

Jhukar and the Late Harappan Cultural Mosaic of the Greater Indus Valley

M. Rafique Mughal

In the Lower Indus Valley of Pakistan, comprising the Province of Sindh, the Late Harappan Period is archaeologically known as the "Jhukar Culture" after the name of the site where N.G. Majumdar dug in 1928 (1931:1934:5-18) and found pottery reminiscent of Mature Harappan ceramic forms but having distinctive painted designs. Ten years before, R.D. Banerji of the Archaeological Survey of British India had excavated at the highest mound 'B' of Jhukar and identified it with the remains of a Buddhist stupa. He did not reach the early settlement, which actually lies more than 40 feet below the present surface of the mound, and below the remains of the early historical period.

The Site

The ancient site of Jhukar is situated six miles due west of Larkana or 17 miles northwest of Mohenjo-daro. It covers a total area of 1300 x 850 feet (10 hectares) consisting of two mounds, designated 'A' and 'B', and the approximately 300 foot wide area between the two mounds. The large mound 'B' is roughly circular, 750 x 700 feet (4.7 ha), and rises 60 feet above the surrounding plain (Figure 1). The small one 'A', is only 17 feet high, stretches along the northern side of mound 'B' in East-West direction, and measures 850 feet long and 300 feet wide (2.2 ha).

The excavations at Jhukar were started in the summer of 1973 with a view to investigating the so-called Jhukar

culture. During this first brief season, excavations were carried out under the general direction of Ahmad Nabi Khan, then Superintendent of Explorations, assisted in the field by Masoodul Hasan Khokhar and Gulzar Mohammad Khan, then Field Officers in the Exploration Branch of the Department of Archaeology, Government of Pakistan. The second and final season lasted for four months, from November 1973 to February 1974, under the direction of the present author assisted in the field by Gulzar Mohammad Khan.

Stratigraphic Evidence

To obtain stratigraphically documented evidence from both mounds 'A' and 'B', trenches were laid respectively measuring 140 x 20 feet and 180 x 20 feet. The area under excavation at each mound was enlarged as excavations progressed. Natural sediment could not be reached due to the high level of subsurface water. Both the mounds had been re-occupied during early historical times and abandoned by about the seventh century A.D. The later occupations at the highest mound 'B' had been more intense than on 'A', which accounts for the greater present height of the former. As the present discussion focuses on the Late Harappan Period, the evidence of the later period is not discussed in this paper.

On the basis of statistical analysis of the ceramics found in the main trench (C/IV) on the smaller mound 'A'



Figure 25.1. The high mound 'B' of Jhukar from the east at the beginning of excavations in 1973.

(Figure 2), the following overlapping phases are proposed for the one continuous protohistoric occupation at Jhukar occurring below the remains of the early historical period:

	Early Historical Phase:
	Uppermost occupation: layer 1 (top) - 10
	Break in occupation
Late Jhukar Phase:	Four layers 11, 12, 13 and 14
Middle Jhukar Phase:	Layers 15, 15A, 16 and 17
Early Jhukar Phase:	Layers 18, 19 and 20 and about three feet below the water level. (Total thickness of protohistoric deposits is not known).

Jhukar Pottery

According to an initial study of pottery from one trench, the whole collection from the protohistoric levels contained at least fifty types and sub-types. The number and percentage of each type were tabulated at the site in April 1974. It was observed that Mature Harappan ceramics were present in *all* three phases of Jhukar. These Mature Harappan pottery types compare very well with those known from the nearby site of Mohenjo-daro and, therefore, are not repeated here.

Of the Mature Harappan pottery types, 50% were found to be present in the Early, Middle and Late Jhukar Phases. Some 12% were found to occur in the Early and Middle Jhukar Phases, 3% in the Middle Jhukar Phase only, 24% in the Middle and Late Jhukar Phases, and 8% in the Late Jhukar Phase only. The well known and often over-

