

LESSONS FROM A STUDY OF SOME RIVERBANK SETTLEMENTS IN SUNDEBBAN, WEST BENGAL

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ABSTRACT: It can be ostensibly said that a mere identification of forms and patterns in settlement geography should not be considered much of an end in itself unless it opens up the avenues for further probe into the cultural processes responsible for creation of specific forms and patterns. This paper attempts to extend the scope of settlement geography beyond the limited objective of identification and classification into the realm of analysis of process and response and also to examine the possible off-shoots of the study which can be taken up for meaningful academic research.

With the aforesaid objective, some nine mouzas located along the river Bidyadhari in Sunderban, West Bengal, have been chosen as a case. Apart from being representative of the general character of Sunderban, which is known for its premature reclamation and consequent problem ridden economy, these settlements also exhibit some special attributes of changing locations of the foci of activities as a result of shifting river channels, floods and waterlogging. The villages show considerable variation in size and form which with a little academic effort can be explained in terms of their physical ecological setting and history of development.

Of particular methodological significance is the enormous service the cadastral mouza maps can render in analysis of settlement forms. The shape and alignment of plots and the patterns therein offer highly effective clues to the process by which the land was reclaimed and the population arranged itself spatially.

One of the major off-shoots of this study may undoubtedly strengthen the field of toponymy. Almost every village name, official or local, may give some clue to its history in a nutshell.

The other most important aspect which directly relates itself to problem-solving and social planning is the remarkable depopulation of two villages, Tambuldaha and Chunpuri, due to the ingress of saline tidal water over an extensive territory causing much distress to not only the displaced population but also others.

1. INTRODUCTION

It is still very doubtful whether settlement geography can offer any systematic embodiment of analytical principles, in explaining the laws of human behaviour and decision-making concerning habitation. It is true that settlement geogra-

phers with an environmentalist viewpoint have justifiably argued that a human settlement contains all the reflections of the mode or modes of environmental perception of a community occupying a particular habitat and can, therefore, be regarded as a microcosm of the pattern of

natural resource utilization by the group concerned. A settlement, therefore, can be conceived as an **ecological niche** of a particular group of people within a broader habitat. It is probably from this none-too-explicit assumption that settlement geographers have often been drawn towards the examination of forms, patterns and types (Jones & Eyles, 1977) of human settlements hoping that the spatial arrangements in these would ultimately provide clues to the actual pattern of interaction between man and environment in specific terms. Unfortunately neither have forms, patterns or types been defined without ambiguity, nor have been there too many examples of how the identification of specific forms, types or patterns help us construct the process by which modes of resources use lead to definite habitational lay-outs.

1.1 Forms, Patterns and Types

In spite of the above shortcoming, there have been repeated attempts at identification and classification of forms, patterns or types of human settlements by settlement geographers. While such attempts should be valued as the essential primary steps of any settlement study, they should not be considered as end-products of research unless they open up avenues for further probe into the cultural processes responsible for the creation of specific forms and patterns.

However, the positive aspects of identification and classification of forms are not altogether missing. It is probably Moser (1780) who was the first to lay the foundation of analytical settlement geography as far back as the eighteenth century with the results of his field investigations about human settlements in northern Germany. Moser's analytical methods were later greatly strengthened by

Dahlmann (1840) and Hanssen (1880) who from their identification of settlement forms paved the way for revealing the functional history of individual settlements. It was from that juncture that settlement morphology and toponymy have got their rightful recognition as valid systems of enquiry into human behaviour and decision-making (Eidt, 1976).

