



Desert Landscape and Archaeological Sites: A Case Study of Jodhpur District in Western Rajasthan, India

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Abstract: *A suitable landscape is a crucial factor considered by the ancient people to decide which particular environment should be occupied for dwelling. The main focus of this paper is to identify the possible applicable factors for the occupation of a desert landscape during the Prehistoric to Early Historic (Rang Mahal) periods in the Jodhpur district of western Rajasthan.*

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Introduction

The study of archaeological findings can be more productive when the surrounding landscape of the region is *taken* into consideration. This article examines the suitable landscape characters which must be *supported* for the *establishment* of ancient human settlements in the Jodhpur district, right from the Prehistoric Period to the Early Historic period. Suitable landscape features/ resources available in the Jodhpur district could have attracted large-scale ancient human settlements in the Jodhpur district from the Prehistoric to Early Historic phase.

Study area and environment

Jodhpur district is situated in the western part of Rajasthan state in India. The district falls under the category of the Great Indian Desert, particularly its southern, western, and northern portions (Fig.1). The climate is characterized by extreme temperature, dryness, cold and uncertain rainfall. There are scattered open hills and sand dunes in the north, west, and south. The Luni River, which rises near Pushkar in Ajmer, is the only river that *flows* through the district (Fig.2). Lakes, Playas, seasonal streams, tanks, and tube wells are *important water sources* (Gazetteer of Jodhpur district 1979).

Previous Work

Jodhpur district was *subjected* to research by several geologists, geographers, and archeologists since 1950. Prehistoric sites reported in the district before 2008 were subjected to a *detailed* study of archaeological remains. Not much is known about the Protohistoric and Early Historic phases of the Jodhpur region. However, a *systematic* archaeological survey was conducted between 2008-2014, and 51 new Early Historic Rang Mahal sites were discovered and studied (Dibyopama 2015).

Archaeological Sites: Prehistoric to Early Historic Phase

Paleolithic and Mesolithic sites in the study area were first reported by late Prof. V.N. Misra (IAR 1958-59, 1959-1960, 1976-77, 1979-80). However, Paleolithic and Mesolithic sites were discovered in their research project on Palaeoenvironmental and Archaeological research in western Rajasthan and Pakistan (Allchin *et al.* 1978). Subsequently, one Middle Paleolithic, few Mesolithic sites, and a Historical site belong to (Gupta era) was discovered (Deotare *et al.* 1998, 2004).

Lower Paleolithic : There are two Lower Paleolithic sites reported in the dried river basin of Luni by Prof. V.N. Misra in 1951. One is a factory site found at Pichak near Bilara on the Luni, and the other one is located in Dhaneri near Sojat on the Lilri. A few handaxes of the Late Acheulean facies were found at Luni. Dhaneri site was found with few flakes, blades, and cores seemed to belong to a Microlithic phase. The material of most of these tools was flint and jasper. Other tributaries of the Luni which yielded tools were the Bandi, Guhiya, Jawai, Mitri, Reria, and Sukris (IAR, 1958-59).

Middle Paleolithic sites : Middle Palaeolithic sites of the Jodhpur district are Pipad, Bisalpur, Pichak, Shergarh, Gurha, Sar, Nagari (IAR, 1959-60), (Allchin *et al.* 1978), and Lordiya (Deotare *et al.* 1998).

Upper Paleolithic sites : The Upper Paleolithic industry belongs to the same humid phase as the Middle Paleolithic industries. Only two Upper Paleolithic sites reported in the study area are - Gurha and Nagri (Allchin *et al.* 1978).

Mesolithic : Numerous Mesolithic occupation deposits were recorded along with working floors, camping places, and artifact collections. Relatively well preserved, 22 Mesolithic sites have been reported in the Jodhpur district. Important Mesolithic sites in the district are Bujhwar, Jamba, Nenau, Khinchan, Hindol Gol, etc. (see IAR 1958 -59, 1959 -1960, 1976 -77, 1979-80 Allchin *et al.* 1978; Deotare *et al.* 1998).

