INTRODUCTION

Forts are structures, often built with strong, protective surrounding walls and other structures for the defense of a territory during warfare as well as peace times. Forts solidified a rule in a region and also defended the territory from natural calamities. Several definitions of forts are available in various texts on architecture. The term fort in ordinary usage implies stronghold, which offers protection and security to all inhabitants who seek refuge in it. In Sanskrit, the term Durga i.e. a fort means that which is hard to approach, or difficult of access, or inaccessible. In Vedic literature, it is referred to as Pura, meaning a fortified city, thus equating a city or town to a fort. The corresponding term for fort in Kannada is Kote, in Telugu it is referred to as Kota and Kottai in Tamil.

Primarily the forts were for defence from natural hazards like rain, wind, etc. and attack from outsiders. According to Columbia encyclopedia, “Forts are built in times of peace, designed to protect political, industrial, transportation, and communication centres”2. That is, their importance is chiefly strategic, erected for strengthening a place of position, like town, capital city, economic centre, etc. The two important functions of the fortifications was, protection from enemy attacks and to make defence effective. Forts grew as corollary to the existing trends of warfare, which is one of the oldest aspects of human existence.3 The nature of the defence structures depended upon the methods of attack and defence, the weapons used, military organization and the strength of the kingdom. In fact, forts were equally useful in offensive as well as defensive warfare.

Initially man started building houses to protect him from sun, rain, cold, and wind. Gradually structures were built to protect the community from natural calamities, wild animals and enemy attacks. Defensive walls came to be built around habitats. In the ancient

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3 Charkaravarti P.C. (1941): The art of war in Ancient India, Low Price Publication, Delhi P-14
period, people built mud forts, later they built forts with sun-dried bricks, and gradually used burnt bricks and finally stone blocks were brought into usage. With the advancement in science and technology particularly during medieval times, arms and ammunitions were introduced. Since medieval times, forts were built of huge blocks of stones and the height of the forts was also raised. Forts usually consisted of moats, gateways, bastions, watch towers, administrative buildings, sometimes residential quarters, at times royal residences, water storage facilities, granaries, magazines, as well as army quarters and guards rooms.

Moats, a very important characteristic of a fort, were defensive trenches serving the purpose of evading the attackers from scaling the fort walls. These ditches lined with stones usually were 20” to 45” deep. The moats were filled with water and crocodiles. The idea was to ward off the enemies from crossing over to climb the walls. If the enemy managed to cross, they were attacked by the army stationed within the fort. It is also said that if the enemy managed to scale the walls they would also be attacked by the defender using various means like:

1. Gegge/Dhimmi: wooden log
2. Benki Chandu: by throwing fire balls
3. Bandegallu: stones/boulders
4. Uriyenne: boiling oil
5. Nigi nigi Kenda: red-hot charcoal
6. Chuchuva guta: long spear and other means

The Arthashastra speaks of construction of three moats, around a fort. The moat attached to the fort wall was to be filled with water having crocodiles and poisonous snakes camouflaged with lotuses. The next moat is with clay or thorny bushes. The last moat was to be kept vacant so as to avoid animals venturing towards the fort as well as the enemy. Gate ways were the main entrance of a fort or the fortress was another important part of the fort.

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6 Ibid; PP-184 - 185
On the sides of the gateways were usually Bastions, a projecting part so as to allow defensive firing in all directions. Besides, sharp nails were fixed to the doors so that elephants could not open these gateways. Watchtowers were also used to watch the movements of the enemy.

Later additional walls were constructed around the fort for better protection as seen in Chitradurga and Hangal forts. Huge cannons were fixed on the Bastions, also eyehole kind of openings were cutout at strategic points on the fort walls for firing, shooting of arrows and to watch the movement of enemy army. Such tiny openings are to be found at Badami’s northern and southern fort. The capital cities of the dynasties/empires were fortified and within it were palaces, market areas, temples, shrines, and other structures of utility as evidenced at Hampi.

The urban core here is clearly defined by a ring of massive fortifications, which encloses an approximately elliptical area (4 kms). Within this zone are also rocky ridges, flanked by long valleys and to the south and west are vast landscapes.

