



ANALYSIS OF ARCHITECTURE OF FORTS: INSIGHTS FROM RAJASTHAN STATE OF INDIA

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ABSTRACT

The Sirohi region in the state of Rajasthan in India is where you will find the ruins of the ancient fort of Bandiyagarh. Within the scope of this research project, we offer recent findings regarding the archaeological site of Bandiyagarh. Bandiyagarh is located approximately 10 kilometers away from the ruins of Chandravati, the capital city site of the regal Parmar dynasty (910 to 1312 AD), and the recently discovered structures played a key role in reconstructing the history of the Parmar dynasty. Since Sirohi was a prosperous trading post located along the ancient Silk Road, it was frequently the focus of invasions and conflicts between neighboring kingdoms. The fortification wall of the stronghold completely encircles the fort, which is located on a plateau that is encircled by a series of mountains. The research into the topographical obstacles found that the steep ascents in hills, the natural barrier by water-streams, and the lush forest that surrounds Bandiyagarh fort made it difficult to capture the fort. In addition to that, the antagonistic Bhil and Garasia ethnic groups are connected to this patch of woods. This enormous stronghold has evaded discovery thus far because to the strategic positioning of its defenses.

Keywords: *architecture of forts, insights fort*

INTRODUCTION

Coordinates for this location in India's Rajasthan state are 24.42366892 and 72.7948251. The area is known as the Sirohi district. The fort is protected by a formidable wall and sits atop a high plateau that is encircled on all sides by the Aravalli Mountains. According to the findings of the investigation into topographical barriers, the steep rise in hills, the naturally occurring obstruction of water-streams, and the dense forest rendered it impossible to capture the Bandiyagarh fort.

You can see a portion of the topographic map titled "Survey of India" displayed below in the figure labeled "Figure 1." The contours and height of the site are shown on the map. At this same position there is a peak that towers 865 meters above the surrounding terrain. One of

the reasons that this forsaken territory was not discovered sooner is because it is currently dominated by the savage Bhils and Garasi. This is one of the reasons why it has been forgotten. The results of the topographic survey indicate the existence of thorny plants that are two meters in height. The area is inaccessible on foot due to the presence of multiple rivers, which are depicted as black lines in Figure 1, as well as steep hillsides that have drops ranging from 49 to 57 meters. The aforementioned traits, taken together, make it easier for the location to be kept secret from the rest of the world. It does not appear that anyone cares that there is no electricity or plumbing in this area. There are existing settlements of Bhils and Garasia that have been founded in the woods. These communities are armed with traditional hunting implements such as the axe, bowarrow, and catapult. The Bhils and Garasia engage in a variety of traditional social activities, such as hunting, farming, animal husbandry, and poultry keeping. However, only a small percentage of the populace work in factories for a living. Previously, they lived in a hut made of clay, wood, stones, and terracotta roof tiles. This structure was their home. These individuals hold a high regard for hero stones and adhere to ethnic cults such as Vir-Bavji. The name Vir Bavji originates from two local words: "Vir," which means "brave warrior," and "Bavji," which means "God." Together, these words form the name Vir Bavji. In addition to the indigenous people who live there, this region is also home to a variety of animals belonging to the genus Panthera, such as the sloth bear, monitor lizard, and foxes, amongst other species.

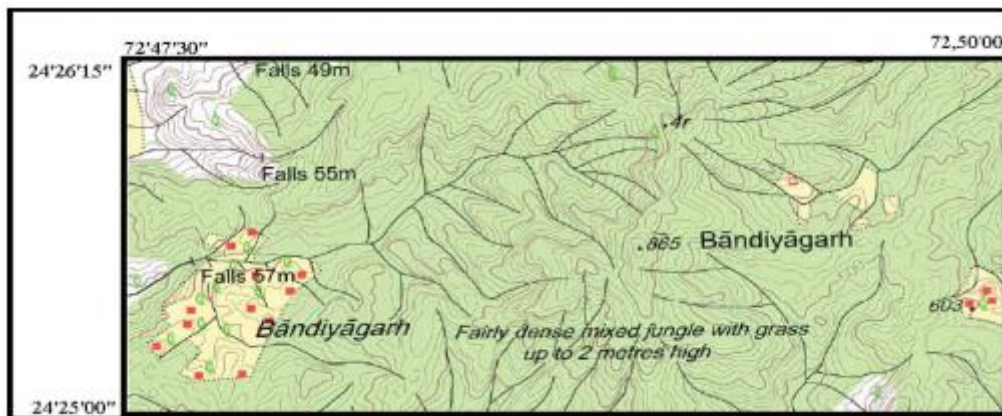


Figure 1 Topographical maps show Bandiyagarh as a dense jungle with two-meter grass