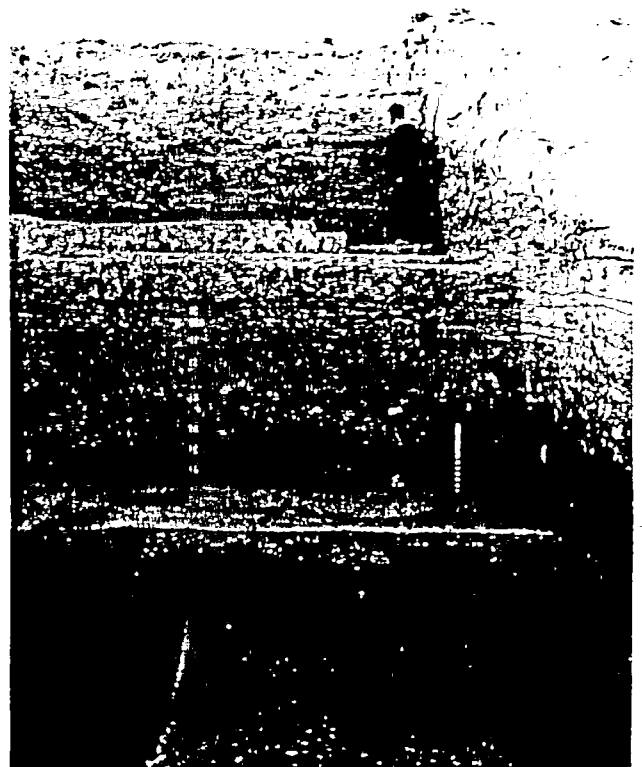


Figure 25.2. The deep trench at mound 'A' which revealed a ceramic sequence of the Mature and Late Harappan Periods. The human figure is pointing at layer (4) which marked the end of the Jhukar occupation (scale in feet).

emphasized ceramic types labelled as "Jhukar Culture" pottery and comparable with those from Chanhudaro (Mackay 1943: PL.XLII-XLVII), the upper levels of Amri (IIC and IID; Casal 1964:Figure432-441, 446, 459, 475, 497-537), the upper levels of Mohenjodaro (author's observations and Dales and Kenoyer 1986: Pl. 18E, 19F, Figure131:86), and Lohumjodaro (Majumdar 1934:48-52) were represented by only 8% of the total number of pottery types and those too in the Late Jhukar Phase. A detailed study of the ceramics would further refine the sequence proposed here and would enable sharp differentiation of each pottery type of the Late Jhukar Phase. It is clear, however, that the so-called "Jhukar Culture" refers to certain pottery designs and shapes which are different from those of the characteristic Mature Harappan ceramics but are found with them in the later period. Because of this evidence, the present author emphatically stated in 1974 (at the International Symposium on the Indus Civilization held at Karachi) that "Jhukar" consists of only a few pottery types occurring in association with the Mature Harappan ceramics in the later levels. Commenting on the statement, Prof. G.F.Dales observed (1982:102):

Dr. Mughal firmly stated his impression that Jhukar is nothing more than a pottery style that occurs archaeologically with Mature and Late Harappan and not after it and that it has much in common with the Harappan ceramics. This may be overstated but even so it is based on direct observation of the excavation at Jhukar and first hand study of all ceramics.

In fact, this is no overstatement but a conclusion based on statistical data as presented here.

The Jhukar style of pottery is distinguished by the painted designs in black on red slip with additional use of red or brown color and white paint or slip. The most common designs are groups of connected semi-circular lines or loops, rows of elongated lozenges resembling fish designs, circles with red dots, leaf designs with thick lines, loops on the rims of dishes, squares, cross and multiple zigzag lines. The most comparable pottery is from Chanhudaro II (or Jhukar levels), Amri III D, upper levels of Mohenjodaro (identified by the author in the Reserve Collections at Mohenjodaro and excavated in 1964 by G.F. Dales as quoted above). The early waterlogged levels of Jhukar also contained "reserve" slipped and buff bodied "Quetta Wet" wares, comparable to those of the "early levels" of Mohenjodaro (Mughal 1970:241; 1973:11) and from Chanhudaro (Mackay 1943:PL.XXXVIII, 26-29). It would appear that both Jhukar and Chanhudaro were contemporary with the early settlement history at Mohenjodaro. The available evidence would further suggest that the three sites remained contemporary with each other until the last occupations associated with the Jhukar style of pottery or what is generally regarded as the Late Harappan Period in Sindh. At least two more settlements, Amri and

Lohumjodaro also had 'Jhukar' occupations. The present evidence would indicate that the main area of the Late Harappan Jhukar related assemblages was between Jhukar and Amri, and from the Kirthar piedmont to Chanhudaro across the Indus River. Beyond the main concentration of 'Jhukar' ceramics, ties with materials of Kulli/Mehi in southern Baluchistan and, in turn, with Sibri and the South Cemetery at Mehrgarh, are well documented; all of these fall within the Late Harappan horizon as discussed below.

Late Harappan in Sindh

The evidence from Jhukar clearly shows that the appearance of some new pottery forms and a new decorative style is indicative of change in Harappan material culture rather than a break or cultural discontinuity. At Jhukar, the new evidence comes from one trench only, but when it is seen together with that from Chanhudaro and Amri, the changes in ceramics coincide with a quantitative decrease or virtual absence of associated Harappan artifacts (Mughal 1974, 1980:96-7; Possehl 1980:16). For example, instead of the generally square seals of the Mature Harappan Period, circular stamp seals with different motifs emerged resembling the shape of 'Persian Gulf' seals that cannot be dated much earlier than about 2000 B.C. The use of Indus script decreased in the Late Harappan Period, and the limited number of examples so far reported are mostly incised on pottery. The stone cubical weights became rare in occurrence or use, and so were the stylized female figurines of terracotta. However, the production of faience bangles and beads and of stone beads increased. The upper levels of Mohenjodaro and Chanhudaro show a significant qualitative decline in architecture.

