

## An overlook into the development of military system and cities during Vijayanagara period.-A Study

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### Abstract

The history of urban settlements and their growth is as fascinating as the history of temple architecture. The growth of a city relies mainly on the efficient defence system designed to ensure safety. Though the scope of defence is large, here the topic has been confined to discuss the military system and cities during vijayanagara period. A good number of foreign visitors to Vijayanagara have provided a vivid description of the life in the city and the arrangements made to ensure its safety. A systematic study of these chronicles is significant to understand the defence system of this ancient Imperial city. This paper deals with An overlook into the Development of Military System and cities during Vijayanagara period.-A Study.

**Keywords:** Anegundi, bizenegalia, Bijanagar, hosamaledurga, hosapatna, Pampakshetra, Vijayanagara

### Introduction

The ancient megacity of Vijayanagara or Vidyanagara that has served as the imperial capital of the great Vijayanagara Empire is more familiar than Hampi in modern times. While Vijayanagara or Anegundi were the royal centres, *Pampakshetra*, which houses the sacred temple of Lord thousands from time immemorial. It is also known as the earthly abode of Purandaradasa, the famous exponent of the Haridasa tradition. It was here that Harihara, the legendary Kannada poet of mediaeval times lived and accomplished his literary pursuits. This temple received elevated status after Lord Virupaksha was designated the tutelary deity of the Vijayanagara Emperors. Hampi enjoys a distinct slot in the cultural map of India.

Historical and archaeological findings in this area suggest that this region was densely settled during the mythological era, prehistoric times and later periods. The city was known by different names at different periods. It has been variously styled by travellers and historians. They are, Bizenegalia Beejanuggur, Bidjanagar Bicheneghar Binedar, Chendur, and Binedar (appears as variations of the Bichenega), Bisnagua, Bisnaga and Bijanagar.

*Bisnaga* the Portuguese rendering of the name of Vijayanagara- the city of Victory. The spellings adopted by different writers have been endless. We have *Beejanugger* and *Beejnugger* in the translations of Ferishth; *Bisnagar*, *Bidjanagar*, *Bijanagher* amongst the Portuguese; *Bicheneger* in the writings of Russian Nikitin; *Biznegalia* of Italian Nicolo Die Conti. Vidiyanagar (Vidyanagara or Vijayanagara), while the inscriptions refer to the city as Vidyanagara, Hastinavati and Vijayanagara.



Fig 1

Parasivamurthy, in his recently published article, on a new copper plate inscription highlighted the date the founding date of the Vijayanagara Empire as April 18, 1336 CE, which is based on the date mentioned in an inscription attesting a grant by Harihara. Further he has argued that the empire was known as Vidyanagara at the time. It was most likely that the empire was named Vijayanagara and its capital city was *Vidyanagara*. This empire was founded to ensure a protective shield to the native religion and culture. It was possible to fulfill this objective only by way of fighting the alien religious powers that had conquered the nation. Hence, the name was Vijayanagara. As there is little pronunciation difference between the two names, Vidyanagara must have been eventually evolved into Vijayanagara. A careful study of the inscriptions may help establish such a possibility. Further, one could not rule out the possibility of naming the city after sage Vidyanarya, who was the driving force behind the establishment of the Vijayanagara Empire.

A study of the inscriptions discovered here reveals that this area had been subjected to the rule of major dynasties including the Chalukyas of Badami, the Rashtrakutas, the Chalukyas of Kalyana and the Hoysalas. Though the history of this region was subjected to rapid changes post 1300 CE, it has also witnessed several ebbs and flows. It was flourished under several efficient administrators as the most favoured destination of the travellers, traders and others only to fall victim to the political rivalry by 1565 CE. In modern times, the environs of Hampi dotted with ancient archaeological ruins and monuments attract tourists and the research scholars alike. Several authors of repute have scripted quality articles on topics related to the defence system of this ancient city and those write-ups have been compiled in a book entitled '*Vijayanagara Progress of Research*'. Besides, the series of volumes on Vijayanagara related research works also contain writings furnishing valuable information on this subject.