(a) Bastion  (b) Cannon

(c) Watch Tower  (d) Officers’ Quarters
When enemy troops planned an attack of the fort, they usually would camp outside the fort for many days or months. Once the supplies inside the fort were exhausted, the inhabitants of the fort had no choice but to open the gates and surrender to the enemy. The enemy troops camped was always at an advantage and would easily conquer the fort without much resistance. If the forts were captured it meant that the entire kingdom or provinces was under their control, so it was very essential to protect the forts from attack.

The forts had granaries to store grains as it was required to sustain the inhabitants of the fort especially when the forts were under attack and surrounded by enemies. They built underground magazines to store arms and ammunition within the forts. Loads of grains and
other requirements were stored so as to last for months as the gates were to be closed as long as the enemy troops camped outside the forts.

In order to fulfill the social and religious needs of the people the forts had within them temples, officers’ quarters, palaces and other structures both civilian and military. People belonging to different classes used to live within the fort in specified areas allotted to them. Arthashastra gives a detailed description of the construction of forts. The work even specifies the place where the King was to build his capital that is in the centre of the country. The site or capital was to be chosen by experts in the science of building. Arthashastra mentions that forts were to be constructed at the confluence of rivers or near a perennial lake; near an artificial tank (round, rectangular or square in shape, depending on the nature of the land) with canals to fill it. The place was to be well served by both land and water trade routes and be capable of being a market town. As water was very essential for forts big ponds were excavated in large forts and artificial wells in small forts and Donis or small ponds cut out in hill forts or Giridurgas.

Armed forces were maintained within the forts for the purpose of defence; the structures related to army consisted of -

a) Army quarters – where the soldiers were housed and training rendered for the force;

b) Guard rooms – A space near the entrance of a fort where guards or sentries were stationed;

c) Magazine – A place for the storage of gunpowder, arms and ammunitions. It is known as Souterrain meaning under earth. An underground chamber had a

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7 Rajendran, P-184
8 Ibid, P-186
CHAPTER – I: INTRODUCTION

series of rooms dug in the ground or bedrock beneath a fort and similar other chambers to store supplies, ordinance.

d) Powder magazine - A room or compartment usually lined with lead or copper and placed underground for storing gunpowder. However such magazines were introduced into the forts in the modern period.

Forts were part of people’s lives. Administrative and social life was connected with forts. Settlement areas around the forts were named after these forts. Karnataka has a number of cities and towns named after the forts such as -

- Kote: Bagalkote, Melukote, H.D Kote, Hosakote, etc.
- Durga : Chitradurga, Savandurga, Ramdurga, Devarayanadurga, Huliyurdurga, Rayadurga ;
- Gadh (also meaning fort): Pavagad, Gajendragad, Sadashivagad, Amingad ;
- Kal also means fort: Mudugal, Hangal, Niigal ;
- Giridurga or hill forts - Devgiri, Madugiri, and Channagiri.

Defence architecture has been found since ancient times. The Earliest cites that were fortified in India could be traced to Indus valley civilization.

Tracing the antiquity of fortification in India, it is necessary to study the basic settlement and habitation patterns in pre and proto historic time. The Neolithic phase in India was an agricultural and pastoral economy with settled habitation and domestication of animals, giving birth to a system of dwelling structures. Neolithic – Chalcolithic times had small open air sites, caves, and rock shelters.

The best example of this period is the rock shelters near Badami called Shidalpadi in which paintings and stone equipments were found. During this period, self defence being an important issue, thorn hedges, wooden stockades, cattle huts, and earthen walls, got erected.
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The primitive types of fortification are found in the form of a great wall around Kot Diji and Kalibangan. They were primarily meant to discourage animal and human intrusion. During the Harappan civilization, structures similar to forts are to be found at Kohtras Buthi, Kot Diji and Mazena Damb in Sindh provinces.

Fig. 2: Harappan City (3500 B.C.)

The structures found are defensive walls, ramparts, towers etc. As seen in the two big citadels at Harappa, its fortification mainly consisted of a defensive rampart of bund, above the flood level, built of mud and debris. Mohenjo-Daro, one of the biggest cities of Harappan civilization also had similar fortifications. The well-planned urban nature of the cities reveals autocracy or symbol of power. As rightly said by Ramesh Menon about Lothal—“Lothal was where the Harappans lived 4000 years ago. It is one of the world’s richest sites of Indus Valley Civilization.

