kulpi creek to join the Hugli near Kulpi (Bandyopadhyay, 1994, 1996).

Based on the positions of the five outlets of the Ganga Brahmaputra Delta compiled by Claudius Ptolemy in the 2nd century A.D., Bhattasali (1941) identified the present Hariyabhanga confluence of the India-Bangladesh border as the 'Mega' estuary of Ptolemy (Bhattasali, 1941). According to him this was the ancient outlet of the Adi Ganga (Bandyopadhyay, 1996). Later Bagchi (1944) accepted the view of Bhattasali (1941). Based on modern photo interpretation studies by Babu (1976), Das *et al.* (1985) detected that an approximately 5 kilometres wide and 50 kilometres long levee zone 'representing an ancient channel' extends from the south of Kolkata to the area around Khari which can closely be related with the course of the Adi Ganga (Bandyopadhyay, 1996, Babu, 1976). According to Rudra (1981, 1986, 1987) from Khari onwards the river used to flow due south into the sea along the Gobadiya creek through the Saptamukhi estuary of today (Rudra, 1981, 1986, 1987). This course coincides most accurately with the descriptions made in the Chaitanya-bhâgabat or Chaitanyamangal and Manasâ-Bijay or Manasamangal. According to Bandyopadhyay (1994, 1996) the course of the lower Adi Ganga, downstream of Surjyapur, may be established with some confidence up to Gajmuri-Dighirpara through Multi, Hogla, Joynagar, Bishnupur, Chhatrabhog and Barashi, its position below that area may only be left undefined (Bandyopadhyay, 1996).

Evidences from Mediaeval literatures:

There are some Mediaeval Bengali literatures which described the Adi Ganga course of the Bhagirathi as a principal navigational channel to the Bay of Bengal. Among these few works are now collectively referred to as the *Mangala* poems or *Mangalkâvyas* - a class of various culture related narrative themes that flourished in the 13th - 18th century Bengal (Sen, 1945, 1971, Bhattacharyya, 1975). A voyage to the ocean mostly by merchants, was a theme common to a number of *Mangalkâvyas* (Bandyopadhyay, 1996).

MYTH & REALITY OF THE ADI GANGA: A PALEODISTRIBUTARY OF THE GANGES IN WEST BENGAL, INDIA

Manasâ-Bijay or *Manasâr Bhâsân* or *Manasâmangal* by Bipradas Pipilai (latest 15th century-c.1496): The *Manasâmangal* - a latest 15th century Bengali verse was composed by Bipradas Pipilai. A number of old strandline villages were mentioned in the *Manasâmangal*. Voyages to the ocean mostly by merchants like Chandsadagar travelled through the Adi Ganga. Bipradas Pipilai has described the journey path of Behula, wife of snake bitten Lakhindar, through the Adi Ganga, crossing Chitpur, Betore, Kalighat, Churaghat, Baruipur, Chatrabhog, Badrikunda, Hathiagarh, Choumukhi, Satamukhi and Sagarsangam (Sen, 1958). The description of Bipradas Pipilai tallies to a large extent with Van den Brouke's map of the Adi Ganga in 1660.

Chaitanyabhâgabat or *Chaitanyamangal* by Brindabandas (1535-1536): The *Chaitanyabhâgabat*, was a biography of the famous Vaishnavait saint Sri Chaitanyadeva. It was on paper by Brindabandas. The famous Vaishnavait saint Sri Chaitanyadeva, one of the major religious preachers of eastern India, also travelled to Puri, in the coastal Orissa through this way i.e. the Adi Ganga proving its navigability as a large river (Dutta, 1929, 1935, Sen, 1991). The presence of a number of rich towns and religious places on the banks of the Adi Ganga proves its remarkable existence as a big river. The strand of Adi Ganga was known as *Jangal* and it was down this path that Sri Chaitanyadeva along with four companions travelled from Nabadwip to Puri. According to *Chaitanyabhâgabat*, when he reached Atisara village (now Baruipur) he spent the night (14th Falgun, 1510) singing *kirtan* in the hut of Sadhu Anantaram. This tradition of singing *kirtan* continues in Baruipur for 500 years. A temple has come up on this spot. Thereafter, Sri Chaitanyadeva went southwards and with the help of the fouzdar, Ramchandra Khan (Ghosh) crossed Satamukhi river and reached Puri via Midnapore.

Chandimangal (Dhanapati version) by Mukundaram Chakrabarti (1594-1606): The another important literary works of Mediaeval Bengal *i.e. Chandimangal* by Kabikangkan Mukundaram Chakrabarti, also came into light (Bhattacharyya, 1966). According to the description important localities are Garifa, Bajan, Amalanga/Amalangka (Ambulinga in Barashi), Chhatrabhog, Hatiyagarh, Shilakut, Magra (Wilson, 1892, Bandyopadhyay, 1907, Reaks, 1919).

