

# A MORPHOLOGICAL ANALYSIS OF NEIGHBORHOOD STRUCTURE—*TOLES* AND THE RITUAL ARTIFACTS OF THE KATHMANDU VALLEY TOWNS—THE CASE OF THIMI

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## Abstract

The traditional towns of the Kathmandu Valley are ingrained with varying cultural forms of different historical periods. But the paucity of documented literature and the evident difficulties conducting archaeological work on the existing settlements leave significant gaps in the knowledge of ancient and medieval towns of the Valley. This paper, through the morphological analysis of neighborhood units, known as *toles*, and their ritual artifacts, of one of the Valley towns—Thimi— attempts to discover the different historical layers of the settlement. In particular, the study finds that the territorial structure of the *tole* and its ritual artifacts such as the shrine of *Ganesa*, which is the symbol of a neighborhood locality, and the crossroad spirit, known as *chwasa* show a regular pattern in their location within

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the neighborhood quarter, and their distribution in the settlement. They are also found to be closely related to the settlement structure as defined by the neighborhood blocks and the street patterns. Following the morphological analysis, the study then reconstructs four historical phases, and suggests that the development of the town was regulated by the royal court. Further, through the case study of the three neighborhood units, the paper shows that *toles* constituted basic urban units—a transition level to the town settlement that differed from the lower level structure of the clan settlement unit.

## Introduction

In the Kathmandu Valley, besides the three major cities—Kathmandu, Patan and Bhaktapur, there are 31 small town settlements dotted around the Valley terrain. Most of these settlements are known to have already been settled by the Licchavi period (2<sup>nd</sup>–9<sup>th</sup> C). The inscriptional records of this period at the same time show the existence of numerous settlements prior to the beginning of the historic period. Cultural historians unanimously agree that Nepal was primarily inhabited and ruled by the people known as *Kirata* before the advent of Licchavi rule.

The present day Newar community is an amalgamation of numerous ethnic communities that migrated to Nepal during different periods in ancient times. But it is thought that among the various communities of the Valley Newars, the descendants of *Kirata* make up the majority of the population. According to some scholars, the Licchavis had an ancestral link to *Kiratas* and like *Sakyas* were indigenous people who had their



Buddha. Such a historical background suggests that the settlements of the Kathmandu Valley have at their early historical layers the embodiment of the indigenous community life, which in the course of history, evolved into various forms following interactions with immigrating communities in later historical periods.

At the present stage of research, the paucity of documented literature and limited progress on archaeological work leave much a significant gap in the knowledge of both the ancient and medieval settlements of the Kathmandu Valley. The present study attempts to throw light on the forms of the traditional settlements through the analysis of neighborhood structures of the town of Thimi, one of the traditional settlements of the Valley. Historical records show that the town of Thimi existed before 1350 AD, while other studies suggest that the settlement existed long before the Licchavi period.<sup>3</sup> This paper makes a morphological analysis on the physical forms of the neighborhoods and their ritual artifacts, and finds out different historical layers of the town developed by the end of first half of 19<sup>th</sup> century. These settlement layers, relating to other available data, both historical and morphological, can be framed in an evolutionary sequence. The analysis

also leads to the understanding of various other features of the settlement such as whether the town developed in a spontaneous manner or in a certain planned framework. It will also point out that the neighborhood unit—*tole*, of the Kathmandu Valley is the basic urban unit that heralds the beginning of urban community life in the settlement.

### **The Town of Thimi—Geographical Setting**

The town of Thimi is eight km east of the present capital city-- Kathmandu, and 4 kms west of Bhaktapur, the medieval capital city of Nepal (Fig. 1). Thimi, from the medieval period, was also known as '*Madhyapura*' probably because of its central location with The Kathmandu and Patan to the west and Bhaktapur to the east. Since 1997, the town including other minor settlements around it has been designated as Madhyapura municipality.

It is typical of Valley settlements that most of the settlements are built on elevated land of the undulating Valley terrain, while the lower basins are utilized for agricultural purposes. Thimi is at one of the southern spurs on the plateau south of the Manohara river, and north of Hanumante stream (Fig. 2). The spur of Thimi falls away to the east, south and west rising at an elevation of about 30 meters from the lower valley floor. A north-south route connects Thimi with a number of other settlements located farther north and south.

The traditional route connecting The Kathmandu and Bhaktapur passes almost through the central part of the

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<sup>3</sup> *Gopalarajavamsavali*, folio 52, p. 108, Malla and Vajracharya, 1985. *Gopalarajavamsavali* is a chronicle composed sometime in the period of 14<sup>th</sup> century, and is considered the most reliable medieval document among numerous other chronicles on Nepalese history.



settlement thus dividing the town into two parts, the northern and southern sectors. The north-south street running almost through the middle of the whole settlement is the major street of the town with temples and other public buildings studied in sidelanes and squares (Fig. 3). Minor lanes branch towards the east and west from this spinal street. The topography of the land falling sharply on all the three sides of the settlement and the compact cluster of dwellings define sharply the town settlement area on the plateau against the low lying agricultural fields around it.

Almost at the center of the southern section of the town, towards the east of the main street, there is one of the ritual centers of the town. This center is known as *Layaku* (Sanskrit: *rajakula*—palace or the court of the royalty), which in the medieval period served as an administrative office of the Thimi region. At present there exists a court of the Town Goddess within the *Layaku*. The rest of the *Layaku* has been rebuilt to house a secondary school. At the southern end of the town, there is a square where the main temple of the Town Goddess is located. The square is the main ritual center of the town. North of *Layaku*, there is a large water tank and it is said that the area south of the tank is the earlier part of the town of Thimi, and a town gate existed at the southwest corner of the tank in the main street. At present there exist three town gates on some of the major routes leading to the town.

In the early period the main shops of the town were along the route connecting Bhaktapur and Kathmandu. But in 1853, a new road for horse drawn carriages

was constructed at the northern end of the town to connect The Kathmandu and Bhaktapur, and the area developed as the new shopping street of the town. The development of the town up to this street shows a certain degree of continuity in the traditional pattern of the settlement and therefore delimits the area for the present study. As late as 1973, another traffic line was built in the low land at the south of the town, which has been a market zone of recent developments. It is said that until 1960, there were only few shops in the main north-south street of the settlement, which by now is lined with shops on both sides today.

The population of the municipality in 1995 was projected to be 38,373 with that of the old town core around 20,000.<sup>4</sup> The town area consists of numerous neighborhood quarters, and is entirely inhabited by Newar's. But as described in the previous section, this community can be further divided into a number of communities according to their ethnic roots, traditional professions and social status. Among these communities, the Shrestha community and Prajapati community make up 85% of the total population. Shresthas traditionally work in farming. They are also engaged in commerce and hold administrative posts, while Prajapatis specialize in pottery making, in addition to their traditional farm work. Thimi exhibits a number of common features with other major towns of the Valley such as topography, compact settlement, dwell-

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<sup>4</sup> Thimi, 1990.



ings of three or more stories built in contiguity, and streets punctuated by community squares with temples and other public structures.

### **The Neighborhood quarter-Tole, and the Town**

The neighborhood quarters known as *toles* are one of the important social and spatial structuring units in the towns of the Kathmandu Valley. Early historical records indicate that *toles* were preceded by *gwala*. This is evident from the Licchavi period records that mention numerous settlement localities with the suffix 'gwala', while making no references to *toles*. Later, by the 10<sup>th</sup> century *tole* or, alternatively 'sthana' (locality), is used either in conjunction with *gwala*, or omitted.<sup>5</sup> *Gwala* appears to be of ancient origin and is not Sanskrit. The term is probably of *Kirata* derivation. We do not know what the *gwala* and *tole* included in their territory at those times. But *gwala* was one of the local administrative unit known from Licchavi records and so was the *tole* in the early medieval period. The inscription of the Golmadhi *tole* in Bhaktapur dated 1642, which mentions a chief of the *tole*—*twala-pramukha*, in connection with the establishment of a *Ganesa* shrine, suggests that *tole* continued to be an administrative unit of the town until the late Malla period (1200-1768).<sup>6</sup> While *gwala* continues to be in use as a

suffix in the name of certain particular localities until the present day, *toles* began to be common as neighborhood units of the town settlement from the early medieval period.

By the medieval period, *toles* are frequently referred to in the hierarchical structure of the town settlement. The documents of the period make reference to toponyms relevant in the spatial organization of the settlements, such as *desha*, *tole*, *nani* and *chhen*. This is a nested hierarchic organization of a settlement with *desha* at the highest level. *Desha* indicates the area of the town defined by certain boundary limits. *Chhen*, at the lowest level stands for the dwelling itself, while *nani* is an area of a dwelling cluster the inhabitants of which are, in general, members of the same clan. A group of such *nanis* then makes up a neighborhood quarter—the *tole* (*Newari: twa*).<sup>7</sup> Thus, in the hierarchy of the spatial structure, *tole* constitutes a unit higher than the clan settlement unit—*nani*. *Toles* are also the most commonly known place names in the towns of the Kathmandu Valley

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<sup>5</sup> Joshi, H. R., 1996, pp. 1-3; See also Kolver and Shakya, 1985, pp. 107-111.