The assemblages that follow the Late Harappan Jhukar horizon in Sindh are called Jhangar; these were first reported by Majumdar (1934:68-70) at the site of Kotri and, later, at Chanhudaro (Mackay 1943:132-137; PL.XXXIX, 3-15; and PL.XI.5-11) and at Amri (Casal 1964:63). Jhangar is marked by a distinctive black and gray burnished pottery, either with a plain surface or decorated with incised geometric and linear designs, associated with a few red wares having a rare painted decoration of chocolate on buff or light-red slip. Two chert flakes, a copper chisel, and an awl are reported from Jhangar (Majumdar 1934:69), but their association with the gray pottery seems doubtful. In the Jhangar assemblage, there is nothing comparable to the Jhukar materials. It may be pointed out that a kind of gray incised ware, although different in fabric from that of Jhangar, occurs in association with iron at Pirak IIIB in northwestern Sindh, dated between 915-790 and 890-770 B.C. (calibrated).

It is evident that the integrative Harappan social organization and strong administrative structure had weakened and was disintegrating by the end of third millennium B.C., necessitating readjustments by the people and adoption of

new strategies for survival. The reasons for change in the Lower Indus Valley are ascribed, with varying degree of emphasis, to possible invasions, devastating floods, over-utilization of economic resources, disruption of commercial links with the resource or production centers, or to a combination of several factors. These are discussed by several scholars in the available literature and, therefore, are not repeated here. Whatever may be the reasons for changes in the material culture towards the end of Mature Harappan Period, the beginning of these changes cannot be dated precisely at present. A general time-range for Jhukar is indicated by the two calibrated radiocarbon dates falling between 2165 and 1860 B.C. that are assigned to the Late Harappan levels of Mohenjo-daro. A terminal date for Jhukar is also not yet known, although it seems likely that the Jhukar occupation lasted beyond the latest available radiocarbon date from Mohenjo-daro. An approximate time of 1700 B.C. for the end of Jhukar occupation in the Lower Indus Valley may at present be proposed in the absence of absolute dates. The occupation associated with the gray incised and burnished Jhangar pottery, as reported from Lohumjo-daro, Chanhu-daro and Amri, seems to have nothing in common with the Jhukar pottery. It may be placed largely in the first millennium B.C. If so, then a chronological gap of at least seven hundred years between 1700 and 1000 B.C. remains to be explained.

The Jhukar pottery style was not localized in western Sindh only. Identical painted designs are reported from Lothal A (upper levels) and B (Rao 1985:Figure 75, A 34 and 36; 77, A 66; Figure 82, 248; Figure 88, B 7, B 19; Figure 89, B 30, B 33, B 41; Figure 91, B 82; B 83; Figure 94, B 142) and Rangpur IIA and IIB levels (Rao 1963:Figure 26, A 4, A 24; Figure 32, B 6) in Gujarat, western India. Equally important is the occurrence in Sindh of at least one pottery type which is generally thought to occur in the Harappan sites of Gujarat. It is a specimen of a bowl with stud handle found at Lohumjo-daro (Flam 1981:233, Figure 12; this paper Figure 3A). This type is also found associated with Lothal A (upper levels) and B (Rao 1985: Figure 66, 178; Figure 69, 188 and this paper Figure 3C; Figure 75, A 5, Figure 86, 280), and Rangpur IIA and IIB Periods (Rao 1963:Figure 17, 32-34; Figure 23, 92 and this paper Figure 3B; and Figure 29, 39). This evidence further confirms the presence of the Jhukar pottery style in Gujarat, emphasizing close and long interrelationships between the Late Harappan populations of Sindh and Gujarat.

Late Harappan in Gujarat

It seems that by the beginning of second millennium B.C., changes in the Harappan material culture were also taking place in the adjacent regions of Kutch and Saurashtra (Gujarat), although not necessarily for the same reasons as postulated for Sindh. In Kutch, Surkotada Period IB, which

