

Why and When were the Vijayanagara Walls Built? : A Reflection on R P Brubaker's Monograph on *Vijayanagara Warfare and the Archaeology of Defence**

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For more than three decades the surviving monuments of Vijayanagara have been exhaustively investigated and recorded using traditional methods and also the latest and most accurate technology available. The greater part of these studies was published in the Monograph Series of the Vijayanagara Research Project (VRP).

Brubaker, in this volume, documents the remaining walls of the capital that are spread on a vast urban area, including the royal centre, the urban core, Anegundi and the large metropolitan region enclosing an area of c. 650 square kilometers.

Relying on an exceptional field work, the author subjects these archaeological data to a statistical analysis by measuring the various structures and using qualitative and quantitative scales. The text is illustrated with very clear and useful topographic maps, photographs and statistical tables. In short an excellent piece of scholarship!

More competent colleagues will review the various issues raised by this brilliant study. In my analysis I will be satisfied with considering the walls from the point of view of military technology. My approach to Indian fortifications is to determine the typology of defensive works and understand their development over time.

Though it seems presumptuous of me to comment on this matter that is so well documented, it is possible to explore different interpretations of the data.

In most of the books written on Vijayanagara I have the impression that the authors nurture the myth of the great military barriers of these amazing walls since they magnify its defense value and do not recognize its inherent weakness. Brubaker himself incidentally refers to these massive fortifications that “had successfully deterred or repelled assault on the imperial city for nearly two centuries” even though it is admitted that Vijayanagara had never experienced any foreign invasion before the battle of Talikota.

His survey however is a solid work, well balanced and full of subtle nuances which I cannot consider in this short review. I will concentrate on essentials rather than details.

When you consider the various defensive features that had become standard in the Muslim kingdoms of northern Deccan in the second half of the 16th century, after gunpowder artillery became widespread, you realize that the Vijayanagara system of defence at that time was obsolete.

Let us consider these features as described by the author.

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The walls, whatever their dimensions (because their overall thickness varies considerably), are characterized by an embankment of earth and/or rubble revetted on the outer face with large quarried wedge-shaped granite blocs jointed without mortar punctuated in places by invariably square or rectangular bastions. Along certain enclosures however circular bastions have been discovered. There are no vestiges of the offensive and defensive works usually built in the fortifications of this period: no wall-head defences such as parapet, merlons and crenels and also no ditches along the outer perimeter.

The author notes one case only when a parapet consisting of a dry-laid double-faced wall of split stones was preserved, but this is a crude wall not a defensive battlemented parapet. If such work existed we should find at least a few examples of these structures along the long circuit walls. Parapets are not seen in ancient fortifications because original works have been replaced by battlements of a later period or destroyed. At Warangal where the walls are topped by pointed merlons erected by the Muslims, merlons made of a single block of stone with rectangular notches still exist in the inner part of the gateways. In Vijayanagara such structures are not found, though there is no evidence for damages to fortifications after the disaster which could have affected the cresting of the walls.

Regarding ditches, the author says that they do not appear to have been common around the capital. He only mentions a clear instance when the walls were augmented by a ditch excavated in front of the outer face of the walls. In fact, ditches are the last to survive destruction and in most of the fortified sites I visited or studied in South India, even when the walls had been completely erased, these excavations still exist buried under bushes and their outlines are clearly seen on Google earth. In Vijayanagara, in rugged areas, except the unique work mentioned above, we don't find evidence of

other dry ditches excavated in the rock nor wet ditches in flat land.

Gateways are vulnerable points in all fortifications. In Vijayanagara they are either simple openings or large structures of various designs in plan, size, form. Some are surmounted by a dome or various works. In more elaborate cases they are composed of open courtyards with walls projecting forward. But all of them don't appear to have been designed with consideration of defence.

Moreover extensive fields of horse-stones (*kudurekallu*) have been discovered near the wall of the urban core, on either side of the Tungabhadra and at several kilometers to the north-east, usually across broad valleys. This original device (not found in other sites), however, consists of multiple lines of large boulders which, according to the author, appear to be the remnants of originally more extensive works, apparently erected as part of a single overall conception to control and obstruct or slow movement within the environs of the capital.

Now, considering the form of the works, the author notes that, though there is a micro-variability in the many uniform walls and bastions of the capital, there are however examples of a widespread and seemingly uniform tradition to build quadrangular works, to which he refers as the Kummata tradition. But there is no need to mention this particular site, since most of the ancient fortifications in South India are composed of walls made of segments forming salient angles flanked by square or rectangular bastions. These works are found in Aihole (CE 5th-7th century?), in Alampur (CE 7th-8th century?) and even at the end of the 18th century, the ramparts of large fortified towns such as Madurai or Palayamkottai, though adapted to the new system of defense, had retained the most distinctive features of the old system of fortification. This conservatism could be explained by the fact that south Indian military

engineers kept to a set of practices or fixed habits, because they were convinced, even after firearms were widespread, that the huge square or rectangular blocks used by them were not vulnerable to shots and mining during sieges, that the quadrangular bastions with their thick masonry face were as resistant to artillery as the round ones.