11Ibid
The first dockyard in the world was probably constructed by the inhabitants of Lothal. It was the largest dockyard which was ever built during Harappa period or Bronze Age for shipping cargo. The inhabitants of Lothal were no doubt an ingenious lot. Their engineering expertise in building the dockyard speaks for itself. It is considered most scientifically designed dock of the age.

During Vedic period a number of small states flourished. The term Rashtra was headed by a king or Rajan and below the Rashtra was the grama the smallest unit of administration of the State headed by the Gramani. It was the duty of the Gramani to protect the people of the village from neighbouring principalities or tribes and even from wild animals. But with the rise of Paramountcy there was an increase in the wars among Janapadas or Tribal States. In course of time with the concept of Digvijaya or waging of victorious campaigns from all direction for attaining universal fame and glory, came into practice.

Wars were fought mainly due to boundary disputes, struggles for succession, personal gains, wealth, to gain political power, to occupy areas of strategic importance, to protect women and children, cattle etc. These certainly gave birth of defence in the form of forts and fortifications.

The nature and character of a fort depended largely upon the contemporary trends of warfare. While the war principles remained almost same, that is to say as the under-lying concept of a fort was defence, it remained constant from Harappan period to Colonial times. The fort as a structure underwent changes in patterns from time to time, varying in its shape, size, plan and materials of construction. The changing techniques of warfare were reflected through changes that the structure of forts underwent.

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Fig. 3: Artist’s imagination of Dwaraka City

Source: krishnaart.com

Vedic period was characterized by the appearance of Painted Gray Ware. With a well advanced agricultural and pastoral economy and some sort of political organization of the tribal state called Janapadas, headed by a Rajan, during this period, there are references to cities like Kausambi, Rajagriha, Ahichhatra, Ujjain, and Dwaraka, Indraprastha etc which were termed as Pura and were protected by ramparts of walls made of heaped earth. The Rigveda mentions Agni and Indra as destroyers of forts, and invokes them in several hymns or slokas to display their powers and destruction of the forts of daasas. Indra is called as Purandhara meaning destroyer of forts. At Kausambi, Ahichhatra and other places ramparts of mud with sloping sides and riveted with burnt brick are found. Similarly at Rajagriha, the

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excavated and textual data reveals that, there seems to have been a fairly consistent concept of
the layout of urban centres, although the plan was not invariably adhered to. The town is
said to have been enclosed by a moat or a rampart.

_Mahabharata_ and _Ramayana_ also refer to forts and fortifications. The term _Vapra_ and
Chhaya meaning ramparts or earth of mud are found in the epics. The _Adiparva_ of
_Mahabharata_ refers to the city of _Indraprastha_ as protected by a wide moat, lofty walls and
several gateways. The city of _Ayodhaya_ in _Ramayana_, is described as surrounded by deep
moat all round, and was guarded by huge gateways and towers. _Kishkinda_, the city of
_Sugriva_ was a forest fort provided with golden gates, moat and citadel. _Lanka_, the capital of
_Ravanna_ was typical of a mixed fort, furnished with four huge gates, and four bridges situated
in midst of sea which could be considered as a _jaladurga_. The Buddhist _Nikaya_ and _Jataka_
literature also make stray references to forts and fortifications. The _Nikaya_ mentions a border
city defended by strong ramparts and towers and provided with a single gate indicating that
borders were strongly fortified. The _Maha Ummagga Jataka_ states that the city of _Vaisali_
was surrounded by a rampart near the gates. Panini also mentions moats around cities and
gives technical names like _Parikha_ (Moat), _Prakara_ (Rampart), _Dwarah_ (Gates).

During Mauryan period the political and military conditions of the period especially,
in the face of foreign invasions required strong fortification. Kautilya's _Arthasastra_, dealing
with the art and science of administering the State emphasizes the need for strong forts.