### **Antiquity of the Vijayanagara Fort**

The chronicles of all foreign travellers do refer to the massive fortifications surrounding the city. Nitishastra of Kamandaka, the ancient treatise on military craft, stress the need for having solid fortifications and adds that without a proper fortification system, the king is blown away like a cloud against the wind. That fort is has been treated as one among the seven crucial organs of a State (Saptanga) (the others are king, minister, population, fort, treasury, military and ally) speaks about the importance attached to them in the defence system. Forts played a decisive role in the defence system since ancient times. Vijayanagara kings too had given due importance to the forts and raised several new fortifications across their empire along with strengthening the existing ones. The great fortress walls enclosing the regal city was the most important defence formations of their times. There are two conflicting observations about the antiquity of the Vijayanagara fort. While one group of scholars believe that the Hosadurga, Virupaksha Hosabettur, Hosapattana was later shot into fame as Vijayanagara, the other group of historians have dismissed this theory only to add to the confusion over this issue. Here, it would be pertinent to understand the factors that have influenced the formation of Vijayanagara.

Based on the study of inscriptions, the date of the founding of the Vijayanagara Empire has happened on April 14, 1336 A. D. However, several other historical sources refer to its antiquity. Mallik Kafur, the commander of Allauddin Khilji led a military expedition into the South in 1310 A.D. One of the consequences of this military onslaught was the fall of three major dynasties of the South including the Yadavas of Devagiri, the Kakatiyas of Warangal and the Pandyas of Madhurai. The only kingdom that was able to survive the Muslim aggression, despite incurring heavy losses was the Hoysalas. The foresight of its king Viraballala III and the steps he had initiated to foster a greater sense of unity and integrity among his feudatory have ensured the survival of this royalty during this time of severe crisis. In this noble cause, the Sangama brothers who were powerful in the northern region joined hands with Ballala and later founded their empire. Inscriptions name this new empire Vidyanagara<sup>[17]</sup>. Based on these details and recent studies of inscriptions it was discovered that the early inscriptions issued by Harihara and Bukka decorated them with the title *Mahamandaleshwaras* (feudatory) instead of independent kings<sup>[18]</sup>. In this background, some new issues need to be discussed. Ballala had set up provincial headquarters across his kingdom. Barkur in the coastal region, Virupaksha Hosadurga identified to be located on the banks of Tungabhadra river, Tiruvannamalai and Thondanur were important among his headquarters. It would be ideal to call Ballala's provincial headquarters Virupaksha Hosadurga until the issue related to its exact location is sorted out. Ballala had adopted several measures to strengthen the defence network across his kingdom. He had built two strong fortifications named Hosadurga-Virupaksha Hosadurga and Hosabettu-Hosapattana on the northern bank of Tungabhadra. It is to be noted that this town was different from the capital city that Harihara had raised on the southern banks of Tungabhadra. Ballala stayed on at his new capital from 1330 to 1340. Hampi, which was located at the northern frontier of his kingdom too was made capital. In his writings about Viraballala III, B. R. Gopal says that Hampi was his capital and tries to locate the capital city founded by Harihara somewhere on the northern banks of Tungabhadra. Given the existence of the town of Anegundi at the time, it is not possible to claim that Ballala's new capital Virupaksha Hosadurga and Anegundi are the same. Now the question arises whether Hampi and Virupaksha Hosadurga are the same? Interestingly, some of the inscriptions of Ballala do refer to Virupaksha Hosadurga as the capital of his northern provinces. The Arasikere inscription of 1330 A. D. refers to the Ballala III camping at Virupaksha Pattana. The Gubbi inscription of 1331 A. D. also confirms that Ballala III was at staying on at Virupaksha-Hosadurga. Similarly, the Hosamaledurga inscription of 1323 A. D. refers to Ballala's campaign against Kampilaraya. Hosamaledurga has been identified to be the Ramghar near Sandur. Vasundhara, after conducting a study of Vijayanagara forts and other relics concludes that Virupaksha-Hosadurga built by Ballala III was located

