THE DECLINE OF THE INDUS CIVILIZATION AND THE LATE HARAPPAN PERIOD IN THE INDUS VALLEY

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Sometime towards the end of the third millennium B.C., the cultural integration of the Greater Indus Valley and the sea coast which characterized the Mature Harappan times (Fig.1), was apparently weakened. A change in the material culture, settlement location, population concentration and subsistence practices had taken place but several features of the Harappan cultural tradition continued to persist in three principal areas or regions (Mughal 1980; 1982 and 1989), each marked by its own distinctive traits and labelled differently by various scholars (Fig.2), but all agreeing to the basic fact that the new materials represent the later stage of the Harappan Civilization called, Late Harappan. The material evidence from each region is reviewed here to highlight the nature and degree of cultural changes.

THE LATE HARAPPAN CULTURAL MOSAIC

The Punjab and Beyond

In the upper Indus Valley, the Late Harappan Period is recognized by a group of pottery found with the burials of Cemetery called 'H' at Harappa and on the uppermost occupation levels of Harappan Mound AB, at the site of Chak Purbane Syal, and at 50 sites in Cholistan (Mughal 1980; 1982; 1984; 1990a; 1990b and 1990c). Most of the sites in Cholistan are settlements and those with industrial activities, distinguished by kilns and pottery firing areas. The pottery forms and decorations are mixed with other types of pottery comparable with those found associated with Cemetery H at Harappa. The sites are mostly located to the north and northeast of Derawar Fort, an area which was essentially fed by a channel from the Sutlej River since the Mature Harappan times (Fig.3). Such a high concentration of Late Harappan, Cemetery H related sites has not yet been found elsewhere though their continuation towards north is very likely to be discovered in future at least up to Swat where Stacul (1984) discovered red wares painted with designs of Cemetery H origin. Among the sites, 14 or 28% of the total number are settlements and an equal number represent settlements with kilns. Nine sites are purely industrial in function where no habitation has been found. The evidence of camp sites marking temporary occupations along side the permanent settlements during the Late Harappan Period is significant. The camp sites sharply increase to 20% in the Late Harappan Period from 5.75% in the preceding Mature Harappan times (Mughal 1990a and 1990c).

Like several ceramic and other materials, there is a continuity in the functional articulation of the sites and settlement hierarchy. Four functional categories of the sites that were present during the Mature Harappan, persist in the Late Harappan Period (Fig.4). In size, the four-tiered settlement hierarchy which is evident in the Mature Harappan, was maintained in the Late Harappan Period as well. The site data as summarized bythe present writer (Mughal 1990b, Table 3; and 1990c), demonstrates that among 26 Late Harappan settlements (out of 50 of all kinds), 12 settlements are up to 5 ha. in size, constituting 46.15% of the total number, and covering 28.73 ha. area. Seven sites, or 26.92% are between 5 and 10 ha. in size while six sites (23.07%) are 10 to 20 ha. in size çovering 98.3 ha. area as against 51.1 ha. area covered by all the 7 sites of 5 to 10 ha. size. One site, Kudwala measures 38.1 ha.* which is very close to the definition of a city (Mughal 1990c). It covers larger area than the total area occupied by all the 12 sites up to 5 ha. in size. The evidence shows that there was no basic change in the four-tiered hierarchy of the sites during the Late Harappan Period despite changes in their location and reduction in number. The upper Indus Valley was not abandoned; instead this region was densely populated during the period immediately following the Mature Harappan. The ceramics do indicate changes in certain forms and painted styles but the Harappan cultural tradition persisted for some time and then gradually dwindled to a vague or faint expression in just few pottery forms until the end of second millennium B.C. by which time, the Harappan tradition was lost and forgotten.

In eastern Punjab, northern Rajasthan, Haryana and the western Uttar Pradesh (India), a number of archaeologists (Suraj Bhan 1975; Shaffer 1986; Dikshit 1982, 1984; Joshi 1978; Francfort 1985) have brought to light more than one thousand sites (Joshi et el. 1984). In India, a total of 563 sites have been assigned to the Late Harappan Period, though it is not clear if all the sites represent assemblages precisely comparable to those of Harappa and Cholistan. Among the reported sites, 297 are in Haryana, 132 in eastern Punjab, 130 in Uttar Pradesh and 4 in Himachal Pradesh and Delhi areas. If we consider all the sites grouped under the Late Harappan, an impressive map of their spatial distribution emerges covering the Indo-Gangetic Divide, east Punjab and Haryana and extending up to the Ganges River in which some areas of high settlement densities are very evident (Fig.5).

Sindh

The second major region of the Late Harappan was the Lower Indus Valley around Mohenjo-daro approximately from Jhukar to south of Amri and between the old bed of Hakra-Wahind-Nara River in eastern Sindh to the foot of the Kirthar

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* The size given elsewhere (Mughal 1990a and 1990b) stands corrected.

mountains. After its first discovery and recognition as a ceramic style often equated with a separate 'culture,' at the type-site of Jhukar and at Lohumjo-daro (Majumdar 1931; 1934), its elaboration came from the excavation of the upper levels of Chanhu-daro (Mackay 1943) and Amri IIID (Casal 1964). While re-studying the reserve collections at Mohenjo-daro in 1973 after the new excavation at Jhukar, a number of potsherds decorated in Jhukar bichrome style and vessel forms were noticed which the record indicated were from the upper levels of Mohenjo-daro. George F. Dales (1982) has also reported Jhukar pottery from the upper levels of Mohenjo-daro grouped under Phase B (Dales and Kenoyer 1986,Fig. 13, 1 and PI. 18F; Fig. 63,1; Fig. 86,1-7).

For understanding the true character of the Jhukar style of pottery at the type-site and its relation with the preceding Mature Harappan which had not been clarified at other sites, a good stratigraphical sample of materials was obtained through excavations at Jhukar carried out for two seasons in 1973 and 1974 (Mughal 1989). At the smaller of the two mounds, the main trench (CIV) yielded Harappan Period occupation from layer 11 (above) to 20 until further digging was not possible due to high water table. On the basis of frequencies of ceramics, structures and floor levels, the sequence was divided for convenience into three phases: Late Jhukar Phase from layer 11 to 14; Middle Jhukar Phase from 15 to 17 and an Early Jhukar Phase consisting of 18 to 20. According to a preliminary study done in April 1974 by the writer at the site, there were fifty ceramic types and sub-types. The most significant evidence was that the Harappan ceramics were present in all the layers. Fifty percent of the total occurred in all the three phases; 12% in the Early and Middle Jhukar Phases, while 3% were present in the Middle Jhukar Phase. Twelve types (or 24%) appeared in the Middle Phase and continued in the Late Jhukar Phase among which at least four pottery types were new, appearing in the last level (layer 15) of the Middle Phase. The Late Jhukar Phase contained four new types which in form and surface decorations are generally known as the Jhukar pottery. In all, there were less than ten new pottery types but all were associated with 80% or more Mature Harappan pottery. The stratigraphical evidence is sufficient to affirm that 'Jhukar' is only a pottery style emerging in association with the continuing Mature Harappan ceramic tradition without any break or sudden change in cultural continuity.

In the literature, the new pottery style has been over emphasized to the exclusion of associated evidence and thus creating an erroneous impression as if the appearance of Jhukar marked a basic change or break in the Harappan culture. However, a change did take place as reflected in the virtual disuse of squarish stamp seals and appearance of circular ones with boss at the back like the shape of 'Persian Gulf' seals but bearing different designs. The use of cubical weights became rare and

so were the stylized female figurines. There was an increase in the production of trade items such as beads and faience. The Indus script persisted but on pottery only (Mughal 1980).