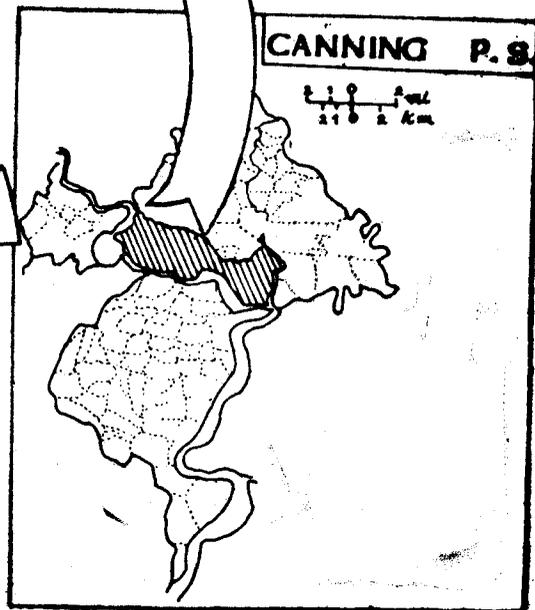
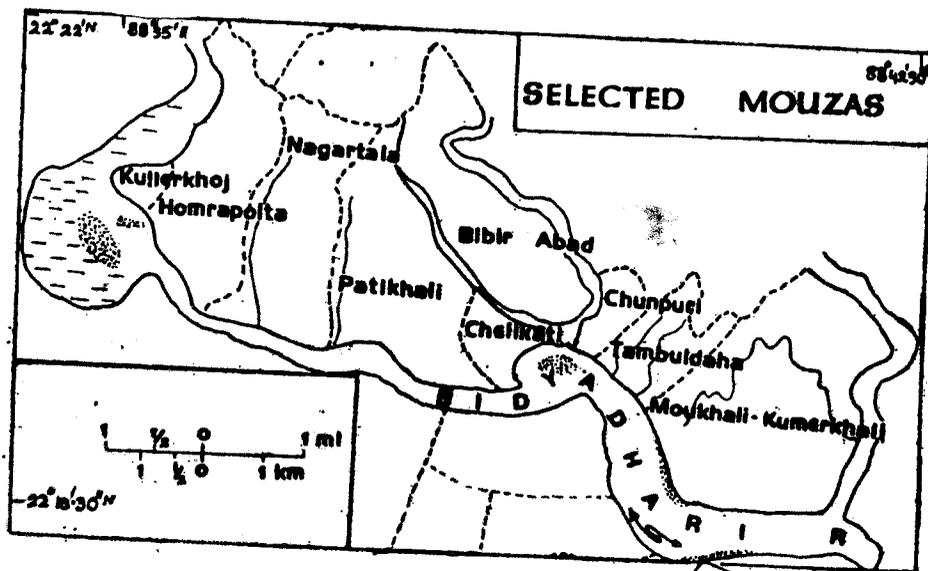
1.2 Forms and Functions

Admitted that the present crop of geographers in India have not taken adequate lessons from the endeavours of Dahlmann and Hanssen, one can cite a large number of examples showing that the dominant settlement forms of different regions are functionally related to the dominant spatial resource-process and the dominant temporal cultural process acting behind the mode of resource utilization. Over the plateau areas once forested and devegetised largely after the Permanent Settlement in response to increased revenue demand from land, the dominant settlement form is linear. Over the canal irrigated **bhabar** lands, linear forms (Nitz, 1977) predominate. Over the old settled floodable plains away from the rivers, large compact forms predominate. Over the marshy lands and deserts settlements are small and dispersed (Jones, 1969). Such associations between physiographic situations and settlement form have been treated as more phenomenological than functional. But in this paper our endeavour will be towards establishing the functional linkages between settlement forms and the spatial resource-process achieved over time.

2. SUNDERBAN

With the aforesaid objective some nine mouzas located along the river Bidyadhari in Sunderban, West Bengal, have been

LOCATION OF THE STUDY AREA



(Fig. 1)

chosen as a case. These village settlements not only represent the overall character of Sunderban but also have some specific attributes of their own.

2.1 General Character

The general character of Sunderban presents the appearance of a problem-ridden area exhibiting such key characteristics as isolation, monoculture, salinity of soil and water, proneness to hazards like tidal ingression, cyclones and depre-dations of wild animals, all of which are consequences of the premature reclama-tion of estuarine lands out of dense man-grove forests by embankments and jungle clearing much before these lands were built up adequately by natural riverine and marine delta-building processes. A short review of the historical proces of the acquisition of Sunderban lands for revenue settlement, reclamation and cul-tivation may be useful in order to under-stand the general problems confronting the area today.