somewhere in the surroundings of Hampi. However, Dr B. Narasimhaiah, based on the Hampapura inscription dated 1411 A. D. and Muttinapura inscription dated A. D. 1315 in the Chikkamagalur district and taluk had tried to locate Virupakshapura in the surroundings of Dorasamudra, however, he was not able to specify the location. Furnishing reasons for not identifying Virupakshapura with Hampi, he has argued that Lord Virupaksha of Hampi had already been a popular deity by the time of Viraballala. Furthermore, he says some of the special techniques applied in the construction of Vijayanagara era fortifications were missing in the forts of the Hoysala period. Narasimhaiah must have furnished these conclusions assuming that Vijayanagara has seen full-pledged development at the time of Harihara itself. Archaeological remains indicate the existence of an urban settlement in the area adjacent to the Mahanavami Dibba. However, it is irrelevant to go in for details in this paper. Given that the city grew by extent over a period of time and the suburban areas were raised at the later period, Narasimhaiah's remarks turn inappropriate. The foreign visitors have mentioned the application of the technology believed to be of the Hoysala period in the fortifications of the Vijayanagara period. Likewise, it could not be authenticated that Bukkaraya was the first person to raise fortifications in this region. An inscription dated A. D. 1236 attests grants by Hoysala king Someshwara to the Virupaksha temple of Hampi. Fernão Nuniz had mentioned in his accounts about the fortification works and watch towers during the rule of Bukkaraya or post Harihara period. His statement confirms the reconstruction of the city walls during different periods to meet the needs of the hour. Thus, it is not possible to accept that an Imperial capital spreading over 300 sq. km. was set up between 1358 and 1369 A. D. as observed by Narasimhaiah. Moreover, the recent discovery of the archaeological evidence proves human settlement in this area much before the founding of Vijayanagara were sufficient to dismiss Narasimhaiah's arguments. As an inscription dated April 18, 1336 A.D. mentioned Vidyanagara, it can be concluded that the capital of the Vijayanagara empire existed before the founding of the empire and witnessed further growth till 1565 A. D. Vasudevan, C. S. has discussed in detail this subject in one of his recent write-ups. Therefore, Vasundhara Filioza identifying the Virupakshapura Virupaksha Hosadurga built by Viraballala III in the Hampi area appears authentic. This plausible conclusion could be made that the early Vidyanagara of the Vijayanagara Empire was set up in the vicinity of the ancient city. Channabasappa S. Patil, while discussing the antiquity and growth of this city in his work the 'Inscriptions of Vijayanagara' has made a similar observation. Hampi had been an important settlement much before the Vijayanagara period. The oldest among the inscriptions found here was the one which was three Brahmi inscriptions dating back to the 1<sup>st</sup> and 2<sup>nd</sup> century A.D. and discovered at the palace premises. While this area was under the rule of the Kalachuri dynasty in the 12<sup>th</sup> century, it was passed on to the Hoysalas by 13<sup>th</sup> century. An inscription dated 1236 A. D. confirms the grants given by the Hoysala king Someshwara to the Virupaksha temple. These sources come in handy to establish that Hampi was a well-known settlement during the Hoysala period and approve Vasundhara's observations on this topic.

### Types of Forts

Since immemorial time kings have built forts to protect themselves, their wealth and their subjects. Karnataka inscriptions refer to different types of forts viz, *Giridurga*-fort covered by hill; *Vanadurga*-fort covered by forest; and *Jaladurga* -fort covered by water source. Durgasimha has raised the number to four by adding *Staladurga* -land fort; to this list. He had further classified the forts taking the tally to eight. They are as follows

#### 1. Giridurga: (Hill fort)



1. Guhya: The fort is surrounded by cliffs on four sides and has a single entrance.
2. Prastara: fort having no proper entrance but a small entry place passing through the waterfalls.

