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Part 1



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ISTITUTO ITALIANO PER IL MEDIO ED ESTREMO ORIENTE
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The Protohistoric Settlement Patterns in the Cholistan Desert

Cholistan is an extension of the Thar desert which covers an area of 15,902 sq.km or about two-thirds part of the total area of former State of Bahawalpur in the east-central Indus Valley. In ancient times, Cholistan was drained by the Ghaggar-Hakra River which flowed perennially along the western fringes of the desert before it dried up about the beginning of 1st millennium BC. The survey of archaeological sites carried out along the old course of the Hakra River between 1974 and 1977 indicated a great density of ancient sites (Mughal 1981, 1982, 1984, 1989) among which 377 belonged to the protohistoric period as grouped below:

Cultural Association	Time – Range	Number of Sites
Hakra Wares	4th millennium BC	99
Early Harappan	3100/3000 – 2500 BC	40
Mature Harappan	2500–2000/1900 BC	174
Late Harappan	1900–1500 BC	50
Painted Grey Wares	1100/1000–500 BC	14

Thirty-seven sites represented early historical, Medieval and later periods while ten sites remained unidentified (fig. 1).

The location and relocation of settlements, their densities and abandonment were intimately related with frequent changes in the Hakra River course since the beginning of human habitation in Cholistan. Various scholars have tried to reconstruct old river courses in Cholistan and the adjoining Indian territory (Oldham 1893; Lambrick 1964: 229–36; Wilhelmy 1969). Their observations are still useful although new archaeological evidence has revised their dating of various changes. Most recently, with the help of Landsat imagery, it has been possible to identify various palaeo-channels in the Sutlej-Yamuna Divide and Cholistan (Ghose et al. 1979, 1980; Pal et al. 1984) (fig. 2). The settlement patterns that have emerged

