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STONE OBJECTS FROM MIDDLE GHAGGAR BASIN WITH SPECIAL REFERENCE TO SRI GANGANAGAR DISTRICT, RAJASTHAN

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Abstract:

The middle Ghaggar basin's stone objects are discussed in the present paper, specifically with relation to Sri Ganganagar District in Rajasthan. Numerous stone items in a wide variety of shapes and types accumulated on the surface during the exploration. Chert is a distinctive and easily recognized type of sandstone that may be found in the Rohri hill near Sukkur in Sindh, central Pakistan. It is also frequently found in the Lower Shiwalik range. The paucity of Rohri chert working debitage at the majority of the sites in the Sri Ganganagar district lends weight to this opinion. The sites Chak-Baror, Chak-IKPM-I, Chak-IKPM-II, and Chak-4JST do include blades, a sizeable fluted blade-core, mular, sandstone balls, and a few debitages of Rohri chert. Due to these, archaeologists now believe that some of the stone objects found here were made locally using materials brought to the site from the Rohri Hills and Lower Shiwalik Range. The typo-technological aspects of the Rohri chert assemblage from this region have been looked at in this perspective.

Introduction

The study region is located in western India's Rajasthan state's northernmost district of Sri Ganganagar, between latitudes of 28o46'48 and 30o09'24 north and longitudes of 73o04'17 and 74o11'24 east. It covers 10978 sq. km of land in total. These nine tehsils-Sri Ganaganager, Sri Karanpura, Sadulshahar, Padampura, Raisinghnagar, Suratgarh, Anoopgarh, Sri Vijaysinghnagar, and Ghursana combine to make up the district. The research area contains 3018 settlements with a combined population of 1969168, as reported by the 2011 Census. Bahawalpur and Bahawalnagar in Pakistan's Bahawalnagar District, Bikaner in Rajasthan's south, Hanumangarh in its east, and Fazilka in its north, all form its borders.

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Due to the Vedic Saraswati River's location in the study region (now known as dried-up Ghaggar) and the presence of Pre-Harappan and historical sites like Bijnor, Baror, Chak-86, Chak-90, Chak-59, and Tarkhanwaladhera, it has significant historical and archaeological potential. For the study of historical socio-economic conditions, the subject matter of the current study is important. Exploration and the small amount of excavation have largely revealed it. We need to seek other sites to learn more about this region, despite a few sites being mentioned by various researchers. We'll try to reconstruct the region's geographical, cultural, and socioeconomic past using its artefacts. 243 archaeological sites, 180 of which are newly discovered, are found while the researcher explores 3018 villages.

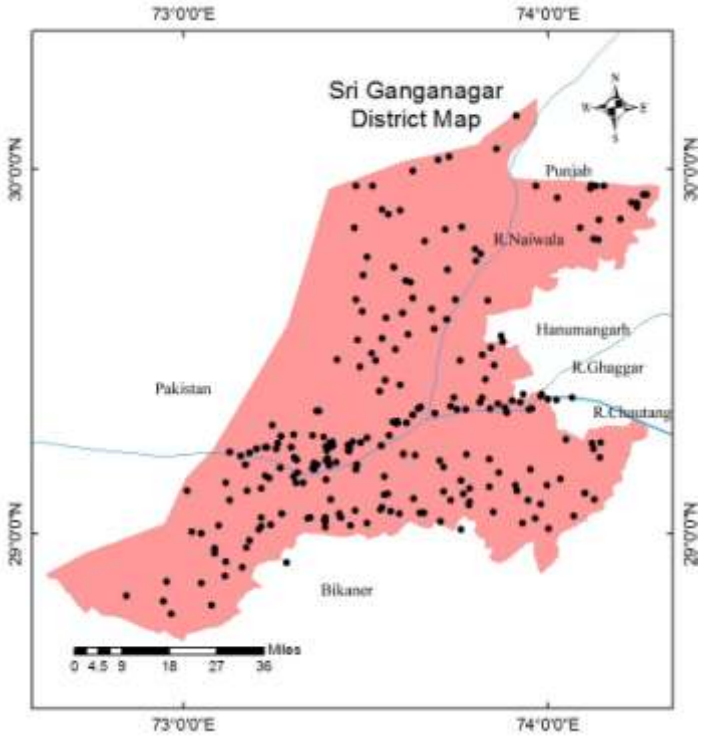

Fig. 1 Map showing of Study Area and Explored sites of District Sri Ganganagar, Rajasthan.