Southern Balochistan

Though falling outside the Greater Indus Valley proper, yet Balochistan had always been within the sphere of Harappan cultural interaction since at least the fourth millennium B.C. It is therefore, no surprise to find Mature Harappan occupations or materials along the ancient lines of communications passing through Balochistan or along its eastern borders. The Mature Harappan occupations in the Gomal, Zhob, Loralai and Quetta Valleys (Dani 1970-71 and Mughal 1972) fit into this pattern. These wide ranging contacts were already established and maintained at an early date which are supported by the evidence of early third millennium B.C. and even of the earlier period. These contacts continued and were intensified by the end of third and beginning of second millennium B.C., and further enlarged to include southern Bactria, Margiana and Siestan to the northwest, and Shahdad and Bampur on the west. The best evidence of extensive interrelationships comes from the South Cemetery at Mehrgarh and Sibri in the Kachi Plain of northwestern Sindh (Santoni 1984) which was contemporary with the Late Harappan (Jhukar) Period of the lower Indus Valley (Mughal 1989).

The southern Balochistan Valley 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) which are also grouped as 'Kulli Complex A'. The parallels of Kulli pottery extend westwards to Bampur Basin in southern Iran and across the Gulf to Umm-an-Nar and Hili, in those contexts which are assigned to the end of third millennium B.C., a time-range also supported by the Radiocarbon dates from the Kulli levels at Niai Buthi II (Fairservis 1975: 189-194) and Nindowari (Casal 1966). The 'Kulli Complex A' sites were not only partially contemporary with the Mature Harappan but also appear to have lasted longer to be contemporareous with the Late Harappan (Jhukar) in Sindh. The Kulli bowls with multiple loops or lines on the rim, plain wares, horn motif of rows of animals, and horizontally spread leaf design in particular, occur in the Jhukar assemblages which begin to appear in the upper levels of Amri III C and continue into III D (Casal 1964: Fig.86, 416; Fig.90, 455-6; Fig. 45, 514-16, 518). The Kulli pottery is also reported at Lohumjo-daro, Ghazi Shah, Pandi Wahi and Shahjo-Kotiro (Mjumdar 1934; respectively PI. XXII, 28; PL. XXVI, 32; PL. XXVIII, 43; and PL. XXXII, 39), indicating close contacts between southern Balochistan and western Sindh. The padestalled

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 Sibri. The latter site has yielded channel spouted cups which have parallels in shape with one recorded at Dabar Kot (Mughal 1972: Fig. 38; 13) and with other sites in Bactria and South Turkmenia. In brief, the Kulli assemblages of southern Balochistan containing 'Harappan' materials do fall within the Late Harappan horizon of the lower Indus Valley as represented at Jhukar and Mehrgarh Period VIII.

Kutch and Saurashtra

Kutch and Saurashtra of Gujarat State in western India have been intensively explored and a large number of sites have been documented by a long succession of archaeologists so well known in the literature. The proximity of Kutch to lower Sindh accounts for a greater number of Mature Harappan sites there than in Saurashtra. The best evidence of the Late Harappan comes from three sites — Rangpur and Lothal (Rao 1963:1979 and 1985) and Surkotada in Kutch (Joshi 1972). At Surkotada, Period IB of the occupation sequence is Late Harappan, demonstrating a quantitative decrease of characteristically Mature Harappan materials of Period IA. There is also a marked increase up to 70% of Coarse Red Ware which is found in association with white and black painted polychrome pottery. The last levels of Surkotada IC, are dominated by the white painted Black-and-Red wares with very little presence of the Harppan tradition in ceramics. Comparable evidence of change from the Mature to Late Harappan comes from Lothal B, (Phase VA) and Rangpur IIB and IIC, associated also with the Lustrous Red, painted Black-and-Red and Coarse Red Wares which quantitatively increase during the subsequent Period III at Rangpur. On the basis of recent work, two phases of the Late Harappan are distinguished by Kuldeep Bhan (1989): An 'initial' phase represented by Rangpur II B and C, Lothal B (VA), Surkotada IB and related materials from other sites; and the 'final' phase, marked by Rangpur Period III and Surkotada IC. A significant increase in the number of sites during the 'initial' phase to 152 is evident (Fig.6) as compared to 20 in the Mature Harappan Period. The 'final' Late Harappan phase in Gujarat is mostly represented by round huts, thought to belong to "seasonal pastoral camps" as demonstrated by a sample of 79 sites, thus making a total of 231 Late Harappan sites so far reported in Kutch and Saurashtra.

The distinction between an 'initial' and 'final' phases is a step towards reconstruction of sequential development or changes during the Late Harappan Period, although the relation between the two phases is not yet clear. A similar study and distinction is necessary for regrouping the large number of sites in east Punjab, Haryana and western Uttar Pradesh, where all the sites have been placed within Late

Harappan time-bracket but their chronology and distributional patterns are still very confusing. It is possible that Sindh also witnessed a 'final' phase where Jhangar materials of uncertain date were first reported by Majumdar (1934: 68-70) and later, at Chanhu-daro (Mackay 1943), and Amri (Casal 1964).

The Harappan Period in Gujarat has a long list of labels: Rangpur IIB-C, Degenerate Harappan, Post Harappan, Post Urban Harappan and more recently, Sorath Harappan, Prabhas Harappan and Gujarati Harappan! The classic Mature Harappan in Kutch, located close to the southern Indus Valley, is now beginning to be labelled as "Sindhi Harappan". (If such a regrettable archaeo-political frenzy continues, the list would be even longer!). One of the reasons for various terminologies appears to be the reluctance to accept a type-site for an initial framework such as Lothal or Rangpur. Viewed from the lower Indus Valley in Pakistan, it would appear that Lothal and Rangpur remained in contact with the lower Indus Valley until the Late Harappan (Jhukar) Period. A number of potsherds in Jhukar style came from Lothal A and Rangpur IIA levels. The Jhukar pottery forms and painting style appeared in Lothal A (Rao 1985: Fig. 75, A 34 and A36; Fig. 77, A66; and Fig. 78, A88), and continued well into Lothal B Period (Rao 1985: Fig. 82, 248; Fig. 88, B7 and B19; Fig. 89, B30, B33 and B41; Fig. 91, B82 and B93; and Fig. 94, B142). Similar situation is evident at Rangpur where the Jhukar pottery first appeared in Period IIA (Rao 1963: Fig. 26, A4 and A24) and in Rangpur IIB Period (Rao 1963: Fig. 32, B6). On the other hand, certain Late Harappan pottery forms that were very characteristic of Saurashtra during the Late Harappan Period reached as far as Lohumjo-daro where Louis Flam (1981: 233) recorded a typical stud-handled bowl with Jhukar pottery. This pottery type also first appeared in Lothal A levels (Rao 1985: Fig. 66, 178; Fig.69, 188; Fig. 75, A5), and increased in number during Lothal B (Rao 1985: Fig. 86, 280). The Rangpur Periods IIA and IIB yielded a number of stud-handles (Rao 1963: Fig. 17,32-34; Fig. 23,92; and Fig. 29,39). Moreover, Frank Herman (personal communications) who has extensively studied the ceramics of Rojdi and related sites, pointed out two specimens of burnished grey ware from the uppermost or 'Late Phase B' levels of Mohenjo-daro (Dales and Kenoyer 1986: Fig. 15,3-4) which have precise parallels in both grey and red burnished pottery at Rangpur IIA (Rao 1963: Fig. 25, 115), Lothal and other contemporary sites in Gujarat.

The archaeological evidence is suggestive of linking, if not equating, Jhukar of lower Sindh with Lothal A-B and Rangpur IIA-IIB of Saurashtra during the Late Harappan Period. The contacts were mutual and not one sided emanating from the lower Indus Valley alone. Although both the regions took a different course of cultural development subsequently, an initial interaction was marked by more than casual contacts.

CHRONOLOGY

The time-range covered by the Late Harappan cultural phenomena in the Greater Indus Valley or in each of the three areas of concentration is not yet very clear. With the weight of new data from the undivided Punjab, Sindh and Gujarat, the old paradigm of uniform end of the Harappan Civilization is no longer valid (Dyson 1982: 422; Possehl 1989: 19; Mughal 1989). It is rightly pointed out that the cultural change from the Mature to Late Harappan was not "evenly paced in all regions" of the Indus Valley Civilization, nor its outcome was homogeneous. Following them, Allchin (1990 : 27) repeats these observations. However, it is still not very clear at what point in time the change or 'transformation' from the Mature to Late Harappan took place and therefore, each region has to be studied separately. The situation is further complicated at the sites where archaeological contexts show overlap between the Late Harappan occupation and the settlement of Iron Age or of later period. A series of Radiocarbon dates are needed from the sites of both the Mature and Late Harappan occupations to determine the beginning and end of the Late Harappan in the three principal areas and also the timing of change or transformation in each region.