The Bandiyagarh region has the calc-gneiss, calcitic-marble, and quartzite that are characteristic of the Kumbhalgarh group. The remaining portion of the territory is composed of the pink color-displaying granite and Gneiss granite that are characteristic of the Sendra-Ambaji group. According to Acharya's research from 1998 (p. Map), all of these rocks belong to the Delhi Supergroup and have an age ranging from the lower to the middle Proterozoic. This explains why there are such a large number of rocks available to be used as construction materials for enormous walls that spread out in all directions. During the constructing



process, the stone blocks were arranged in such a way that the undersides of adjacent blocks formed an interlocking pattern. There was no indication that mortar had been used in the construction procedure. The acropolis (also known as the fort) is surrounded by extensive lengths of defensive walls and enclosures.

Our team had previously discovered the southern section of the fortification, where they found the remains of an entrance made of bricks in the southern section and stones in the northern section, as well as four temple ruins containing sculptures of Shivalinga with Nandi & Ganesh of the Hindu religion and Parsvanath of the Jain religion, a year-round waterfall connected to a small pond, two paused stronghold enclosures for a seasonal rivulet, a stone bridge According to Talesara, Bahuguna, Thakar, et al. (2020, page 286), the bricks were made during the Parmar Dynasty in the Middle Ages. This may be deduced from the size and construction of the bricks.

The name Rajasthan originates from the Sanskrit word Rajputana, which means "land established or ruled by a Prince" (Dalal & Phadke, 2002, p. 138). Previously, Rajasthan was known as Rajputana. The cultural regions of Ajmer-Merwara, Hadauti, Dhundhar, Godhwar, Shekhawati, Mewar, Marwar, Vagad, and Mewat are just few of the nine that make up Rajasthan (country of kings) (Talesara, Bahuguna, Thakar et al., 2020, page 280) (Talesara, Bahuguna, Thakar et al., 2020). These areas are home to significant archaeological sites as well as having their own distinctive histories, artistic traditions, and architectural styles. The district of Sirohi, which can be defined as "between Godh" (a palanquin or cradle-like building) in the middle of the high Aravalli mountain range, is where the town of Godhwar is located. The name "Godhwar" comes from this location. According to Adam (1899), page 1, the region of Marwar can be found to the north of Sirohi, the region of Mewar can be found to the east, the region of Palanpur can be found to the south, the region of Edar can be found to the east, and the region of Marwar desert can be found to the west. The research area is cut in half by hills and rocky ranges, and some areas are completely hidden by them. The mountain of Abu, which is part of the Aravalli range and is located close to the state's southern border, is the most notable natural landmark in this area. It is separated by a small pass from a connecting range of lower hills that continues north-east, all the way up to the cantonment of Erinpura, which is located on the state's northern boundary (Adam, 1899, page 13). The distance between the two is approximately 20 miles at the base of the mountain. The only drains for the entire region are located in Western Banas and its associated tributaries. The headwaters of the Western Banas River can be found in the Sirohi Hills, which are located close to Saimer. The river then travels in a direction that is generally north-northeast to south-southwest before entering North Gujarat and eventually drying up at the Little Rann.