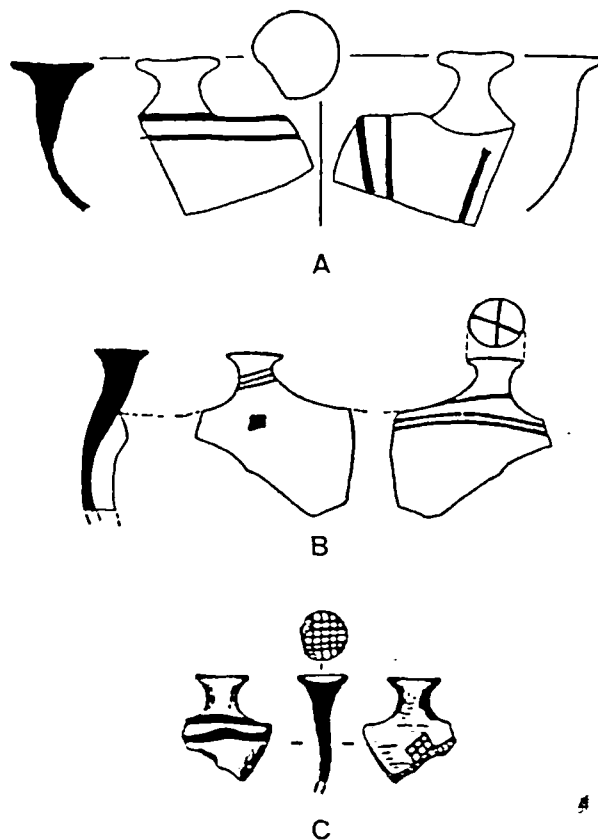


Figure 25.3. Fragments of stud-handled bowls. A) Lohumjo-daro; B) Rangpur IIA; and C) Lothal A (upper levels).

followed the Mature Harappan, shows a quantitative decrease of characteristic Harappan materials, with 70% of coarse red wares found along with white and black painted polychrome pottery (Joshi 1972:129). The last occupation of Period IC was dominated by white painted black and red wares, massive constructions and the lingering presence of Harappan pointed-base goblets. Four dates from the last occupation IC range between 2195-1885 and 2190-1880 B.C. (calibrated), making them almost contemporary with the last (Jhukar) occupation at Mohenjo-daro. Similar, if not simultaneous, changes in the Harappan material culture are evident in Lothal B (Phase V A), which is marked by an increase of coarse red and other non-Harappan wares, and in Rangpur IIB-C, at which site they are superseded by the profusion of Lustrous Red and painted Black-and-Red wares of Rangpur Period III. Kuldeep Bhan (1989) distinguishes two phases of the Late Harappan in Gujarat. An "Initial Phase," represented by Rangpur IIB and C, Lothal B (VA) and related materials at other sites, and the "Final Phase" marked by the materials comparable to Rangpur III. On the basis of present evidence, the Jhangar of Sindh may be placed after the end of Rangpur III and Surkotada IC, because there is nothing in common between the Jhangar and Surkotada IC ceramics.

The reasons for cultural changes in Gujarat from the Mature to Late Harappan were certainly different from those in the Lower Indus Valley. There is also no significant change in the subsistence strategies in Gujarat during the Late Harappan Period. Millets and rice, which are summer crops, were cultivated with the winter crops of wheat and barley during the preceding Mature Harappan. The lowering of sea level due to tectonics could have had adverse effects on the coastal settlements, but their economic and social implications remain to be fully explained. It is certain, however, that the number of sites during the "Initial Phase" of Late Harappan increased significantly to 152, as compared to 20 Mature Harappan settlements. In the "Final Phase," round huts representing "seasonal pastoral camps" appear with those of permanent settlement, totalling 79 (Bhan 1989:227). The Late Harappan sites in Gujarat so far known number 231.

Late Harappan in the Punjab

The cultural changes in the Upper Indus Valley at the end of Mature Harappan were not necessarily simultaneous with those of the Lower Indus Valley. The Cemetery H materials from the graves and settlement Mounds AB and E at Harappa, overlying the Mature Harappan occupation levels, are yet to be dated precisely. Two calibrated radiocarbon dates of the Mature Period provide an end bracket of 2155 and 2020 B.C., a time-range approximating that of the upper levels of Mohenjo-daro. It seems that the end of third millennium B.C. (circa 2100/2000 B.C.), was the time of likely beginning of cultural changes in the Mature Harappan, at least in the Core Area of the Indus Civilization. Therefore, the appearance of Late Harappan Cemetery H materials at Harappa should most probably date to the beginning of the second millennium B.C. In India, the Cemetery H related levels at Sanghol have given four calibrated dates ranging between 2175-1715 and 1785-1560 B.C.

Statistical analyses of ceramics and artifacts are not available from any site to determine the degree of material or cultural change from the Mature to Late Harappan in the Upper Indus Valley. It is certain however that hydrographic changes in Cholistan, a region demonstrating dramatic shifts in the Ghaggar-Hakra River courses, were a major reason for settlement re-location in the same area where Mature Harappan sites existed. Fifty sites in Cholistan revealed materials comparable to those of Cemetery H at Harappa and of Chak Purbane Syal, among which Kudwala covered an area of 38.1 hectares (Mughal 1990a and 1990b). In the Punjab also, there is a continuity of the Mature Harappan pottery forms—such as offering stands, jars and vases of various shapes—in the Cemetery H materials, in spite of distinctive new shapes, different surface treatment and painted designs of the Late Harappan Period.