Fig 2



**Vanadurga fort: (Forest Fort)**



**Fig 3**

1. Kadra: surrounded by water tanks or moats with mud
2. Stambha Gahana: enriched with groves and greenery

**2. Jaladurga Fort (Surrounded by water)**



**Fig 4**

1. Atadweepa- The island forest surrounded by natural water bodies
2. Mahasthala- the fort surrounded by large tanks and thorny shrubs

### 3. Sthaladurga (land fort)

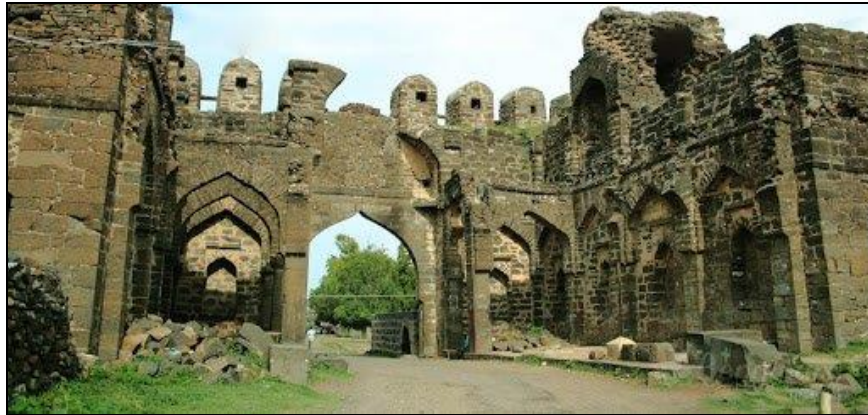


Fig 5

1. Udakastambha: Fort has sufficient water and green pasture inside but lacks these features in the outer portion.
2. Vairini: surrounded by saline or unclean water or no water.

This classification provides an idea about the types of fortifications raised during Durgasimha's period and how they were classified based on their natural surroundings. He treats 'Mahastala' as one among the water forts. Interestingly, their descriptions match the surroundings of Hampi. Moreover, based on the characteristic features given by the author of Panchatantra, Vijayanagara fort could be classified as '*Mahasamsthana Durga*'. Hampi or Vijayanagara is surrounded by a large river that is difficult to cross over in the north, impenetrable hill ranges, forests of shrubs and large size lakes in the south, east and west. These features qualify this fort to be called 'Jaladurga'.

#### Area of the capital city

Almost all foreign travellers who have visited the Imperial capital of Vijayanagara have mentioned massive protective walls enclosing the city. That they were marveled at the extent of the city and its defence system is evident from their writings. Nicolo de Conti says that the city is situated near very steep mountains and the circumference of the city is sixty miles. Its walls are carried up to the mountains and enclose the valleys at their foot. Abdul Razak who visited the city at a later stage has written about the city having seven concentric walled fortifications of stones. Details provided by Razak leads to the impression that the fortification was extended up to Hosapete. Afanasy Nikitin, has mentioned that the city of Vijayanagara was surrounded by a three-layered fort. He also says it was surrounded by fortifications on one side, high mountains on another side and the river on the third side. Domingo Paes has mentioned the city has a circumference of 24 *Haridari*. One *Haridari* is equal to three miles (Ondu Alate, Kannada Ratnakosha, 1977), which in turn equals  $24 \times 3 = 72$  miles means the circumference of 115 km. In the light of these details, recent discoveries need to be referred to. Catherine D. Morrison writes that the capital city of the Vijayanagara Empire was enclosing an area of 300 square km i. e., 21 km from east to west and 16 km from north to south. However, in his recent article C. S. Vasudevan, says that the urban landscape was limited to 25 square km. He has also listed Kamalapura, Krishnapura, Achyutapura, Vithalapura, Mallappana Gudi, Anantashayana Gudi, Shale Tirumalaraya Pattana, Tirumaladevi Pattana, Varadarajamma Pattana, Anantapura, Venkatapura, Anegondi, Nimbapura, Nagalapura and Hosapete as the suburbs. Catherine D. Marisson's observations appear correct when the geographical areas of these suburbs were taken into consideration. S. K. Joshi has more or less endorsed the views of Marrison and based on the pattern of names of various suburbs concludes that Toranagal, Kampli, Sadur, Hosamaledurga, Hosapete, Mallapura etc were the main gates of the Imperial capital. Domingo Paes too has mentioned Hosapete or Nagalapura as it was known during those days was the gate of the city. He writes: "two leagues (Haradari) before you arrive at the have a very lofty range of hills which has passed by which you enter the city. These are called gates. You must enter by these" This indicates the extent of Vijayanagara up to Hosapete. S. K. Joshi has said that the circumference of Vijayanagara was 164 sq. Miles (264 sq. km) within the seven concentric layers of walls around it. In all, these walls enclosing the capital city were 500 miles in length. They were the longest continuous fortifications in the whole of Asia, right after the Great Wall of China. The circumference of the city exceeded 300 sq. km. When the suburbs located beyond the seventh layer is taken into account, proving Catherine D. Marrison is right. The travellers' accounts have also mentioned the city is capable of protecting itself in case there was a siege extending over several months.