<sup>6</sup> Department of Archaeology, n. d.

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<sup>7</sup> The toponyms *desha*, *tole*, *nani* and *chhen* do not appear in Licchavi inscriptions. *Toles* and *chhen* become current by the early medieval period while *nani* appears later in the documents of this period. Inscriptions of Thimi, from the 16<sup>th</sup> century onwards, begin to use *Madhyapura* in place of Thimi *desha*. All settlements of The Kathmandu Valley were given a Sanskrit name, which began to be standard in official documents while the original name continued to be in popular use. See Kolver and Sakya, 1985, for medieval palm leaf documents, and *Bhumisambandhi tamsuk tadpatra*, issues of *Abhilekh*, 3-10.



from the early medieval period (9<sup>th</sup>-12<sup>th</sup> C).<sup>8</sup> In Thimi, the available palm leaf records, which date from the beginning of the 15<sup>th</sup> century, already show the existence of a number of *toles* in the town. In these documents where the address of the vendor and the buyer is noted, *tole* comes next to *Themi desha*, that is, the town of Thimi.

Unlike the *nani*, which develops within private dwelling plots, the territory of the *tole* includes public spaces of the settlement and artifacts built by the community of the *tole* which are also utilized by the residents of other localities. It is in the realm of the *tole* that an individual makes donation out of his personal property for the benefit of the general public with a desire to earn religious merit. Inscriptions placed in these structures record the donor's will and guidelines for their maintenance, giving the donor a place in posterity for future generations. The history of the town and the community are thus first written in the community structures of *toles*.

As will be seen later, the *toles* of Thimi are localities inhabited by communities of diverse origin. There are certain patterns in the composition of the community with respect to the location of *toles* in the town. The patterns of the layout of *toles* and the community structures indicate the manner in which the physical and social plan of the settlement was laid out, or evolved during the course

of history. Before we proceed to the analysis of the structure of *tole*, it is, however, important to define and delimit the concept of *tole* in the context of The Kathmandu Valley towns as there are neither legal nor recognizable physical boundaries that may uniformly delineate the territories of *toles* in the settlement.

### **Tole—Definition**

In the Kathmandu Valley, although the *tole* is a common toponym and socio-spatial unit of the settlement, there are difficulties in making precise statements on what elements constitute a *tole* or what its boundaries are. In the town of Thimi, there are 21 localities, which are known as *toles*. Several inscriptional records of the town that mention *tole-pancha-samucchaya* (representatives of the *tole* community) show that *toles* also served as formal units in local administration. The size of these *toles*, however, despairingly varies, with some of the *toles* having fewer than 10 households while others had more than one hundred. Shrines of *Ganesa*, which are one of the most ubiquitous features of *toles*, are not present in some of the localities which are also called *toles*. Community artifacts such as rest houses, known as *pati*, are all too common within and outside the town settlements to be taken as the symbol of the *tole*. Social organizations binding all the residents into one single unit also do not exist in *Shrestha* communities of Thimi. The complexity of delineating the *tole* territory arises partly from the process of the development of the settlement, which, in the case of Thimi, spans more than a millennium. However, a workable definition of the *tole* needs to be established to identify

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<sup>8</sup> Joshi, H. R., Op. Cit. Some of the early instances are—*Yanwalottara-tole*(920), *Koshalatole*(1066) in The Kathmandu, and *Nogola-tole* (1091) in Patan



*toles* and their boundaries to make meaningful analysis of social and spatial structures.

There are numerous kinds of community artifacts frequently used by the residents built in a neighborhood locality. Most frequent structures include temples dedicated to various deities, a fountain or a well, rest houses and dance platform. These artifacts are organized around one or more squares where the shrine of *Ganesa*, located in one of the squares, among all the community artifacts, might be considered as central to the residents of the locality. The locality, which has its own *Ganesa* shrine located in its community square, is always classified as a *tole*. Localities which are called *toles* but do not have their separate shrine of *Ganesa* belong to the clientele of the *Ganesa* that is located in the neighboring locality.

Compared to other shrines. The shrine of *Ganesa* is of special importance to the neighborhood community. It must be visited in all the important ritual ceremonies, while there are no such obligations to shrines of other deities. Therefore, there may not be other shrines in a *tole* locality, but the temple of *Ganesa* is customarily present as the symbol of the *tole*. Further, in a *tole*, there may be several shrines dedicated to one deity, while there will be only one shrine of *Ganesa* that belongs to the *tole* community in common.

In medieval inscriptional records, *Ganesa* has been mentioned as *tole-devata*—the deity of the *tole*, or as *sthana-Ganesa*—the *Ganesa* of the locality. No records have been found that

mention other deities as *tole-devata*. We are not certain of the form of the *tole* and its community structures in the Licchavi period. But the settlement of Thimi by the late Malla period exhibits such a relationship between the shrine of *Ganesa* and the *tole*. Further, in the annual festival of Town Goddess, it is the float of *Ganesa* rather than of other deities that represents the *toles* of Thimi in the procession of floats that goes round the town settlement. Therefore, in our study, we will take the shrine of *Ganesa* as the identity of a *tole*, and its clientele to define the *tole* territory (Fig. 4, Fig. 5)

### **Types of *Tole***

As mentioned earlier, *toles* are made up of numerous *nanis*, and are inhabited by diverse communities, which are indicated by their ancestral sites, traditional social status and occupation. In Thimi, two types of *toles* may be identified according to the constitution of the community structure. These are the *toles* of homogenous communities, and of mixed communities. The distribution of the communities in the town shows that in general, the town is structured into sectors according to the profession and ethnic roots of the communities. The *tole*, on the other hand, usually includes parts of two or more such sectors, and thus, is not nested within such a community sector in the spatial hierarchy. Unlike other forms of community such as the *nani* and *dewali*, which are structures closely related to clan and ancestral traditions, the community of a *tole* is more a geographical entity defined only by the location. However it is characteristic that certain communities are concentrated in



a particular type of neighborhood area. For instance, *Vajracharyas*—the Buddhist priests, are distributed in all the *toles* along the main street while other communities with a marginal population, and belonging to the lower ladder of the traditional social hierarchy, are concentrated at certain locations which are usually on the periphery of the settlement.

Shrines of Ganesa may also be considered in the classification of *tole* types. In Thimi, two types of *toles* may be identified according to the locations of the shrine of *Ganesa*. The first type has shrines located at the main north south street of the town, while the shrines in the second type are located at the periphery of the settlement. The squares of the shrines at the periphery are located at a point where the paths from the surrounding fields enter the settlement, and then lead to the main street by a lane. Further, these squares are connected by a circular route that surrounds the settlement. The location of all the *Ganesa* shrines of Thimi fits within this scheme of street structure of the settlement. The two types of *toles*, thus, may be called as the central type and the peripheral type according to the location of their respective shrines of *Ganesa*. The *tole* of the central type includes the quarters at both sides of the main street with dwelling clusters at both sides of the lane that branches from the main street leading to the *tole* of the peripheral type in its territory. The two types of *toles* are contiguous and not divided by the main streets or lanes. In the following sections we will take three representative instances (Ref. Fig. 5) to make further detail studies on the physical and social structure of the *tole*, and

to analyze their relationship in the structure of the settlement. The first two *toles*—Dathu and Shiva are at the southern sector, and belong to central and the peripheral type respectively. The third—*Kumha-nani tole* is at the northern sector where the majority of the residents are *Prajapatis*.

### Dathu Tole

Dathu belongs to the central type of *tole* (Fig. 6a). Dathu, which means middle, is one of the generic names of neighborhood areas of The Kathmandu Valley towns. The existence of this toponym therefore suggests neighboring *toles* on both sides. Usually, since the settlements were built upon a tableland with gentle declivity towards the river basin, the upper part and the lower part are called *Thatu* and *Kothu*. In the palm leaf records of Thimi, *Thantho tole* and *Kotho tole* are mentioned by 1420. The division of the old core into the upper and the lower is still found in one of the traditional rituals related to cattle farming. The line of division is the lane running east-west south of the *layaku*. It appears that the division of the settlement into *Thatu* and *Kothu* is one of the earliest forms in the organizational division of the settlement. At present, there are no localities known by these names. There are, however, two *nanis* in front of each other separated by the lane that divides the *Thatu* and *Kothu* sections of the settlement. By the beginning of the 16<sup>th</sup> century, the areas belonging to *Thatu* and *Kothu* are already known by the names *Inaya-lacchi tole*, *Dathu tole* and *Thaniswa tole*. The upper part of *Kothu*, north of Dathu, and which probably was the proper *Kothu*



at the initial division, is now included within *Inaya-lacchi tole*. *Thaniswa tole* is now known as *Maru tole*, named later after the *mandapa* built in one of the squares of the *tole*.

The first record of the settlement in Dathu area is dated 1420. It mentions a house known as *pasa-chhen* that belonged to a *Mulami*—the headman. But the *nani* in which the house belongs is entered from the lane that does not belong within the territory of *Dathu tole*. However, by 1515, we find record mentioning the locality of *Dathu tole* itself. Its present territory is defined by only one lane. Sandwiched between *Maru tole* at the south and *Inaya tole* at the north, its expansion was limited and thus has the minimum territory that a *tole* of the central type may have. The lane leads to a town gate to the west, which is one of the major entry points to the settlement. To the east the lane winds its way and leads to the farmlands at the lower basin east of the town settlement. It is one of the important characteristic of the lanes of Thimi that lanes do not traverse straight-through when leading outside the settlement but are blocked by dwellings, known as *hapa-chhen*, making the lanes turn their way before meeting the circuit path surrounding the settlement.