2.2 Delta-Building Process

Sunderban in its active phase of emerg-ence from a subaqueous environment was characterised by myriad of tortuous water courses — channels, cross-channels and creeks flowing in divergent and changing directions in response to tides and ebbs, encircling innumerable islands of different size and shape. As a result of repeated collisions between the siltladen riverine and marine waters flowing in op-posite directions through these channels, there were frequent bank spills which led to the creation of natural levees along the periphery of the islands in the shape of girdles containing within them shallow saucer like depressions. These depressions usually contained salt marshes, because once the saline water

made its way into them, it was difficult for it to drain out into the rivers across the natural levees. It is not difficult to assume that repetition of such processes would ultimately build up the interior depressions to a level at par with their peripheries as had happened in the case of the more mature sections of the Bengal delta north of Sunderban. Unfortunately, human interventions midway put a stop to the process and Sunderban remained a minor with the responsibilities of an adult.

2.3 History of Reclamation

Sunderban was settled hundreds of years back. Large tanks, masonry build-ings and structure and high embankments in various places are cited as indications of a former prosperity. A remnant of an old temple found in Mathurapur named 'Jatar-Deul' was referred even in the history of early sixteenth century (Mitra, 1914). Afterward, the history of settle-ment was obscured by a missing link. The regions was probably completely de-populated. It is difficult to explain the causal factors behind such depopulation because of controversies.

The contemporary humanized land-scape dates back to late eighteenth cen-tury when the first effort to reclaim the forest was made in 1770 by Claude Russel, the Collector-General, in the present district of 24 Parganas (Pargiter 1984). He granted leases against some preconditions of lands called patitabadi Taluks. During the following forty years, the country was cleared almost down to Sagar Island on the south. The next effort was made by Tilman Henckell, Judge and Magistrate of Jessore in 1783 (Pargiter, 1984). The lands that Henckell leased out for reclamation and cultivation were called "Henckell's

Taluk," presently known as Hingalganj. Thus Hingalganj and Sagar were two foci and the intermediate lands were reclaimed subsequently. But the development of the area had been extremely slow for a virgin land like Sunderban. The region criss-crossed by numerous rivers, backwaters, creeks, and channels has always been lacking in communication facilities, supply of sweet water which rendered the prosperity of return from agricultural endeavours very poor. Besides, the very high incidence of deaths from attacks of wild animals and malarious fever tended to slow down the reclamation, cultivation and the settlement growth. It has, however, been geared up within the last one hundred years. One of the major factors responsible for such a change has been the construction of a large drainage system and high embankments since 1891 (Gaz., © 1989).

In the early stage, cultivation remained one of secondary importance in Sunderban because jungle clearing and cultivation were performed by such a group of people who had already some involvements in harnessing old settled lands outside the region. They used to come here during the sowing and harvesting periods and settled only seasonally. Quite a sizeable bulk of small peasants, share croppers and landless labourers immigrated into Sunderban from the drought and famine prone plateau regions of western Medinipore, Singbhum and Santal Parganas. Among them were a large number of Santals, Mundas, Oraons, Kurm's and Koras. They came in different waves of migration and settled down in different areas of Sunderban (Gaz., © 1989).

Embankments played a vital role in determining the location of settlements. People tried to settle along embankments

for reasons of reclamation, protection, maintenance and communication.

2.4 Specific Character of Selected Villages

The area under study began to be reclaimed since the middle of the nineteenth century. These lands were a part of the lot numbers 55 and 56 and were leased out for reclamation under the rules of 1853.

Most of the settlements sprang up along river margins protected by embankments and natural levees. The locations and forms of the settlements changed depending upon the changes in river courses, as evidenced from the mouza maps. Due to delta-building processes acting upon the western and eastern extremities of the study area, continuous emergence of land has been a very distinguished phenomenon. Construction of successive embankments parallel to the Bidyadhari in Kullerkhoj and Maukhali-Kumarkhali implies a southward shift of the river, transforming interior areas into marshes and causing depopulation.