Discussion

During the exploration in Sri Ganganagar district, Rajasthan, the researcher has brought to light a variety of miscellaneous finds of stone and terracotta etc., from archaeological sites ranging from Pre-Harappan to Medieval times in the region of present study. These miscellaneous antiquities include bangles, sling balls, cakes, terracotta figures,

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toy cart wheel, others objects, etc. The chronological position of these finds could be possible by typological comparison and on the basis of culture of their find spot. These remains are the important tools for the reconstruction of various aspects of ancient cultures specially their socio-economic life. They are not only the art pieces but represent the activities of people of an unseen society of which we have no other documentary evidences. It will have to be admitted that thousands of pages or words may be unable to convey the inner feeling and ideas of people in the manner in which they are revealed by the finds associated with the ancient cultureThe description of these antiquities is given below material-wise:

Drill Bits

The bulk of drills are made of "ernestite," which Kenoyer and Vidale have provisionally termed (1992). These drills originated from different locations at the many Harappan sites in the Indian subcontinent. To comprehend the nature of results, distribution patterns and morphology, 1200 drills bits from Dholavira were treated to a thorough documentation and microscopic investigation. During his studies in Chanhu-daro and Mohenjo-daro, E.J.H. Mackay (1937) first investigated the production of stone beads and drilling technology. Mackay discovered a range of unfinished stone beads from Chanhu-daro that were in various phases of creation. This discovery has helped researchers better understand the bead manufacturing process used to create the long barrel-cylinder beads (Mackay 1937). He also discovered a sizable quantity of Chanhu-daro stone drills, both complete and shattered. The entire one is typically 3.81 cm long and ranges in diameter from 2.54-3.048 mm (Mackay 1937). Chanhu-daro samples show that the beads were also drilled first, then polished (Mackay 1937). According to R.S. Bisht, “agate-carnelian sources from Ratanpur in Rajapipla, Kapadvanj, Jamnagar, Khandek, and Medhok or Mardak Bet, as well as many of the agate-carnelian specimens from Harappa, the raw material for these stone beads was mostly from the Gujarat region of India (Bisht, R.S. 1989).” (Law 2011). Gujarati sites have also produced proof of bead making activities. Based on the presence of numerouscores, crushed, flakes and un-perforated beads spread across the courtyard, the nearby rooms, S.R. Rao claims that there is likely to be a bead factory from Lothal (Rao 1985). Rao hypothesizes that the Rajapipla mines provided the agate used to create carnelian at Lothal. Rao contrasts the current bead manufacturing lapidaries and methods used in Khambhat with those used in the Lothal bead plant (Rao 1979, 1985). According to Kenoyer

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"the modern bead industry at Khambhat, there are two different kinds of diamond-tipped drills: tekni, which uses a single rounded diamond chip to make a depression to facilitate the use of a second drill for the actual boring, and sayedi, which has two tiny rounded diamonds set at an angle at the tip end (Kenoyer et al. 1991)." Due to the lack of diamond during the protohistoric era, hard stones had to be drilled using chert and various forms of mottled green jasper, which took a lot of time.

For the purpose of identifying and categorising cylindrical drills with a dimpled tip, they proposed two new terminologies.Based on the shape of the drills, they are termed to as "tapered cylindrical drills" and "constricted cylindrical drills." Law (2011) describes ernestite as follows: “Ernestite is an extremely fine-grained stone mottled with dark-brown to black patches and dendritic veins in a khaki-coloured matrix”. He collects four ernestite samples taken from Mound E of Harappa, Law conducted XRD and EMPA tests. Similar to other earlier research, the XRD tests of two samples from Dholavira show phases of mullite-sillimanite (Prabhakar et al. 2012). It has not yet been determined where ernestite comes from. But ernestite drill bits and raw materials are more common at sites in Gujarat than at other Harappan sites (Prabhakar et al. 2012), suggesting that a source may be there or close by. The study of the Dholavira excavation materials resulted in the documentation and recording of 1212 drills in total (Prabhakar, V.N., pp-257). The researcher found many drills bits course of exploration at Chak-I KPM-II and others sites in present study area.