Kautilya for the first time included forts among the seven constituent elements of sovereignty
of the State called _Saptanga._

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16 Thapar Romila (2002): _Early India from the Orignis to AD 1300_, Penguin Books India Pvt. Ltd, New Delhi, P-144
17 Mahabharata: _Adiparva_, 1978, Gita Press, Gorakpur PP-121 and 8-12
18 Battacharya, H.C(ed) : _Ramayana_ ( edited with the commentary—Ramayanatilaka of Ramanujacarya, 1886, Vol-7,
Calcutta
19 Ibid;
20 Ibid;
P-994
Table 1: The Constituent Elements of a State of Kautilya

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Designation</th>
<th>Meaning - Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rajan</td>
<td>King</td>
</tr>
<tr>
<td>2</td>
<td>Mantri/ Amatya</td>
<td>The group of Ministers, Councilors, Ministers and other high officials</td>
</tr>
<tr>
<td>3</td>
<td>Desa</td>
<td>The territory of the state along with the population inhabiting it (the janapada)</td>
</tr>
<tr>
<td>4</td>
<td>Durga</td>
<td>The fortified towns and cities</td>
</tr>
<tr>
<td>5</td>
<td>Kosa</td>
<td>The treasury – the wealth of the state</td>
</tr>
<tr>
<td>6</td>
<td>Bala</td>
<td>Army (defence, law and order)</td>
</tr>
<tr>
<td>7</td>
<td>Mitra</td>
<td>Friend – allies</td>
</tr>
</tbody>
</table>

Saptanga is indicative of the importance given to forts. He emphasizes that the king erects forts not only around the capital but also at the frontiers of the kingdom. Kautilya divides forts into four classes as Adak (water), Pervade (hill), Dana (desert) and Vane (forest).23

Fig. 4: Classification of Forts by Kautilya

As regards the plan or shape of the fort, Kautilya prescribes circular (vrutha), rectangular (dirhamchaturasra) or square (chaturasra). While choosing the site of a fort, he warns that care should be taken to see that it does not get exposed to external dangers. Hence, he says that the capital city shall be in the centre of the kingdom, preferably on the bank of the confluence of rivers or a deep pool of perennial waters. Further, Kautilya deals with parts of architectural adjuncts of a fort, the method of their construction, disposition, shape etc.

According to him, a fort shall have three ditches of triple moat, (parikha) outside the rampart, with an intermediary distance of danda or 6' from each other, and 14, 12, and 10 dandas in width, with a depth of not less than one quarter from ground level.24

Kautilya then says that several roads like the chariot path, elephant path etc., are to be laid within the fort area. He further states that the approaches to the fort outside the rampart were to be properly obstructed by erecting knee brakers (Janubhanjani), a trident, earth pits, thorny bushes etc. In the centre of the fort was to be the palace which was to north or east. The work further says that authorities store sufficient quantities of weapons and essential commodities such as oils, grains, salt, medicines, articles, dry or fresh vegetables, dried flesh, hay stock, firewood, metals, hide, charcoal, tendons, poison, horns, bamboo, timbers, armour, and skins.25 This is indicative the importance of a fort and the significance of it being possessed by a king.

Arthashastra mentions eight kinds of forts with natural defences. (See fig Kautilya further says that Neladurga or Bhudurga, the land fort is the easiest to capture. Jaladurga is river fort more difficult and the Giridurga mountain fort most difficult. He Classifies forts as -

a) Audaka: Water fortification such as in island in the midst of a river or water body;

b) Parvata: mountainous such as a rocky tract;

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24 Ibid;
c) \textit{Dhanvana:} Desert such as a wild tract devoid of water and over grown with thicket growing in barren soil;

d) \textit{Vana (Forest):} full of water and thickets

e) \textit{Nitisara of Kamandaka} mentions

\begin{itemize}
\item[(i)] \textit{Audaka (water) b. Parvata (hill) c. Vraksha (tree)};
\item[(ii)] \textit{Airina (desert) f. Dhanvana (wild tracts)}\footnote{Ibid};
\end{itemize}

\textit{Manusmriti} classifies forts into 6 groups -

1. \textit{Dhanva Durga:} desert surrounded by a wild and waterless tract within a radius of five yojanas.

2. \textit{Mahi Durga:} built by either stone or brick, this fort should have entrance gates, spacious court yards and surrounded by high ramparts;

3. \textit{Ab Durga:} encircled by deep waters;

4. \textit{Vruksha Durga:} surrounded by tall and huge trees, wild and thorny bushes, creepers etc.

5. \textit{Nri Durga:} Troop fort consisting of elephants, horses, chariots and foot soldiers who protect it on all sides.