In east Punjab (including Haryana), 429 sites of the "Late" Harappan Period are reported (Joshi *et al.* 1984),

and with the inclusion of 130 additional "late" sites in Uttar Pradesh and four other near Delhi and Himachal Pradesh, the total comes to 563. It is not certain, however, how many sites in this impressive list precisely compare with Cemetery H settlements. A fairly large number of "late" Harappan sites in India appear to contain non-Harappan materials of later date, mixed with a few Harappan or seemingly Harappan pottery forms of coarse fabric, lingering on until the beginning of first millennium B.C. A clear distinction between the Late Harappan Cemetery H materials and the later materials of the first millennium has yet to be made. It seems that in the (undivided) Punjab, there were also two phases of the Late Harappan, similar to the "Initial" and "Final" phases of Gujarat. Although the Punjab Late Harappan (Cemetery H) shows continuity from the Mature Harappan, as do the Sindh and Gujarat Late Harappan, there is no evidence at present to show that the Cemetery H materials were linked in any way with the Late Harappan materials of Sindh or Gujarat.

Late Harappan in Baluchistan

Although falling outside the Greater Indus Valley proper, Baluchistan always fell within the sphere of Harappan cultural interaction. Therefore, it seems relevant to our present discussion to point out the Late Harappan horizon in Baluchistan and its significance for changes in the material culture of the Indus Civilization during the second millennium B.C.

The climax or maturity of the Indus Civilization coincided with Harappan access to the sea coast, where a series of settlements were founded, constituting an integral part of the Core Area of the Mature Harappan Period (Figure 4). Likewise, the contemporary outpost at Shortugai in northern Afghanistan was established sometime during the second half of the third millennium B.C. In this context, it is therefore no surprise to find Mature Harappan occupations or materials along the ancient lines of communication passing through or along its eastern borders. The Mature Harappan sites in the Gomal Valley (Hisam Dheri, Mahra Sharif and Budki Dheri), in the Zhob Valley (Periano Ghundai), in the Loralai Valley (Dabar Kot, Kaonri and Sinjawi Ghundai), and at Quetta Miri in Quetta (Dani 1970-71 and Mughal 1972) fit into this pattern. These wide ranging contacts were already established and maintained at an early date, a fact supported by evidence from the early third millennium B.C. and even earlier. These contacts continued and were intensified by the end of the third and beginning of the second millennium B.C., and were further enlarged to include southern Bactria, Margiana and Sistan to the northwest, and Shahdad and Bampur to the west. The best evidence of extensive inter-relationships comes from the South Cemetery at Mehrgarh and Sibri in the Kachi plain of northwestern Sindh (Santoni 1984), both sites