PL.-1 Drill Bits

1 Stone, chart, drill bits convex, parallel sided a sharp cutting edge, light grayish colour, of Early Harappan period from chak-5UDM-A.

2 Stone, chart, a fragment of drill bits, grayish colour with both the ends broken, Hakra period from Chak-I-KPM-II.

3 Stone, chart, drill bits convex, parallel sided a sharp cutting edge, light yellowish colour, of Hakra period period from chak-I-KPM-II.

4 Stone, chart, drill bits convex, parallel sided a sharp cutting edge, light yellowish colour, of Hakra period period from chak-I-KPM-II.

5 Stone, chart, a fragment of drill bits, reddish colour with ends of broken, Hakra period from Chak-I-KPM-II.

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6 Stone, chart, a fragment of drill bits, brownish colour with ends of broken, Hakra period from Chak-I-KPM-II.

7 Stone, chart, drill bits convex, parallel sided a sharp cutting edge, light yellowish colour, of Hakra period period from chak-I-KPM-II.

8 Stone, chart, a fragment of drill bits, reddish colour with ends of broken, Hakra period from Chak-I-KPM-II.

Table -1 Measurement of Drill Bits from Sri Ganganagar District, Rajasthan (PL.-1)

Sr. No.	Site Name	Material-1	Material-2	Form	Length (mm)	Width (mm)	Thickness (mm)	Weight (gm)
1	Chak-5UDM-A-4	Stone	Chart	Drill bite	38.96	23.65	6.10	4.30
2	Chak-I KPM-II-3	Stone	Chart	Drill bite	24.78	19.11	14.08	7.33
3	Chak-I KPM-II-1	Stone	Chart	Drill bite	16.42	5.02	1.60	0.80
4	Chak-I KPM-II-12	Stone	Chart	Drill bite	16.78	5.27	2.09	0.10
5	Chak-I KPM-II-14	Stone	Chart	Drill bite	18.14	9.31	1.90	0.30
6	Chak-I KPM-II-11	Stone	Chart	Drill bite	15.45	9.27	2.11	0.20
7	Chak-I KPM-II-13	Stone	Chart	Drill bite	14.81	9.84	2.97	0.30
8	Chak-I KPM-II-10	Stone	Chart	Drill bite	13	11.16	2.17	0.21

STONE OBJECTS

During the course of exploration a large number of stone objects viz. querns, saddle querns, pestles, sling balls and weights were noticed on the surface of the sites. Some of these are heavy and bulky so it was not possible to collect theses type of objects from each site, these were photographed *in-situ* but in this chapter only those objects are included which were collected and then taken for study in the laboratory. The probably source for this stone is Kaliyana hills, near Charki Dadri. Earlier Randel Law did a survey to identify the source

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of stone in the Tosham hills (Law 2008: 192-246). It is most probable that these querns and pestles were used for milling some crop grains. Some of the illustrated specimens are described below.

PL.-1 Stone Objects

1 Sandstone, a fragment of saddle quern, of Early Harappan period from chak-I-A.

2 Sandstone, a fragment of saddle quern, of Early Harappan period from chak-I-A.

3 Sandstone, pestle, roughly square, light grey colour, of Early Harappan period from chak-46GB.

4 Sandstone, pestle, round shape, both side are flat, of Early Harappan period from chak-4JST

5 Sandstone, pounder-cum-pestle, cylindrical, of Early Harappan period from chamar Kher-I.

6 Sandstone, pounder, roughly rounded shape, of Early Harappan period from chak-25BB.

Table -1 Measurement of Stone Objects from Sri Ganganagar District, Rajasthan (PL.-1)

Sr. No.	Site Name	Material-1	Material-2	Form	Length (mm)	Width (mm)	Thickness (mm)	Weight (gm)	Dai-Metter (mm)
1	Chak- I-A-2	Stone	Sandstone	Saddle Quern	72.50	65.93	22.36	159.06	
2	Baror-7	Stone	Sandstone	Saddle Quern				111.55	
3	46GB-8	Stone	Sandstone	Pestle				182.62	
4	Chak-4JST-50	Stone	Sandstone	Pestle			30.32	168.43	60.72
5	Chamar Khera-I-37	Stone	Sandstone	Pounder-cum-pestle	64.48			272.36	56.92
6	Chak-25BB-7	Stone	Sandstone	Pounder				298.2	64.64

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PL.-3 Stone Objects

1 Sandstone, molar, black colour, circular section with broken ends, of Early Harappan period from chak- 4JST.

2 Sandstone, a fragment of objects, light green colour, rectangular section with broken ends, of Mature Harappan period from chak-46GB.