In the lower Indus Valley, a single C-14 date from the upper or late Jhukar levels of Mohenjo-daro falling between 2165 and 1860 B.C. (calibrated) is insufficient , but it does give an approximate time when changes in the material culture occurred. It would appear that in the lower Indus Valley, the changes marked by the appearance of Jhukar style pottery might have begun around 2000 B.C.

The date of Late Harappan Cemetery H related sites in the upper Indus Valley is difficult to work out because of absence of Radiocarbon dates from the upper levels of Harappa. The terminal date of Harappa is not yet known. Kalibangan II (Mature Harappan) has provided a series of 24 dates, the minimum range of which falls between 1540 and 1240 B.C. (Possehl 1989 for dates). The Mature Harappan occupation of Banawali II (Bisht 1982 and 1987), dates between 2555-2285 and 1700-1415 B.C. on the basis of a series of four calibrated dates. The Cemetery H occupation at Bara I has given the longest range of the two C-14 dates which comes to 1585-1330 B.C. and 1980-1690 B.C. Their upper limit falls between 2330-1957 B.C. and 2335-1885 B.C. From another contemporary site, Sanghol (except for one early date), four Radiocarbon dates range between 2175-1715 B.C. and 1785-1560 (?) B.C. The available dates from Cemetery H related Late Harappan sites may vary greatly especially at the beginning of occupation and so are the dates of the terminal period of Mature Harappan. On the basis of lowest dates, it is proposed that the Late Harappan Cemetery H occupation period ended in the Punjab sometime between

1700 and 1500 B.C. The succeeding occupations with fading Harappan tradition lingered on well into the early first millennium B.C, overlapping at some sites with the Painted Grey Wares (PGW). It is difficult to propose even an approximate date for the end of Mature Harappan or the beginning of the Late Harappan in the Punjab because of variations in their suggested time. If we group the dates from Cemetery H related sites and consider them with the changes in the river courses of the Ghaggar-Hakra, one gets an impression without actual proof at present, that change or transformation to the Late Harappan in the upper Indus Valley might have taken place earlier than in Sindh, most probably beginning between 2200 and 2100 B.C.

As already stated, the Late Harappan in the upper Indus Valley was known from Harappa where a cemetery in area 'H' revealed a distinctive group of burial pottery in two strata, also found at the upper levels of Citadel Mound AB. The explorations in Cholistan revealed 50 sites associated with Cemetery H type of pottery while further eastward in the Indian territory, the 'Late Harappan' (not necessarily Cemetery H related) occupation is reportedly found at 563 sites. All the sites are not fully published but the summary reports clearly demonstrate that identification or description of 'Late Harappan' in east Punjab, Haryana and Rajasthan is not entirely applicable to the Late Harappan materials of the Pakistani Punjab which are all comparable to Cemetery H. Looking from the Pakistani side, there seem to be two distinct but overlapping assemblages in the Indian territory which are generally labelled as Late Harappan. The Cemetery H related materials found in northern Rajasthan and Indian Punjab seem to be a part of Late Harappan phenomena represented at Harappa, Chak Purbane Syal and 41 (out of 50) sites in Cholistan. The Late Harappan Cemetery H related occupation at Sanghol, as already pointed out, has provided a time range between 2175-1785 and 1715-1560 B.C. (Calibrated) by four Radiocarbon dates, except the fifth one which gives a wide bracket of 2410-1945 B.C.A date beginning about 2000 B.C. and continuing until at least about 1700 B.C. for the Late Harappan, would be consistent with the comparable archaeological evidence from several sites in Pakistan and India. It is however pointed out that further to the east in the Doab and the Indo-Gangetic Divide, there appear to be a later expansion in which few Harappan pottery forms, if any, are found to be present and are spread over a very large territory (Fig.5). The scantily published accounts of these very late sites, if illustrations are anything but representative, show modified Harappan pottery shapes as if to indicate survival of a tradition. Two such very late sites are Dadheri and Bhagwanpura (Joshi 1978), where late occupations containing a few Harappan pottery forms overlap with the Painted Grey Wares. The present author observed at Delhi that Bhagwanpura yielded some grey pottery which duplicated the red ware Harappan bowls with nail-head and are found in association with Painted Grey Wares.

In southern Gujarat (Saurashtra), the site of Lothal at the beginning of Period A, already contained Jhukar style pottery that persisted in Lothal B lying above. It seems that the local or internal changes reflected in Lothal B ceramics and other material were not related to the events in the lower Indus Valley. Seven C-14 dates from Lothal A have a range from 2655(?)-2185 to 1950-1570 B.C. and the two dates of later occupation assigned to Lothal B are between 2320-1955 and 2315-1865 B.C. (calibrated). The early dates of Lothal B would present a chronological problems if contacts with Jhukar during Lothal A Period are firmly established. In Kutch, the date of last occupations of Surkotada IB and IC falls between 2195-1885 and 2190-1880 B.C. (Calibrated), a time almost contemporaneous with the Jhukar occupation at Mohenjo-daro.

On the available evidence, the cultural mosaic of the Greater Indus Valley during the Late Harappan Period essentially consisted of three principal areas as already pointed out in the beginning (Fig.2). The largest area covers the upper Indus Valley which appears to have been the Core Area (not shown on the map) of the Cemetery H related sites and its later geographical expansion beyond the Yamuna River. A comparison with the geographical extent of the Early Harappan cultural area (Fig.7) would clearly illustrate that contrary to the observations of Possehl (1989:26) which are uncritically repeated by Allchin (1990:28), the boundaries of the Late Harappan were drastically different from those of the Early Harappan.

TERMINOLOGIES OF THE LATE HARAPPAN

The terminologies used to express the last phase of the Harappan Civilization as identified and reported from widely scattered sites in different regions, reflect different conceptual approaches of the scholars. The term 'Post Urban', originally coined by Possehl in 1977 (Possehl and Raval 1989:18) and now borrowed by Allchin (1990:25), implies a stage or level in the process of cultural change that became apparent after the climax of the Indus Civilization. It is an interpretative term in content to distinguish the later stage of the Harappan socio-cultural development which followed the 'Urban' stage (Mature Harappan). The imposition of 'pre-urban', 'urban' and 'post-urban' frame of reference on the one continuous civilizational process tends to create arbitrary divisions such as those existing a long time ago and called 'pre-Harappan', 'Harappan' and 'post-Harappan'. It is confusing and self-contradictory to label, for example, the Cemetery H sites in Cholistan dominated by at least one principal centre, Kudwala (38.1 ha.) on the pattern of Mature Harappan settlement grid, as 'post-urban' which in fact represents the *late urban* phenomenon of the Harappan Civilization. Likewise, it is not justified to call the early stages of urbanization in the Indus Valley as 'pre-urban', which is an *early urban* (Harappan) stage of development (Mughal 1970; 1990b). Most of the scholars explain the later

changes in the Harappan materials with specific reference to the sites such as Cemetery H, Jhukar, Mitathal B, etc. As a compromise to various terminologies, the 'Late Harappan' with reference to the principal and best known sites yielding distinctive materials is used here to express (a) chronological position of such 'late' materials, (b) cultural continuity with the Harappan Civilization, and (c) character of specific archaeological materials. The term 'Late Harappan' is thought to be a neutral one as compared to the 'post-urban' because it does not impose interpretive or conceptual bias, or an opinion of an individual. The Late Harappan terminology is certainly widely used and understood very well by the scholars of South Asian archaeology. Moreover, it is found less confusing than the other unacceptable terms such as post-urban.