*Dathu tole* has eight *nanis*, which, according to their evolutionary sequence, can be classified into the first and the second type and is without the third type, which belongs to the latest historical layer in the development of the town. All of the *Nanis* of the first type is entered, except the one that from the main street, are at the south of the lane. The *nanis*

of the second type have part of the dwelling clusters at the north. It can be seen that the traditional territory of *Dathu tole* is the quarters lying south of the lane.

According to the tradition of ancestral rites, the quarters of *Dathu tole* are inhabited by four communities (known as *dewali* communities) with the predominant community residing at the eastern sector. One of the *nani* of the eastern quarter bordering the main street belongs to *Vajracharyas* and is entered from the lane at the south belonging to *Maru tole*. The presence of *Vajracharyas* and various *dewali* communities makes *Dathu* a heterogeneous *tole* in its constitution.

The central community square of *Dathu* is on the main street where the lanes meet (Fig. 6b). The *Ganesa* shrine of *Dathu tole* is located in this square at the northern boundary of the *tole*. The area immediately north of the shrine belongs to *Inaya-lacchi tole*. No inscription or other records are found to indicate the period of the foundation of the shrine. The position of *Dathu Ganesa* at the end of the sequence of floats of *tole-Ganesas* following the float of the Town Goddess, suggests that it was enshrined later than *Ganesas* of the neighboring *toles* of *Patasi-kwa*, *Maru*, and *Inaya-lacchi*. It thus appears that *Raja-Ganesa* and *Thasama* were in existence prior to *Dathu Ganesa*, which indicates the *tole* to have been inhabited later than the area of *Maru tole* to the south. Thus it is probable that at the beginning *Thatu* and *Kothu tole* with *layaku* as the center, and *Thaniswa*(*Maru*) *tole* at the southern end existed as two settlement clusters which were joined by the settle-



ment in Dathu *tole* at later period. Thus the shrine of *Ganesa* in the early periods of the development of the town was a concept related to clusters of settlement separated by some distance rather than that of each *tole* settlement developed in contiguity to the existing ones. The localities which developed later in contiguity at the boundary zones of the original settlement core often belonged to the votary of its shrine. Such a relationship of boundary localities with the original core area divides the category of *toles* into primary and secondary types. In earlier times, *Kothu* was secondary to *Thatu* both of which belonged to *Raja-Ganesa*. Likewise, *Kwalankhu* is a secondary *tole* while *Maru* is primary in *Thasama Ganesa* circle. In this respect Dathu belongs to the category of primary *tole*.

In Dathu *tole*, there are two other shrines—one dedicated to *Nasa-dyo* (Sanskrit—*Nrityanatha*, the god of dance) in *Nasa-nani* and the other to *Krisna* in *Dathu-lacchi*. *Nasa-dyo* is one particular form of *Ganesa* and the shrine of Dathu is one of the most popular in Thimi. At the central square of Dathu *tole* in the main street there is a *dabali*—the dance platform, with a *pati*, dedicated to *Nrityanatha*, located at the south of the platform. The *pati* was built in 1832 by a resident of a *nani* at the east of the main street. The shrine of *Krisna* appears to be a late structure built at a time of his cult's resurgence in the middle of the 20<sup>th</sup> century.<sup>9</sup>

Other artifacts of community use are the *patis* (Newari: *phale*, *phalacha*). These are built in the ground floors of the houses of individuals facing the Main

Street. One is in front of Dathu *Ganesa*, one is to the east of *dabali*, and one is to the east of *Dathu-lacchi* (1795). The *pati* of *Dathu-lacchi*<sup>10</sup> is for making offerings during the festival dedicated to the Town Goddess. Because of its minimum size, *Dathu tole*, compared to other *toles* of the central type, has minimum number of religious structures the found in a *tole* locality.

### Siva Tole

*Siva tole*, lying at the eastern quarter of *layaku*, is a *tole* of the peripheral type (Fig. 7a). The territory of the *tole* is defined by a lane, which is one of the main access links connecting the main street with the agricultural fields to the east. The community square of the *tole* is located at the entrance to the settlement. The circuit path running at the periphery of the settlement passes through this square connecting *Siva* with other *toles* at the periphery.

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<sup>9</sup> In Balakumari Square, at the southern end of the town, there is one pillar—*Haridharma-stambha* erected in 1950 (2007 VS) dedicated to *Krisna* in addition to a shrine of 1901 (1958 VS). *Haridharma-stambhas* of this period, such as that of Thimi are to be found in a number of other settlements of the Valley. The resurgence of the cult during this period is also reflected by frequency use of '*krishna*' in the personal names of individuals born in this period.

<sup>10</sup> The house itself is mentioned as *Dathurachhen* in the inscription. *Dathurachhen* is the contraction of *Dathu-lacchi-chhen*, i. e., the house in the square of Dathu.



The main settlement clusters of the *tole* are at the south of the lane. There are four *nanis* of the first type, among which three *nanis* are at the southern quarter. The area of the *tole* extends through the circuit route to the east leading to the water tank-Duipokhari at the north. Most of the dwellings in this part of the *tole* belong to that type which developed later than the *nanis* at the south. At present, this part has a major concentration of *Manandhars* who are one of the major communities of the *tole* and whose traditional occupation is in the oil business. In earlier times there was an oil press in a square of the lane, north of *layaku*, that belonged to the *Manandhars*. The oral tradition of the locality holds *Ganesa* of the *tole* as the deity enshrined by *Manandhars*. The considerable number of *Manandhar* families residing behind the *layaku* also suggests their early settlement in this locality. Besides *Shrestha* and *Manandhars*, residents of other communities are also to be found at the southern peripheral area of the *tole*.

*Siva tole* in earlier times was known as *Bankha-chhen tole*. An inscription at *Mahadeva* temple in the square dated 1441 mentions the deity as the venerable *Siva* of *Bankha* (Fig. 7b). The temple was erected on the already existing shrine of *Tri-Bhairava*. The inscription is also the earliest one of the Malla period inscriptions recorded so far in Thimi and is the first inscription to have mentioned the place as '*Themidesha*'. The building of the two-story temple dedicated to *Siva* in this *tole* is the earliest on record to be found in Thimi indicating that the area was of major importance in the settlement. Fur-

ther if we take into consideration the oral tradition of the local residents that there existed an early settlement at the eastern belt below the town plateau, and the location of the *layaku* in the town, the *Siva Square* provided the main link between the settlement around the *layaku* and the settlements below. In this respect, *Siva Square*, although belonging to a peripheral *tole*, was one important node of the town settlement.

Besides the temple of *Ganesa*, other important artifacts built in the square are the dance platform dedicated to *Siva* in 1666, a fountain with an inscription dated 1715 (NS 835), and two community rest houses. The fountain has two Buddhist *caityas* probably donated by *Manandhars*—a Buddhist community. There is also one *caitya* in the square, and a community house in front of the *Ganesa* temple at the south donated by one resident of the *Shrestha* community. The square of *Siva tole* is thus a center basically furnished with the typical community facilities of a *tole* locality.

### **Kumha-nani Tole**

*Kumha-nani* is at the northern sector of Thimi and is the quarter of the *Prajapati* community (Fig. 8a). It is located in a lane that runs along the edge of a tableland towards the west of the main street. The lane still has the remains of a town gate at the west leading to the old route to The Kathmandu. Although the *tole*'s shrine of *Ganesa* is not located in the main street, other features characterize the locality as a *tole* of the central type. The *tole* is made up of five *nanis* belonging to type II, and one group of dwelling clusters of type III along the



main street. All the residents of the *nanis* at the west are *Prajapatis* of various agnatic clans. *Brahma-nani*, which is at the east of the Main Street derives its name from the priest inhabitants who are *Brahmans*. The cluster along the main street also mainly belongs to *Prajapatis* with several houses belonging to the Buddhist priest community of *Vajracharyas*.

It can be seen from the figure that the main settlement area of all *nanis* is at the north of the lane of the *tole* with a southward orientation. Although the east–west street through *Hattimahankal* is a social and spatial divide between the northern and southern sector of the town, the orientation of *nanis* and the pattern of development expansion of *toles* at the northern sector with respect to their lane is symmetrically the same as is found in the *toles* at the southern sector. What makes the *toles* of the *Prajapati* area distinct from the *toles* of the *Shrestha* communities is the form of the open spaces of the *nanis* and the presence of certain communities and ritual facilities, which are not usually found in *Shrestha* communities. The dwellings of all *nanis* of *Kumha-nani tole* are arranged along wider lanes and spacious courts. These open courts are known as *lacchi*, including that section of the main street which belongs to *Kumha-nani tole* locality. The *lacchi* of *nanis* primarily serve as the production spaces for the communities of the respective *nani* quarters. These spaces are utilized for the sun baking of pottery and setting up temporary kilns where the baked pottery is fired. The potter's wheel and the clay stock is on the ground floor of each individual dwelling while

the hay to be used during the firing process is stacked on the second floor. Some of the houses have separate structures known as *nau-pau* to keep stocks of their fired and baked pottery, and haystacks on the backyard. The open courts on other occasions are used by individual families. There exists a tradition of dividing the open space of the court with each family having the right to use the space at its front, and which is also specifically mentioned in the documents of the property division and inheritance of the dwelling.