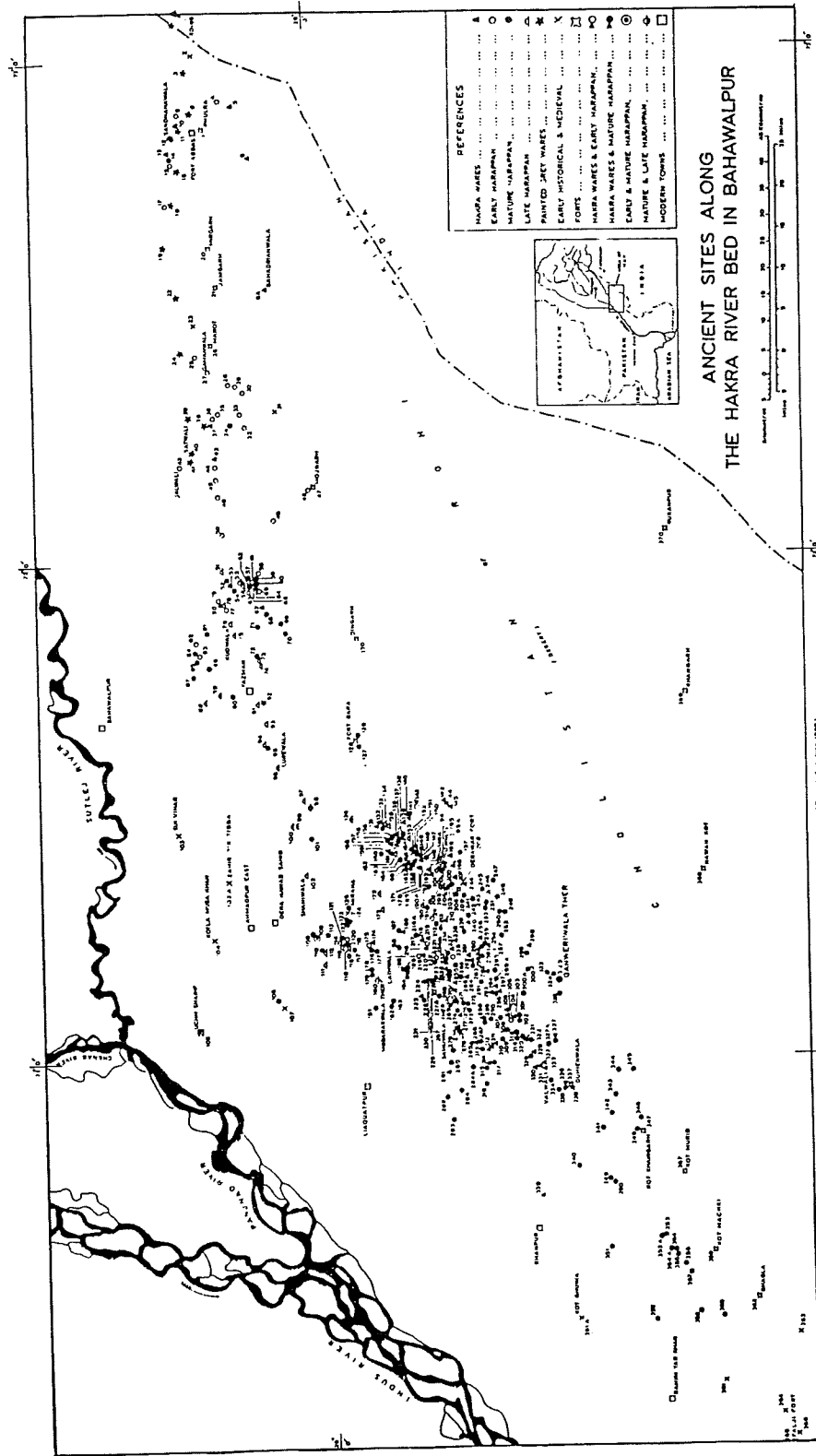


Fig. 1 - The distribution of ancient sites of all periods in the Cholistan desert.

