MORTIMER WHEELER ARCHAEOLOGICAL LECTURE

ANTECEDENTS OF THE INDUS CIVILIZATION[1]

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I

WHAT were the antecedents of the Indus civilization? Thirty years ago Professor Stuart Piggott wrote that 'The Harappa Culture is known only in its mature form; it has no known beginnings, no tentative early phases before the outlines are firmly fixed. An origin outside India is inherently improbable, but where and in what form this origin was is quite unknown.' (Piggott 1950, 140). Since that time those memorable words have been frequently quoted—they have appeared more than once in questions in the Cambridge Archaeology Tripos—but now, thirty years on, it may be useful to consider the matter afresh in the light of subsequent discoveries. Piggott, in spite of what he said, laid the foundations in his *Prehistoric India* of an objective answer to the question of origins; and his approach is reflected in Wheeler's summary treatment of the evidence:

As to the immediate ancestry of the Indus Civilization there is indeed comparatively little (in 1965) that is new, although the old evidence has

[1] Most of the field observations which underlie this paper were made during the past four seasons' work of the Cambridge Archaeological Mission to Pakistan, and I should like gratefully to acknowledge the support and major contributions of my wife, as co-Director, and each of the other members of the team. The Mission depends for its funding upon its numerous sponsors, among them the British Academy and British Museum, and all of these deserve acknowledgement. I must also make special mention of the continuing friendly assistance of Mr M. Ishtiaq Khan, Director of Archaeology in Pakistan, and of many members of his staff. The excavations at Lewan and Tarakai Qila were done in collaboration with the Department of Archaeology of the University of Peshawar, and I would like to express our gratitude to Professor F. A. Durrani and Professor Farid Khan, and to their colleagues. Finally, in the course of my discussion of the work in progress at Mehrgarh I must acknowledge my indebtedness to Dr J.-F. Jarrige for kindly permitting me to refer to as yet unpublished annual reports for the most recent seasons' work, and to points made by himself or his colleagues in lectures or discussions.

from time to time been flogged into a somewhat unreal semblance of life. The general nature of the evidence is tolerably clear whilst its details remain elusive. Briefly the position is this.

In the fourth and third millennia, the Iranian plateau . . . was the home of a multitude of disparate societies, essentially neolithic but verging gradually upon a stone-bronze (or chalcolithic) technology . . .

To this village-society it has been customary to trace the primary urban development of Mesopotamia. . . . Basic differences between the Indus and Mesopotamian civilizations bar the possibility of any closely related colonization of the former from the latter; and at the same time our knowledge of the Ganges and Central Indian cultures is sufficient to preclude an origin farther east or south. We are left with the Baluch or Iranian borderland as the immediate source of the Indus civilization, at any rate in its more material aspects (Wheeler 1966, 10–13).

This, however, was not Wheeler's final word on the subject, since in the third edition of *The Indus Civilization* he concluded a discussion of the relations between India and Mesopotamia with the words: 'It can at least be averred that, however, translated, the *idea* of civilization came to the Indus from the Euphrates and Tigris, and gave the Harappans their initial direction or at least informed their purpose' (Wheeler 1968, 134–5).

It is about the beginnings of the Indus civilization that I wish to speak this evening. This lecture is the third of a series I have planned in recent years: the first dealing in rather broad terms with the problems of interpretation of the late Harappan period and with the nature of the cultural transmission of what is sometimes spoken of as the 'legacy of the Indus civilization'; the second with the related problem of the arrival and spread of Indo-Aryan speaking people in South Asia and the interpretation of the process of cultural interaction which took place between the newcomers and the existing populations. The latter was read as a paper in Dushanbe in 1977 at a conference on the movements of peoples in Central Asia during the second and third millennia BC; and the former—though written some years earlier—was read in 1979 at a conference in Kashmir organized by the American Institute of Indian Studies in Delhi. Both are now in press (Allchin, F. R., 1981 and in press). It is curious to remark that this present lecture has been in some ways more difficult to prepare than the others, since the level of familiarity with the subject which one may assume is probably lower in Britain than with either of the other audiences. This is a sad comment upon the indifference and neglect of almost all things pertaining to India

which the laying down of imperial responsibilities has hitherto engendered in this country. This is no doubt the reason why even today we have no British School or Institute in either India or Pakistan, and why British field-work in these countries has still to be done on an individual basis. The Cambridge University Archaeological Mission to Pakistan, shortly to embark on its fifth field season, is currently the only British expedition in a position to carry out any longer-term field projects in either country.