#### Skill of construction

The fortifications of Vijayanagara city have been very strategically constructed. The foreign accounts speak about the fort having solid gates, the guards of which were constantly at their posts and examining everything

with severe inspection and also about building these gates and watchtowers of stones and lime. It was not easy to identify the gates while crossing over to one layer from the other. They were not visible from a distance. The gates were constructed with solid walls on both sides and composed of open courtyards with walls projecting forward. This effectively conceals these gates from a distance. The path leading inside too was curvaceous in shape. Therefore, it was impossible to escape if the attackers were caught in between the two layers. These walls have been raised using locally available granite stones. Normally the walls are wide at the base and turn narrower as they rise up and in some places, they are narrower to the extent of not being easily spotted. S. K. Joshi writes about three styles of walls in the Vijayanagara fortifications. The wall section spotted at the chore of the city is different from other wall sections.

1. Type one walls could be named compound walls. These types of walls are still standing surrounding the Kamal Mahal palace. These types of walls are wide in the bottom part and become narrow as they rise. Brick and mortar have been used in the upper portions. It is 0.06 metre wide and has been constructed in the style parapet (*Kaipidi*) walls. These types of walls have 2 metre width and 10 metre height in the bottom part. They have been built using the stone blocks of the required size and the size of these stone blocks reduces as the wall rises. This wall is the best specimen of such art and also indicates the knowledge of the rules of gravitation power during those days. The doors are rectangular and resemble the doors of portals in their height. These constructions were more for internal security than to protect from external aggressions. They are more or less similar to the compound walls built in our times. They indirectly speak about the social and political status of the individuals residing there.
2. The style is of the fortifications is different outside the core area of the city. Compared with the innermost and outermost wall formations, these are different in their style of construction. They have been building large size stone blocks and they were surrounded by moats that were filled with water in those days. It is also mentioned in the foreign traveller's accounts. Nuniz, while describing the Raichur battle mentions that the guns were installed at such high places that they hardly did any harm to the men beneath the fort walls. The walls were filled with mud and there were no guns fixed to the fort. Only the residents of the city are well victim to raging soldiers.  
The ruins of these walls are over seven metres high and probably there were of increased height in earlier times. The runs of the upper portion were not found anywhere. These walls are 6.80 metre wide at the basement and turn narrow as they rise. They are slanting in shape but appear flat. It is the reason why they survived even this day. Moreover, the gravitation force theory has been aptly applied here.
3. The third type of walls are constructed beyond the fortifications of the core city and this wall too has been built using the stone blocks of huge size. They are 6.60 meters wide at their base and 7 meters in height. The center gap between the inner and outer stone casing is filled with the flakes emerged while dressing the casing stones and the red soil or Gravel. In the top level of the fort wall outer casing is raised then the inner side like parapet. This arrangements support the watch and wards to conduct surveillance and attack unnoticed by the enemy. The bottom platform on which the guards walk or stand is plastered by lime mortar. But the arrow holes and other defensive structures were not found. Thus Dr| S K Joshi opines that such walls are also functioned as an enclosure wall only