3. METHODOLOGY

The methodology of investigations and analysis followed in this paper is not in total agreement with generally accepted approach by Indian workers saving a few like the Benaras group of geographers (Singh et al, 1975). However, the present approach has some similarities with those adopted by researchers in Germany and the United States (Dahlmann (1840), Hanssen (1880), Jordan (1977)).

These authors established some relevance of the distribution, size and shape of landed property units to the layout or form of settlements. While they

depended primarily on the actual property structure and its spatial distribution as investigated in field, our emphasis in this paper is mainly on the maximum inference that can be drawn on the basis of minimum information that have already been mapped by some authorities or other such as the Survey of India and the Directorate of Land Records. Of particular methodological significance, is the enormous service the cadastral mouza maps can render in analysis of settlement forms. The shape and alignment of plots and the patterns therein offer highly effective clues to the process by which the land was reclaimed and the population arranged itself spatially. It is not our objective to do away with field-work altogether; nor do we propose to say that the inferences derived from these maps are infallible. But we have a double purpose behind selecting such a methodological approach. Firstly, it is extremely difficult for individual researchers to give a full scale coverage of all settlements along with the linkages between their forms, functions and historical process of development for a considerably large region as Sunderban on the basis of field survey. The inferences drawn from mapped data are likely to provide us with all possible variants of settlement forms and minimize the necessity of field work by appropriate sampling. Secondly, methods and tools in geography are supposed to be different from those in other social sciences like history and sociology. The specificity of geographical method, which can also be considered its strength, lies in its capacity to handle and analyse spatial data independent of chronicles and interviews. It is on this strength that a geographer proceeds to unearth societal norms and behaviour. If he draws supporting evidences from the field of history and sociology or from any other sets of

information relating to social or economic structure, it should be considered as a welcome addition to the power of his method but not as its essentials. In our opinion, geographic enquiry into any problem is essentially a visual method, as in visual anthropology, whose efficacy lies in the depth and extent of subjective knowledge derived from systematic learning of the principles of geography.

Coming back to the selected villages, we are yet to come across any existing paradigm except that of the long-lot land survey system found in Texas (Jordan, 1975, 1977). We have also a close parallel of the irregular rectangular survey of Central Texas mentioned by the same author. The examination of top-sheets, cadastral mouza maps and district and police station maps of different time points from 1921 onward helps us to formulate a number of statements which, we believe, can serve as the building blocks of some working hypotheses relevant to the objectives stated earlier. We are presenting these building blocks in the subsequent sections of this paper.

4. HISTORY AND FORMS : FUNCTIONAL RELATIONS

4.1 Linearity

Over the entire region linear forms of settlement predominate over other forms with the exception of a few in which convergence of linearity from multiple directions have given rise to ill-defined clusters. The term form here refers to the shape of an individual settlement. Examples of pure linearity are to be found in the western Homrapolta village. Such linear forms go with several site and situational associations. They are found along embankments as in the extreme northern part of Patikhali; along natural levees,

although of limited occurrence as in north-eastern Patikhali in small and disconnected stretches (since most of the natural levees had been reinforced by embankments before the mouza were surveyed); and along closely spaced combinations of levees, embankments and channels as in southern Patikhali where a very large settlement is found. Ill-defined non-linear clusters may be found wherever roads or embankments have converged in individual nodal points

The regional pattern of settlements again is predominantly linear if we consider in some detail the layout of the chief governing factor which is channels lined by levees and embankments, the last named also serving as roads. The term **pattern** here refers to the broad direction along which strips and clusters are aligned.

It is to be noted that we have made a slight intentional departure in defining form and pattern from the conventional definitions. In defining pattern we have tried to incorporate the driving force behind locations of settlement in general. Here the driving force is the tendency of the settlers to cling to embankments for reasons of reclamation, protection, maintenance and communication.

4.2 Land Settlements and Human Settlements

There is a close relationship between land settlements and human settlements in so far as the shape and the size of the plots are concerned. The plot layouts are indicative of the nature of clustering of dwellings. Small irregular rectangular plots are associated with dwellings whereas elongated plots are associated presumably with cultivation.