First, let me briefly recall the story of the rediscovery of the Indus civilization. In 1873 Cunningham, who had already visited Harappa some twenty years earlier, published a seal with unknown script which he concluded to be certainly not Indian, but a foreign import (Cunningham 1875, 105–8). This was the first of the distinctive Harappan seals. In the following decades two other seals were discovered at Harappa, and this perhaps was what led Marshall to send first Hargreaves to visit the site in 1914, and then Daya Ram Sahni to excavate in the season of 1921–2, and to find further seals. In either the same or the following year R. D. Banerji carried out an excavation at Mohenjo-daro and brought to light yet another seal there. Two years later Sir John Marshall announced to the world the discovery of a long forgotten civilization on the banks of the Indus (Marshall 1924, 528–32), and thus started a decade of systematic excavation at Mohenjo-daro, Harappa and Chanhu-daro. In the main, till today, our knowledge of the mature Indus civilization is based upon this work. It is interesting in passing to note the importance of the field-work of four of the first Indian officers to be recruited to the Archaeological Survey, for, in addition to the two whose names we have already mentioned, we must add Madhav Sarup Vats whose publication of the Harappa excavations (Vats 1940), coincided with the conclusion of the first phase of research on the Indus civilization; and N. G. Majumdar who in 1929 made a discovery little noticed at the time but of great importance for our present subject.

Marshall, from the very beginning, had no doubt of the indigenous origin of the newly discovered civilization. He wrote in his first announcement in the *Illustrated London News* (1924):

> What seems prima facie more probable is that this forgotten civilization, of which the excavations of Harappa and Mohenjo-daro have now given us a first glimpse, was developed in the Indus valley itself, and just as distinctive of that region as the civilization of the Pharoahs was distinctive of the Nile. . . . In the case of the Indus, it is probably true that successive migrations from outside had a useful effect,

as they did in Mesopotamia and Egypt, in promoting the development of indigenous culture; but there is no reason to assume that the culture of this region was imported from other lands, or that it was profoundly modified by outside influences.

and in the same year he wrote of the Indus civilization as 'no mere provincial offshoot of Mesopotamian culture', but as something that was developed 'for countless generations on the banks of the Indus itself' (Marshall 1927, 60–3).

So much then for the discovery of the Indus Civilization; but what of the origins, what of its antecedents? Sir John Marshall's initial optimism was not at once supported by subsequent discoveries, and he is notably less confident in some of his later writings. What then of the archaeological evidence, whose paucity Stuart Piggott had complained of? The first positive facts were obtained by N. G. Majumdar who from 1925 made a series of exploratory tours in Sindh, in the course of which he discovered several sites which he inferred to be older than Mohenjo-daro. At some he made trial excavations and in 1929 found at Amri, below remains which he recognized as belonging to the Indus civilization, those of 'an earlier phase of the chalcolithic civilization than that represented by Harappa and Mohenjo-daro.' From this he concluded that the Indus civilization must have had a long history and the 'Amri culture', as he called it, might in part co-exist with and in part antedate it (Majumdar 1934, 27). The next discovery was made by Sir Mortimer Wheeler, during his excavation at Harappa in 1946, when beneath the great rampart he found pottery of 'non-Harappa' or 'alien' type, which he concluded to represent a 'pre-Harappa' phase of culture (Wheeler 1947). He noted general affinities of the pottery to that of north Baluchistan. It is perhaps hardly surprising that the full significance of this find should not have struck him, when he was concerned with major problems relating to the mature civilization itself; but it seems probable, in the light of what we now know, that Sir Mortimer had here come across a part of an earlier settlement over which the city of Harappa was built.

A new and outstandingly important excavation was started in 1955 at Kot Diji, a site from which Majumdar had collected, although not apparently published, materials (Khan 1965). The Pakistan Archaeological Department's excavations revealed a continuous occupation going back from the mature Harappan to an earlier phase which we can now recognize as Early Indus. The year 1959 saw the beginning of two other important excavations:

those of the French Archaeological Mission at Amri (Casal 1964), and of the Indian Archaeological Survey at Kalibangan (*Indian Archaeology—a Review*, 1960–1—1968–9). The new work at Amri revealed far more clearly than had Majumdar's the two developing periods of occupation which preceded the mature Harappan. Of these the earlier shows strong resemblances to contemporary sites in Baluchistan; while the second or 'intermediate' shows closer links to Kot Diji. The Kalibangan excavations provided a wealth of new data about a major settlement of the mature Harappan period and a smaller excavation of part of the underlying pre-Harappan settlement.