CAUSES OF DECLINE

The subject of the decline of the Indus Civilization is as old as its discovery. The basic issue involved is the evidence and interpretation of data for an explanation of cultural change beginning about the end of Mature Harappan around 2000 B.C. Several scholars have written and debated on the possible causes of change, often associated with the decline, if not the end, of this remarkable civilization of the Indus Valley. Their explanations are forceful and varied, based on particular data set, and their arguments range from human interference like invasions and population growth, to natural causes such as earthquakes, climate, hydrological changes, as summarized recently by Possehl and Raval (1989: 19-24) and re-stated by Allchin (1990: 25-27). It is becoming abundantly clear that there was no single cause for cultural change in the whole or large part of the Greater Indus Valley.

Among the views so far presented on the causes and consequences of cultural change, the invasion of the Aryan speaking people has been discussed by many scholars whose writings are all familiar to us. Despite considerable and prolonged debate on this issue, valid chronological and cultural objections still remain to be reconciled with archaeological evidence. Excessive utilization of land resources responsible for creating an economic imbalance with increasing population pressure, is thought to have forced the farming section of the Harappans to migrate to new areas, resulting in abandonment of cities (Fairservis 1967) and consequently, leading to a general economic decline. It may be true in a restricted sense because a marked increase in the number of Late Harappan settlements in the Punjab, Haryana and beyond does not support the observation of "a precarious economic situation as a significant reason for the downfall" of the Harappan Civilization. With reference to Mohenjo-daro, it has been argued by Professor G. F. Dales (1966) that tectonic disturbances creating an uplift across the Indus River downstream, created a vast lake that engulfed the city which ultimately led its decline. Despite objections to this

explanation, the Greater Indus Valley does fall within an active seismic zone, causing frequent changes in the river regimes. The effects of climate changes are still being debated.

CURRENT EXPLANATION OF CHANGE

The weight of discoveries in Cholistan prompted the present writer to revise his views (Mughal 1977: 68-73) on the causes of decline of the Indus Civilization when he wrote:

> "Around the middle of the second millennium B.C., certain changes in the Harappan material culture became evident resulting from re-adjustments or changes in the socio-economic and political organizational structure of the Harappan society. These changes might have been necessitated by gradual depletion of economic resources,, increased population pressure or perhaps insecurity created by invading or intruding groups of people, or perhaps, by combination of various causes. Whatever may be the reasons, it is however certain that Pan-Indus integration of the Greater Indus Valley which climaxed during the Mature Harappan Period had weakned but not destroyed. It seems that the local population re-grouped and readjusted to changed situation in three principal areas and thus managed to survive for a considerable length of time. These changes are reflected in the material culture found in each region of their concentration. They are known as the 'Cemetery H Culture' in the Punjab, 'Jhukar Culture' in Sind and 'Late degenerate/Post or Late Harappan Culture' in Gujarat (Western India). The initial regional differentiations were emphasized in pottery of each group amidst recurrent Mature Harappan ceramic traditions. But the characteristic square steatite seals with script, standard cubical weights, 'mother-goddess' form and most metal tools disappeared". (Mughal 1980:96-7).

In a restatement, it was added that "changes in the hydrographic pattern of the Indus Valley" (Mughal 1982:92) could have been one of the causes of decline. The field work in Cholistan, in addition to providing vital information on the settlement patterns through time, also made the dating of various river courses possible on the basis of archaeological evidence (Mughal in press; 1982; 1984 and 1990c). It is now almost certain that the first archaeologically dated hydrographic change took place around 2500 B.C. which affected the Early Harappan (Kot Dijian) occupation of the Hakra Valley so seriously as to necessitate relocation of settlements on new ground amongst which, Ganweriwala is the largest in size (over 80 ha.). It seems that the changes in the river courses also affected the subsistence base and the population was forced to abandon their settlement areas and agricultural land. Such a situation might have prompted a reorganization at socio-economic and political or administrative levels, and heightened class differentiation, competition and control

over economic resources by one class of people over the others. It is important to note that Cholistan lies in the Core Centre of the Harappan Civilization where changes from the Early to the Mature Harappan stage took place about 2500 B.C., coinciding with major shifts in settlement location and patterning due to a major change in the Hakra River course. Across the border in India, studies carried out on palaeochannels of the Ghaggar or ancient Saraswati, have revealed various changes in the hydrography of the Indo-Gangetic Divide prior to the shifting of Yamuna and Ganges river towards southeast. These channels have not yet been dated archaeologically to help relate to the river changes in Pakistan's territory (Fig.8) but a general sequence of the events is clear during the period covered by the Indus Civilization.

As stated above, a major change in river course(s) took place in the middle of the third millennium B.C., which must have forced a major shift in the settlement location on new ground and in consequence, generated a series of cultural processes which were crystalized into what is called, the Mature Harappan. The second major change took place most probably around 2100 B.C. There was a reduction in the water supply through a channel from the Sutlej River, causing relocation of settlements in much more restricted area than that of the preceding period. Once again, environmental changes altered the existing settlement pattern on the Hakra, causing and coinciding with changes in the material culture as reflected in the Cemetery H assemblages in the lower and upper courses of the Hakra and its tributaries . The effects of river changes and termination of water supply on the subsistence economy and social organization were much more disruptive and disastrous than any other single or multiple causes such as invasions, seasonal or unusual flood or over utilization of land resources by intensive agriculture. A reverse process of increased opportunities and enterprise, prosperity and further development would have ensued by an increase in water resources and availability of extensive and silt laden, fertile agricultural land. The evidence of high density of settlements during the Mature Harappan Period in a new area fed by a channel from the Sutlej, illustrates this point. It would therefore seem that in case of Cholistan (or Hakra-Ghaggar region) in the Punjab, the settlement changes in size, density and hierarchy were directly related to hydrographical changes of the rivers. In Sindh, full information on settlement changes through time comparable to that of Punjab is not available. However, the course of the Indus River in the Lower Indus Valley, too, has been changing frequently (Holmes 1968). In view of the situation in Punjab, it is tempting to extend the argument down to Sindh, the region dominated by Mohenjo-daro but the present evidence would not permit us to suggest changes in the river course as a major factor of the Harappan decline in the lower Indus Valley. Further south, the evidence from Kutch is not fully known regarding the late phase of the Indus Civilization. In Saurashtra, cultural change from the period represented by

Rangpur IIA to IIB-C and later in Period III, or Lothal A to B is seen in the context of land and water, and in the basic shift from wheat to millet (Possehl 1980). In that region, the hypotheses for cultural change as suggested for the main Indus River Valley are not applicable at all. The settlement pattern during the later (than Rangpur IIA) period, having small size and considerable increase in their number, illustrates the effect of diversification of economy as compared to the settlements associated with the preceding Rangpur IIA Period.

The above review of the new data demonstrates the need to change our understanding of the geographical extent of the Indus Civilization and to correct an erroneous impression created by lumping together all the sites of different phases of the Harappan Civilization and thus showing a vast geograhical area covered by it. During the Early Harappan Period (3400-2600/2500 B.C.), the populations had no access to the sea but remained confined to the Indus — Hakra River plains, having inter-settlement and inter-regional contacts including the accessible valleys of Balochistan on the west (Fig.7). In the Mature Harappan Period beginning around 2500 B.C., a very significant shift towards the sea coast took place stretching at least from Sonmiani Bay near Bala Kot to the Rann of Kutch. It is in this part of the coastline and its hinterland that Mature Harappan sites are located. The Core Area in the Mature Harappan Period consisted most of the Early Harappan Core Area and the sea coast (Fig.1) and extended further to cover the Pakistani Makran coast and parts of Saurashtra. The Late Harappan Period in the Greater Indus Valley on the other hand, was marked by three regional areas, each springing from the Mature Harappan but having distinct assemblages localized in their own areas (Fig.2). The Harappan tradition was retained in each of the three areas for some time until lost completely by about the first millennium B.C. The limits of these areas are defined by occurrence of similar ceramic types: Cemetery H in the Punjab, Jhukar in Sind which overlapped with Kulli in southern Baluchistan, and Rangpur IIB-C and Lothal B in Saurashtra. Interaction between Saurashtra and Sind are indicated but none of these two regions has yet shown contacts with the Late Harappan in the Punjab. The causes of emergence of Late Harappan phenomena in Gujarat were different but for the Punjab and Sindh, frequent river changes may have been the principal reason for change. The end or disappearance of the Late Harappan is not clear and the subject deserves serious research. On the present evidence, at least three geographical areas of the Late Harappan can be distinguished in the Greater Indus Valley which will certainly be modified further as the chronology of this period is reconstucted with precision. Meanwhile, it is proposed to call the Cemetery H related materials as Punjab Late Harappan, Jhukar related as Sindh Late Harappan, and Rangpur and Lothal related materials as Gujarat Late Harappan. These are neither intended to be mutually exclusive geographical divisions, nor it is possible to suggest a simultaneous