In the square where the lane of the *tole* meets the main street, in addition to *patis*, there are two other community structures—one *caitya* and a community house (Fig. 8b). The inscription of the *caitya* placed at the west face of the plinth is dated 1583, and is the earliest dated structure to refer to the *Prajapati* community of the northern sector.<sup>11</sup> This *caitya*, known as *Kuti-chiba*, located in front of *Yachin bahal*, probably the earliest Buddhist monastery of Thimi, belongs to the group of 7 major *caityas* of Thimi located in the main street, and is a landmark at the entrance to the northern part of the town. The square is also the station where the *Ganesas* of northern sectors halt for one night after they complete the visit of their *toles* during the festival of the Town Goddess. *Caitya* is one of the characteristic religious artifacts present in the localities of Buddhist communities. Additional minor *caityas* are built as meritorious deeds by the residents in the street, lanes and courts of the *nani* localities. The struc-

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<sup>11</sup> Manju Vajracharya, handnotes on the events of Thimi



ture at the northwest corner of the *Kuti-chiba* is the community house of the *tole* called the *chupal*. It is now converted into a three story dwelling structure.<sup>12</sup>

The shrine of *Ganesa* of this *tole* is at the entrance of *Kumha-nani* (Fig. 8c). An additional *chupal* located in this area is now used as a private dwelling in a manner similar to that of *Kuti-chiba* Square. Another particular feature of the *Prajapati* locality is the shrine of *Viswakarma*, the patron deity of artisans. In most of the localities of *Prajapati*, there are, in general, no separate temples dedicated to this deity. The shrine is on the ground floor of certain individual dwellings. In *Kumha-nani tole*, there are four shrines of *Viswakarma*, and all are located within *Kumha-nani* itself. One of them has a separate shrine, and the majority of the residents of the *tole* belong to its votary. The absence of *Viswakarma* in other *nanis* and the location of the shrine of *Ganesa* indicate that *Kumha-nani* is the oldest quarter of the *tole*. The location of the temple of *Ganesa* at the lane interior from the main street, and the fact that its whose votaries include *Vajracharyas* and *Bramhans* show that *Ganesa* is equally worshipped by all communities irrespective of location and the patron community who enshrined it.

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<sup>12</sup> According to the present owner of the dwelling, until 1965, the building was a two-story structure and used by a *Kusle* family. The dwelling was donated by the ancestor of the present owner for the use of the community, which gave them the 'right' to reclaim it for their private use.

## **Morphology of The *Tole* Structure**

### ***Ganesa* shrine and Territory of the *Tole***

The analysis of the settlement clusters of *Ganesa* shrines shows that the location of the shrine with respect to the *tole* territory is one of the important aspects related to the manner of the development of the settlement. It highlights certain features of the development of *toles* and consequently of the street structure of the town. It is found that all the *Ganesa* shrines of both the central and peripheral types of *toles* are not located in the central area of the *tole* but at the boundary where the area of the *tole* has its entrance or exit. The location of the shrine of *Ganesa* at the boundary of the settlement appears to be an established classical arrangement as suggested by *Nepal Mahatmya* (The Glory of Nepal).<sup>13</sup> The *Mahatmya*, considered to be a work of the 16<sup>th</sup> century, describes the sacred route during the pilgrim's visit to the sacred shrines of Nepal thus: "May he climb the mountain called *Bhujangasaila* at beautiful *Guhadvara*. May he worship *Ganesa* at the entrance, who has been located at the border of the holy land (*ksetra-sima*)." At present a number of the shrines appear to be located in the central area of their respective *toles*. It is because of the expansion of the settlement in the boundary zones in later historical periods. For instance, *Thasama Ganesa* of *Maru* and *Raj-Ganesa* of *Inaya-lacchi* are now located at the central part of their respective

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<sup>13</sup> *Nepal Mahatmya*, 29-37, Acharya, J. (tr.), 1992, p. 274.



community territory. But the oral history and other analytical studies indicate that there were town gates near the *Ganesa* shrines of both of these *toles*. For instance, one of the houses to the west of the main street near the shrine of *Raj-Ganesa* was in former times known as 'the house beside the gate'.<sup>14</sup> The northern part of *Inaya-lacchi* and the housing clusters around *Balakumari* Square are settlements developed later.

The two types of *toles*—central and peripheral—and the location of their respective *Ganesa* shrines are related to the initial street structures and nodes of the town plateau—such as the Main Street, the access routes to the low lying farmlands and the topography of the land. The north-south Main Street runs at the ridge of the town plateau and is the main axis that links the settlements and agricultural fields of the region. This street and the routes branching east and west from it and leading to the surrounding fields form the primary network of street and lanes of the settlement. Within this basic frame, the nodes of the *tole* settlement clusters developed.

We have seen that the territory of the *toles* of the central type includes at least one lane on each side that branches from the main street. The dwelling clusters or the *nanis* that are entranced from these lanes then form the territory of the *tole*. It can be seen from the *Ganesa* community clusters that the territory of a *tole* is developed on one side of the

lane while leaving the other side open or less built. This is also true for the *toles* of the peripheral type as well. As shown in Fig. 5 the *toles* at the south of the *layaku* extend more towards the southern side of the lane while the *toles* at the north have their territories extended towards the northern side of the lane of the *tole*.

The regularity in the shape and layout of plots of *nanis* and the pattern of lanes is most apparent in the earliest core of the town south of *Raja-Ganesa* and north of *Thasama Ganesa*. In this area, the blocks of the quarters of the *tole* were divided by lines running north-south into plots of *nanis* with their depth possibly extending the width of the block. The development pattern of the plot of a *nani* was from its interior part towards the lane or the street. The area of the *nani* further back was less developed. This pattern of development of the *nani* clusters should have influenced the *toles* present shapes. The boundaries of a *tole* appear to be in a state of flux with the buying and selling of the unbuilt parts of the *nani* plots to residents of the neighboring *toles*. Instances from our inquiry of *Dathu tole* and *Chode tole* show that if a part of the plot belonging to a *nani* of a *tole* was sold and its access was from a lane belonging to the neighboring *tole*, the part of the plot thus sold then belongs to the new *tole*. Consequently, the dwellings at the less developed side of the lane of the *tole* are often found to have been built later compared to the more developed side.

The symmetry and regularity in the form of development of the *tole* territory presuppose a certain pattern of land allocation for the settlers at the initial stage of

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<sup>14</sup> Conversations with Avayendraman Joshi, a descendent of the house alternately known as 'Yambuka-chhen'. *Yambuka-chhen* is also found in the palm leaf document dated 1575.



town development. Accordingly, it also suggests that the east-west lanes that branch off from the main street existed before the beginning of the settlement of the *tole* or *nani*. It thus appears that the authority of the *layaku* was determinant in laying the pattern of lanes and thereby the structure of *toles* that developed later.

### ***Chwasa* and The Crossroads**

The quarter block bounded by the street and the lanes is also a ritual unit within the *tole* area in the settlement structure. This structure is symbolized by a ritual artifact known as the *chwasa* (Fig. 9). The *chwasa* (Sanskrit—*chatuspatha*) is a place of crossroad spirit, usually represented by an aniconic stone boulder with no emblem inscribed.<sup>15</sup> Its origins are archaic and therefore are to be found

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<sup>15</sup> Ritual offerings are made in *chwasa* to propitiate the spirits who otherwise bring harm to the inhabitants. In one ceremony, known as *bahu-biyegu*, *bali* offerings made to *matrikas*, the mother goddesses and *Bhairava* are placed in the *chwasa*. This shows a certain parallel to the description of *Mrichhakatika*, an ancient drama, where Carudatta asks his friend Maitreya to go to *chatuspatha* to offer *pinda bali* to *matrikas* (Cf. Kosambhi, 1960). Similarly, *Satapatha Br.* (2.6.2.9) invites *Rudra* (the fiery aspect of *Siva*) to a crossroads sacrifice: “graciously accept it together with thy sister *Ambika*”. It is not surprising therefore that a *Sivalinga* is enshrined in one of the *chwasa* of Inaco *tole* of Bhaktapur. *Catuspatha niketana* and *catuspatha rata* are among many *matrikas* mentioned in *Mb-Salyaparva*. The local name *chwasa-ajima* recalls this same tradition. An excellent reading on the prehistoric traditions of crossroad spirit is Kosambhi, D., 1960.

at the earliest of the layers of Kathmandu Valley settlements. In the town of Thimi, *chwasa*, in a majority of the instances, are located at the southern corner where the lane meets the main street. Some of the *chwasas* in the old core of Thimi are also located in lanes where there does not exist a crossing lane at present. But, as shown in the figure, these *chwasas* lie within close proximity of a straight line, and it is probable that there existed a north-south route between the main street and the circuit route to the east in earlier times. The route could also have been simply a boundary track between the plots of the quarter blocks which became obliterated either due to the merger of the plots or due to some other adjustments made later, such as the enclosure of the dwelling compounds. However, there is a tradition of making a hole called a *nasa-pwa*, which is a small elongated triangular opening in the wall built later on the previously existing path of the drain or access routes.<sup>16</sup> The *nasa-pwa*