It must be surprising that Wheeler, neither in his popular work *Civilizations of the Indus Valley and Beyond* (1966) from which we quoted earlier, nor in the third edition of *The Indus Civilization* (1968) drew what would seem to be the logical conclusions from these new excavations. He continued to refer to the earlier phase of culture as 'non-Harappan', and to argue principally on the basis of difference of forms of pottery and painted pottery styles that the newly discovered early period could not be an earlier form of the mature Harappan. I remember discussing the material from Kot Diji with him about that time and finding that we did not see it at all in the same light.

A new line of interpretation was however not slow to emerge. In the first edition of the *Birth of Indian Civilization* (1968) my wife and I wrote: 'What is particularly exciting about the new excavations is the repeated evidence of continuity from pre-Harappan to Harappan times, suggesting that a large if not a major element in the Harappan civilization must derive from the pre-Harappan culture of the Indus valley itself'. We also remarked upon the considerable uniformity of the culture of the pre-Harappan phase over so wide an area, and we suggested that the centuries of pre-Harappan culture in the Indus valley must provide the matrix within which the peculiarly Indian civilization developed, to emerge so brilliantly in the mature Harappan phase. Shortly after this Fairservis, in the first edition of the *Roots of Indian Civilization* (1971), included a thoughtful discussion of the origins of the Harappan civilization, weighing and comparing three factors: what he called the 'outside-influence factor', the environment provided by the Indus valley, and the factor of social readiness; and he introduced the term Early Harappan for what we had hitherto followed Wheeler and the excavators of Kalibangan as naming pre-Harappan. He concluded (p. 239) that the civilization that arose in the Indus river valley, whatever its antecedents in

Iran or elsewhere, was none the less 'uniquely subcontinental', and had 'a particular character that clearly differentiated it from other civilizations of the ancient world'. In this particularity he believed that one could trace the roots of some of later Indian civilization. A third major contribution of this time was in the Ph.D. thesis of Dr Rafique Mughal (1970), in which a systematic survey of the available data led him to propose that the whole Indus valley or 'Greater Indus system' as he preferred to call it should be viewed as a single cultural region. He also demonstrated that the unbroken line of development which ran from the preceding phase into the mature Harappan, at site after site, demanded a more appropriate term than 'pre-Harappan', and he too proposed the use of Early Harappan.

I paused at this point because it marks the beginning of a new approach to the question of Harappan origins. The tide of discovery, however, has not slackened since then. Since 1970 a number of important new discoveries and excavations have been reported. In Pakistan, Sarai Khola, near Taxila, revealed to the Pakistan Archaeological Department an Early Harappan occupation above an earlier 'Neolithic' settlement (Halim 1972). At Gumla north of Dera Ismail Khan Peshawar University Department of Archaeology have discovered a settlement with a culture sequence including periods approximating to mature and early Harappan as well as one or perhaps two earlier periods (Dani 1971). Related sequences have subsequently been discovered at nearby Rahman Dheri and further north in the Bannu Basin the Cambridge–Peshawar universities' collaboration has led to the excavation of two sites, Lewan and Tarakai Qila, providing evidence of an Early Harappan occupation. Dr Mughal's important excavation at Jalilpur in the Punjab gives another sequence related to these and to that of Sarai Khola (Mughal 1974). All these sites are in Pakistan, but significant discoveries have continued to be made in India also. Dr Suraj Bhan and others have explored and excavated a number of sites in the east Punjab and Haryana regions, including Mitathal, Banavali, and many others (Suraj Bhan 1975). J. P. Joshi of the Archaeological Survey has excavated Surkotada, an interesting site in Kacch, where in the early period the final stage of the Early Harappan appears to be in evidence (Joshi 1972). The most recent discovery was our own last winter, when in the heart of the city of Taxila my wife and I came across an Early Indus settlement, buried under remains of the early historic period and hitherto unnoticed, although only 400 metres from the Taxila Museum!