Vasundhara is the opinion that the huge walls encircling the royal dwellings were built during the reign of Viraballala III. However, Narasimhaiah has analysed the styles of Hoysala and Vijayanagara architecture in this way: In Vijayanagara style, stone blocks have been polished and plugged placing them side by side. A cone has been affixed in between two blocks and they have arranged in juxtaposed.

Strong portions of the walls have been raised by intricately plugging the stone blocks wedging with small-sized stones. However, this particular style of construction is missing in the walls of Dorasamudra or Halebeedu fortifications. Hence, these constructions did not belong to the Hoysala period, Narasimhaiah observes. However, Narasimhaiah has failed to take into account the gap of time between the constructions at Dorasamudra and Virupaksha Hosadurga. There is a gap of three centuries between these constructions. Besides, this style of construction is to be found in the compound walls of the Hoysala period temples. The Hoysalas used the same variety of stones, whereas during the Vijayanagara period different varieties of stone have been used. This technology is a gift of Hoysalas to the Vijayanagara.

The architects of the fort of Vijayanagara and the people who built it as it was planned is very evidently observable in this fort and the later scholar who studied the architecture of the fort do appreciated the ingenuity of the planners and builders. This fort has been strategically built taking all measures to ensure its defence. None of the entrances to the fort looks like an entrance from a given distance. None of the entry paths is in a straight line, instead, they are curvaceous. As barricades have been installed in front of the entrances, they look like the part of protective walls, making it difficult for anyone to make out where the entrance is. This helps the soldiers to fire at the entering enemy men from above as they keep searching for the entry points. Gates have been constructed in the Hindu style using only stone blocks, while the gumbazs were built in Islamic style. Travellers have mentioned that the upper portion of the gates have been built using stone blocks and cementing them with mortar. The relics such type of constructions is found at the Hareshankara Hebbagilu.

These extensive fortifications had three types of entrances. They were Main Gates, Gates and Portals. While the Main Gates were big and the chief entry points to the city, gates were meant for the daily use of the public. The



Portals were used by the common people. Each of these entrances was given separate names for the ease of identification during the time of crisis. They were,

**Gateways:** Singarada Hebbagilu, Betegarara Hebbagilu, Bhimana Hebbagilu etc.

**Gates:** Gummatada Bagilu, Somavarada Bagilu, Udayagiri Bagilu, Hareshankara Bagilu, first Penukonda Bagilu, second Penukonda Bagilu, Kote Shankara Devara Bagilu, Hedeya Bagilu, Hoovina Bagilu, Kotharada Bagilu, Upparige Bagilu, Savami Bagilu, Devara Bagilu, the gate near Anjaneya temple etc.

**Small Gates:** Hampadevi's portal, Remmu portal, Jayadeshankara God's portal, Matangeshwara God's portal etc.

The features of the main gates, gates and portals have been dropped here as they have already been discussed in detail in the Vijayanagara Progress of Research Reports.<sup>45</sup>