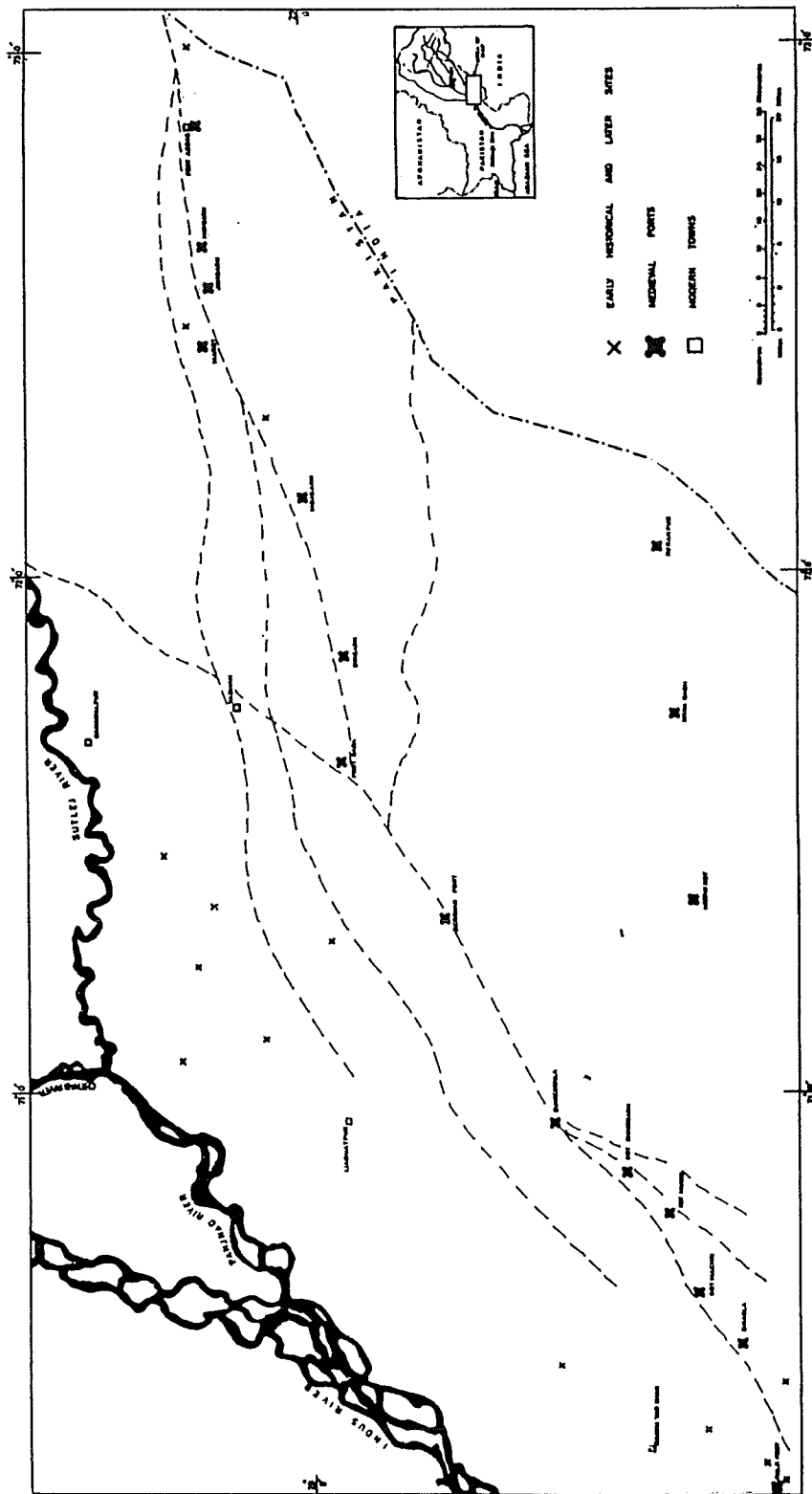


Fig. 2 - Old channels of the Hakra River in Cholistan reconstructed from Landsat imagery.

after explorations are linked with the Hakra River as would be evident from the distribution of sites of different periods.

Hakra Wares Sites (fig. 3; table 1)

The earliest known sites in Cholistan that are associated with Hakra Wares are located mostly on the stabilized sand dunes and on the mud flats. Except few sites on the northeastern part of the Hakra, their highest concentration is near Derawar Fort and to its southwest. Among 99 sites, 52.5% represented camp sites or temporary occupation marked by scatter of potsherds, microliths, terracotta, shell and stone artifacts. The settlement sites constituted 45.4% of the total number which are represented by mounds of varying sizes and heights. Nearly 57% are up to 5 ha in size and 13.5 are between 5 to 10 ha. Three sites are between 10 to 15 ha, four between 15 and 20 ha and three upto 25 ha. The largest site of Lathwala I covers an area of 26.3 ha. It appears that some of the permanent settlements were of substantial size although the largest number consists of camp sites.

Two settlements of the Hakra Wares, namely Kuchanwala and Nahrenwala, also contain Kot Dijian materials of the Early Harappan period. Four sites, namely Azimwali II, Dhuni, Sanukewala II and Thoriwala, were abandoned and reoccupied during the Mature Harappan period. Specialized craft activities at two sites of the Hakra Wares are indicated by circular kilns.

Early Harappan Sites (fig. 4; table 1)

During the Early Harappan period, the Hakra River was perennial as shown by the sites located all along its course from the northeast to southwest beyond Derawar Fort. This period is marked by a dramatic change from the nomadic life to permanent settlement because the camp sites which constituted 52.5% of the total during the Hakra Wares period, sharply declined to only 7.5% in the Early Harappan period. There was no site exclusively for craft activities but settlements combining the functions of specialized activities existed which constituted 35% of the total sites during the Early Harappan period. There was an increase of settlement sites consisting of 57.5% of the total number. However, the total of both the permanent settlements and multi-functional settlements comes to 92%.