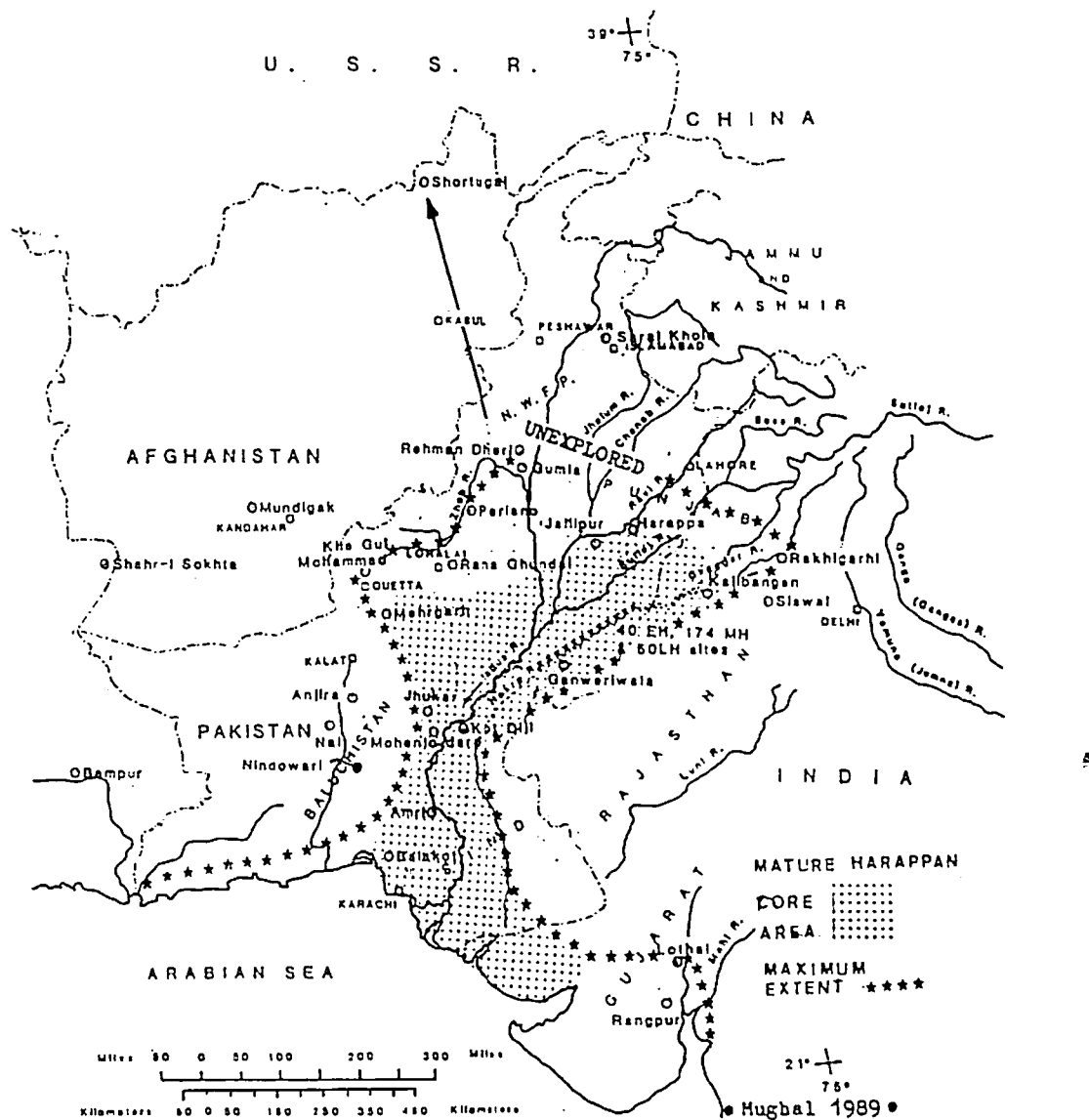


Figure 25.4. Map showing the core area of the Indus Civilization and its maximum extent during the Mature Harappan Period (after Mughal 1990b).

contemporary with the Late Harappan (Jhukar) Period of the Lower Indus Valley (Mughal 1989:55).

The southern Baluchistan valleys of Kej and Rakhshan came into very close contact with the southern Indus Valley. A number of Mature Harappan ceramic forms, painted designs and other materials are found with those of Kulli/Mehi materials (Stein 1933:118-127; Possehl 1986) in Baluchistan, which are also grouped as "Kulli Complex A." The parallels of Kulli pottery extend westwards at least to the Bampur Basin in southern Iran and across the Gulf to Umm an-Nar and Hili in contexts assigned to the end of the third millennium B.C., a time-range also supported by the radiocarbon dates from the Kulli levels at Niai Buthi II and Nindowari. The "Kulli Complex A" sites were not only

partially contemporary with the Mature Harappan Period, but also appear to have lasted long enough to be contemporaneous with the Late Harappan (Jhukar) in Sindh. The Kulli bowls with multiple loops or lines on the rim, plain wares, the horn motif of rows of animals, and the horizontally spread leaf design, in particular, occur in the Jhukar ceramic assemblages that begin to appear in the upper levels of Amri III C and continue in III D (Casal 1964:Figure 86, 416; Figure 90, 455-6; Figure 45, 514-16, 518). Kulli pottery is also reported at Lohumjo-daro. Ghazi Shah, Pandi Wahi and Shahjo-Kotiro (Majumdar 1934; respectively Pl.XXII, 28; PL.XXVI, 32; PL.XXVIII 43; and PL.XXXII, 39), indicating close contacts between southern Baluchistan and western Sindh. The pedestalled bowls, jars,

beakers and perforated ware which frequently occur at the Kulli sites, have also been found at the (Late Harappan) South Cemetery at Mehrgarh and at Sibri. The latter sites have yielded channel spouted cups which have parallels in shape with one recorded at Dabar Kot (Mughal 1972: Figure 38: 13) and with other sites in Bactria and south Turkmenia. In brief, the Kulli assemblages of southern Baluchistan containing "Harappan" materials do fall within the Late Harappan horizon of the Lower Indus Valley as represented at Jhukar and Mehrgarh Period VIII.

Conclusions

It seems clear that, about the beginning of the second millennium B.C., Harappan cultural unity and integration,

which marked its highest point of development, was weakened and eventually fragmented into three large geographical areas (Figure 5). The timing of cultural disintegration and the emergence of at least three regional cultures may have been different in each area, as perhaps were the causes of change (Dyson 1982). Continuity of Harappan traits is attested by their presence at the Late Harappan sites of Cemetery H in the Punjab, Jhukar related sites in Sindh and parts of southern Baluchistan, and at Rangpur II B and C related sites in Gujarat. At that time, Sindh had close contacts with Gujarat on the one hand, and with the Kulli dominated region of southern Baluchistan on the other. However, no contacts are as yet known to exist between the Cemetery H settlements of the Punjab and the Lower Indus Valley, Gujarat and Baluchistan. It seems that