Before I conclude this now somewhat lengthy catalogue of the discovery of the Early Indus sites, I must not neglect to mention one further excavation that is proving to be by far the most important discovery of recent years in the sub-continent. At Mehrgarh near the point at which the Bolan pass and river emerge on to the Kacchi plain below Quetta, the French Archaeological Mission to Pakistan have been since 1974–5 uncovering stage after stage of what appears to have been a continuous occupation spread thinly over an area of approximately 300 hectares, the latest dating from about the beginning of the mature Harappan period and the oldest, as yet largely unpublished, being over ten metres of occupation deposit terminating around 5000 BC (calibrated radio-carbon date) and going back from that date through many levels of pre-ceramic neolithic occupation (Jarrige and Lechevallier 1979). This site permits us for the first time to observe a long development of settled life on the Indus plains continuing perhaps for fifty centuries before the beginning of the mature Indus urban stage and providing, at last, an archaeological basis for Sir John Marshall's optimistic hopes. Obviously I cannot begin to detail the many exciting discoveries which Jean-François Jarrige and his colleagues have been making —they deserve a lecture in themselves—but if we are to try to understand the several stages of development of settled agricultural life in the Indus valley, and therefore the antecedents of the Indus civilization, Mehrgarh makes a quite outstanding contribution.

II

I want now to move on to consider the broad stages of that development in the greater Indus system, and particularly to give attention to the penultimate stage which precedes the establishment of full-fledged, urban civilization. These topics are inevitably large and I can only hope to treat them in somewhat summary fashion. Inevitably it will be necessary to generalize and to exclude much of the detail. The stages are primarily chronological and in determining their limits I shall quote dates in oversimple form. I shall use plain BC dates derived (in most cases) from radio-carbon dates, calibrated according to the MASCA system. Elsewhere, where radio-carbon dates are not available, I shall rely upon those established by cross-dating to sites where they are.

Stage I (?7th millennium–c.3500 BC)

The earliest known development of settled agricultural life is at

present found at Mehrgarh, and since this site offers an unbroken sequence over several millennia, coming to an end around the beginning of the mature urban phase (which appears to be represented at the neighbouring site of Naushahro), it seems inevitable that for the present we must follow the sequence which its excavators have published (Jarrige and Lechevallier 1979). It may well be significant that Mehrgarh lies at the point of transition from the Indo-Iranian uplands to the Indus plains, but while the evidence remains so thin on the ground we should not read too much into this situation. The excavations have been going on for several years, but as yet only a limited number of radio-carbon dates have been published. None the less the excavator has been able to produce a convincing sequence and to date the periods broadly, supplying cross dating and other evidence to substantiate the radio-carbon.

The first stage of the process may be best described as Neolithic: it covers a great span of time and comprises two or three periods. (*a*) The earliest is pre-ceramic, represented by the long series of occupation deposits in the bank of the Bolan river and terminating around 5000 BC. Already during this period there is the first evidence of mud brick structures. Technology was based on stone, involving a blade industry, making blades and microliths, and hafting some of them with bitumen, as sickles in wooden hafts; bone was also used, and imprints of baskets occur. Grains of barley are found, as well as a date stone, and bones of cattle, both *Bos indicus* and *Bos bubalis*, along with sheep or goat. In the lower levels it is reported that the proportion of wild species was much greater than in the upper; also the relative proportion of cattle bones to sheep or goat increases in the later levels of the period. The stone blades and microliths are particularly interesting. The industry is in many respects reminiscent of some of the earlier phases of the Mesolithic industries of India east of the Indus, and for that matter more widely from the Zagros to Central India. Some of the tools bear sickle gloss, confirming their use in connection with the harvesting of grains. A group of burials was excavated, some with red ochre covering the skeleton, stone tools occur in graves, and in one case turquoise beads. These suggest that already at this very early date long-distance trade, probably with Central Asia, had been established. (*b*) The second period at Mehrgarh, which we are inclined to regard as ceramic Neolithic, coincides with the first appearance of a few sherds of pottery, along with further mud brick structures and burials of a distinctively Eastern Iranian or Central Asian type (though known there from much later date).

This period gives evidence of two varieties of wheat as well as barley, and many seeds of cotton are reported. The proportion of cattle bones increases further. The indications of trade continue and expand, fragments of conch shell from the Arabian sea are found as well as the first lapis lazuli, presumably imported from the same direction as the turquoise. Also from this period comes the first unburnt clay modelling of a human torso. (*c*) The third period which may be regarded either as final Neolithic or as to beginning of the Chalcolithic witnesses a great expansion of the production and quality of the painted pottery which now becomes a special feature of the crafts of this region. Further objects of turquoise, lapis and conch shell suggest a continuing pattern of external trade contacts. During this period the first evidence of copper production occurs. The excavator has proposed for this period a date in the first half of the fourth millennium and this seems altogether acceptable.