Nearly 60% of the sites among a good sample of thirty-two are upto 5 ha in size while 25% come within 5 to 10 ha. Three sites are between 10 to 20 ha. One site, Gamanwala covers an area of 27.3 ha. It is the largest Early Harappan site so far known in the Greater Indus Valley when com-

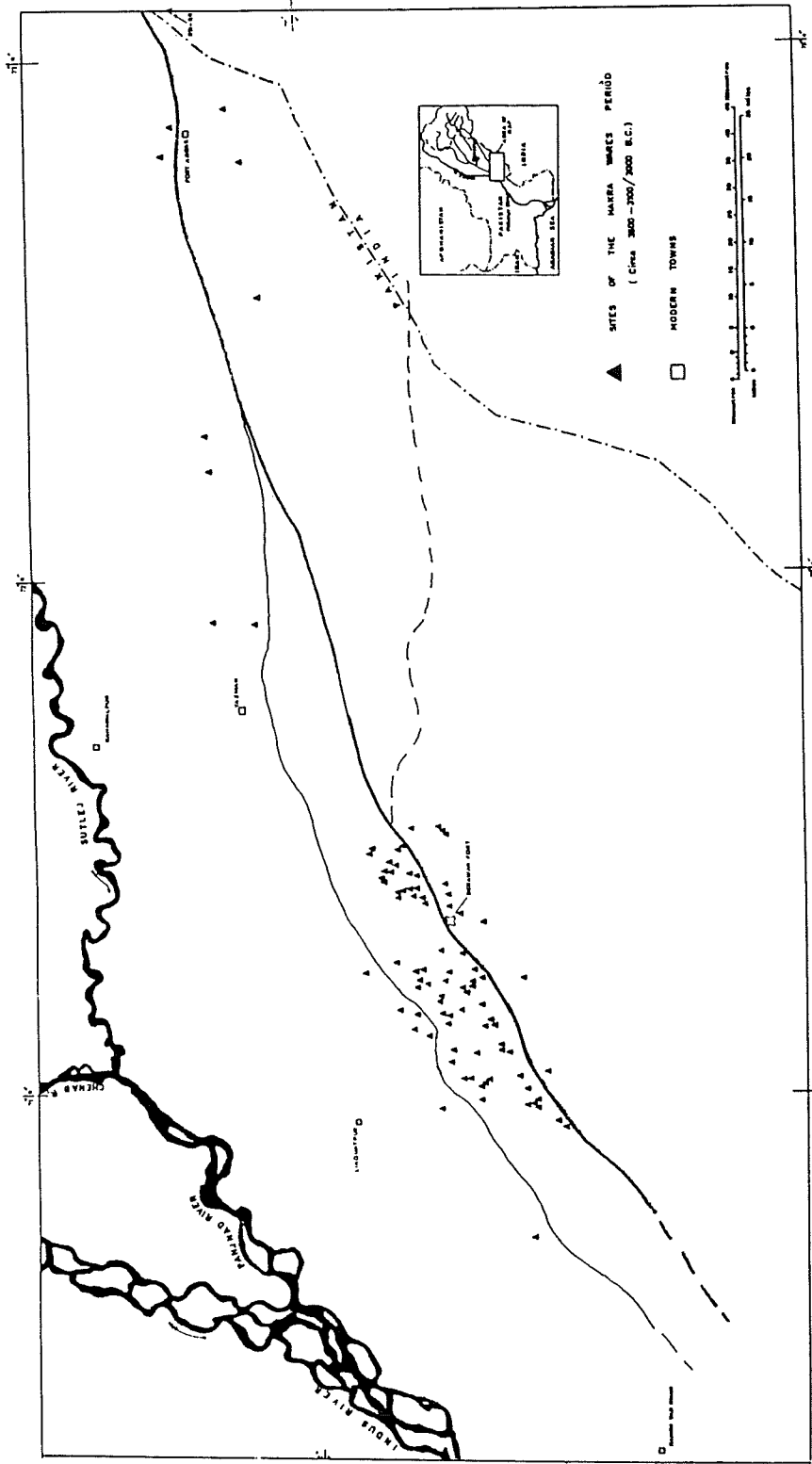


Fig. 3 — The Hakra Ware sites showing their concentration near Derawar on the Hakra River which was earlier joined by another channel flowing from the eastern side.