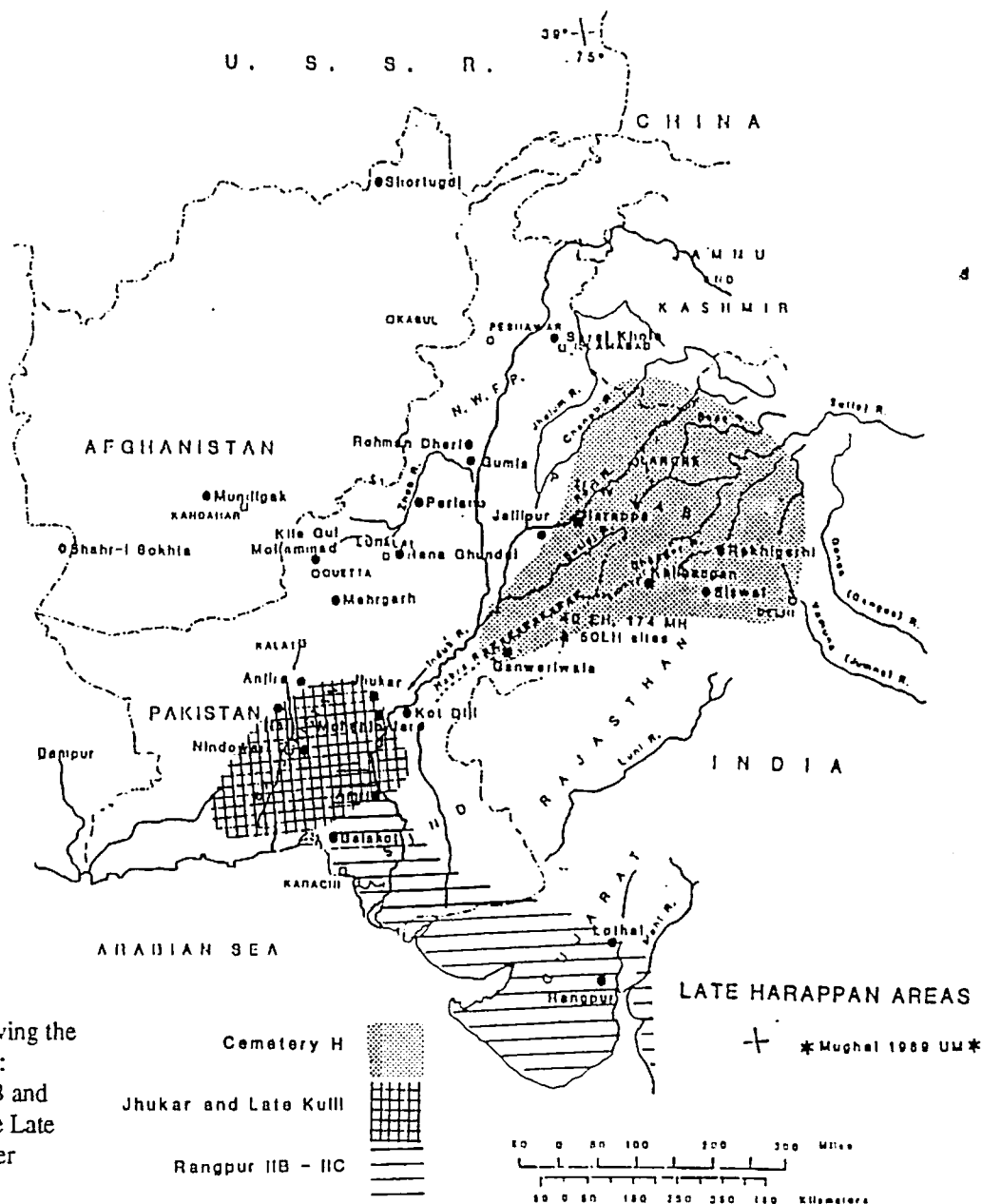


Figure 25.5. Map showing the three principal regions: Jhukar, Rangpur IIA-B and Cemetery H during the Late Harappan Period (after Mughal 1990b).

sometime during the second half of the second millennium B.C., the Harappan cultural configurations were obliterated in the Greater Indus Valley. The Post-Harappan "Kulli Complex B" (or Londo) in Baluchistan, the Black and Red wares of Gujarat, and the Ochre-Colored and Painted Gray wares in undivided Punjab have little in common with the Harappan culture. By that time, the Harappan cultural mosaic was completely gone and forgotten.

Acknowledgements

This paper comes from research undertaken by the author during 1988-89 at the University Museum of the

University of Pennsylvania, Philadelphia, as a Fulbright scholar. The author wishes to thank, in particular, Professors Robert H. Dyson Jr., and Gregory L. Possehl for many fruitful discussions and for their generous help and facilities for work; Madame Catherine Jarrige and Dr. Jean-François Jarrige for their hospitality in Paris during the Conference; Khawja Shahid Hosain, Secretary to the Government of Pakistan, Ministry of Culture and Tourism and Dr. Ahmad Nabi Khan, Director General of Archaeology in Pakistan, for permission to attend the Conference.