Râymangal by Krishnaram Das (1686): The *Râymangal* composed by Krishnaram Das was also an important Mediaeval literature (Bandyopadhyay, 1907). In poem no. 10 some localities like Dihi Medanmal, Hogla, Patharghata, Barasat, Khaniya. According to description of poem - 50 localities (arranged in downstream order) are Kalyanpur, Malancha, Baruipur, Surjyapur, Sadhughata, Multi, Hansuri, Barasat, Barukshetra (Baharu), Joynagar, Bishnupur, Ambulinga (in Barashi), Chhatrabhog, Gangadwara (Gangaduyara), Tiyakhol, Gajmuri, Kakdwip, Betai, Dhamai, Gojana, Magra.

A few inferior and less important verses like the *Satyanârâyan Kathâ* of Ayodhya Ram, the *Shitalâmangal* of Harideb and the *Kalu Râyer Geet* of Dwija Nityananda (Basu, 1989). It also may be noted that, in few of the earlier works some existing place-names were often arbitrarily ascribed to a *Mangalkâvya* although their mention cannot be found in the authentic versions of the same (Bandyopadhyay, 1996, Reaks, 1919, Mukhopadhyay, 1921, Lahiri, 1936, Dutt, 1963, Mukherjee, 1983).

Conclusion :

The Ancient and Mediaeval historical records revealed the anabranching status the River Bhagirathi-Hugli. It had branched into three distributaries (e.g. Jamuna, Hugli, and Saraswati) near Tribeni. According to *Manasâmangal*, Chandsadagar, an established merchant, always used this pathway of the Adi Ganga while in his voyage for trading purposes to the remote islands. As myth

ATANU MANDAL

dictated, the body of the snake bitten Lakhindar (son of Chandsadagar) was also carried out through floating by his tenacious wife, Behula amidst the passage of the Adi Ganga River. As stated in the Chaitanyabhâgabat, Sri Chaitanyadeva, an incarnation of God had also travelled Puri through this river from Nabadwip. While recognizing the huge of this river route, Nawab Alivardi Khan (1739-1756), hired the Dutch engineers and excavated the channel between Garden Reach and Sankrail and joined the Saraswati with the Adi Ganga (1.00 kilometre) for the easy entry of European merchant ships to the Kolkata Port. This excavated path or the Kati Ganga is not considered yet as the holy path as there is no crematorium along this side. During 1775-1777, Major William Tolly excavated the Adi Ganga River and collect toll from it. Many intellectuals mentioned the previous path of the river Adi Ganga via Chitpur, Betore, Kalighat, Churaghat, Baruipur, Chatrabhog, Badrikunda, Hathiagarh, Choumukhi, Satamukhi and Sagarsangam. Although, there is a great controversy about the point of confluence of the Adi Ganga, but the river finally arrive at the Bay of Bengal. Dry bed of the Adi Ganga River is also prevalent now a day beyond Garia. Somewhere the river bed is converted into built-up area, playground and fisheries. But once the lifeline of deltaic Bengal is now illegally reclaimed by the encroachers. The present channel of the Adi Ganga is in a lamentable state of decay.

REFERENCES

- Babu, P.V.L.P. (1976). A review on the oil and gas prospects of the Bengal basin based on photogeomorphological studies, Photonirvachak: J. Indian Society Photo-Interpretation, 4(1-2): 1-3.
- Bagchi, K. (1944). The Ganges Delta. University of Calcutta. Kolkata. 39-49.
- Bandyopadhyay, P. (1907). Ancient History of Bengal (in Bengali). 1: published by Banerji PB. Kolkata. 16-19.
- Bandyopadhyay, S. (1994). Sagar Island: Evolution, Landforms and Environmental Management. Unpublished PhD thesis. University of Calcutta. Kolkata. 122.
- Bandyopadhyay, S. (1996). Location of the Adi Ganga Palaeochannel, South 24-Parganas, West Bengal: A Review. Geographical Review of India, 58 (2): 93-109.
- Basu, A.K. (1989). History of the Course of the Ganga (in Bengali), West Bengal State Book Board. 107-117.
- Bhattacharyya, A. (1975). History of the Bengali Mangalkâvyas (in Bengali), 6th ed., A Mukherji and Co. Pvt. Ltd., Kolkata. 11-14, 20, 61-64, 127-130, 467.
- Bhattacharyya, B. (1966). Kabikangkan Mukundaram Chakrabarti's Chandimangal: The Story of Dhanapati (in Bengali). University of Calcutta. Kolkata. 1-2, 219-223, 317-322, 482-483.
- Bhattasali, N.K. (1941). Antiquity of the lower Ganges and its courses. Sci. & Culture, 7(5): 44,233-239.
- Das, D.K., Majumder, I.P. and Ganguly, A. (1985). Evolution of the landscapes in the Calcutta Sundarban coastal area of South Bengal, India, *Indian Academy Science (Earth Planet Science)*, 95(3): 143-152.
- Dutt, K. (1929). The antiquities of Khari, Appendices to the Annual Report of Varendra Research Society. (Monograph-3): 4-13.
- Dutt, K. (1934). Poundrabardhan and Barddhamanbhukti (in Bengali), article read in 1st Annual Conf., Bangiya Sahitya Parishad, reprinted in: Dutt, K. (1989) The Past of South 24-Parganas (in Bengali), Sundarban Regional Museum, Baruipur, Kolkata. (2): 87-91.
- Dutt, K. (1935). A brief historical account of Sundarban (in Bengali), In Sen, D.C. The Greater Bengal (in Bengali), University of Calcutta, Kolkata. (2): 1126-1132.
- Dutt, K. (1952). Chhatrabhog (in Bengali), Prabasi, 52(2): 433-438.