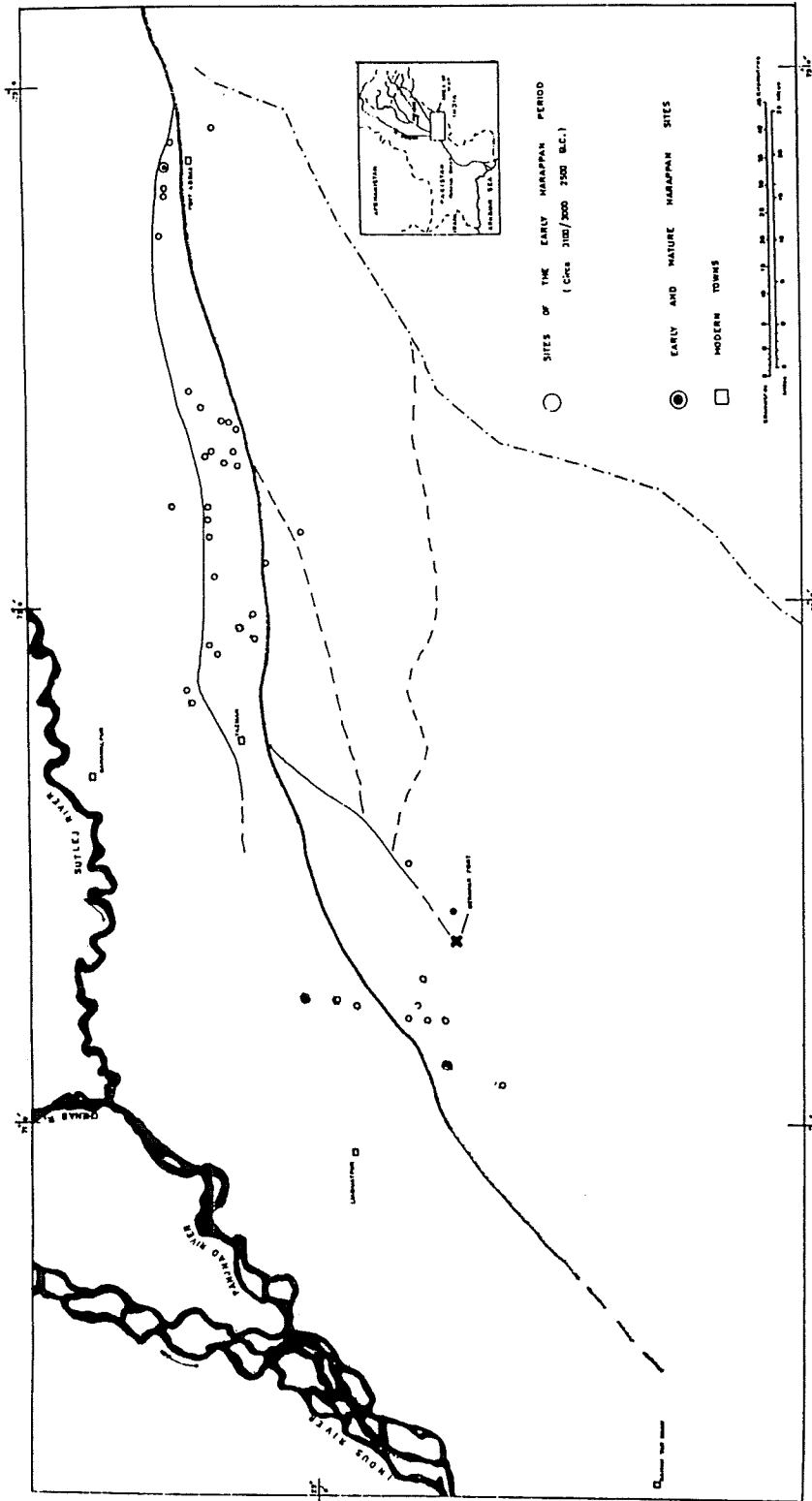


Fig. 4 — The pattern of sites during the Early Harappan period mostly along the northeastern portion of the Hakra River and showing slight shift in the river course.