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<sup>16</sup> *Nasa-pwas* are built in the ground floor walls of the dwellings, exterior homestead walls, and in any walls that are built closing the earlier access routes. As the access route may not have been straight entirely, the *nasa-pwas* are not always in one straight line. But the series of *nasa-pwas* fall within close proximity of one straight line, thus defining continuous access routes that existed in previous times. When there is a door or a window falling in the line, it substitutes for the *nasa-pwa*. The triangular shape of the *nasa-pwa*, made by chiseling the rectangular bricks, is distinct from other kinds of holes. Gradually, the functions of *nasa-pwa* are being forgotten, and there are instances that do not leave the earlier *nasa-pwas* or other openings when new walls are built. *Nasa-pwa* is also built in the wall that fronts the main door of a temple or a shrine.



openings are supposed to provide unobstructed flow of the spirits that used to travel through the routes that previously existed. Observations and inquiries of residents have shown that there existed such an access route, as shown by the dotted line in Fig. 10 between the main street and the circuit route at the east.

The pattern of the distribution of *chwasas* and the spatial unit related to it has its own sequence of evolution. According to their pattern of distribution, the whole town of Thimi can be grouped into a number of sectors. At the same time, the distribution shows close correspondence with the development of the types of *nanis*. At the eastern sector in the old core of the town where there are *nanis* of the first type, *chwasas* are to be found within each lane in addition to those which are at each corner of the street block. In the western sector of this central core, there is only one *chwasas* to a block and no *chwasas* in the lane. In the areas with *nanis* of the second type, which are to be found at the northern part of the southern sector of the town, *chwasas* are not installed in each lane crossing, but several quarter blocks share one *chwasas* in common, including those blocks that lie on either side of the main north-south street, which are clearly different *chwasas* units at the southern part. At the eastern part of the northern sector, where most of the settlement clusters belong to the latest type, the number of *chwasas* is even less with, for instance, the secondary *toles*—Pacho, Garcha, Gungachiba, each having only one *chwasas* in common. It appears that the idea of a relatively independent ritual unit of the settlement defined by *chwasas* changed gradually from

settlement blocks defined by crossing of routes, which could be boundary paths of the homestead plots to the crossings of lanes and the main street, and finally to the main junction of the locality, which is a *tole*. What is relevant here in this topological development of *chwasas* is that the locations of *chwasas* help to identify the obliterated paths that existed in the settlement in its early period, and then the main streets in the areas of the later settlements. Our analysis of the developmental phases of the town settlement from the study of *tole* types and other features such as community sectors related to common *ancestral* shrines and clan clusters of *nanis* shows that the above changes in the topological pattern of *chwasas* coincides exactly with the phases of spatial development of the town.

Thus the analysis of the structure and types of *toles*, the locations of the shrines of *Ganesas* with respect to the *tole* territory and the *chwasas* in the crossings of the streets and lanes leads to a schematic plan of the street patterns, layout of *toles* and four development phases of Thimi as shown in Fig. 10.

## Conclusion

The manner of territorial organization of the *toles* in Thimi suggests that the layout and development of settlements were regulated and the institution of such control could be no other than the *layaku* itself. Relevant to this conclusion is the feature that the town, both in its physical layout of the *toles* and the manner of distribution of ritual artifacts—*Ganesa* and *chwasas*, shows no other axis and center but the main north-



south street and the *layaku*. The distribution patterns of *chwasas* and the shrines of *Ganesa* are important features that may be examined to discover the different historical layers of the ancient and medieval settlements of the Kathmandu Valley. In particular, since the origin of the *chwasas* is archaic, and its ritual unit smaller, it helps to find out the individual layers of the settlement in finer scales.

Historical records mentioning *toles* by the 10<sup>th</sup> century in cities like Patan suggest that the settlement could have been planned in divisions of *toles*. However, the division of the territory defined by *Raja-Ganesa* into *Thatu* and *Kothu tole* as shown by the medieval records of Thimi indicates that *toles*, at the beginning, were divisions within a settlement area not entirely commensurate with the territory of the shrine of *Ganesa*. Rather a *Ganesa* shrine belonged to a settlement cluster that was spatially separate from other nearby settlement clusters. The deity was more properly known as *sthana-Ganesa*, as indicated by the original name of the *Ganesa* of Maru (*sthanesvara Inaya* > *Thasva Inaya*—ie; *Ganesa*, the god of the locality) and the record of *Ganesa* of Chapacho, than *tole-Ganesa*. The concept of *tole-Ganesa* establishes the *tole* as an organizational unit of the town. Further, the differences that exist between the eastern sector and the western sector of the old core of the town in the pattern of distribution of *chwasas* indicate the possibility of later development of the western sector compared to the sector at the east of the main street. Therefore, the *toles* that span both the eastern sector and the western sector classified as the

central type appear to be a development over time.

It should be noted that there is no other socio-spatial settlement unit in the constitution of the town higher and lower than *tole* related to the daily community and public life of the inhabitants. The ritual structure of *Mandalika*, which encompasses a number of *toles*, is manifested only on certain occasions.<sup>17</sup> *Nani*—the lower level unit belonging to the *tole* territory, is the clan settlement unit, and its development history belongs to the private realm. It is only the territory of the *tole* that belongs to the diverse communities of a locality.

Most of the *toles* of Thimi are heterogeneous in their community composition. The diversity in the community structure and the presence of the shrine of *Ganesa*, a non-partisan deity, which is independent of any social, religious and occupational divisions, as the symbol of the *tole* make the *tole* a socially open structure of the settlement. All the community facilities in the street, lanes

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<sup>17</sup> A division known as '*chhu*' is occasionally mentioned in medieval documents. Kolver and Sakya (1987) suggest that '*chhu*' might be a district that included several *toles* of the town. Thimi is also said to have been divided into *Tachhu*, *Wachhu*, *Nachhu*, *Yema*, *Kwako*, *Inaya*, and *Bhudah-khel* districts. These divisions were for the purpose of tax collection. No community facility or ritual artifact is known to belong in common to *toles* of such *chhu*. Thus, it appears that '*chhu*' was not the physical and community unit of settlement but an administrative division, which constantly did change boundaries, and disappeared following the new administration.



and squares of a *tole*, although generally built, used and maintained by the residents of the *tole*, are open to all the communities of the town. The building of the main square of the *tole* along the main streets and at the entry points to the town settlement essentially makes the community life of the *tole* public and opens all the streets, lanes, squares and the facilities of a *tole* to public use. No gates are known to have been built to enclose the *tole* territory of Thimi from the neighboring areas in the town. The artifacts of *toles* are what make the community structures of the town. Some of the urban structures which belong to a larger community than to a *tole* territory such as ancestral shrines, shrines of *Astamatrika*—a set of eight mother goddesses, and water tanks, are either located at the periphery of the settlement or belong to that part of the history at the beginning of settlement, and are unique. Thus do not grow in number with the growth of the town. Thus, the *tole* is that unit of the town which is related to the daily community life of the residents, and which also gives the settlement of Thimi an urban character.

## References

- Acharya, Jaya Raj, 1992. The Nepal Mahatmya of Skandhapurana. Department of Archaeology, n. d. *Bhaktapursilalekha suchi* (An Inventory of the Stone Inscriptions of Bhaktapur), The Kathmandu.
- Dyos, H. J., ed., 1968. *The Study of Urban History*. London.
- Funo, Shuji, 1998. "Ritual Facilities and Community Organization of Cakranegara City, Lombok, Indonesia: Spatial Structure of Cakranegara, Part II", J. Archit.and Plann. Env., AIJ, 503, Jan, pp. 151-156.
- Gutschow, N., 1981. The Kathmandu: "Historical development, Spatial Structure, Social and Ritual Topography", Khumbu Himal, 13/3.
- Holle, A., Toffin, G., and Rimal, K. P., 1993. "The thirty two Maharjan Tols of The Kathmandu City". in G. Toffin, ed., *The Anthropology of Nepal: From Tradition to Modernity*. The Kathmandu, French Cultural Centre.
- Joshi, Hari Ram, 1996. Rolamba, Journal of Joshi Research Institute, Vol. 16, No. 1, Lalitpur.
- Kolver, B. and Shakya, Hemaraj, 1985. Palm Leaf Documents from Rudravarna Mahavihara, Wissenschaftsverlag, Sankt Augustin.
- Kosambhi, D. D., 1960. "At the Crossroads: Mother Goddess Cult-Sites in Ancient India", part I and II, Journal of Royal Asiatic Society, April, pp. 17-34, Oct. 135-144.
- Malla, Kamal Prakash. 1981. Linguistic Archaeology of Nepal Valley: A preliminary report, Kailash, vol. VII, 1-2: pp 5-23.
- Malla, Kamal Prakash and Vajracharya Dhanavajra, The Gopalrajvasavali. Nepal Research Centre Publications, No. 9, Franz Steiner Verlag Wiesbaden GmbH, 1985.
- Nepali, Gopal Singh., The Newars. Madhab Lal Maharjan, Himalayan Book sellers, The Kathmandu, reprint 1988 (1st edition, 1965).
- Pant, Mohan and Funo, Shuji., 1998. "Spatial Structure of a Buddhist Monastery Quarter of the city of Patan, The Kathmandu Valley". J. Archit. Plann. and Environ. Eng. AIJ. No. 513, Nov, pp. 183-189.
- 2001. "Analysis of Settlement Clusters and The Development of The Town of Thimi, The Kathmandu Valley". J. Archit. Plann. and Environ. Eng. AIJ. No. 543, May,



pp. 177-185

Rajbamshi, S., ed., 1984. *Bhumisambandhi tamsuk- tadapatra* (Palm leaf land deed documents) part 2. Department of Archaeology, HMG of Nepal, (2041 VS).

