

G A N G A

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New photograph to be inserted

ANCIENT RIVER FLOW OF RIVER GANGA IN DELTAIC BENGAL: (Source : Banglar Nadi Katha :Kalyan Rudra)

There are different views regarding the actual path of flow of river Ganga, meeting with the Bay of Bengal. During the last two centuries or so, a number of river experts expressed their views through different papers, reports, and publications that the Bhagirathi-Hugli river combination is the original path

flow of the Ganga. But, they are never confident regarding the views from when actually the Ganga has turned east, and begun to flow along the recent channel path of the river Padma. There are different opinions for this view. Whatsoever, after studying different papers on this issue, it can be assumed that during the period from 12th to 16th Century, this change of flow path occurred gradually, swinging from some pivotal point and at a very slow rate. And obviously during this change of



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flow, a few distributaries like Bhirab, Jalangi, Mathabhanga etc. were very much active; and afterwards the courses of these distributaries have been abandoned, and mostly they have been silted up.

From the Great Epics like the Ramayana, the Mahabharata, the Matsya and Vayu Puranas, etc. the Bhagirathi has been identified as the original Ganga path; but there are doubts to take this view as the base line of the History of the Ganga. It is a well-known fact that human habitation had started in the western sector long back than in the eastern sector of the Ganga. The archaeological sites in the flood plains, much below the ground, support this view. Number of sites e.g. Tamralipta, Chandraketugarh, Karnasubarna, Mounds of Pandu Raja, and deep below the Sunderbans periphery, and others, scattered sites in many places, resemble the skill of art and culture of good old ages. And for all the reasons, in the ancient and medieval literature, descriptions of western part of Bengal has got much more importance than in eastern part.

The detailed descriptions of Bhagirathi river and Port of Tamralipta have been mentioned in the writings of eminent foreign tourists in India like Megasthenes (300 BC), Tolemy (150 AD), Fa Hien (300 AD) etc. It is also true that there was a long-term business deals between Southeast Asia and far west Rome from Port of Tamralipta during the period from 300 BC to 700 AD. These documents obviously prove that the river Bhagirathi no doubt is a river, witnessing so many historical events of good old ages. But nothing can be said confidently. The above descriptions are those of only maximum to the limit of 2500 years before or so. Further, it has been noted that the western segment of Bengal delta is extended towards south, more than the eastern segment, though the accumulation of river carrying sediments are much more in the eastern sector. From the asymmetrical shape of the delta, and from the progradation of delta more towards south in the western sector, it can be assumed that the original flow course of Ganga was running along the Bhagirathi canal for



some time. On the other hand, from the analysis of different physiographic maps of Bengal, in the time span of 150 AD (TOLEMY) and 1781 (RENNEL), Prof.M.I.Choudhury of Bangladesh opined that it is Padma, and not Bhagirathi is the actual flow path of river Ganga.

HISTORY OF ACCUMULATION OF RIVER SEDIMENTS IN THE GANGA-BRAHMAPUTRA DELTA SEGMENT (Source : Banglar Nadi Katha : Kalyan Rudra)

The Ganga-Brahmaputra-Meghna delta constitutes the Bengal Basin, bounded by Chotanagpur plateau in the west, and Chitaganj-Tripura Hilly tract in the east. This vast stretch of 2,00,000 sq.km. Land has been formed of sediments, brought down by Ganga-Brahmaputra-Meghna rivers and their innumerable tributaries, mostly of Himalayan origin. It has been ascertained from different geological sources that the time taken for accumulation of these sediments has been nearly 60 million years or so. It has been observed during excavation of Mineral oil in West Bengal and Bangladesh that the depth of sediments,

forming this vast land of Bengal Basin, has increased gradually from west to east. For example, the depth of sediments in the western sector of Bengal basin along 87° E longitude is around 120-160m., while along the eastern border of Bangladesh delta, the depth has gradually increased to the limit of around 22 km. or so. The primary rock bed, on which the huge amount of river sediments were accumulated, has been seen to be inclined from west to east, and from sub-surface studies it is evident that the rock bed has been deeply inserted into Burmese Plate tectonically. From recent survey, it is known that so far in the delta formation system in Eastern India, about 5 lakhs cubic kilometer of river borne sediments have been accumulated, and till date about 1000 million tons of sediments are being accumulated annually. At the bathymetric level of Bay of Bengal, south of Sunderbans, new sediments have spread along 40,000 sq.km. This sub-aqueous delta forming process under the water is being increased southward, nearly by 15 m. annually. The average depth of sediment layers, accumulated in



this sub- aqueous delta is around 80m. or so. From coastal belt southwards, the sediment layers are being accumulated and has been categorized depth wise. For example, up to 30m. depth, the geological signature of accumulated sediments has been termed as “Top Set“ in the next phase, up to 60m. depth, the inclination of accumulated sediments is much more and is termed as “Fore Set“ and further southwards up to 80m. depth, the accumulated sediment layers has been termed geologically as “Bottom Set “.