pared with the contemporary sites of Jalilpur (15.6 ha) (Mughal 1972, 1974), Sarai Khola (18.5 ha) (Halim 1970-71, 1972), Rehman Dheri (21.7 ha) (Durani 1981), Tarakai Qila (16 ha) (Allchin & Knox 1981) and Kalibangan-1 (4.5 ha) (Lal 1979; Thapar 1973).

At three Early Harappan sites, namely Chak 76, Gamanwali and Sandhanwala Ther (Stein 1942), occupation continued during the Mature Harappan period.

Mature Harappan Sites (fig. 5; table 1)

The total number of 174 Mature Harappan sites consist of settlements, habitation sites with kilns, sites representing industrial activities exclusively, camp sites and cemeteries. Fifty sites, or nearly 29% of the total, may represent small towns and villages, while about 19%, or 33 in number, are settlements with areas of specialized craft activities. The highest number of sites, 79 in all or 45.4%, represents areas exclusively demarcated for kilns, pottery firing and other activities during the Mature Harappan period. This is in contrast to the preceding Early Harappan period in which sites exclusively marked for industrial activities did not seem to exist. Ten sites represent temporary occupation which may suggest that during the fully urbanized phase of the Indus Civilization, a section of population was also leading a nomadic life and were utilizing marginal areas of the Cholistan desert. Two cemetery sites were located outside the habitation areas of Gaumwala Daher and Waddanwala.

An outstanding feature of the Mature Harappan period in Cholistan was the emergence of one large city site, Ganweriwala, covering an area of 85.5 ha. It is located at the southern limit of the cluster of Mature Harappan sites southwest of Derawar Fort and in the middle of the two urban centres of Mohenjodaro and Harappa. It is smaller in size than Mohenjodaro (97.5 ha inclusive of open area between the city and the citadel) and larger than Harappa (65 ha excluding the cemeteries H and R 37).

Among other settlement sites, over 61% of the total were up to 5 ha in size and 26% range between 5 to 10 ha. The sites covering more than 10 ha decreased in numbers: five were between 10 and 15 and only three measured 15 and 20 ha.

The Mature Harappan sites were also concentrated around Yazman, an area where a channel from the Sutlej joined the Hakra River. Further eastward, there was only one site, Sandhanawala Ther, which represented both the Early and Mature Harappan periods. It is evident that the Hakra stream east of Yazman ceased to be perennial, accounting for the aban-

donment of that stretch between Fort Abbas and Kudwala during the Mature Harappan period.

Late Harappan Sites (fig. 6; table 1)

The Late Harappan period in Cholistan and even further northeast in India is represented by the Cemetery H type of materials comparable with those originally found at the type-site of Harappa. In this period, the sites were located around the present-day town of Yazman and towards the southwest nearabout Derawar almost in the same area where Mature Harappan occupation lies underneath. It is possible that some other large and high mounds such as Kudwala, Lurewala and Shahiwala also contained early materials but could not be detected on the surface. The northeastern part of the desert in Bahawalnagar District is completely devoid of Late Harappan sites.