—1987. “*Bhumi sambandhi kehi Aitihāsik Tamsuk Tadpatra*” (Some palm leaf land deed documents), *Abhilekh*, Vol. 5, (2044 VS).

Slater, T. R., ed., 1990. *The Built Form of Western Cities*. Leicester University Press, Leicester.

Thimi, 1990. *Municipality and Legal Framework*, The Kathmandu.

Tiwari, S. R., 1995. *Patterns of Settlements in The Kathmandu Valley in Ancient Period*. PhD dissertation submitted to Tribhuvan University, subsequently published as ‘Ancient Settlements of The Kathmandu Valley’, Centre for Nepal and Asian Studies, Tribhuvan University, 2001.







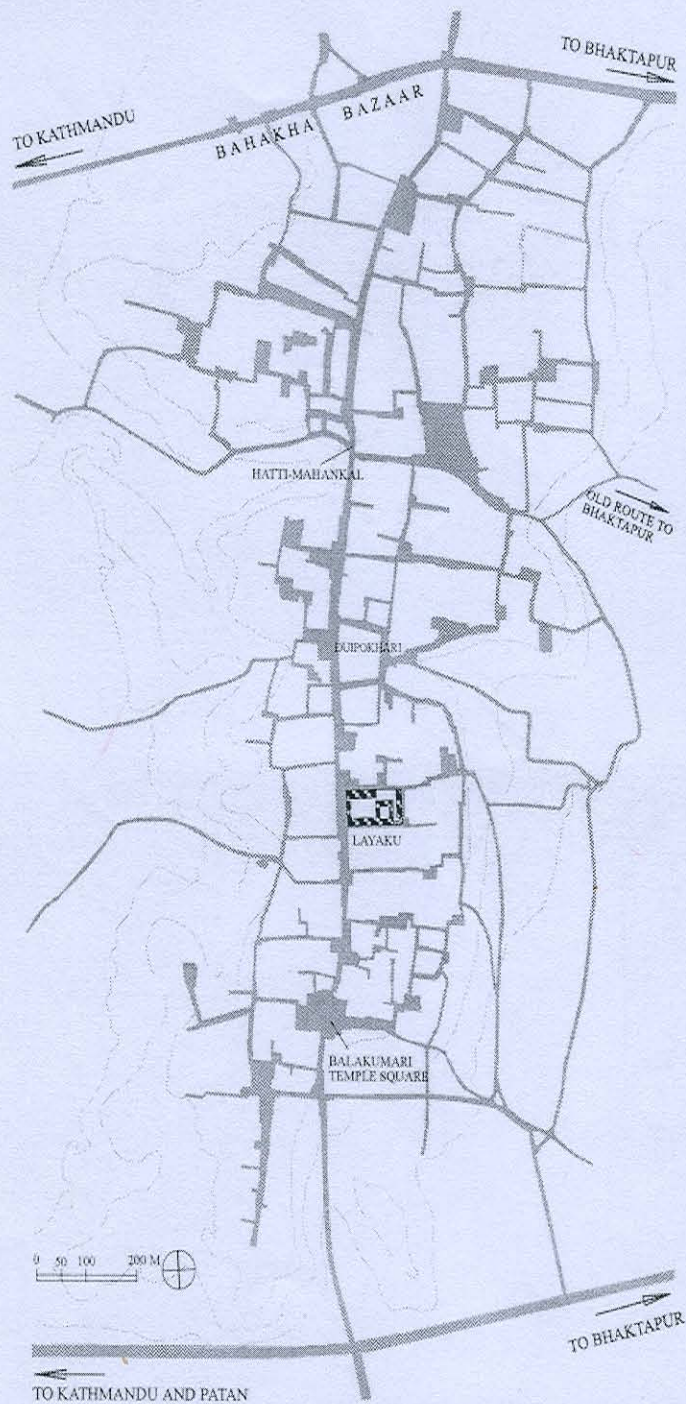


Fig. 3. The town of Thimi



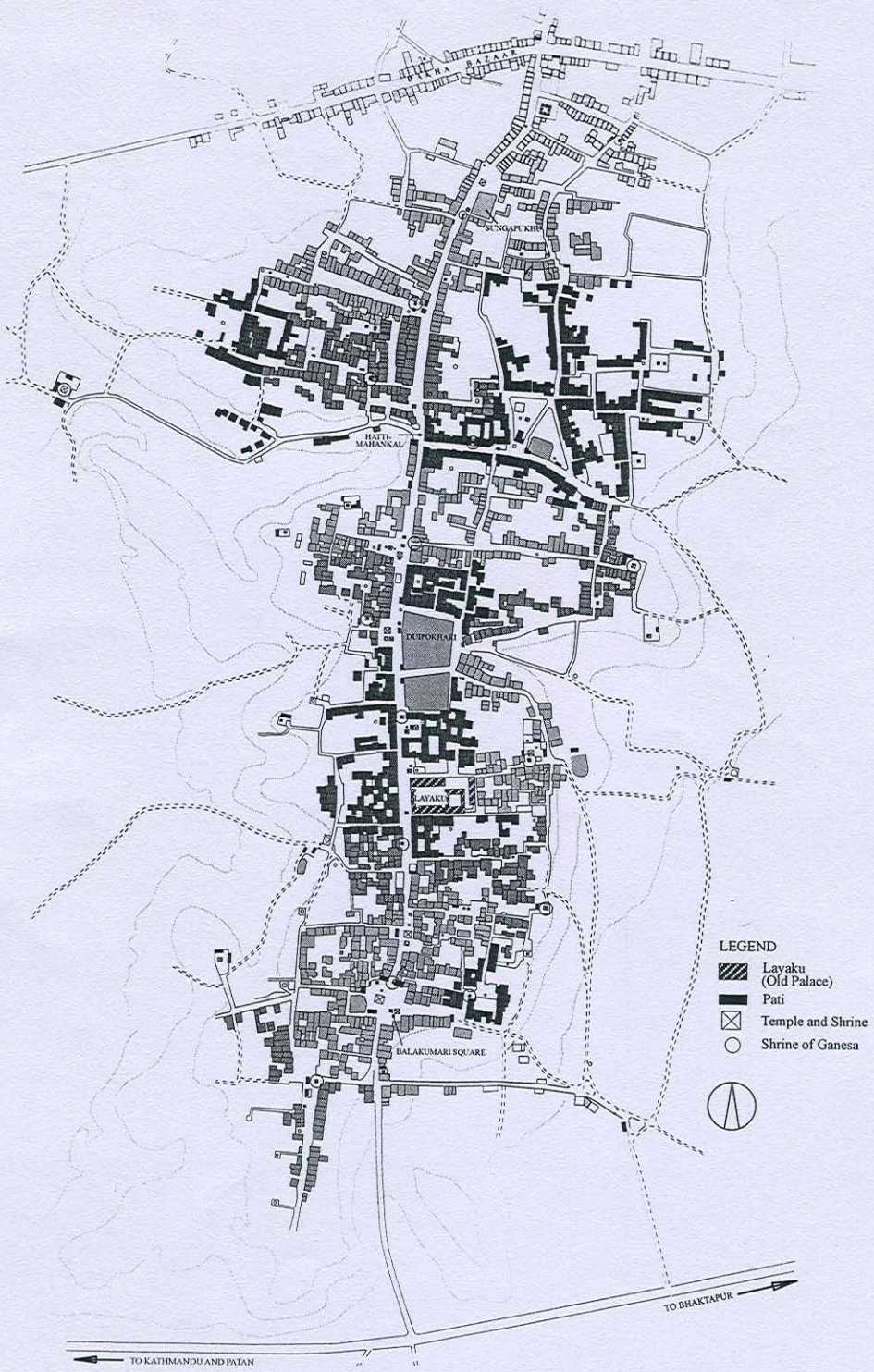


Fig. 4. Community clusters of Ganesa shrine.