The historical and cultural ties that bind the royal Rajput clans of GurjarPartihar, Parmar, Guhil, and Deora-Chauhan to the Sirohi district run deep. The Deora-Chauhan Dynasty had conferred the name "Sirohi" upon the region by the year 1405 A.D.. Before the name "Sirohi" was given to this region, it was once known as Arbuda Mandal/Desh (now just "Mount Abu") or the city of Chandravati. According to Thakar et al. (2019), on pages 123 and 124, it is believed that human occupation of this area first started around the middle of the Palaeolithic epoch and has remained unabated up until the present day. According to historical texts (Vijay Kumar, 1990, pages 1 and 2), the dynasties of the Maurya, the Kshatratapas, and the Guptas all ruled over Mount Abu at some point in the past. In an inscription that was written in the year 625 AD, it was stated that the territory was under the authority of the Bhinmal province of the Gujara-Pratihara dynasty. However, epigraphic evidence from the Sirohi district suggests that the area was settled by King Rajila of the Chapa dynasty of Vasantgarh. This contradicts the information in the inscription that was written in 625 AD. The Samoli inscription that King Siladitya left behind places his rise to power in the same century that it was written (646 AD). The province that had been ruled by the Abu dynasty was eventually taken over by the Parmar of Chandravati, who continued to do so until 1312 AD, despite the fact that they regularly engaged in conflict with the contemporaneous Chalukyas of Gujarat (1025–1041 AD). In the year 1312 A.D., King Lumbha of the Deora Chauhans was successful in his conquest of Parmar of Abu. After defeating Parmar, Deora Chauhan colonized a significant portion of the Abu kingdom. The name "Sirohi" was given to the kingdom in the year 1405 by Rao Sobhaji, the sixth descendant of the Deora Chauhan dynasty. Lakha, king of the Deora Chauhans, directed the construction of the fort at Achalgarh, where Khumbhakaran hid (Dhoundiyal, 1967, page 61). Lakha lived during the same time period as the Guhil king Maharana Kumbha (Kumbhakaran) (1433-1468). However, during the fifteenth century, King Lakha of the Deora Chauhans, with the assistance of King Qutubudin of Gujarat, attacked the kingdom of King Kumbhakaran and took control of the entire region (Dhoundiyal, 1967, page 61). The Deora Chauhan Dynasty may no longer hold the position of monarch in Sirohi, but they are still recognized by the law as the legitimate owners of the royal domains in that region. This region enjoys an unprecedented level of affluence in comparison to other modern cities as a direct result of its location on the Silk Road as well as the commerce that takes place there (Talesara, Priyank, and Aniruddh Bahuguna; 2020b, pages 302 and 304). Because of the region's prosperous economy, numerous modern dynasties have taken a keen interest in the area. As a result of this rivalry, the region ended up being divided and governed by many dynasties at the same time. As a result of the state's persistent state of warfare throughout the Middle Ages, the ruling dynasties of Rajasthan constructed impressive fortifications.



Fort tradition

The construction of forts and other types of fortifications has been an essential aspect of human history, particularly as safe havens and strongholds. For the purposes of archaeology, a defense building can be defined as any fortification or enclosure enclosing a town that serves the purpose of protecting the town, regardless of whether or not it is composed of mortar. A fort is a sort of fortified fortification that is often made according to strategic war craft. The purpose of a fort is to protect the ruling class of a kingdom as well as to serve as a guardian of the kingdom's capital. Forts are typically erected according to strategic war craft. In Indian mythology and culture, fortifications are referred to by a variety of names, including Pura, Durga, Garh, and Kila. The name Durga derives from its original meaning, which was "a place difficult to capture," and this is where the name originated. According to Kautilya (1915, pages 66 and 67), the ancient Mauryan literary source known as "Arthashastra" described numerous types of Durga (forts) in great detail. These Durga included the Jaldurga (water-fort), Parvat-Durga/Giri Durga (hill-fort), Van-Durga (forest fort), and Maru-Durga (desert fort). Kilabandi, which literally translates to "fortification," describes the tall walls and fortified enclosures that have historically surrounded Rajasthani fort buildings.