emergence, development and eventual disappearance of the cultural features that characterized the Late Harappan Period in the Greater Indus Valley. The present review of the available evidence from the vast Harappan territory gives a different perspective of the issues being discussed currently for understanding the nature, causes and consequences of cultural change in the Indus Valley starting about the beginning of second millennium B.C. The cultural mosaic during the Late Harappan Period as suggested at present by the distribution of certain categories of materials mainly in three regions, presents a contrast to an intergrated picture of the preceding Mature Harappan Period. Admittedly, each region presents a diversity of non-Harappan materials and settlement patterns lasting for more than a millennium. An attempt to reconstruct the sequence of events in the late protohistoric period is equally important. On the present evidence, the Gandhara Grave Culture of northern Pakistan, Pirak and Complex B assemblages of Balochistan, Painted Grey Wares of the Punjab and Doab for example, demonstrate a different and unrelated mosaic which spans over another millennium beginning about the last quarter of second millennium B.C., suggesting partial contemporaneity with some of the Late Harappan assemblages of western India and the Punjab. These phenomena call for serious attention to examine socio-cultural consequences of environmental changes and adoption of various strategies for human survival in the Greater Indus Valley.

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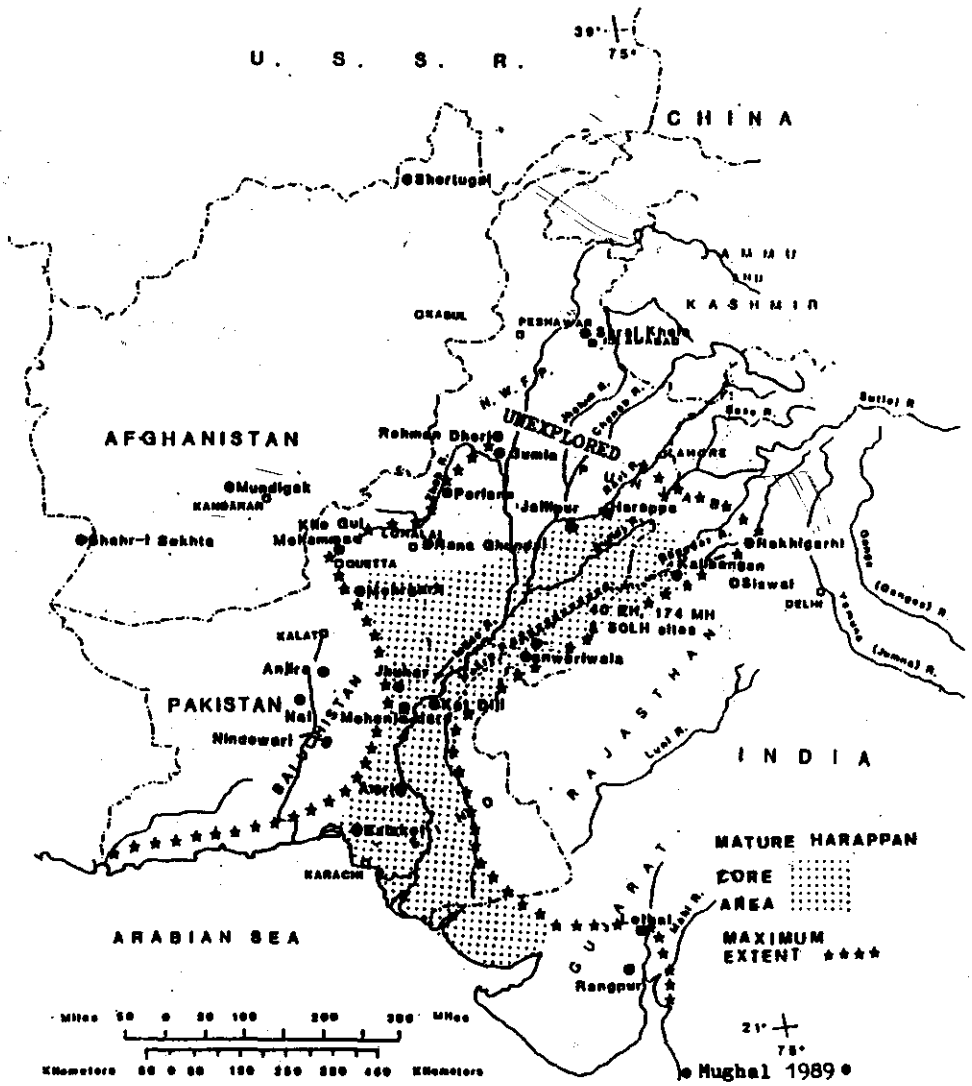

Fig.1.

Map showing the known extent of the Indus Civilization during its Mature Period (2500 - 2000 B.C.)

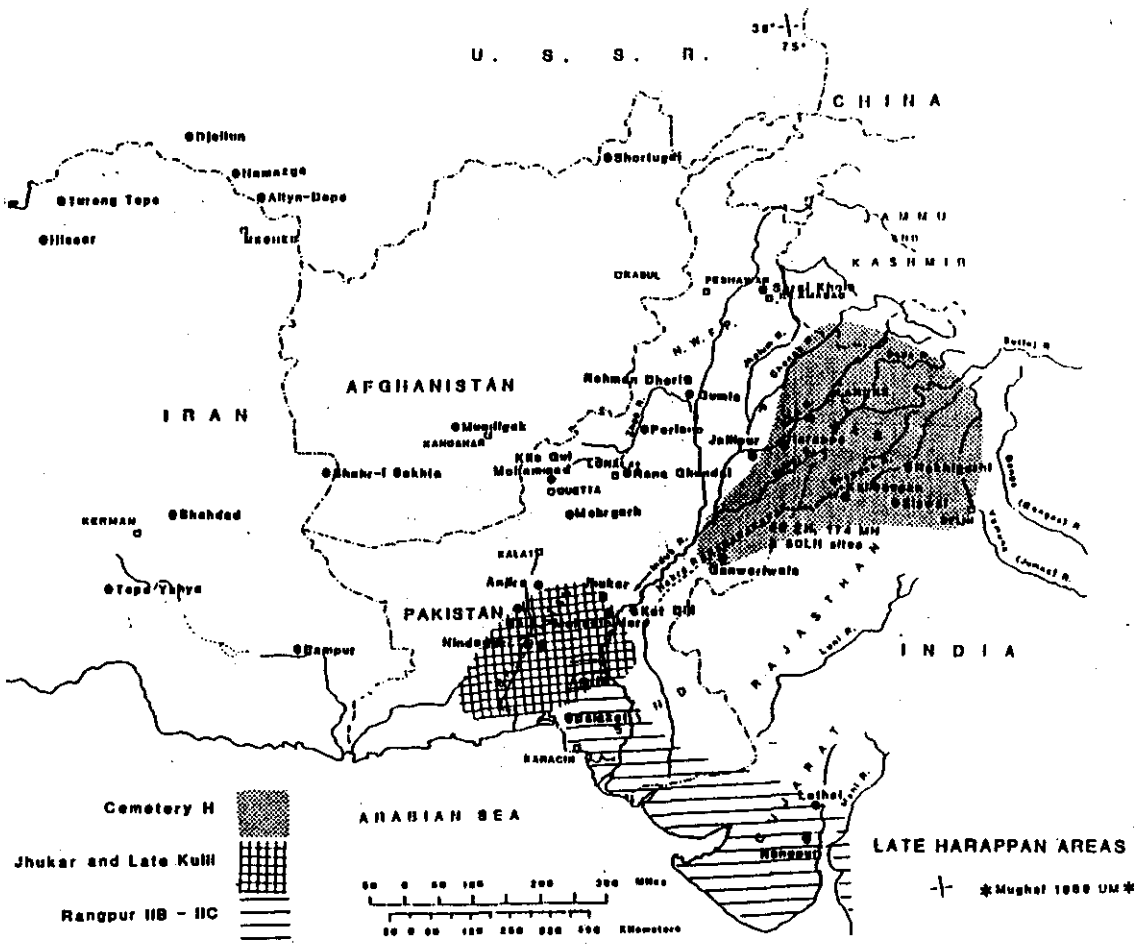

Fig.2.