Early Historic Rang Mahal sites : Extensive exploration was undertaken in the Jodhpur district by the 1st author, during 2008-2014, in Phalodi, Osiyan, Shergarh, Luni, Bilara, and Bhopalgarh Tehsil of Jodhpur district (Dibyopama; 2015). A large concentration of archaeological sites found in Phalodi Tehsil is situated in the North-Western part of the Jodhpur district. Results of extensive archaeological exploration in Jodhpur district 51 sites of Early Historic Rang-Mahal culture discovered and studied systematically. Most of the sites have a single cultural deposit. Sites primarily identified as Rang Mahal culture are based on painted pottery, identical marks of Rang Mahal culture. Its similarity to the pottery recovered from the only excavated site "Rang Mahal" roughly dated between 200 AD - 600 AD (Rydh1959).

Rang Mahal material culture : Pottery is the primary material culture recovered from the Early Historic Rang Mahal sites in the Jodhpur district. The vast amount of pottery recovered from the explored archaeological sites of the Jodhpur district. Identical varieties of Early Historic Rang Mahal pottery are Red Slipped Ware and Black on Red ware. Grey ware and Plain Redware, found in negligible quantity. The pottery shapes are - Globular pot, Storage vessel, miniature pot, sprinklers, cooking vessel, spouted vessel, cup/flower pot shaped vessel, rusticated ware, conical bowls, globular

bowl, lamps, lids, lid cum bowl, basins globular and flared variety. Black on Red ware variety of pottery has a variety of geometric painted designs (Fig.5).

Context of the Archaeological Sites

Stone tools were recovered from the bedrock surface surrounding Bap Malar near the village Lordia (Deotare *et al.* 1998). Exposed bedrock is the source of raw material for Prehistoric people for acquiring raw material for manufacturing tools. Regoliths are naturally depressed basins covered with wind-borne deposits are the appropriate location for getting archaeological sites associated with the Palaeolithic phase. Good exposure of 1.5 m thick regolith cover of limestone was observed on the 3-5 m above the bed of modern ephemeral dry channel valley near Lordiya. A few middle and upper Palaeolithic sites recovered from the matrix of regolith. Geoarchaeological evidence at Lordiya brings out some interesting points on palaeoenvironmental studies. Sometime during the early to late Pleistocene period, today's dry stream bank might be occupied by hunter-gatherers, possibly in a better climatic setting in this semi-arid zone.

The stable sand dunes originated from active sand dunes; however, they stabilized over time, and soils have accumulated organic matter facilitating vegetation growth. Geomorphologically stable dunes are lesser prone to physical weathering. The stable sand dunes have been converted into farms and plantations, and very few entire ecosystems remain in the Thar desert. The Mesolithic and Early Historic sites are commonly occurred on the surfaces of such stable dunes or in dune profiles.

In the fluvial sequence of the Luni Palaeolithic, Mesolithic as well Early Historic Rang Mahal sites were observed. Most of the archaeological sites discovered in the Jodhpur district are ranging from the Prehistoric to Early Historic time found near seasonal streams, lakes, and Palayas (Fig.4). Though the district's climate is extreme but due to the presence of several water bodies in the district creates suitable conditions for the living being. Early Historic Rang Mahal sites from Phalodi Tehsil were found buried on a pediment of intermittent sloppy valleys and foothills. The plain area lies close to the hills is composed of fertile sediments, soils covered with stable sandy plains.

The stable landforms were suitable for agricultural activity and the establishment of early settlements. Another character of this area is blocked drainage on either side of the study area due to the irregular deposition of sand, silt, and sediment. Resulting, during the rainy season, the area gets highly recharge and increases the water table and increases the contains of moisture in the soil, hence acting as a perennial water resource in this area. Even without water, crops can grow very well in areas of blocked drainage. So, the landscape near the blocked drainage is a suitable area for ancient sites' point of view. Due to the availability of various water bodies in the district, a thin carpet of moisture soil is available. This feature is more prominent at the Osiyan and Phalodi tehsil of the Jodhpur district.