Fort sites of Sirohi District

Due to the fact that the Parmar dynasty was responsible for the construction of the majority of the forts in the region, the mountain's strategic location was essential to the consolidation of their kingdom. To defend these strongholds, towers were always positioned at the four cardinal points, enormous Dwars or Pol (gateways) were utilized as points of entry, and stronghold walls were built either with or without mortar. The presence of numerous forts has contributed to the valley's prominence. The following is a list of some of the more well-known forts that have been the subject of reports:

Achalgarh

This ancient citadel fort was constructed during the rule of Parmar and can be found in a secluded location atop Mount Abu. According to Shrivastava (1953), page VI, it was used by the Parmar family as their seat of authority for a number of centuries. In later times, after the Guhil dynasty's Maharana Kumbha had successfully taken control of the region, it was annexed by Deora-Chauhan.

Vasantgarh

At the location that was formerly believed to be the residence of the wise man Vasistha, just the ruins of the fort survive now, but the stories about him live on. This location was inhabited beginning in the sixth century AD and continuing until the late tenth century AD, as



shown by the inscriptions that were found there (Talesara, Bahuguna, Thakar et al., 2020, page 282). Inscriptions discovered in that area suggest that the location was also known as Vatakara and Vatapura in the past. The fort that was built by the Parmar family in a vata (banyan) tree forest became known as "Vatapura," which is whence the term "Vatapura" originated. This suggests that the Parmar dynasty was familiar with the Van-Durga history, an example of which is found in the city of Vasantgarh. On the other hand, "Vatakara" with "Akara" refers to a significant center for mining and smelting. The finding of 240 bronze statues of Jain deities during an earlier excavation at the site of Vasantgarh lends credence to the role of industry and commerce in the ancient city. In the year 1452 A.D., the walled city was initially ruled by Maharana Kumbha. However, it eventually came under the power of the Deora-Chauhan King Rao Lakha, who was assisted in this endeavor by the King of Gujarat, Qutubudin.

Chandravati

The ruins of Chandravati, a significant Parmar commercial town, can be located close to the modern-day community of Abu-Road. Chandravati was named after the goddess Chandra. In the past, the city of Chandravati has revealed the existence of nine enormous defenses. According to Mehta et al. (1978), on page 5, Chandravati was a center for significant commercial activity as a result of the presence of carnelian semi-precious stones. It is major evidence of economic relations with Afghanistan that the semiprecious stone known as "Lapis Lazuli" exists (Pilai, 2015). It is because of Chandravati's connectivity to the Silk Road that the city's economy has become so significant, and its expansion has been so rapid (Talesara, Priyank; Bahuguna, Aniruddh; 2020b, page 302). Both the historical record of Jinaprabhasuri (which was written in 1389 A.D.) and the text Tirthmala's Megha (which was written in 1443 A.D.) represented Chandravati as prosperous and wealthy. Tirthmala's Megha even compared it to Ravan's golden Lanka. (Jain, 1972, p. 345). Multiple invasions, both from inside India and from other parts of the world, took place against the city of Chandravati between the 7th and 14th centuries. The following are some well-known examples of invasions carried out by forces that were not indigenous to the area:

- In the year 1024, Mahmud Ghazni sacked Chandravati and stole everything of value from there.
- 1178 was the year that saw the Battle of Kasindra take place. In order to find the legendary riches of Chandravati, Muhammad Gauri attacked the outskirts of the city, which are locally referred to as Kasindra.
- Chandravati was sacked by Qutub-Ud-Din, a ruler from Gujarat and Delhi, in the year 1197 A.D.
- In the year 1304 AD, Alauddin Khilji led an invasion on Chandravati and looted the city.

Based on evidence such as the use of identical brick sizes, the discovery of two contemporary inscriptions (one rock inscription near the ancient ruins of a temple and another inscription inscribed on the backside of the bronze sculpture of Parsvanath, which we have now deciphered in detail), and the fact that the site is located only a few kilometers from the Parmar capital, we know that the Bandhiyagarh site dates to the same time period as the Parmar kingdom of Abu.

This study makes use of new discoveries that were made in the Sirohi region of Rajasthan, more specifically at the Bandiyagarh site. Just a few kilometers away from the location of the ancient city of Chandravati, which served as the capital of the Parmar empire, a number of important but till undiscovered extensive defensive constructions and settlements have been discovered here. During that historical period, the Parmar Dynasty exercised control over this region. Achalgarh was not only a strategically advantageous location for a fort, but it was also set aside as the royal residence of the king of Abu (Chandravati). The king of Abu built a fort and wall around the city of Vasantgarh, which was an important city in the copper smelting industry (Talesara, Bahuguna, Thakar et al., 2020, page 282) (Talesara, Bahuguna, Thakar et al., 2020, page 282). Photo 2.