Among the total number of fifty Late Harappan sites, nine or 18% are related to the specialized craft activities showing a sharp decrease from the Mature Harappan period in which 45.4% of the total number belonged to the industrial sites. However, with a decrease of all industrial sites, there is corresponding increase in the percentage of multi-functional sites combining habitations with craft activities during the Late Harappan period. This situation of multi-functional sites is similar to that of the Early Harappan period. There are fourteen settlement sites in addition to those of multi-functional types. There was a significant increase in the number of camp sites constituting 26% of the total number as against nearly 6% during the Mature Harappan period, and 7.5% in the Early Harappan period. This would suggest an increased emphasis on the utilization of desert resources along with those of the flood plain of the Hakra River. It is possible that such a shift or change was induced by the changing environment most probably due to reduced water supply in the Hakra. These environmental changes may account for the relocation of settlements during the Late Harappan period and consequent readjustment of population.

An overwhelming number, 46.1% of the total Late Harappan sites are less than 5 ha in size and nearly 27% come within the range of 5 to 10 ha. Four sites cover an area of 15 to 20 ha while the site of Kudwala, near Yazman, covering 31.1 ha are the largest settlement of the Late Harappan period. It is evident that some population had concentrated at four settlements of up to 20 ha in size and at two sites of 10 to 15 ha, but all were dominated by the large urban centre of Kudwala.