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The city was defenceless as its walls were not strong enough to stop the invaders and prevent the capital to be burned and looted, in the second half of the 16th century, but during the preceding period, when gunpowder was not in use, these massive works must have constituted strong barriers against a possible aggression.

We don't know when the construction started. Obviously the defence system was conceived at a time when there was no major innovation in the machines used in warfare and when cavalry was the backbone of the armies. It is likely that the basic components of its defensive walls protecting the capital were built in this period. The author mentions that at the end of the 13th century and the first three decades of the fourteen century, large scale military raids with mounted horses by the Delhi Sultanate penetrated this part of the Deccan. He also adds that the introduction of alignments of horse-stones that was obviously intended to control and obstruct or slow movement of cavalry predates the foundation of Vijayanagara.

This system of successive works around the city described by foreign visitors in the 14th and 15th century and particularly the fields of horse-stones remind me of a complex system found elsewhere, in places such as Warangal (13th century?), where three concentric defensive walls had been erected, based on the accumulation of obstacles, i.e. a series of barriers in front of the main enclosures. The outer rings were meant to block the impetus of the attackers, put the enemy in a position of inferiority or check its advance;

the inner walls, fully covered in a protective layer of stones, represented the final halting line. Could a similar system of defense have been planned in Vijayanagara?

Most of the defence structures were obviously built during the Vijayanagara period itself when military engineers were engaged in the construction of the walls, connecting the existing works and extending them further as a front line of defence providing full protection to the city.

The security arrangements developed over time form a coherent system in which there is a balance between defence and residence. The author emphasizes its importance in social activity based on a complex plan of "controlled-related facilities" inside the capital. The walls were intended to demarcate social spaces in the various quarters of the city; they were also, in some places, protective embankments against floods or reservoirs collecting water for agricultural irrigation or corridors for farmers working in the field; the gateways had for main objective to channel traffic of human and animal movement, to maintain public order and collect taxes; the bastion were used as observation posts.

The most fascinating and promising part of the book is the methodology proposed by the author for new researches. Based on incredible investigations (hundreds of stone blocks were patiently measured!), his statistical analysis of the data reveals the existence of a measurable micro-variability over time in the size of the granite blocks. A way to identify such variations is therefore suggested to find a chronological sequence of construction for the walled enclosures. Already some significant results have been recorded. They give a glimpse of how Vijayanagara progressed from obscure beginnings to an imperial state. Evidence suggests that, during the 15th century, there was a massive programme of expansion and that the walls of of the urban core had likely been completed; it also shows that

in the 16th century there was an expansion of large scale masonry construction. Looking towards the future the author feels that collecting data from the defense works provides a useful basis for regional comparison intended to refine our understanding of the development of the capital.

A point of interest regarding the labour involved in the construction of this colossal architectural work has not been taken up in this study for want of evidence, but it is likely that this gigantic venture was carried out by forced labour, slaves convicts, war prisoners and soldiers, or by a system similar to the *begār* system of the Mughals, coercing certain categories of the population (low castes) to work when required, or the obligatory services in Assam under the Ahoms kings, forcing all adults aged between 15 and 50 to be grouped in units: soldiers in the case of war, labourers during times of peace employed each in their turn in the service of the state.

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To close this analysis, it should be noted that the same system of fortification existed in regional centres such as Penukonda and Chandragiri (which successively became the new capitals after the battle of Talikota). The royal zones of these strongholds, situated on flat land, at the foot of a hill, retained the most distinctive characteristics of the fortifications of the metropolis. They are still surrounded by an enclosure punctuated with quadrangular works,

without parapets, except in some parts. It is only at a later period, probably at end of the 16th century or beginning of the 17th century that the defense of the place was shifted to the top of the adjacent hills, which were enclosed by several concentric walls flanked with semi-circular bastions provided with gun loops and battlements with pointed merlons.

An exception to this type of work is seen at Vellore in the Tamil country, where there is an amazing fortification, the finest and the best preserved specimen of military architecture, which takes fully into account the improvements in the art of war. Its features are so impressive that it was thought that the stronghold was built by foreign engineers! Though the exact date of construction of this elaborate fort is unfortunately not known since it has not yet been documented, it is likely that this work, based on the new technology, was built before the fall of the empire.

Then, why the rulers of Vijayanagara did not adopt the new conditions of warfare when firearms became widespread in the Deccan? We are not in a position to give any answer and explain why, in the capital, permanently threatened by war, no measure had been taken to improve its protection. Perhaps the new defense system was considered not essentially indispensable as the city was protected, on the northern side, the only dangerous one, by the formidable obstacle of the Tungabhadra River.