Figure 2 Sirohi District elevation map showing fault zones and Chandravati, Bandiyagarh, Achalgarh, and Vasantgarh sites

METHODOLOGY

This research makes use of an archaeological field survey to locate Bandiyagarh, a fort that had not been found before to this study. The research include making observations and collecting notes regarding the recent finding made at the site. In this inquiry, several geo-archaeological methodologies, such as the study of landscape, the plain table method, the pedestrian method, applications of GIS and GPS, digital photography, documentation, and



recording of finds, have all been utilized. In order to decipher the inscriptions at the site, it is necessary to conduct an epigraphic research in addition to an analytical analysis of the architectural engineering of the building. Scales, measurements, and geometric concepts were utilized in order to conduct an analysis of the quantitative research approach.

This study employs a qualitative methodology, and as a result, it compiles a significant amount of data regarding the subject from a variety of primary and secondary sources, particularly concerning the historical forts and defenses that were located in the region. Doing a case study of the location, which comprises gathering historical and geographical data from sources such as various types of maps (cartographic research), online public archives, and libraries, helps the analytical investigation of the gathered data. This is because the case study provides a context for the analysis of the data. Other people's books and articles on the subject were read in order to compile some additional material on the subject. The material contained in these sources is essential for gaining an understanding of the tumultuous history and turbulent present of this region. Data from government institutes such as the Geological Survey of India, the Archaeological Survey of India, and the Survey of India were also helpful to this inquiry. The most recent information from these departments enables us to understand the significance of the subject matter and identify the research deficit that exists in this area. Our research took into account all of these sources, in addition to our personal observations that we made while we were at the location itself. In addition, it was vital to understand the bardic stories of the local ethnic groups in order to gain a proper understanding of the ethnography and safety of the place. The findings of anthropological research on the site demonstrate both a distinct socioethnic culture as well as a material culture.

Findings

An ancient site known as Bandiyagarh can be found in the neighborhood of the charming tiny village of Soorpagla. According to the findings of our group (Talesara, Bahuguna, Thakar et al., 2020, page 281), the walled city of Bandiyagarh was situated on a plateau at the summit of a mountain. In addition, there were a few sacred sites located in this area, which are where the current ethnic group's totem, the Vir-Bavji, is donated. We uncovered one natural limestone gravity spring at the outer edge of the fortification. This is clear from the masses of water charge inside the cavities of the hills, and the castle itself is placed on top, surrounded by a forest of wild prickly bushes, Palasa trees, and tall grass. The fortification was built on top of the hill. The highest point of the site provides a clear view of the surrounding area, including the Abu valley, Abu Road (Kharadi), and historical landmarks such as Chandravati, Achalgarh, Guru Shikhar (the state's tallest peak), and Kuisagara Lake (Figure 3). This view can be enjoyed from the highest point of the site.



Documentation of the discoveries

There is a listing of recent archaeological findings, records, and documentation of defensive and fortification architecture, including artifacts.

Massive stone slabs and dressed stone blocks were used to build a rampart wall in the northern weak ascending section of the fort. This area was the only place in the fort's topography where there was a break in the terrain. The wall was designed to be both sturdy and lofty. However, in spite of the fact that this region is similarly difficult to access, it has been kept in a state that is strategically advantageous to its adversaries. As we made our way through the Orthostate of the northern rampart, we came across a variety of carved markings that were cut into flat stone slabs. Another shoe marking, this one distinct from the last but still of the Indian ethnic style, is shown in Figure 4(a), and it features an engraving of a footprint inserted within the shape of an ethnic shoe construction as well as some inscriptions in Devnagari script, the meaning of which is unclear but likely to represent the engraver's name. Figure 4(a) can be found below. Figure 4b shows incisions that have been made on a person's hand. This illustration depicts a native weapon known as the Parashu or Farsa axe (Figure 4(c)). A shrewdly engraved tableau is seen in Figure 4(d), which depicts an armed warrior riding a fish-shaped boat while being pursued by a serpent. It is possible that the guards who were stationed at this rampart used their imaginations to carve these designs into the rock bottom of the rampart. The bulk of the other engravings, on the other hand, have been eroded by the weather and can no longer be read because of this.