It is yet to be ascertained whether the guns were used at the Vijayanagara fort, whether it was capable of withstanding the gunfire and whether arrangements were made to fix the guns along the fort walls. However, all these queries draw a negative answer when we closely examine the construction of watchtowers and other formations. Even the foreign traveller's accounts occasionally refer to the use of guns. Afanasy Nikitin, Domingo Paes, Fernao Nuniz only refers to artillery in their accounts. However, he has mentioned the Bijapur Sultans deploying artillery during the Seize of Vijayanagara. Domingo Paes, while referring to the lake near Hosapete gauges its length to be equal to the range of one falcon fire. The editor has explained falcon to be a variety of guns. Fernao Nuniz has written about both the sides having artillery during the battle of Raichur but he did not explain who they were out to use. While describing the soldier's march fast on the occasion of the Mahanavami festival, Domingo Paes has written about the participation of musketeers, and small guns but not the artillery. Only Fernao Nuniz writings provide information about the Vijayanagara artillery and the details provided by him leads to an impression that they were operated by the Portuguese gunners. Thus, one can conclude that the guns were used by the Vijayanagara armed forces only during a later period in small quantity. Chidanandamurthy opined that guns became popular in Karnataka by the 15<sup>th</sup> century, even though literary sources refer to them only after the 16<sup>th</sup> century. It means this particular weapon started playing a major role in the battlefield only after the Europeans introduced them here and until then, their use was limited to showcase the strength with limited use during the attack. Though guns were fixed at the Raichur, Mudgal and other forts of Vijayanagara, Fernao Nuniz speaks about they play no major role in the warfare.

"The guns fixed at the city were located in such a height that they did not harm the people beneath the walls". Moreover, the architecture of the Vijayanagara fortifications also explains that they were built using the technology which was in vogue before the invention of firearms. Thus, it could be said that guns were not used at this fort.

### **Military and Military administration**

Explaining the *Chturanga* system of army formation that was prevalent during the ancient and mediaeval times in India, Chidanandamurthy says that of late, the chariots ceased to be used in the battlefields and their use was predominantly for transportation or commuting of the elite classes on special occasions. All travellers accounts and the sculptural evidence discovered at Hampi espouses *Chidanandamurthy's* observations. They also reveal that the Vijayanagara Emperors had Elephantry, horsemen, infantry and few firearms. Abdul Razak, Duarte Barbosa, Domingo Paes, Fernao Nunes, and Ludovico di Varthema. Have mentioned the use of elephants, horses, infantry and camels in the Vijayanagara army. Only Afanasy Nikitin and Fernao Nuniz, speak about the artillery. The carvings on the sidewalls of the *Mahanavami Dibba* depicts soldiers sans artillery.

### **Recruitment and emoluments of the soldiers**

Strict guidelines were laid down for the recruitment of the armed forces. The candidates were undressed before undergoing a thorough physical examination. Later, details of their parentage and family were recorded in the salary account books. Once joined, it was difficult to leave the army services and any attempt to remain absent from the services would attract severe punishment. Duarte Barbosa has mentioned religious freedom in the army. Giving details about the salary distribution, Domingo Paes writes that salaries were usually paid once a year. Officers would take details of the soldier's family and also take note of his face-cut or physical mark. Soldiers were getting the salary of one thousand *Pardo*, while some others would get eight hundred to six hundred. Salaries differed from person to person. Soldiers and guards were paid in cash. Sometimes lands yielding income equivalent to the salaries fixed was granted. Abdul Razak records that the taxes collected from the brothels were utilised to pay salaries to the city defence guards. Sepoys were paid salaries once in four months. The number of guards guarding the king's household is twelve thousand and each of the guards were paid one *Pana* per day, Razak writes.

### **Weapons**

Several travellers especially Nichole De Conti, Domingo Paes and Fernao Nuniz have given details about the weapons and accoutrement of the Vijayanagara soldiery. Nichole De Conti has mentioned that the soldiers wore shoes and used weapons like spears, swords, round shape sheild, bow and arrows, muskets and guns. According

to Peas, apart from men, eunuchs, able-bodied and adventurous women were also recruited as royal guards. The soldiers were using gold and silver quoted shields, daggers, battle-axe, muskets, long guns, spears, lances, bows and firearms and there were several persons having expertise in using these weapons. Fernao Nuniz also mentions the weaponry of the Vijayanagara soldiers and his description of the infantry deserves attention. Their shields were as large as to cover up the whole body of the soldiers and provided full protection from the enemy's armed attacks. Students of history are aware of the Persian soldiers using the same type of shields. He had also explained about the use of elephants on the battlefields and said that the archers sitting inside the castle atop the elephants attack the enemies from all four sides. The tusk swords attached to the elephant tusks were doing great harm on the battlefields. He had also mentioned the use of catapults. Along with these traditional weapons, modern weapons like guns were also used by the Vijayanagara forces but the gun was operated by the non-Indian soldiers.