4.3 Strips

The land settlement pattern is dominated by strips or elongated revenue plots though irregular rectangles also occur over a sizeable area. The western two-thirds of the region covered by the selected villages show a predominance of strips roughly parallel to the river and perpendicular to cross-dykes. In the eastern one third also the irregular rectangular plots seem to have been mostly derived from the sub-division of primarily elongated plots.

4.4 Uniformity

Over the entire region there is a broad uniformity in the spacing of cross-dykes and in the length of the strips. This is more clearly visible in the western half of the region.

4.5 Process Indicators

The relationship between land settlements and human settlements together with uniformities in the spacing of cross-dykes and length of strips are indicative of some processes of natural land building, reclamation and habitation.

4.5.1 Natural Process

Cross-dykes are not independent of the alignment and spacing of water courses draining through the islands. It means that during the formative stages of the islands there was some kind of a regularity in the number and spacing of cross-channels of definite size. Later on during the reclamation of the land, cross-dykes were raised along these cross-channels leading to regular spacing between them. This on the one hand has a direct control over the length of the plots lying between two cross-dykes.

4.5.2 Reclamation Process

Between two cross-dykes plots were cleared in strips either one after another starting from a definite point and moving in a definite direction or simultaneously by groups of labourers starting the clearing operation from different points along a cross-dyke and moving in the same direction which is perpendicular to the cross-dyke.

A slightly modified situation may also have prevailed. All cross-dykes were not raised at the same point of time. Naturally in the first stage, the intervening distance between two cross-dykes were greater if two groups of labourers attempt to clear the intervening forests between two cross-dykes from opposite directions then the length of the plots cleared by one group becomes dependent upon two factors. The first one is the total length of space between two cross-dykes and the second one is the capacity of individual group to advance to a definite distance and to come back to the starting point in the course of a day. We have to remember here that coming back to the starting position much before sundown was essential for the clearers because of the fear of depredation by wild animals. The process ultimately led to creation of strips of almost even length. This length in this region roughly varies between 400-500 metres, which is also the average distance a cultivator travels today between home and work.

4.5.3 Habitational Process

Once an embankment or a cross-dyke is selected as the first vector to start the clearing operation, the labour force would try to settle along the edge in a linear fashion because every one would like to locate his dwelling at the minimum per-

missible distance from the furthest point he has to travel to and from within the course of a day. They would not like to settle in compact clusters because in that case the travelling distances of individuals responsible for maintenance of fixed plots would be highly unequal.