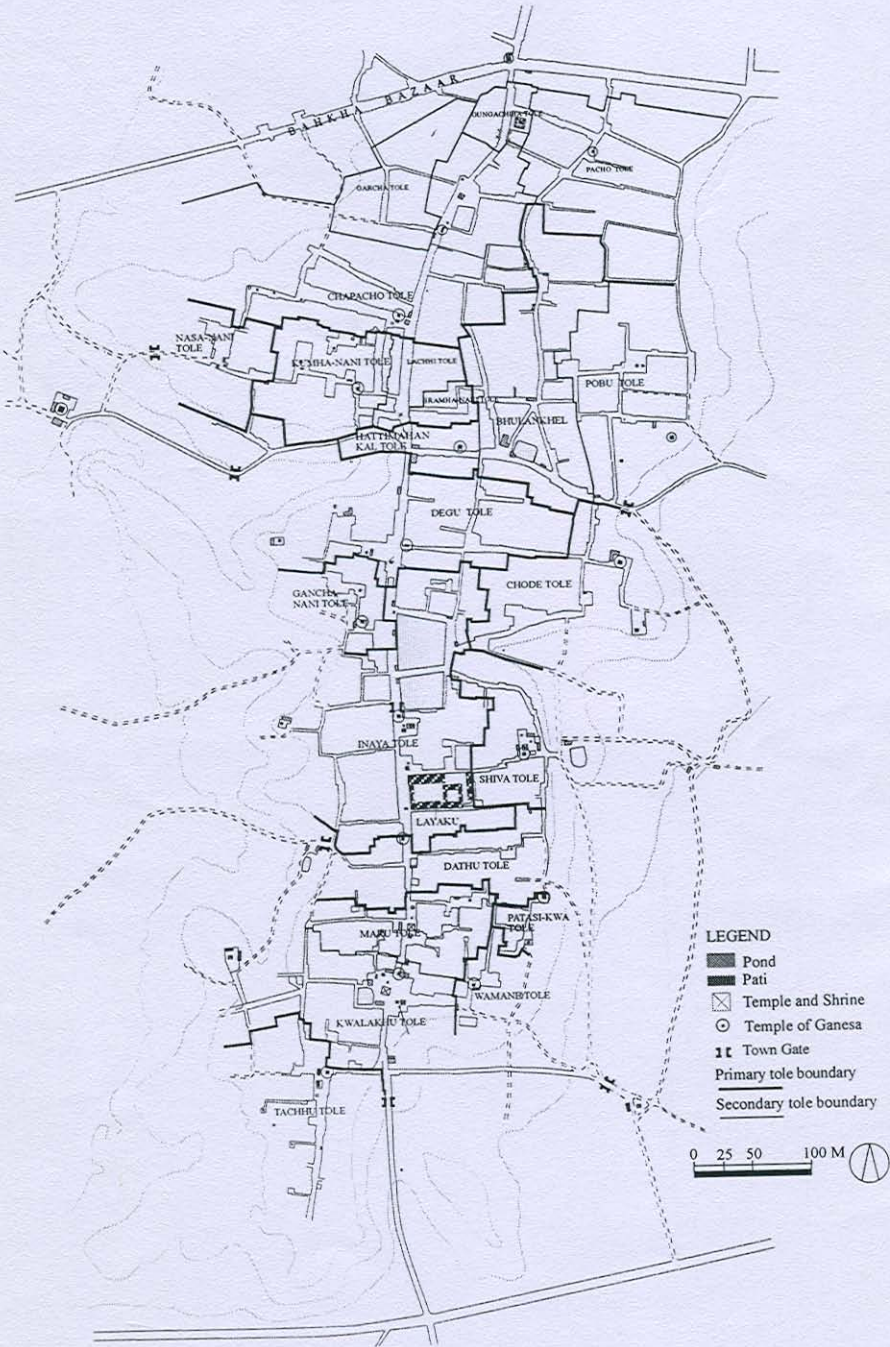


Fig. 5. Structure of Tole Neighbourhoods.



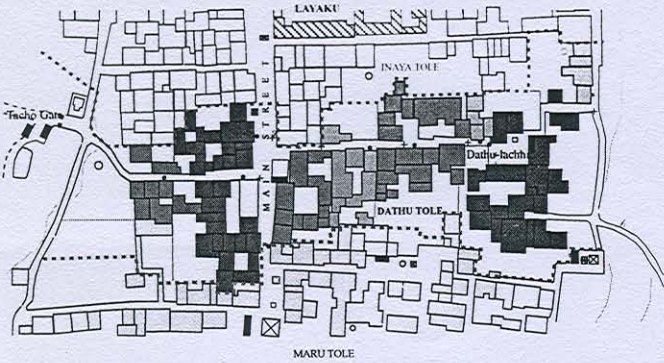


Fig. 6a

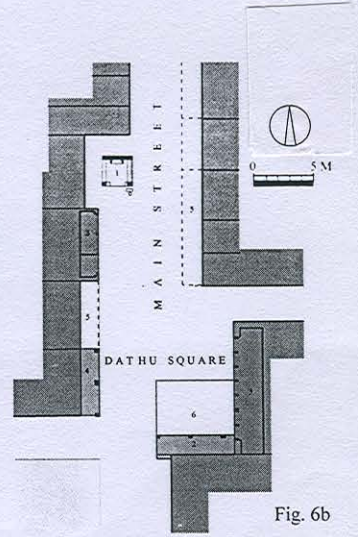


Fig. 6b

**LEGEND**  
 + Chwasa  
 • Kshetrapala  
 ■ Temple of Ganesa  
 ■ Pati  
 - - - - - Tole Boundary  
 ..... Nani Boundary

Note: The shaded areas represent individual nani or dwelling clusters with one common kshetrapala (the protecting deity of the nani).

■ Dwellings □ Rubbles of the pre-existing dwellings

1. Temple of Ganesa; 2. Dathu phale; 3. Dalan with dwellings in the upper floors; 4. Pati; 5. Extant plinths of early pati structures; 6. Dabali

Fig. 6. Dathu Tole. 6a: The territory of Dathu Tole; 6b: Dathu Square.

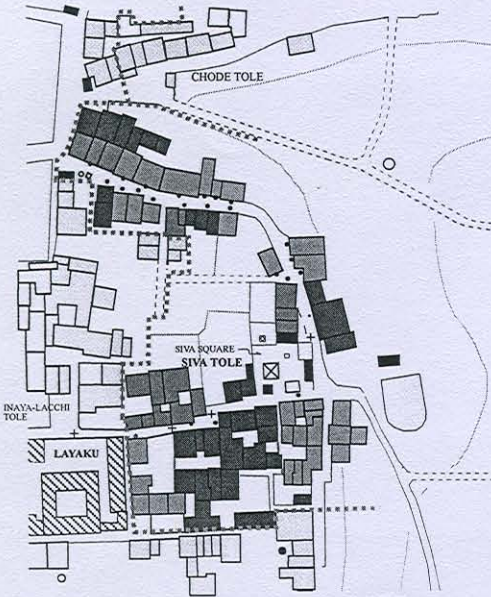


Fig. 7a

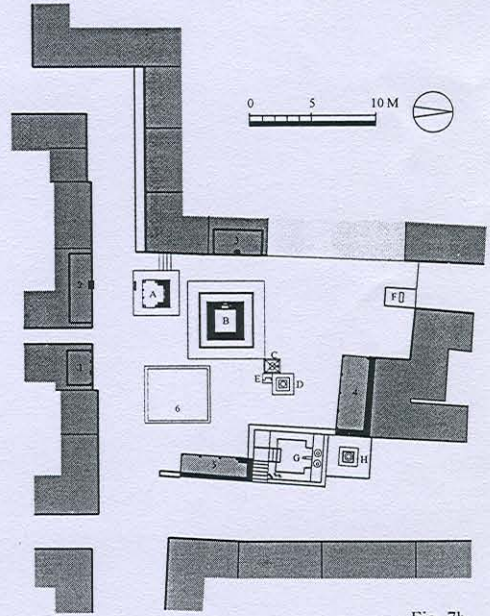


Fig. 7b

**LEGEND**  
 + Chwasa  
 • Kshetrapala  
 ■ Temple of Ganesa  
 ■ Pati  
 - - - - - Tole Boundary  
 ..... Nani Boundary

0 25 50 M

■ Dwellings □ Rubbles of the pre-existing dwellings

A. Temple of Ganesa B. Temple of Mahadeva (Trilinga Bhairava) C. Shivalinga D. Caitya E. Amoghapasa Lokesvara F. Stele G. Stone Fountain H. Caitya

1, 2. Pati with dwellings in the upper floors; 3. Mahadeva pati; 4,5. Pati

Fig. 7. Siva Tole. 7a: The territory of Siva Tole; 7b: Siva Square.