The regional cultural pattern during the late Harappan period in the Indus Valley (circa 2000 - 1500 B.C.).

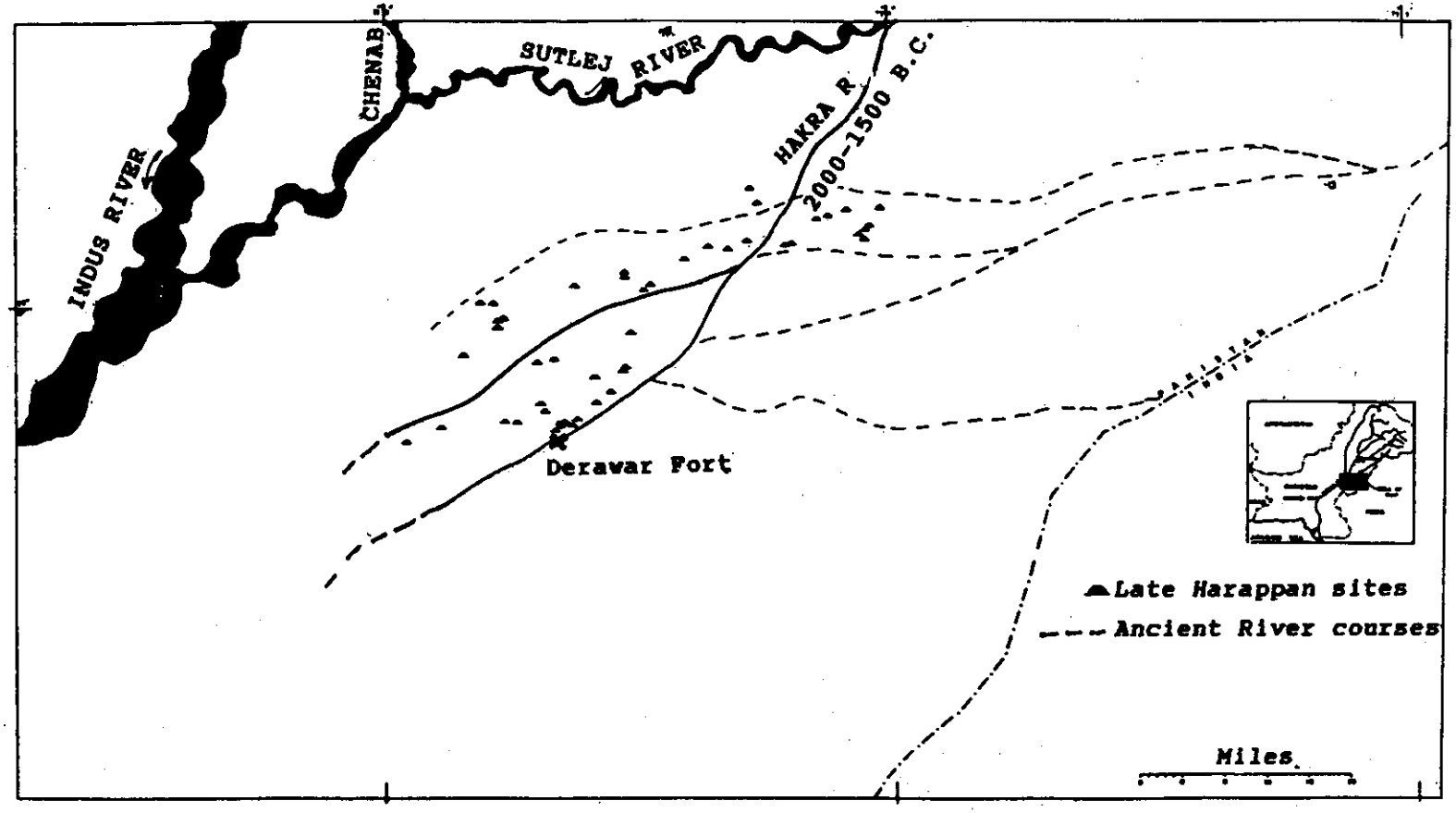

Fig.3. *The Cemetery - H related sites of the late Harappan Period in Cholistan (circa 2000 - 1500 B.C.)*

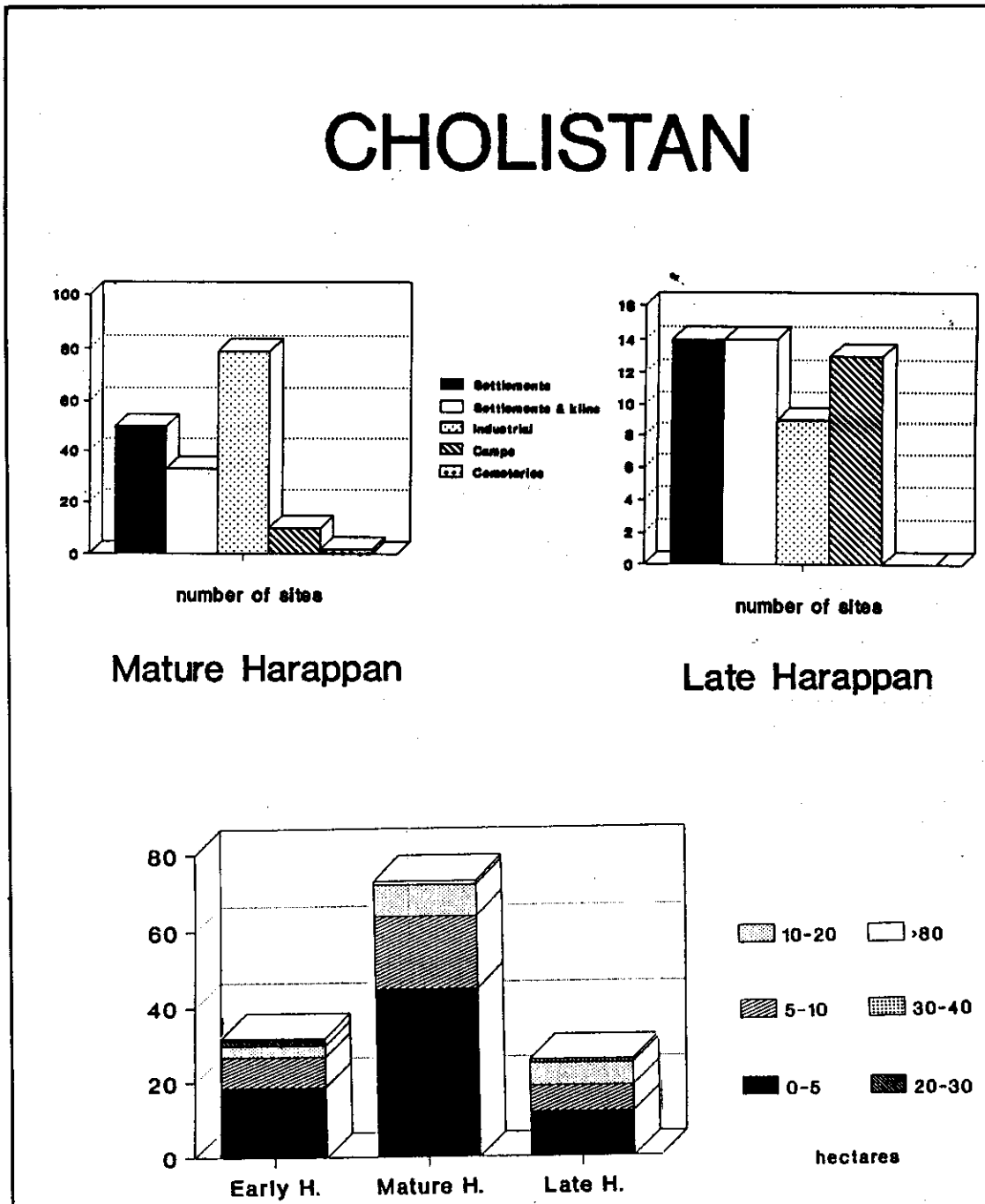

Fig.4.