4.6 Reconstruction

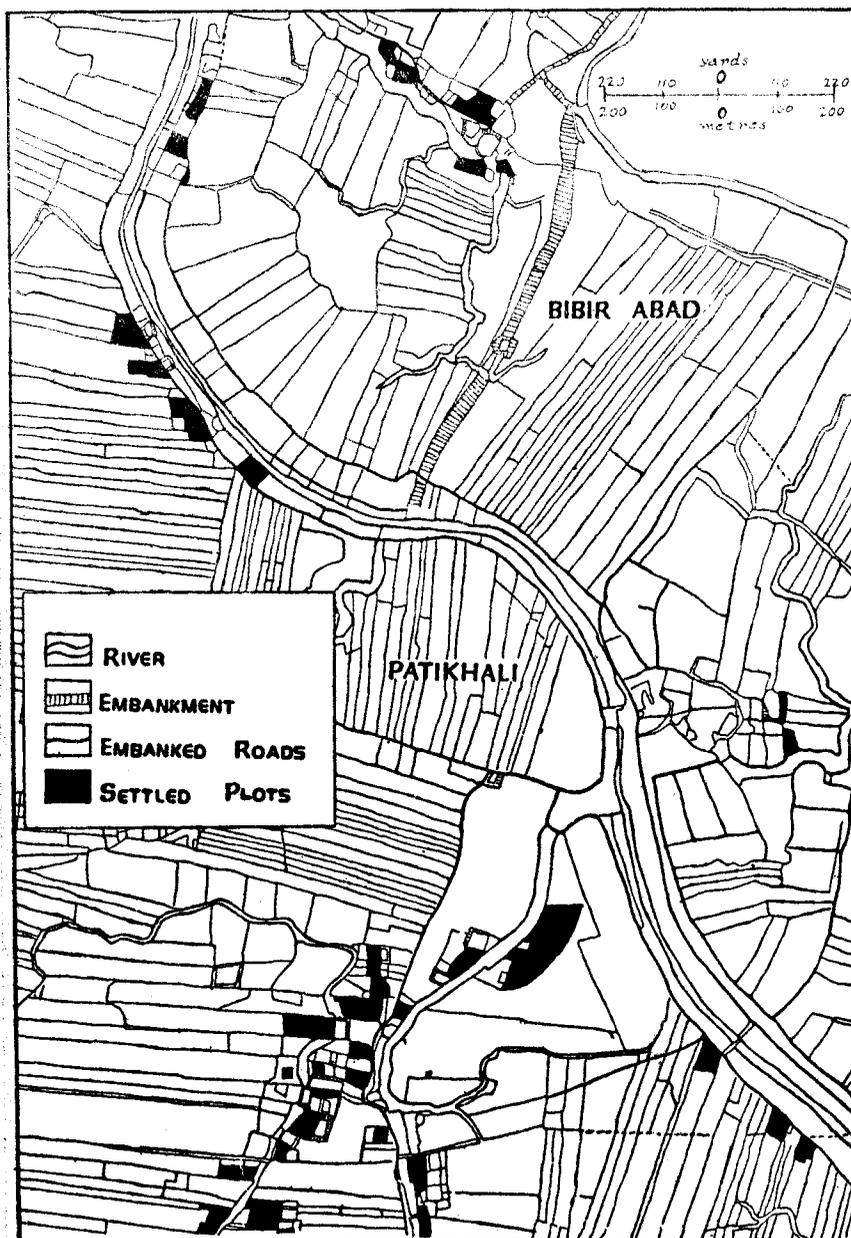
The plot size is indicative of existing dwelling places, those contemplated for the immediate future and also places from which the dwellings have disappeared due to various changes. At a given point of time, plots may have been sub-divided by sale or partive inheritance for the purpose of habitation but the actual existence of the houses may not be found on the survey map since houses are yet to be built during the survey.

4.7 Shifts

There are definite evidences of considerable shifts in the location of the settlements as reconstructed through maps from the locations and alignment of plots. For instance, from the size and the survey pattern of the land in Maukhali and Kumarkhali, it is clearly evident that there were settlements in southern Maukhali. Presence of quite a sizeable number of clustered tiny squarish to rectangular plots, with tanks or roads beside an embankment parallel to the river Bidyadhari but quite inland and further south two parallel embankments along with loosely marked plots are observed. The obvious indications are that the area was inhabited in the past but the settlement shifted away to other places during the time of the survey. The emergence of newlands or chars due to heavy sedimentation and southward shift of the Bidyadhari were the ostensible causes behind this shift. The old settlement locus

AN EXAMPLE OF PLOT ALIGNMENTS AND SETTLEMENTS IN PATIKHALI AND BIBIR ABAD

MOUZAS OF SUNDERBAN, W.B



(Fig. 2)

became a part of a depression away from the southward shifting river, making it susceptible to floods and tidal ingression. This in turn forced the people to shift their dwellings from this once favourable zone to other parts.

In the delta-building process, a significant role is played by repeated shifting of river courses and heavy sedimentation. This has given rise to emergence of land in one place and submergence in another. Thus growth of settlement in one place and complete depopulation in another are simultaneous phenomena in delta areas. The entire area between Tambuldaha Khal and Karati Nala has enormously degenerated due to shifting of river courses, huge silt deposition and frequent tidal ingression. Almost the entire area has been converted into a marshy land, covered with mud. Thus the inhabitants of the two mouzas of Tambuldaha and Chunpuri are forced to leave their original homeland and the area becomes depopulated and deserted. Only the high embankments break the monotony of swamps and muddy land and remain as the sole traces of the past occupancy of the area. The need for problem oriented applied research, as demanded by the case of Tambuldaha and Chunpuri, thus becomes a major sub-area of settlement studies.