Fig. 8a

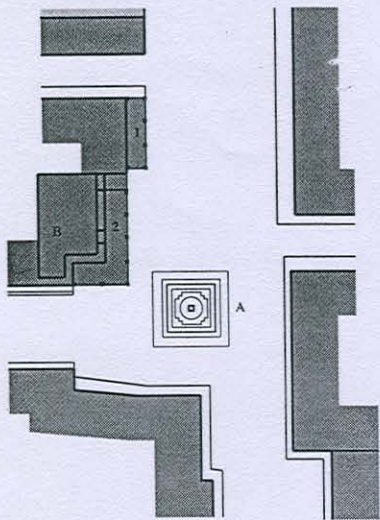


Fig. 8b

A. Kuti chiba; B. Chapal (community house);  
1. Lachhi phalaca (pati); 2. Jugi phalacha (pati).

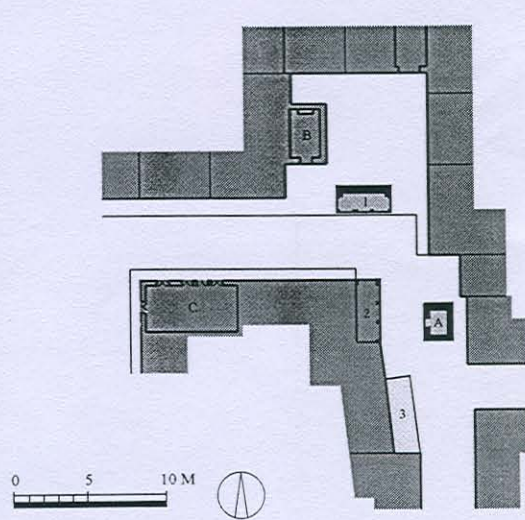


Fig. 8c

■ Dwellings

A. Temple of Ganesa; B. Shrine of Viswakarma; C. Chapa-chhen (community house); 1. Pati; 2. Ganesa bhajan pati; 3. Extant plinth of pre-existing pati.

Fig. 8. Kumha-nani Tole. 8a: The territory of Kumha-nani Tole; 8b. Kuti-chiba Square; 8c: Kumha-nani Square.



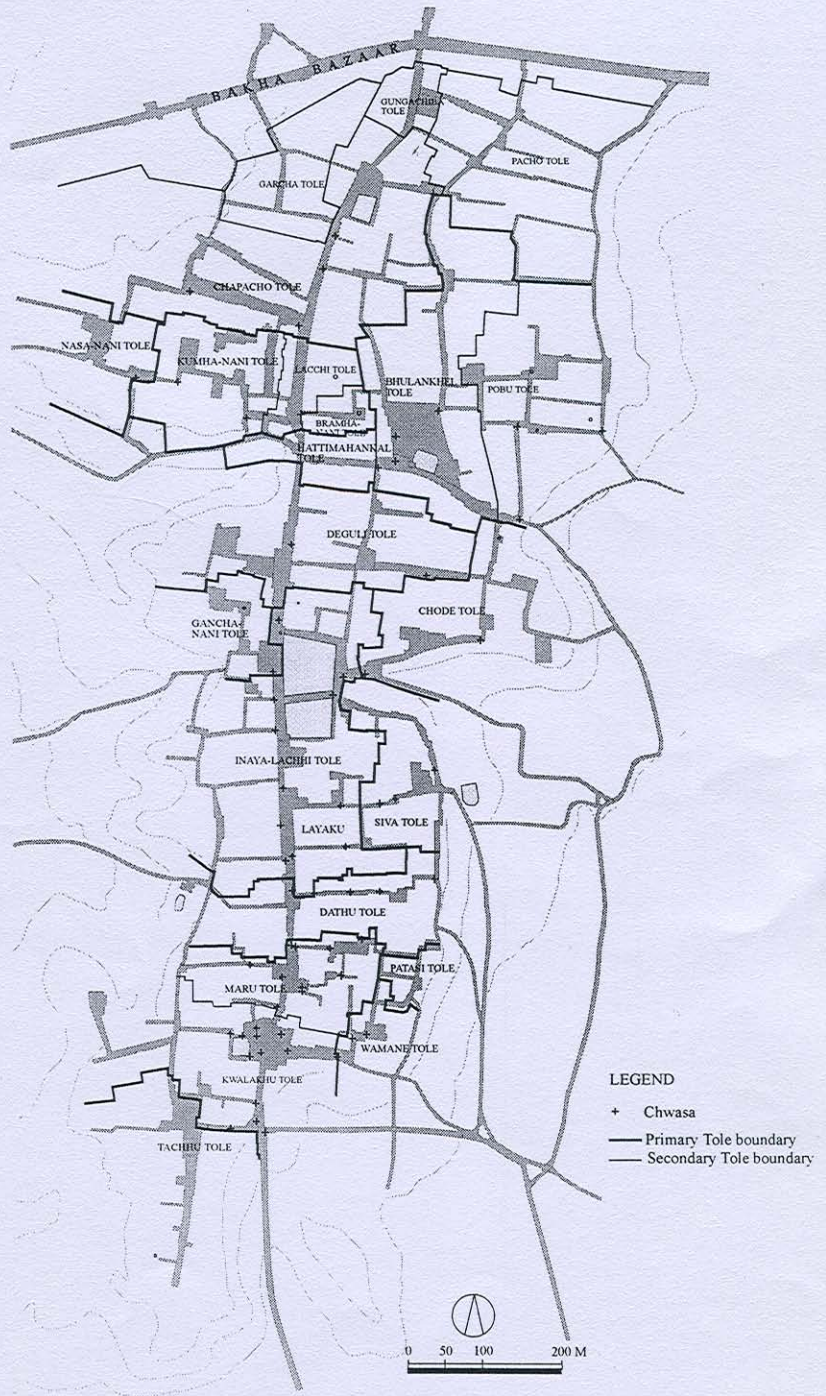


Fig. 9. Distribution of *Chwasa*--the crossroad spirits.



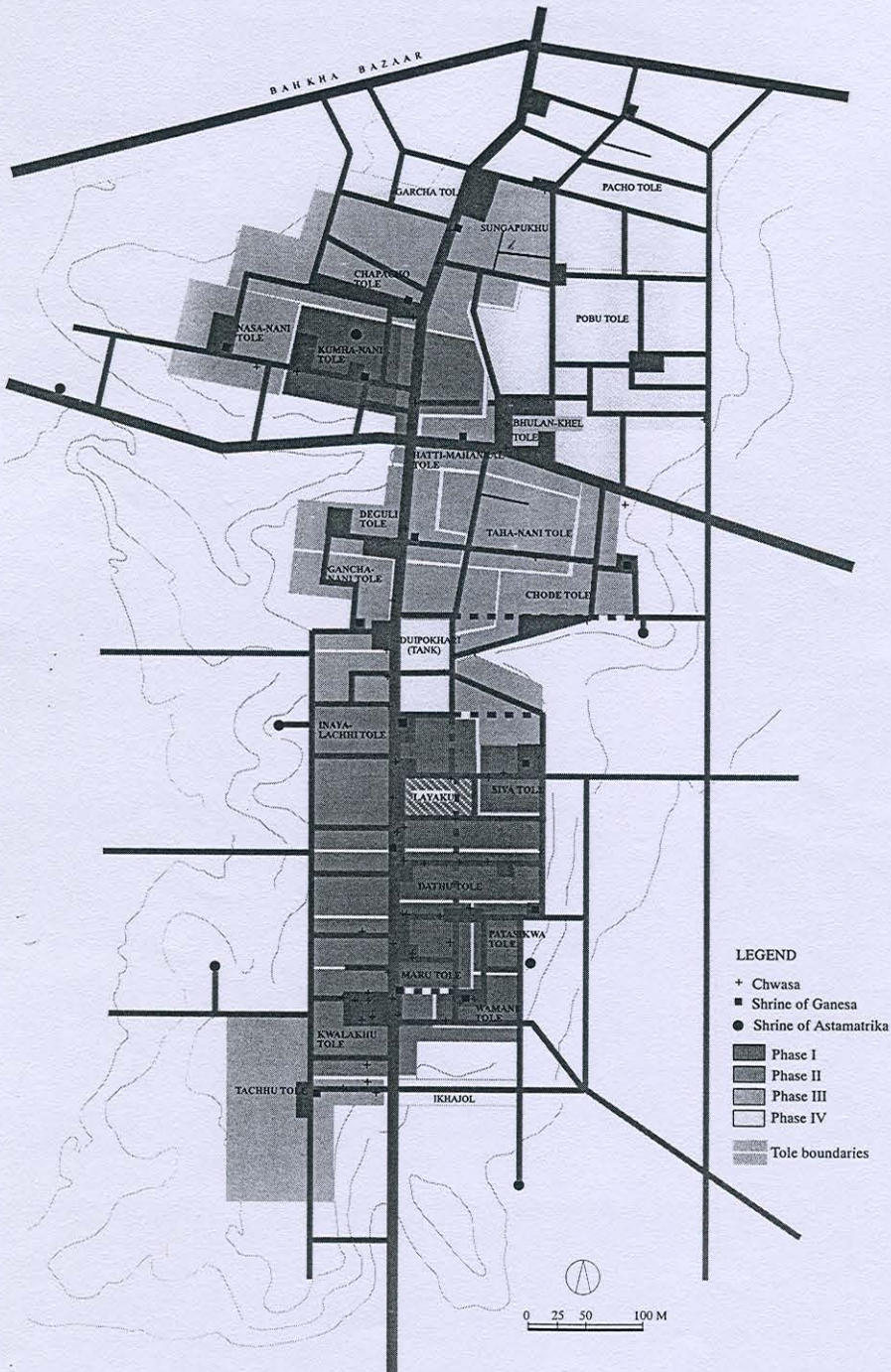


Fig.10. Schematic Plan of Street Pattern and The Structure of Toles. The color shades represent the development phases as show by distribution pattern of crossroad spirits--*chwasa*.