Diagrams showing different categories of sites of the Mature and Late Harappan Periods in Cholistan (above); and number of sites according to their size during the Early, Mature and Late Harappan Periods (below).

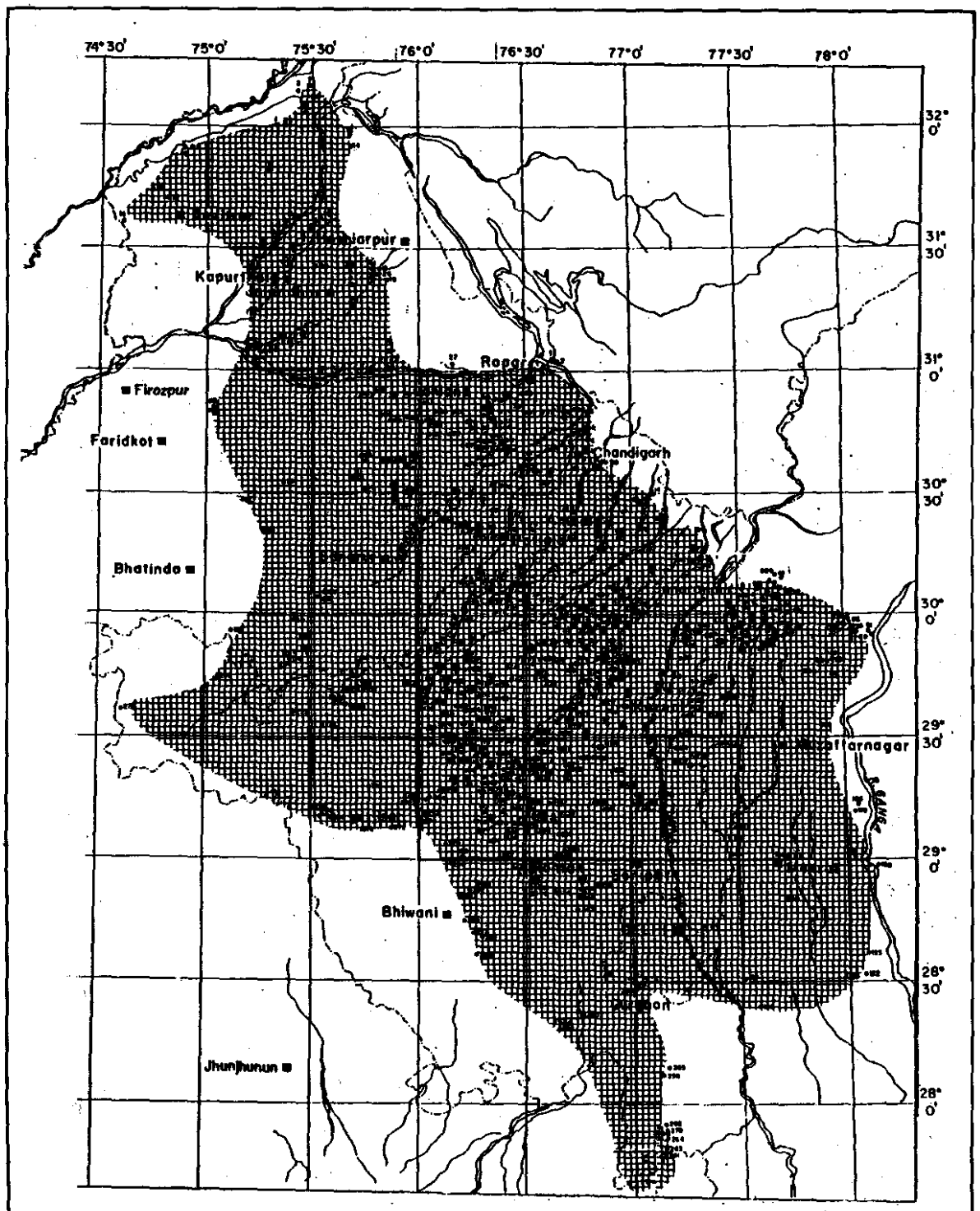

Fig.5.

Area covered by the Late Harappan sites of (initial and final phases) in Eastern Punjab, Haryana and Western Utter Pardesh (India).

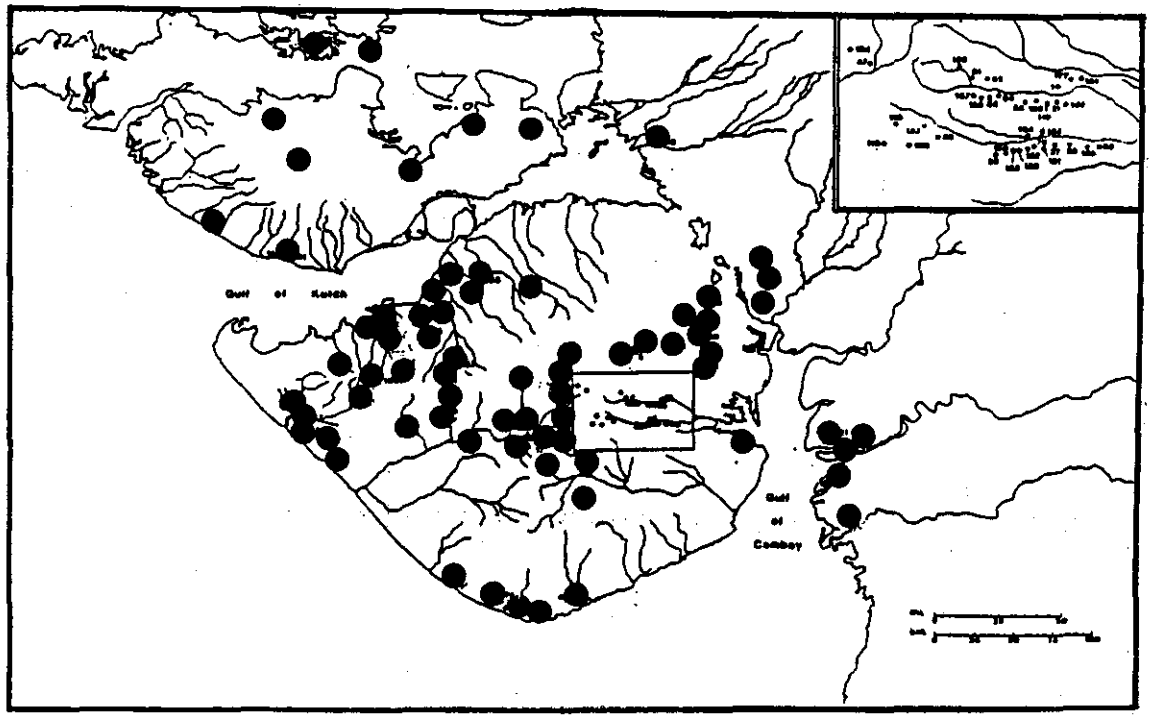

Fig.6. *The Late Harappan (Rangpur II B-C) sites in Kutch and Saurashtra (India).*