6. \textit{Giri Durga:} situated on the top of inaccessible hill, having only one entrance, with water inside and fruit bearing trees

\textit{Sukranitisara} classifies forts into eight types -

\begin{itemize}
\item 1. \textit{Parikha Durga:} fort surrounded by moat;
\item 2. \textit{Parigha Durga:} Mud, Brick or Stone high wall;
\item 3. \textit{Vana Durga:} encircled by thorns and clusters of trees;
\item 4. \textit{Dhanva Durga:} To empty out or to remove water;
\item 5. \textit{Jala Durga:} encircled by water;
\end{itemize}
6. Sainya Durga: usually consisting of about sixty men, commanded by a captain; the unit of formation of cavalry, corresponding to the company in infantry.

*Brihatsamhita*\(^{27}\) considers only 3 kinds of forts. They are (1) Giridurga or Hill fort, (2) Salila or water fort (3) Atavka or forest fort. Nitivakyaamritam of Somadevasuri and *Yuktilkalpataru* of Bhoja broadly classifies forts into two groups (1) Svabhavika – Natural forts supported by natural facilities like high hills, or rock boulders, water resources, forest etc, (2) Aharya – Artificial forts provided with ramparts, fire weapons, food grains, entry and exit ways., *Manasollasa*\(^{28}\) or *AbhilashitarthaChintamani* mentions nine kinds of forts, but specifies only four, they are Salila, Vana, Maru, and Nara.

Out of 18 Puranas only Agni Purana, VayuPurana, VishnuPurana and Markandeya Purana mention about forts and fortifications. According to these Puranas Giridurga, Jaladurga, and Vanadurga are natural forts and of all varieties the Giridurga or Hill fort gained universal respect for its strength.

Shilpa texts such as ShilpaSastra Vastu, Sutropanishad, Mayamata Vishwakrama, Samhitayagna, Yudhagalu kasyapa Shilpa Shastra, Vishwakarma Vastu, Manasara mention about city or fortification\(^{29}\). The Manasara and Vastu Sutropanishad, while dealing with Grama, Nagara Vinyasa, Temple town vinyasa, deal with layout of village, town and city. They describe eight kinds of townships, which are to be protected by ramparts, ditches, gates, towers, etc., if it is evident in these works that every city was invariably fortified the Manasara classifies them as:-

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\(^{27}\) Sastri, V.S: BrihatSamhita (1947) vol VII, and VIII, M.R Publications, Delhi. P-56


\(^{29}\) Gnananda: Vastu Purusha- NeleHinnele, (1992), SanskritiSahitya Pratishtana, Bangalore.
1. **Dandaka**: Having four angles, and consequently four sides; tetragonal in shape, surrounded by a square wall having four gates, that is north, east, west, south gates, or gate ways like in the Srirangam in Tamil Nadu or Guruvayur Temple in Kerala. It prescribes that they should have the temple of Lord Vishnu in the quarter presided over by Varun of Mitra;

2. **Sarvatobhadra**: Strong from all sides, quadrangular in form, with a ditch around it and four large and many smaller gates in the middle at angular points;

3. **Nandyavarta**, (Abode of Happiness): Having greater length than breadth in shape with the interior divided into four quadrants having 3 to 7 streets in each

4. **Padmaka**: (like lotus flower) town with strong fortress all round, with a moat and rampart, having 8, 12, or 16 faces in the outer wall

5. **Svastika**: (beyond human comprehension) provided with a moat and rampart, and two entrance gateways, one on each side of the outer wall,

6. **Karmuka**: Bow type or Semicircular

7. **Prastara**: It should have four central gateways.

8. **Chaturmukha**: Having four faces of gates, either square of rectangular oriented form east to west.

**Manasara** has another division of fortification based on function or nature, such as 1) Sibira: royal camp 2) Vahini Mukha: Military base away from Battlefield 3) Sthaniya: capital city 4) Dronaka: fort near water body 5) Srnviddda: fortune place 6) Kolaka: situated in a hilly or wild tract. 7) Nigama: outpost for vigilance 8) Skandahvara: Military encampment.

**Mayamata**: also classifies forts and the cities and divides them into fourteen kinds as


14. Sakhangara. *VisvakarmaVastu* a written composition on forts and fortifications, discusses architectural principles and speaks of there being twelve kinds of forts based on their location:

1. **Giridurga**: Term is used differently to mean Girisanu, Girmadhya, Girimurdhni, which means fort on foot hill, slopes of hill, in their midst, protected by well armed soldiers.