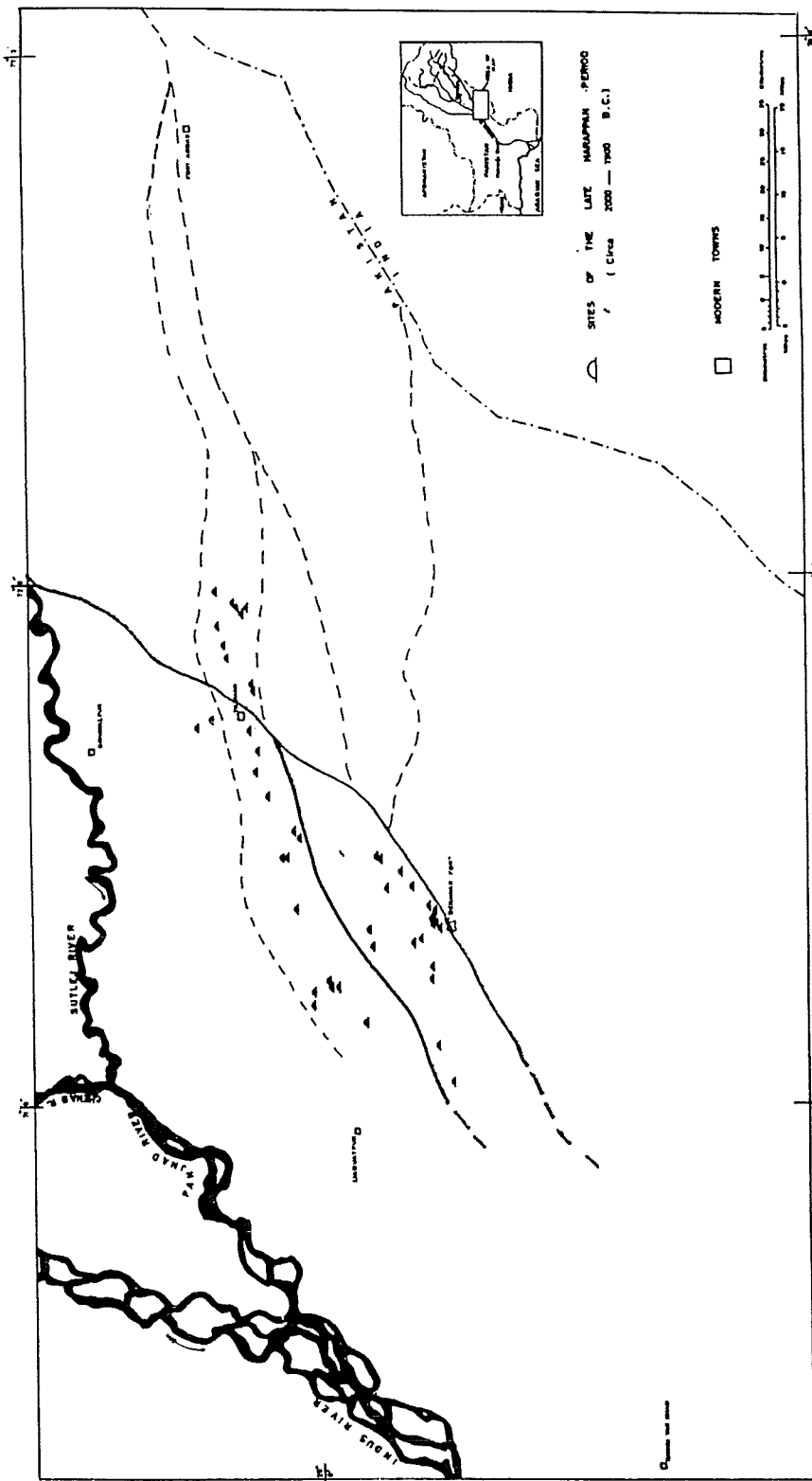


Fig. 6 — Decrease in the number of sites during the Late Harappan period and constriction of area of occupation probably due to reduced water supply.

PGW Settlements (fig. 7; table 1)

The settlements associated with Painted Grey Wares stretch almost in a line for 160 km in the northeastern part of Cholistan between Fort Abbas and Yazman. On the basis of ceramic evidence comparable with the dated PGW sites of Rajasthan in India, these sites belong to the early 1st millennium BC. Much before that period, the northeastern part of the Hakra River had dried up completely. The presence of PGW settlements on the flood plain would indicate that the area of their location must have been subjected to sheet flooding from the Ghaggar with seasonal regularity.

All the PGW sites, fourteen in number, are settlements. Three are less than 1 ha in size and 6 are less than 2 ha. Four sites are between 2 and 4 ha. There is only one large settlement, Satwali, which covers an area of 13.7 ha. There was no evidence of kilns and other specialized activities at any settlement. Evidence of camp sites during the PGW period was not available but the possibility of nomadic population existing at the same time cannot be ruled out.

In the adjoining Indian territory, a great number of protohistoric sites have been located along the old channels of the Ghaggar River and its tributaries, the Naiwal and Chautang Rivers, in northern Rajasthan, Punjab and Haryana by intensive explorations carried out by a succession of archaeologists (Stein 1942; Ghosh 1952; Dalal 1980; Dikshit 1967, 1984; Bhan & Shaffer 1978; Shaffer 1980; Joshi et al. 1984; Francfort 1985). The distribution patterns of the sites in those areas have not yet been refined but settlement densities assignable to various phases of the Indus Civilization and PGW can be identified. On the present evidence, there is a concentration of sites of the Early Harappan period (Kot Diji and Sothi-related materials) in the area drained by the Chautang River due east of Bahawalpur. The settlements were dispersed over a large area during the Mature Harappan period coinciding with relative increase in the site size. The Late Harappan period is marked by new locations, an eastward extension and density of settlements in certain areas.

It is evident that changing hydrographic pattern of the Sutlej–Yamuna Divide and Cholistan had profound effects on the protohistoric settlement patterns, density of population and consequent cultural changes, as the available evidence from Cholistan demonstrates. It has also helped to date various channels of the Ghaggar–Hakra River as it changed its course through time.

TABLE 1 — Occurrence of various protohistoric sites of different periods by numbers (above) and percentage (below)

	Hakra Wares	Early Harappan	Mature Harappan	Late Harappan	P.G. Wares
TOTAL SITES	99	40	174	50	14
All	0	0	79	9	0
industrial	0	0	45.40%	18.00%	0
Settlements with kilns	2 2.02%	14 35.00%	33 18.96%	14 28.00%	0 0
Settlement sites only	45 45.45%	23 57.50%	50 28.74%	14 28.00%	14 100.00%
Camp sites	52 52.52%	3 7.50%	10 5.75%	13 26.00%	0 0
Cemetery sites	0 0	0 0	2 1.15%	0 0	0 0

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