Discussion and Conclusion

The presence of a large number of archaeological sites right from the Palaeolithic to the Early Historic culture in the Jodhpur district suggests that the Thar desert had certain suitable factors responsible for the establishment of human settlement in the region. Most of the archaeological sites are preserved in the context of rocky terrain, stabilized sand dunes, and on the bank of a seasonal stream, near Playa or on the bank of the Luni river. A total number of 97 archeological sites have been reported in the Jodhpur district. Among them, 51 are newly discovered Early Historic Rang Mahal sites (Dibyopama 2015). Concentrations of Early Historic/ Rang Mahal sites are found in the Phalodi tehsil Jodhpur district. The archaeological sites present in and around Phalodi Tehsil are better in terms of human colonization than other Tehsils of the Jodhpur district. These sites are buried on the pediment intermittent sloppy

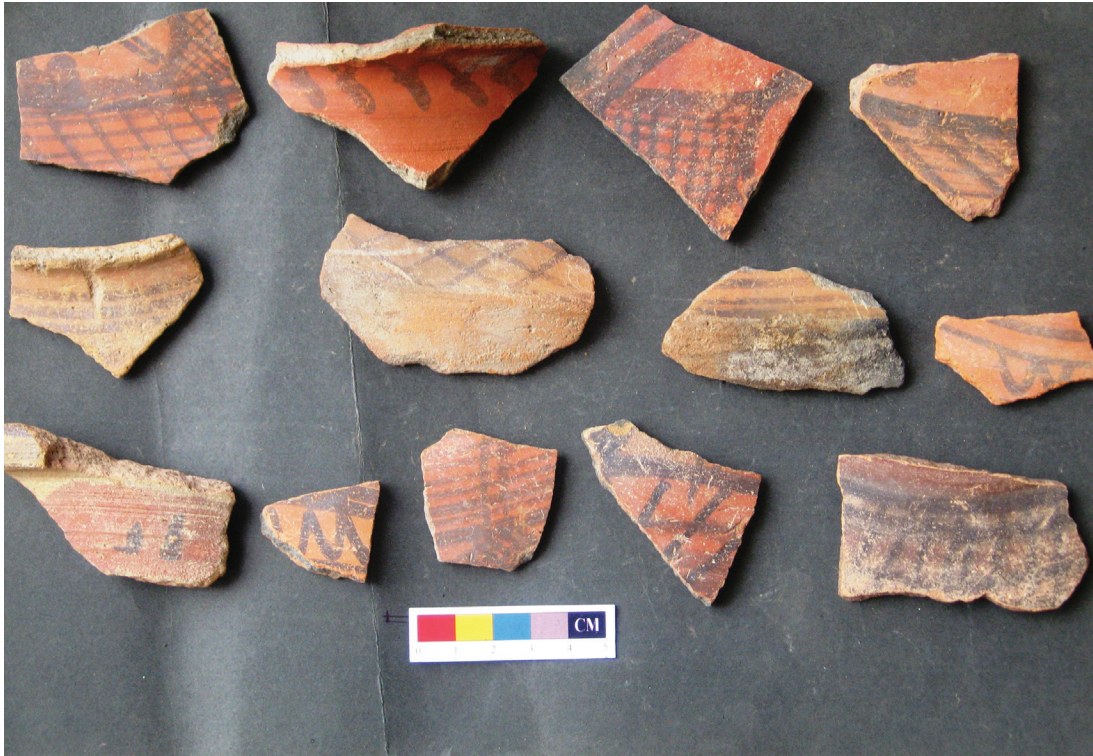


Figure 1: Painted Black on Red ware pottery from Early Historic Rang Mahal Archaeological Sites in the Jodhpur district



Figure 2: Dry channel of Luni River during summer in the Jodhpur district



Figure 3: Seasonal palaya in the Jodhpur district



Figure 4: Rich scatter of archaeological material in the context of stable dune Jodhpur district