2. **Vanadurga**: Situated in the interior or central part or place; the middle; of deep forest are of three type (a) Urdhava: situated on naturally high land (b) Bhudurga: situated on ordinary plain (c) Antastha: Dependent upon underground secret ways or situated within the earth, or underground passages.

3. **Salila**: Water fort, surrounded by a great sea or river, with underground passage, chariots, and walls.

4. **Daivata**: Divine fort or fortification that which has land route endowed by natural facilities like valleys, ditches etc.

5. **Ekamukha, Dwimukha and Chaturmukha**: this are forts with one, two, and four entrances respectively built nearby river, mountains etc

6. **Karmukha**: Bow type erected in the midst of a forest or on the slopes of hills, temporary in nature built of either brick of mud.

7. **Prabhu**: or else kings fort, should be built in the interior or central part or place; the middle; of deep forest or hill surrounded by deep moats, should have minimum gates with watch towers, here it is mentioned that entrances should be either in the east or north.

According to *Silpa Ratna*30, forts are of seven kinds that is Mountain, the Forest, the Water, Airina, the Daivika, the Dhanva, Kirtka, in the order. The first 6 types are same only

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Divya or Daivika is different. Daivika forts are described as protected by demigods like Indra, Varuna, Guha, Jayanta, Vaijayanta, Asvni Devatas, Shiva, Durga and Sarasvati.

In a brief study of different works on vastu, art and architectural science, it may be said that the classification of forts, their changing patterns primarily depended on the site selected and on the shape or plan of a fort. The five main plans of the forts are (1) Vritta-circular (2) Chaturasra -square (3) Dirghachaturasra- Oblong (4) Vrittayata -Semi circular, (5) Golavritta- fully circular. It is thus evident that the forts differed from each other is size, or proportions, architecture and technology, based on the mode of defence. There is also reference to the materials used in the construction of forts. Manasara, Manusmriti and Arthashastra speak of Mahi and Pankadurgas built of brick, clay, mud and Giriduragas built of stone, brick or mud, but for Vana Durga and Maru Durga wood was used extensively.

Manasara, Manusmrithi and Kautilya's Arthashastra, mention that Mahi and Pankadurgas are built of brick, clay or mud, Giridurga should be built of stone, brick or mud, Vana Durga and MaruDurga to be built of wood. Hence by tracing the types and material used the antiquity of forts of different periods becomes evident. A study of the material indicates the way man tapped nature and put the material available to the best use down the ages. Changing patterns of fortification also point to the human efforts or creativity. Archaeological evidences, inscriptional sources, ruins of the forts including moats, bastions, help in an analysis of the scientific and technological knowledge and the changes from time to time.

As far Karnataka is concerned, it is home to several Pre-historic and historic sites. In its upper reaches, the Krishna River has a moderately meandering course cutting though the Deccan trap, further down it flows through Precambrian Kaladgi sediments, comprising

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conglomerates, sandstones, quartzites, chert, limestone and shales. There are many Neolithic settlements in Bagalkot districts. A large number of pictographs, tools and other remains have been discovered. It is said that the drawing of boar and deer seen at Badami and Aregudda have a close similarity with the micrographic drawings of Bhimbetka.

Neolithic settlements are having been found on the hills, caves, and rock shelters. Habitations of the same period have been discovered at Sanganakallu, Tekkallakota, and Hallur. Similar settlements are to be seen in the close vicinity of Chalukyan temples at Badami, there are several shelters with old rock paintings at Aregudda, Badami, Benakal and Tekkalkota sites all of Neolithic period. Around the settlement areas blocks of stones were piled up along with thorny bushes for securing the area. The significance of these settlements shows that defence was one of the considerations of prehistoric dwellings. Thus, the beginnings of a fort or fort like structure may be traced back to the pre historic dwellings, however primitive in form.

Fig. 5: 'Masked Human Figures and Animals – a Painting from Badami
The Krishna River is one of the east flowing rivers in peninsular India. Originating at Mahabaleshwar plateau, at an altitude of about 1,337m above sea level, it flows across the entire breadth of the Peninsula from west to east through the states of Maharashtra, Karnataka and Andhra Pradesh before joining the Bay of Bengal. Some of the important tributaries of the Krishna River are Malaprabha, the Ghataprabha, the Tungabhadra, the Bhima, the Ghod and the Hunsgi. It is on the Malaprabha river basin that Pattadakal, Aihole, Badami, and Mahakuta the regions under study are located.