MYTH & REALITY OF THE ADI GANGA: A PALEODISTRIBUTARY OF THE GANGES IN WEST BENGAL, INDIA

- Dutt, K. (1963). History of the Adi Ganga (in Bengali), Somprakash Sahityapatra, Reprinted in: Dutt, K. (1989) The Past of South 24-Parganas (in Bengali), Sundarban Regional Museum, Baruipur, Kolkata. (1): 54-63.
- Hirst, F.C. (1916). Report on the Nadia Rivers 1915. Bengal Secretariat Book Depot. Kolkata. plate-7.
- Holwell, J.Z. (1771). Interesting Historical Events, Relative to the Provinces of Bengal and the Empire of Indostan. pt. 3. T. Becket and P.A. De Hondt. London. 130-131.
- Hunter, W.W. (1875). A Statistical Account of Bengal. Trübner and Co., London. (1): 29.
- Hunter, W.W. (1876). A Statistical Account of Bengal. Trübner and Co., London. (3): 262.
- Lahiri, A.C. (1936). Final Report on the Survey and Settlement Operations in the District of 24 Parganas for the Period 1924-1933, Bengal Government Press, Kolkata. 14-15, map-4.
- Mukherjee, K.N. (1976). Sociological inter-action on changing land use patterns (case studies in the southern 24-Parganas district), Geographical Review of India, **38**(2): 109-122.
- Mukherjee, K.N. (1983). History of Settlement in the Sundarban of West Bengal. *Indian J. Landscape Systems*, **6**(1-2): 1-19.
- Mukherjee, K.N. (2003). History of Kolkata and Kalighat based on historical and geographical research, Cybernetics, Kolkata. 1-16.
- Mukerjee, R.K. (1938). The Changing Face of Bengal: a Study of Riverine Economy, University of Calcutta, Kolkata. 166-168. plate-2.6.
- Mukhopadhyay, H. (1921). Calcutta of Past and Present (in Bengali), 1991 reprint (Ed. Ray NR.) K.P. Bagchi and Co. Pvt. Ltd., Kolkata. (2): 15,182-183,185.
- O'Malley, L.S.S. (1914). Bengal District Gazetteers: 24-Parganas. Bengal Secretariat Book Depot. Kolkata. 7-8,112.
- O'Malley, L.S.S. (1917). Bengal Bihar Orissa and Sikkim. Cambridge University Press. London. 45.
- Reaks, H.G. (1919). Report on the physical and hydraulic characteristics of the delta. In Moore S. et al. (eds). Report on the Hugli River and its Headwaters. Bengal Secretariat Book Depot, Kolkata. (1, apndx.2): 29-132.
- Rudra, K. (1981). Identification of the ancient mouths of the Ganga as described by Ptolemy. *Geographical Review of India*, **40**(2): 97-104.
- Rudra, K. (1986). The History of Development of the Bhagirathi Hooghly River System and Some Connected Consideration. Unpublished PhD thesis. University of Calcutta. Kolkata. 137.
- Rudra, K. (1987). Quaternary history of the lower Ganga distributaries. *Geographical Review of India*, **49**(3): 38-48.
- Sen, S. (1945). The Bengal and the Bengalees of the Mediaeval Age (in Bengali). Visva Bharati. Kolkata. 46.
- Sen, S. (1958). Vipradasa's Manasâ-Vijaya (in Bengali with English translation). Asiatic Society. Kolkata. (IV-V):143-146,273-275.
- Sen, S. (1971). History of Bengali Literature, 2nd ed., Sahitya Akademi, New Delhi. 52-60.
- Sen, S. (1991). Brindabandas's Chaitanyabhâgabat (in Bengali), 2nd printing, Sahitya Akademi, New Delhi. 246-258.
- Sherwill, W.S. (1858). Report on the Rivers of Bengal. in: Selections from the Records of the Bengal Govt., G.A. Savielle Printing and Pub. Co. (Ltd.). Kolkata. (29): 1-18.
- Wilson, C.R. (1892). Note on the topography of the river in the 16th century from Hugli to the sea as represented in the Da Asia of De Barros. *J. Asiatic Society of Bengal*, **61**(1): 109-117.

Internat. J. Appl. Soc. Sci. | Aug., 2018 | 5 (8)