For the first of these three Mehrgarh periods we know of only one comparable site, Kile Ghul Muhammad in the Quetta valley (Fairservis 1956); for the second and third we may also find comparable materials at Mundigak (Casal 1961), and in surface collections more widely in Baluchistan. We may expect that further research in Baluchistan will provide other sites and confirmatory evidence, parallel to that from other parts of the Iranian plateau, of broadly contemporary developments during the thirty or so centuries included in our first stage; but there is as yet no evidence for settlements in the Indus valley itself. Nor, perhaps surprisingly, do we know of any Mesolithic sites in the Indus valley, comparable to those which exist in such numbers in India east of the Indus system and which in a few instances may be dated by radio-carbon to this period at least. The absence of such evidence is probably to be explained by the fact that the Indus plains have continued to build up with the annual inundation and thus have buried sites of all periods, except in exceptional circumstances. We may also expect with fair confidence that other sites of similar character will be discovered elsewhere along the transition zone between the Iranian plateau and the Indus alluvial plains.

Stage II (3500–3000 BC)

Period IV at Mehrgarh marks the beginning of a new stage. In period I the settlement appears to have been on the bank of the Bolan river and to have remained there throughout a considerable time, allowing for an accumulation, either of silt or occupation, or

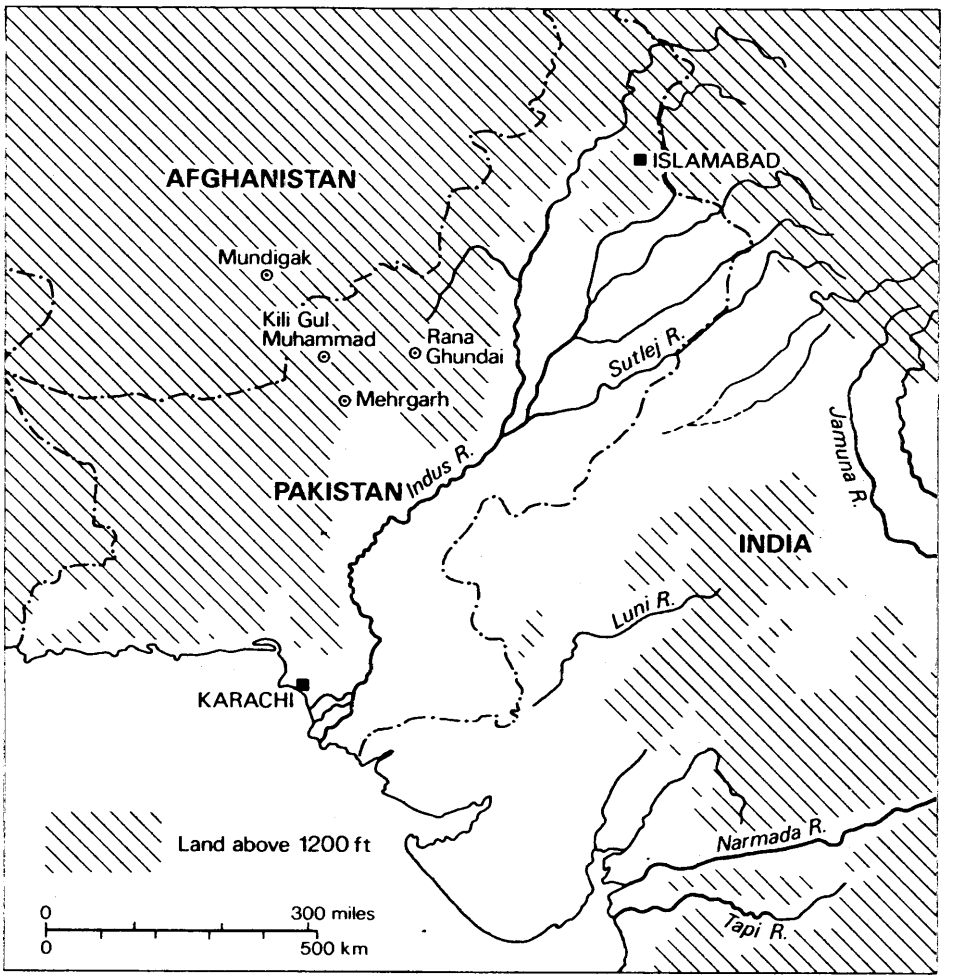

FIG. 1. Map of excavated sites: Stage I.

both, of some ten metres. Thereafter the successive periods II and III saw a gradual southwards shift of the settlement, with no great depth of occupation at any point. From period four onwards till the end of the occupation the settlement was in one place and the strata accumulated one above the other. This perhaps suggests that the need was now felt for some more solid or permanent defensive system around the perimeter, either to keep out animal or human marauders.