3 Sandstone, molar, light green colour, circular section with broken ends, of Historical period from chak- 43PBN.

4 Sandstone, a fragment of pounder, round shape, light green colour, of Early Harappan period from Baror.

5 Sandstone, pounder, both side are flat, reddish colour, of Historical period from chak-86-I.

6 Sandstone, pounder, round shape, light white colour, of Early Harappan period from Baror.

7 Sandstone, a fragment of pounder, black colour, , of Early Harappan period from Baror.

8 Sandstone, pounder, round shape, light white colour, of Late Harappan period from chak-77GB.

Table -3 Measurement of Stone Objects from Sri Ganganagar District, Rajasthan (PL.-3)

Sr. No.	Site Name	Material-1	Material-2	Form	Length (mm)	Width	Thickness (mm)	Weight (gm)	Dai-Metter (mm)
1	Chak-4JST-51	Stone	Sandstone	Muller	82.74			288.96	39.85
2	Chak-46GB-7	Stone	Sandstone	Object				261.81	
3	43PBN-3	Stone	Sandstone	Muller	69.35			309.31	59.13
4	Baror-6	Stone	Sandstone	Object				67.72	
5	86GB-I-1	Stone	Sandstone	Object	58.37	53.65	35.44	199.5	
6	Baror	Stone	Sandstone	Object				108.27	53.02
7	Baror-10	Stone	Sandstone					147.59	
8	77GB-1	Stone	Sandstone	Object				98.64	47.83

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PL.-4 Stone Objects

1 Sandstone, a fragment of objects, brown colour, rectangular section with broken ends, of Mature Harappan period from Baror.

2 Sandstone, pounder, white colour, round shape, of Historical period from chak-37.

3 Sandstone, a fragment of pounder, round shape, white colour, of Early Harappan period from Baror.

4 Sandstone, a fragment of pounder, round shape, white colour, of Early Harappan period from Baror.

5 Quartzite, a fragment of a object, black colour, of Early Harappan period from Baror.

6 Quartzite, pounder, round shape, black colour, of Historical period from chak-47PBN.

7 Limestone, A object, white colour, of Historical period from Sardargarh.

Table -4 Measurement of Stone Objects from Sri Ganganagar District, Rajasthan (PL.-4)

Sr. No.	Site Name	Material-1	Material-2	Form	Length (mm)	Width	Thickness (mm)	Weight (gm)	Dai-Metter (mm)
1	Baror-8	Stone	Sandstone	Object				135.20	
2	Chak-37-10	Stone	Sandstone	Object				117.55	48.59
3	Baror-9	Stone	Sandstone	Object				39.32	
4	53RB-33	Stone	Sandstone	Object				43.93	
5	Baror-46	Stone	Quartzite	Object	39.84	22.56	20.98	16.5	
6	47PBN-2	Stone	Quartzite	Object				48.68	
7	Sardargarh-1	Stone	Limestone	Object				8	

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PL.-5 Pestle

1 Sandstone, pestle, reddish colour, of Hakra period from chak-IKPM-I. (Mandeep,2013, pp-90)

Table -5 Measurement of Pestle from Sri Ganganagar District, Rajasthan (PL.-5)

Sr. No.	Site Name	Material	Form	Length (mm)	Width	Thickness (mm)	Weight (gm)
1	IKPM-I-1	Sandstone	**Pestle**	125.92	56.16	26.98	231.65

Table -6 Measurement of Pestle and Axe from Sri Ganganagar District, Rajasthan (PL.-6)

Sr. No.	Site Name	Material-1	Material-2	Form	Length (mm)	Width	Thickness (mm)	Weight (gm)	Dai-Metter (mm)
1	Chak-4JST	Stone	sandstone	**pestle**	105.76	73.13	44.77	780	
2	Chak-37-9	Stone	Quartzite	**Axe**	54.5	51.6	16.2	86.44	

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PL.-1 Drill Bits

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PL.-2 Stone Objects

PL.-3 Stone Objects

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PL.-4 Stone Objects

PL.-5 Pestle

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PL.-6 Pestle and Axe