NEWS

(Source : The Times Of India, Kolkata, May 14, 2014)

1. Antarctic Ice melt unstoppable, Sea level to rise by 1 meter : Vast glaciers in West Antarctica seem to be locked in an irreversible thaw, linked to global warming that may push up sea levels for centuries. Six glaciers, eaten away from below by a warming of sea waters around the frozen continent, were flowing fast into the Amundsen sea, according to the

report, which was based partly on satellite radar measurements from 1992-2011. Evidence shows large sector of the West Antarctic ice sheet has gone into a state of irreversible retreat. The coastal ends of the glaciers rest on bedrock below sea level, holding back a vast weight of ice and making them vulnerable to melt. This part of Antarctica would be a major contributor to sea level rise in coming decades and centuries, since the glaciers hold enough ice to raise sea level by 1.2m. or so, scientists predict.

2. **Grave water crisis looms ahead :**

By the end of this century, billions are likely to be gripped by water crisis. So say hydrologists, who forecast that on present trends, fresh water faces a double-crunch from a population explosion, which will drive up demand for food and energy, and the impact of climate change. Already today, around 768 million people do not have access to a safe, reliable source of water, and 2.5 billion do not have decent sanitation. In mid century, when the world’s population



of about 7.2 billion is expected to swell to around 9.6 billion, global demand for water is likely to increase by 55%, according to the UN WORLD WATER DEVELOPMENT REPORT .

3. **Tibetan Plateau may be older than The Himalayas**

Contrary to popular belief, the Tibetan Plateau, popularly known as the Roof of the World, could have been there even before the Himalayas, a study of fossils and oxygen isotopes of rocks in the southern parts of Tibet remarks. Conventional wisdom is that the Tibetan plateau rose as the Indian continent collide with Eurasia, about 50 million years ago. Parts of southern Tibet existed as mountainous as they are today, even before the collision. The Tibetan plateau, which has an average elevation of about 4900 m. is ringed by the Himalayas to the south. For the study, researchers analyzed 55 million-year-old rocks from the Linzhou basin, about 50km. NE of Lhasain Tibet. The findings also

imply that the Asian monsoon could have been going on for much longer than previously assumed. .

4. **Asteroid Winter Killed Dinos :**

A devastating impact winter, caused by a massive asteroid strike 66 million years ago might have wiped out the dinosaurs, a new study has found. Researchers have discovered the first physical evidence that global temperatures had suddenly fell down, following the impact off Mexico's peninsula. A huge meteorite impact caused the extinction of approximately half of all the plant and animal species on Earth, some 66 million years ago. This meant not only the end of the dinosaur era, but also of the Cretaceous period.

RIVERS OF BIHAR AND JHARKHAND

LILAJAN RIVER - The Lilajan (also known as Nirajan river) flows through the Chatra and Gaya districts in Bihar and Jharkhand. The river begins its journey north of Simaria in Chatra dist. on the Hazaribagh plateau, the western portion of which constitutes a broad

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watershed between the Damodar drainage on the south, and the Lilajan and Mohana rivers on the north. It flows through a deep and rocky channel until it reaches the neighbourhood of Jori in Jharkhand. The stream flows sluggishly over a wide sandy bed. From this point to the Gaya border beyond Hunterganj, the river is a sandy one, dry in summer but disastrous during rains. 10km. south of Gaya, it unites with Mohana river to form Falgu river. 11 km. west of Chatra, there is Bichkiliya waterfalls on the path of the Lilajan river, and it makes a natural reservoir.

It is believed that Lord Buddha bathed in this river after attaining enlightenment.

LAKHANDEI RIVER :

The river flows through southern Nepal and state of Bihar. It is a main tributary of the Bagmati River. In Nepal, the river basin lies in the Sarlahi district, and the river originates in the Siwalik hills. The river enters India in the Sitamarhi district of Bihar, and flows through the town of Sitamarhi. It then enters the Muzaffarpur district and joins the Bagmati at Katra I, Muzaffarpur dist. The river is known for

excessive flood during monsoons. Important cities on its path are Sitamarhi, Sheohar, Malangwa etc.

JAMUNIA RIVER :

The river is a tributary of the Damodar river. It flows through Hazaribagh, Giridih, Bokaro, Dhanbad dists., Jharkhand. The river rises on Hazaribagh plateau near Bishungarh. It runs near the Grand Trunk Road from around Bagodar to past Dumri ,and then turns south and forms the border between Dhanbad and Bokaro districts, and joins the Damodar.

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