Stage II includes periods IV, V, and part of VI at Mehrgarh. It yields evidence of the growing use of copper, alongside the continuing stone industry, and we may reasonably call it Chalcolithic. It also provides the first evidence of the use of stamp seals in bone or terracotta. The culture throughout this stage appears to be a continuing development of what was already established. The common use and mass production of pottery becomes fully

established and the periods are distinguished from one another by several changes of style, in the painted decoration. The painted styles in general belong to those known from Baluchistan, which in earlier decades attracted so much attention from archaeologists, in the absence of any firmer evidence. Although this often beautiful painted pottery is a speciality of the region, the styles do not seem to reflect any substantial changes in other aspects of life. A similar situation is found in the series of human terracotta figurines which may be traced back at Mehrgarh even to the final levels of Stage I, but which now go through a remarkable series, ending up with the 'Zhob' type of mother goddess, familiar from earlier work in Baluchistan, and now shown to be the end of a long evolutionary series. From our point of view these changes are less significant than the remarkable evidence of continuity of cultural tradition from the first stage. Stage II extends from the middle of the fourth millennium to the opening of the third.

If the second stage is relatively less noteworthy at Mehrgarh, it is much more so elsewhere in the Indus system, for it is during this time that the first evidence of the colonization and settlement of the Indus plains is to be found. There appear to be several separate cultural regions of such settlement. First, in the south in lower Sind, the excavation at Amri and the recognition of a number of related settlements provide an important clue. Amri revealed a sequence of three main periods of which only the first relates to this stage. It witnessed four phases, with objects of copper already present in the earliest, and with continuing stone blade and bone industries throughout. There is also a developing series of painted pottery styles. Radio-carbon dates confirm its general chronology as being from around 3500 BC to *c.*2800 BC. The similarities of the pottery styles are mainly with southern and central Baluchistan and might lead one to suspect that this was the direction from which this movement of colonization derived.

A second group of sites is located along the western plains of the Indus to the north, in the region known as the Derajat and in Bannu district. Several sites have been excavated. A small excavation at Gumla near Dera Ismail Khan and a larger as yet unpublished excavation at Rahman Dheri nearby provide a convincing sequence in which the earlier phases belong to this stage. The settlements appear to have known the use of copper from the beginning, and are once again distinguished by their styles of painted pottery and terracotta figurines. Indeed, the latter are clearly related to those of Mehrgarh period IV, and also show resemblances to those from Turkmenian sites of the Namazga