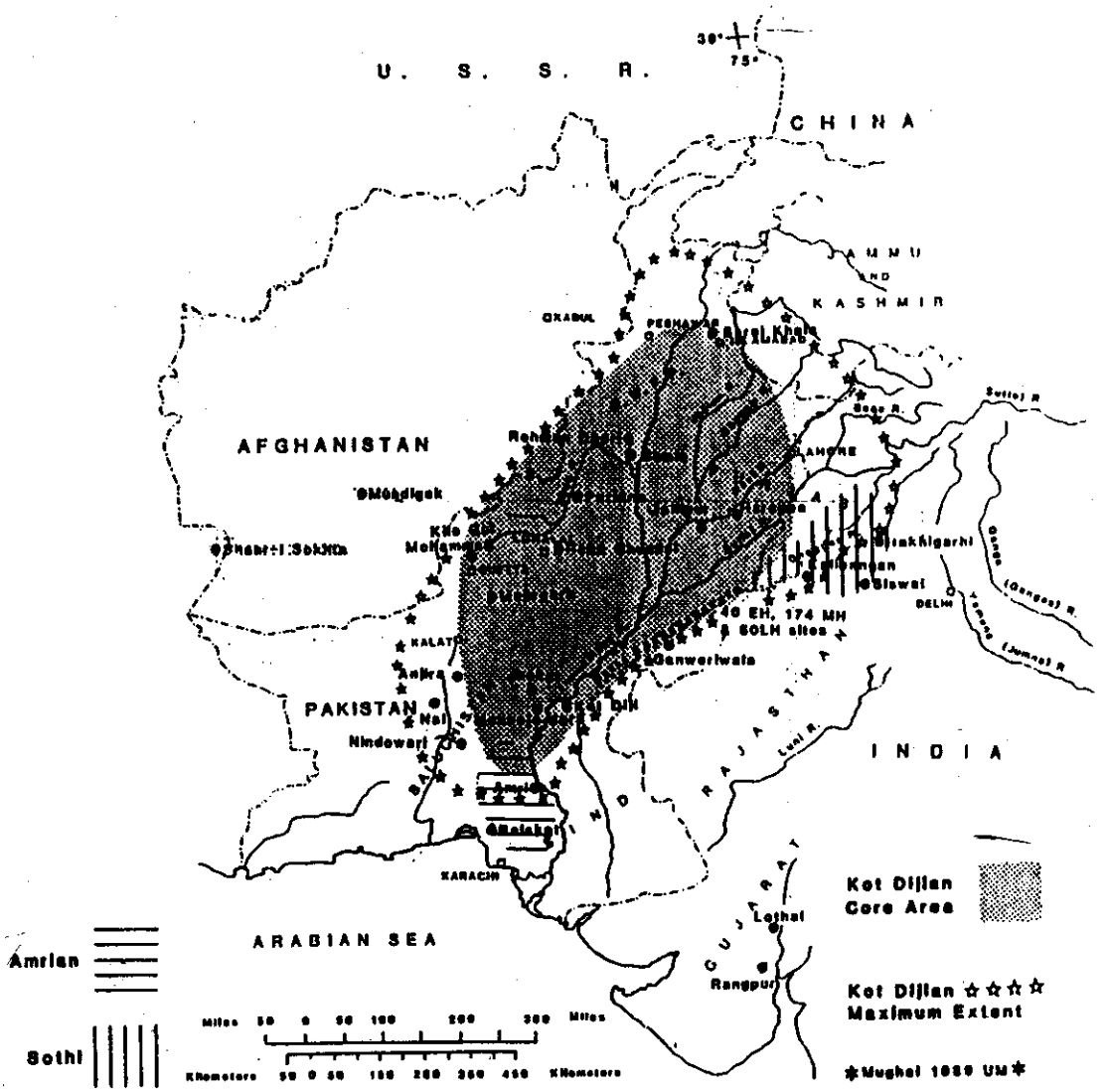

Fig.7.

The geographical extent of the Early Harappan Culture (Kot Dijian) between 3200-2500 B.C.

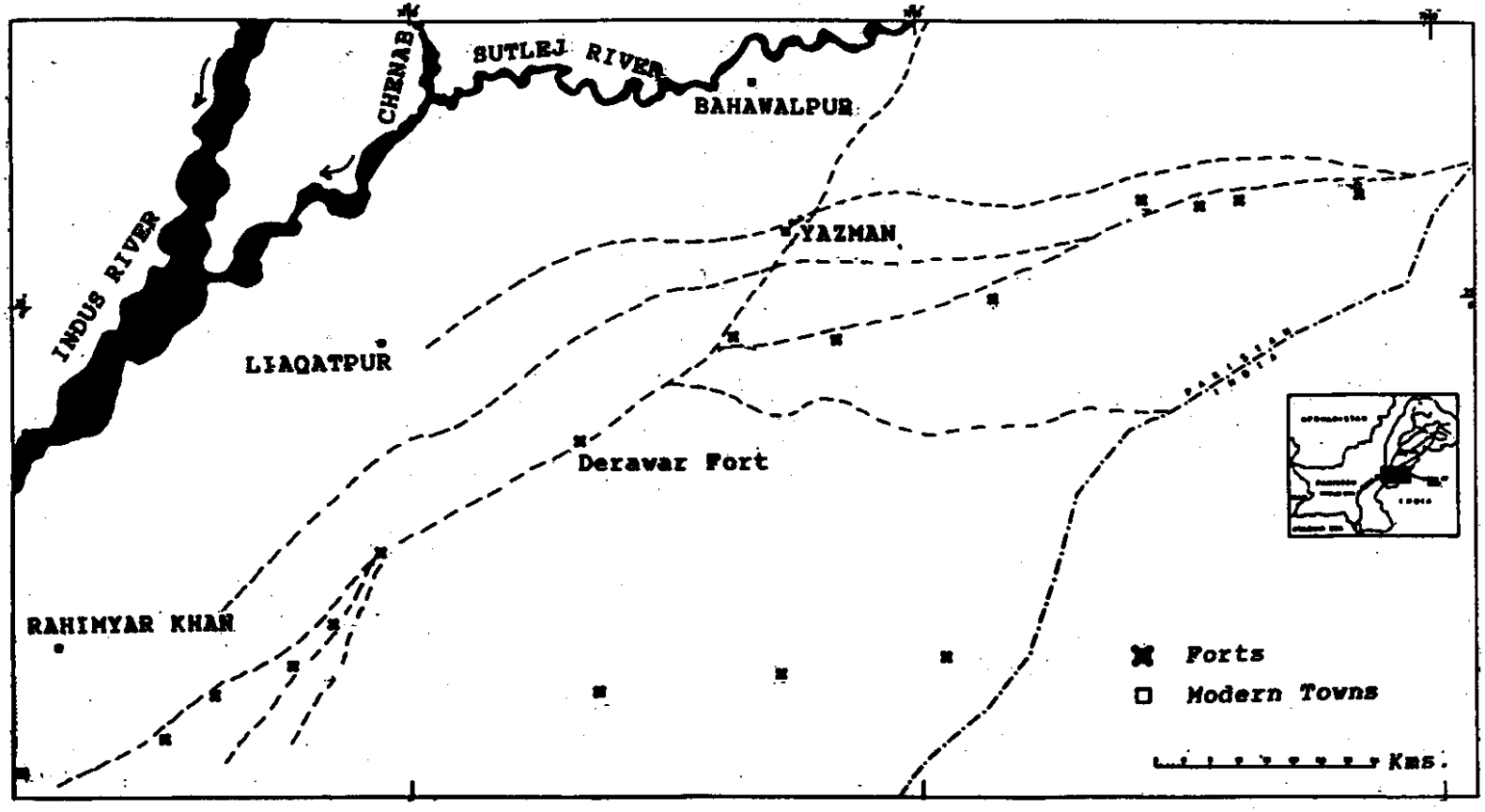

Fig.8. Map showing changing courses of Hakra River since at least fourth millennium B.C. in Cholistan as reconstructed from Landsat imagery.