Craftsmen in the fort built a defense wall that was particularly lengthy and winding. We gave Google Earth Pro a shot in an effort to get a better sense of the scope of the defenses. The white line in Figure 3 illustrates the outside fortification, which we calculated to be over 7.2 kilometers long and an average width of 3 meters outside the enclosures. The length of the fortification was established by the length of the white line.

The locations of three large sacred sites related with Vir-Bavji and Hero-stone that were discovered in three different directions are indicated in Figure 3, Reference Table 1, by the points numbered 1, 2, and 3, respectively. Individually and when combined, the words Vir and Bavji imply courageous warrior and God, respectively. Together, however, they signify the Warrior God of an ethnic cult. As part of an age-old custom, individuals who think that the God of this ethnic group resides in the Bandiyagarh forest in exchange for their desires have contributed thousands of terracotta "warrior seated on the horse" artifacts to the totem site located in this region. These artifacts are illustrated in Figure 5, which can be seen further down on this page. Horses are considerably larger than people, and in contrast to people, they have mouths that are round and open, and both of their ears stand in the typical, upright position. There may be a connection between this fort and the intangible cultural history that it represents, as suggested by the veneration shown to the warrior by the visitors. This

religion can be distinguished from both Hinduism and Jainism, as the epigraphic evidence has already demonstrated. Both Hinduism and Buddhism can be considered.



Figure 3. Satellite height Fortification map displaying finds and border wall

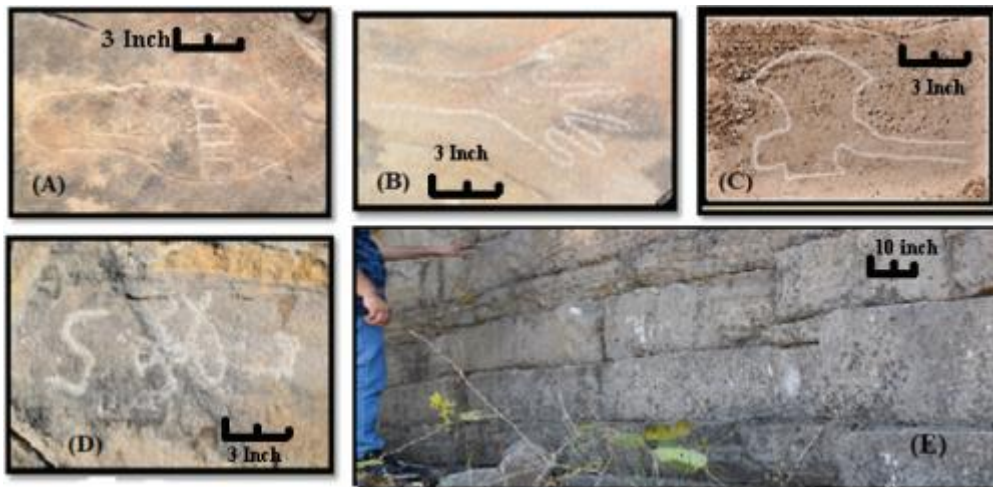


Figure 4. (a) Foot with Inscription, (b) Hand Impression, (c) Axe, (d) Warrior on fish like boat with snake, (e) Fortification of Dressed Stone Blocks.

CONCLUSION

The fortified settlement was discovered by our group in the Sirohi district of Rajasthan, which is located in the southern part of India. Bhils and Garasia are just two of the many different ethnic groups who have made their homes in what was once a fort. Despite the fact that they are unaware of the fort heritage of Sirohi, their belief in Vir-bavji may indicate that they are warriors, which may explain their connection to conflict. The old armament



expertise of the people who originally lived in this area is not diminished by the presence of a simple home. There is no other location in California where totem worship is conducted to the same degree. Worship of the Hero-stone is practiced by the same groups of people in various other areas.

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