5. TOPONYMY

Almost every village name, official or local, gives its history in a nutshell. Here also, connotative significance of place names is amply demonstrated by the names of the villages under study. Toponymy, therefore becomes a relevant approach in studying these villages.

The village name Nagartala implies the early existence of pro-urban culture. We

must bear in mind that places in Sunderban used to be converted into huge fairs during the harvesting of paddy. Zamindars and lotdars would flock there with their paiks, barkandazes, gomastas, underlords, servants and even baijis. To this would be added paddy wholesalers or beparies with their own staff and the cultivators and labourers each one of whom had some business to transact within a specific time and around a specific spot. This spot would then acquire all the characteristics of a temporary nagar or urban centre (Biswas, 1977). Nagartala, therefore, was in all probability a settlement with such attributes during the early phase of its development.

The name Kullerkhoj not only has an etymological meaning but also carries a nuance. The straightforward English translation would be 'search for the bank.' The alternative is that the term khoj has been distorted from khonch which really means a sharp corner. The location of the village on the map along a sharp bend of the river almost exactly fits in with its name. However, kul in Bengali not only means the shore or bank, but also used to imply standing, assurance, protection or end of a struggling journey. This nuance is probably associated with the name of this village to imply a sense of assurance resulting from a discovery of an area which offered habitational opportunities and protection to the first settlers after their long strenuous search amidst the forest for an advantageous residential site by the river bank.

Patikhali is an obvious derivation from pata meaning leaf and khal meaning creek. But creeks and leaf-litters were so common in Sunderban in the early phase of its reclamation that a village could not have christened simply on the

basis of availability of abundant leaf-litters along a creek. The term **pati** must have had, therefore, a specific reference, most presumably to **golpata**, a leaf which was the most important raw material used by the early settler for the purpose of thatching the mud huts.

In the initial days and even at present superstitions were very common among jungle dwellers. The early inhabitants of Sunderban had a special place in their mind for **banbibibi**, the prevailing goddess of the forest. The village name **Bibir Abad** has probably come to existence from a small shrine erected at a place in the jungle in order to appease the deity before clearing the jungles for the purpose of **abad** meaning cultivation.

Unlike Patikhali and B'bir Abad, the name **Chunpuri** has a much more narrow and definitive genetic connotation. There were places in Sunderban which used to produce lime (**chun**) from the charring, (**puri**-place having a k'ln) of shells of snails. It is almost certain that **Chunpuri** used to produce shell-lime.

In **Chelikati**, the forest was probably used for the purpose of fuelwood, presumably from gewan trees, the logs of which were to be cut (**kati**) into chips (**cheli**) in order to be of the proper size and shape to be put into indigenous cooking ovens.

Pottery of earthenwares had a very important place in the early economy of Sunderban as potable water was scarce in

the usually saline environment and had to be collected from distant sources and stored for days together particularly during the hot dry season. **Kumars (potters)** therefore, were an important functional division of labour. The name **Kumarkhali** must have originated from a concentration of earthenware potters in this village.

Similarly, **Tambuldaha** and **Moukhali** have names which refer respectively to early attempts at production of **tambul (betel)** and collection of honey (**mou**) from the nests of honeybees infesting the forests.

6. REMARKS

Sunderban was reclaimed from a wooden watery wilderness. The names of rivers and creeks, islands and sandbanks, villages and localities all refer to the early state of its environment and struggle for human enterprise. In the process of its reclamation, the physical determinants got reflected not only in the geometry of land settlement but also in the forms of human settlements. Today, these geometric forms can be seen on the maps as extremely important clues to the functional history of the development of settlements. Shifting of settlements followed by depopulation in one place and tremendous growth in another characterise the evolution of settlements in Sunderban. In the reconstruction of such a history, the exclusively geographic method of visual analysis opens up a great scope in helping other Social Sciences with similar objectives.

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