References Cited

- Bhan, K.K.
1989 Late Harappan Settlements of Western India, with Specific Reference to Gujarat. In *Old Problems and New Perspectives in the Archaeology of South Asia*, edited by J. Mark Kenoyer, pp. 219-242. Wisconsin Archaeological Reports 2. University of Wisconsin, Madison.
- Casal, J.M.
1964 *Fouilles d'Amri*. 2 vols. Librairie C. Klincksieck, Paris.
- Dales, G.F.
1982 Mohenjo-daro Miscellany: Some Unpublished, Forgotten, or Misinterpreted Features. In *Harappan Civilization: A Contemporary Perspective*, edited by G.L. Possehl, pp. 97-106. Oxford and IBH Publishing Co., New Delhi.
- Dales, G.F., and J.M. Kenoyer
1986 *Excavations at Mohenjodaro, Pakistan: The Pottery*. The University, Museum, University of Pennsylvania, Philadelphia.
- Dani, A.H.
1970-71 Excavations in the Gomal Valley. *Ancient Pakistan 5* (Special Number):1-177.
- Dyson, R.H.
1982 Paradigm Changes in the Study of Indus Civilization. In *Harappan Civilization: A Contemporary Perspective*, edited by G.L. Possehl, pp. 417-428. Oxford & IBH Publishing Co., New Delhi.
- Flam, L.
1981 *The Paleogeography and Prehistoric Settlement Patterns in Sind, Pakistan (Ca. 4000-2000 B.C.)*. Ph.D. Dissertation, University of Pennsylvania. University Microfilms 82-07, 956, Ann Arbor.
- Joshi, J.P.
1972 Exploration in Kutch and Excavation at Surkotada and New Light on Harappan Migration. *Journal of the Oriental Institute 22*(1-2):98-144.
- Joshi, J.P., M. Bala, and J. Ram
1984 The Indus Civilization: A Reconsideration on the Basis of Distribution Maps. In *Frontiers of the Indus Civilization*, edited by B.B. Lal and S.P. Gupta, pp. 511-530. Books and Books, Delhi.
- Mackay, E.J.H.
1943 *Chanhudaro Excavations, 1935-36*. American Oriental Series 20. American Oriental Society, New Haven.
- Majumdar, N.G.
1931 Excavations at Jhukar. *Annual Report of the Archaeological Survey of India 1927-28*, pp. 76-83. Government of India, Calcutta.
1934 Explorations in Sind. *Memoirs of the Archaeological Survey of India 48*. Manager of Publications, Delhi.
- Mughal, M.R.
1970 The Early Harappan Period in the Greater Indus Valley and Northern Baluchistan. (Circa 3000-2400 B.C.). Ph.D. Dissertation, Department of Anthropology, University of Pennsylvania, Philadelphia.

- 1972 Exploration in Northern Baluchistan. *Pakistan Archaeology* 8:137-150.
- 1973 *Present State of Research on the Indus Valley Civilization*. Department of Archaeology and Museums, Karachi.
- 1974 *A Summary Report on the Excavations at Jhukar near Larkana, 1973 and 1974*. Department of Archaeology, Karachi (MSS dated 17 April 1974).
- 1980 New Archaeological Evidence from Bahawalpur. *Man and Environment* IV: 93-98.
- 1989 The Development of Protohistoric Research in Pakistan: 1970-85. *Journal of Central Asia* XII(I): 47-77.
- 1990a The Protohistoric Settlement Patterns in the Cholistan Desert. In *South Asian Archaeology 1987*, edited by M. Taddei, pp. 143-156. IsMEO, Rome.
- 1990b The Harappan Settlement Systems and Patterns in the Greater Indus Valley (Circa 3500-1500 B.C.). *Pakistan Archaeology* 25:1-72.
- Possehl, G.L.
1980 *Indus Civilization in Saurashtra*. B.R. Publishing Corporation, Delhi.
1986 *Kulli: An Exploration of Ancient Civilization in Asia*. Carolina Academic Press, Durham, North Carolina.
- Rao, S.R.
1963 Excavations at Rangpur and other Explorations. *Ancient India* 18-19:5-207.
1985 *Lothal: A Harappan Port Town, 1955-62*. Memoirs of the Archaeological Survey of India 78, vol. 2. A.S.I., New Delhi.
- Santoni, M.
1984 Sibri and the South Cemetery of Mehrgarh: Third Millennium Connections Between the Northern Kachi Plain (Pakistan) and Central Asia. In *South Asian Archaeology 1981*, edited by B. Allchin, pp. 52-60. Cambridge University Press, Cambridge.
- Stein, Sir A.
1933 An Archaeological Tour in Gedrosia. *Memoirs of the Archaeological Survey of India* 43. Government of India, Central Publication Branch, Calcutta.