### **Armours**

Along with the weapons, the soldiers were also provided with armours to protect themselves from the animals used during the battle and also from light-armed attacks. Horses, Elephants and horsemen would wear armours and helmets. Elephants were sheathed in quilt-like steel plates. While the infantry soldiers wore Iron chained guard, the horsemen covered themselves with shirts made of steel plates or animal skin. They were also wearing silk attire of different varieties. Their shirts were made of thick skin and interwoven with steel plates. Some of them have polished their armours. Their headgear has been designed like helmets. They cover parts of the neck and face. Domingo Pea's description of the accoutrement of the soldiers does call for our attention.

### **Strength of the Armed forces**

The traveller's accounts also shed light on the strength of the Vijayanagara armed forces and their formation. Nichole De Conti has estimated the strength of trained men in Vijayanagara city to be 90,000. Abdul Razak has mentioned the army comprising of over a thousand war elephants of huge size and eleven lakh soldiers in the Imperial armed forces. Barbosa writes that the king has a collection of 900 elephants and twenty-five thousand horses and he had brought them paying money. The combined strength of his cavalry and infantry is ten lakh. There are five thousand women who are paid and during the campaigns women equal to the number of men are also deputed. Domingo Paes has pegged the number of permanent commissions in the city to one lakh including 25,000 horsemen. All these references are complementary to each other, hence, they could be treated as authentic. Paes and Fernao Nuniz have also given details about the formation of troops during the wars. Referring to an expedition to the coastal region, Peas writes, "Once I saw the king sending his army against someone in the coastal region. He had deputed 1,50,000 soldiers including several horsemen led by five commanders. He had several elephants. He is capable of marshaling two lakh soldiers at a time whenever he had to showcase his military might to any of the three kings in his neighborhood".

While writing about Raichur campaign Fernao Nuniz mentions that Krishnadevaraya took with him six thousand strong cavalry and forty thousand foot soldiers. There were soldiers holding shields and bows and deployment of three hundred elephants in the fight. Further, he states that four soldiers sitting atop the elephant's attack in four directions. He had also mentioned the guns and the number of soldiers taking part in the battle. However, he did not give the exact number of soldiers fighting from atop the elephants, and several gunners, leaving it to our conclusion. He is also silent about the non-military staff of the camp like doctors, spies and details of the essential commodities and services. Thus, we have a broadly estimated number in the accounts of Fernao Nuniz's than authentic data.

### **Conclusion**

The above-mentioned studies confirm the Vijayanagara rulers spent their wealth for the protection of the religious and cultural heritage of this land. The Empire, encompassed the vast territory located between western and eastern seashores, in south from Rameshwaram up to Tungabhadra river in the north and was a constant fight with their rivals i.e., the Bahmani's and the Shahi dynasties for the control over and its adjacent region up to Gulbarga. Owing to this fight, the Vijayanagara Empire had raised strong and extensive fortifications including its capital city. It appears that they had invested a huge amount of money and resources to maintain these fortifications and their defence personnel. Vijayanagara Empire had in its army infantry, cavalry, Elephantry, camels and artillery. Elephants, horses and their riders were provided with armours and helmets to protect themselves from the assaults on the battlefield. The king would lead the army on his own on certain occasions. Alongside the traditional weapons, modern firearms like guns, light guns, muskets, handguns etc were also used. The king's personal protection squads included men, women and eunuchs. Chariots were no longer in use on the battlefields and they were mere decorative objects limited to processions and personal use. This study also focuses on firearms being in its nascent stage in India. On all counts, the Vijayanagara army and its formation were at their best when compared with the armies of all other Hindu kings of the time. Like the Roman Empire that was founded, developed and declined by the military, Vijayanagara too was a military state.

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