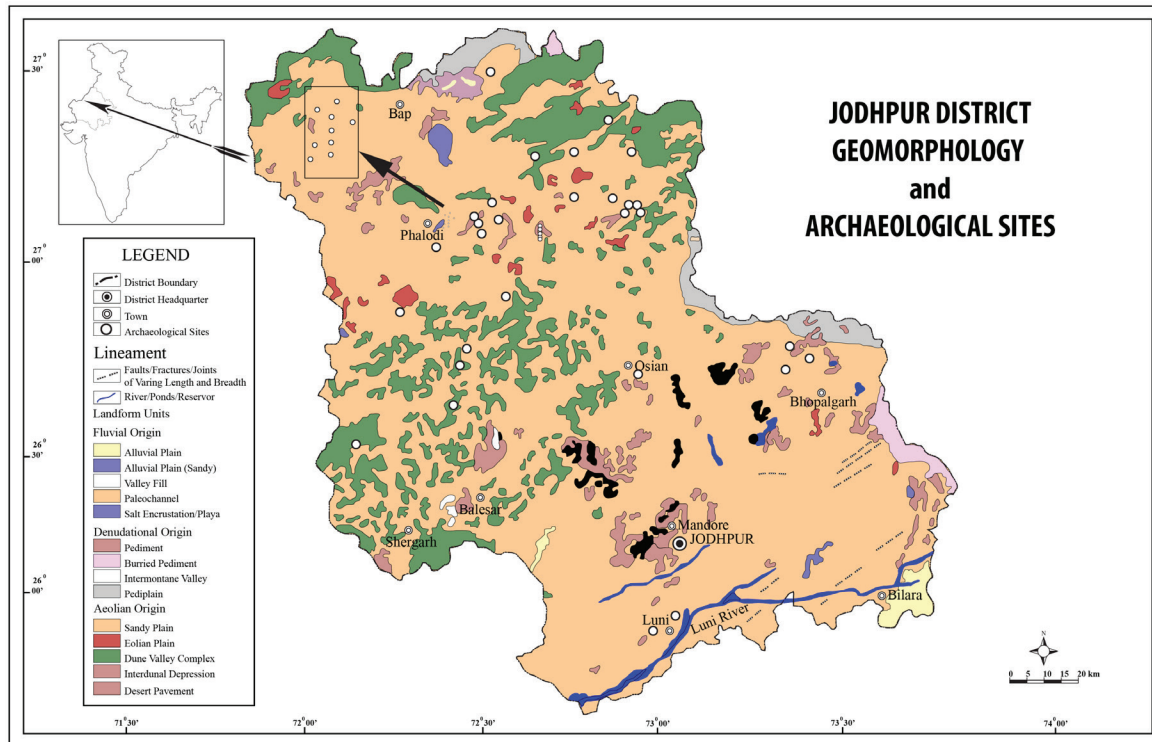


Figure 5: Geomorphology and distribution of Archaeological sites in the Jodhpur district.

valleys, which are covered with stable sandy plains. At the boundary of the Phalodi and Osia tehsil, it shows dense to moderate forests. Stable landforms, forest, agriculture, block drainage the canal provides water throughout the year. To construct houses, a variety of building stone materials is readily available in parts of the Aravalli. Raw materials were also there, which were used for microliths. The soil of the region retains better moisture. The soil, washed from the highland area deposited in the depressed basin, is highly fertile and can be used for good agricultural practice. Abundant forest resources would have provided chances for hunting for the small and big game. The rainfall is ranging from 150-300 mm falls under the low category. The study area is a part of a tropical, desert, arid and hot climate. However, winter rainfall is one of the best sources of water in the district. Dense to moderate forests, availability of raw materials could have attracted the ancient human settlement to the district right from Prehistoric to Historical periods. The absence of a Protohistoric site in the Jodhpur district is still unknown, and future research may shed more light on this aspect.

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