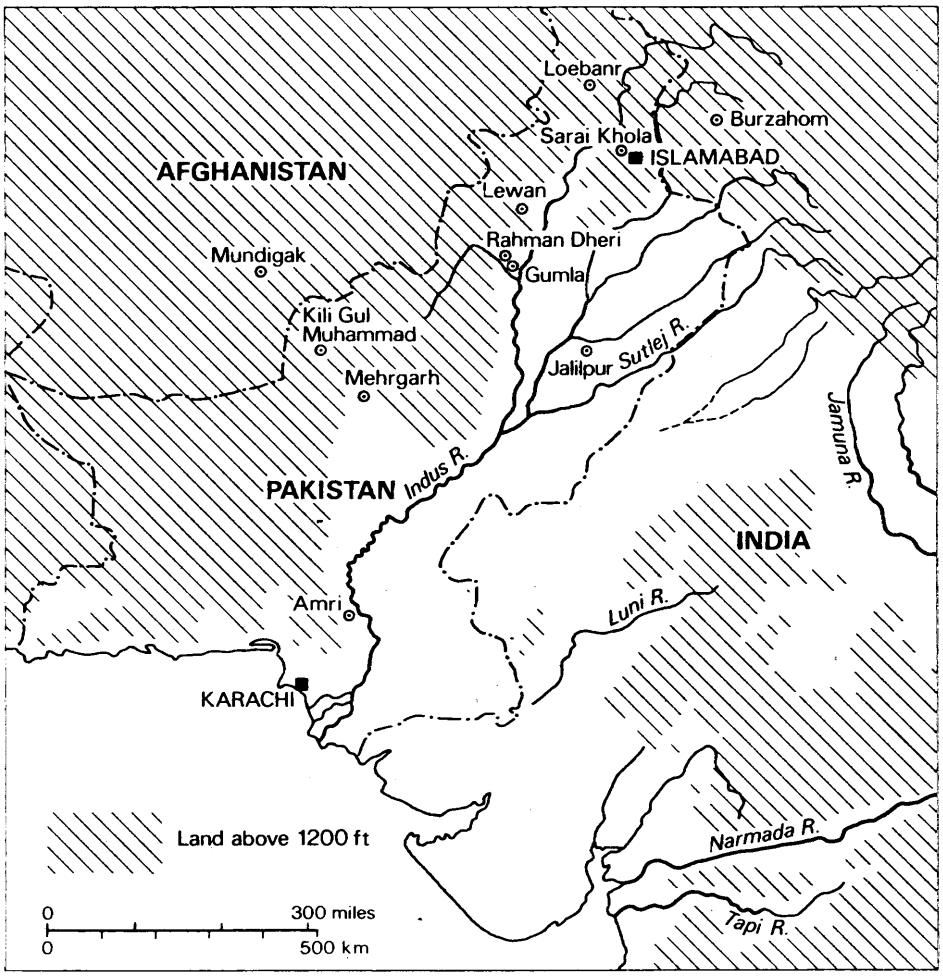

FIG. 2. Map of excavated sites: Stage II.

III complex. Rahman Dheri is particularly interesting because it has produced a curious bone seal from its lowest levels, and because its urban layout appears to be present in its foundation. The aerial photograph shows a regular rectangular plan with apparently regularly aligned streets (these are admittedly from the latest period, but they conform closely to the line of the surrounding brick rampart which appears to go back to the earliest period and which is clearly visible on the modern surface). In the Bannu district Lewan also belongs to this stage, although not as yet dated by radio-carbon. The pottery and terracottas show very close parallels with those of the Derajat sites, but the special feature of Lewan, indeed its unique feature, is that it was a great stone factory, producing microliths, ringstones, ground stone axes, and grindstones (all having parallels in Mehrgarh IV–V). The Lewan microlithic industry has all the characteristics

of a Mesolithic industry of the sort found throughout north-west India and Pakistan.

A third and quite distinct region seems to be indicated by Sarai Khola in the Punjab. Here the earliest occupation may be called Neolithic, since no metal was discovered, but chronologically it seems to belong to our second stage. The stone industry included blades and ground stone axes, and there was a bone industry. The pottery was coarse red-brown, frequently burnished and without painted decoration. Although some elements can be compared to those of Mehrgarh or the Derajat sites, in general this assemblage is so distinct that it seems necessary to assign it a separate regional position. If at all, it is to be related to the Neolithic settlements of Kashmir, notably Burzahom, which may be expected to belong chronologically to this stage and show many similar features, while other elements suggest contact of some sort with regions to the north of the mountains. Again, the early sequence of the Swat valley, revealed in the continuing work of the Italian Mission, are apparently related to the Sarai Khola Neolithic. Thus in this area we seem to have the beginnings of a quite new complex.

A fourth area embraces the south-eastern Punjab and adjacent parts of the Sarasvati valley in northern Rajasthan. Here only one site currently may be certainly assigned to Stage II. At Jalilpur the first period of occupation was also 'Neolithic', apparently without metal and somewhat analogous to Gumla I, but different in other respects. We would expect it to belong to this period. The curious rough-surfaced red ware is without any exact parallels. We may expect other comparable sites to occur in the Sarasvati valley to the south, and eastwards into India across the modern frontier (Mughal 1974; Dalal 1980), but we must await further work on both sides of the India–Pakistan frontier.

Stage III (3000–2500 BC)

The opening centuries of the third millennium seem to have witnessed a development of crucial interest and importance throughout the whole Indus region. Although these changes correspond in time with the end of Mehrgarh VI and period VII, this site does not really exemplify the new development, and this points towards the shift that has taken place, in that whereas in the first and even second stages Mehrgarh might be used as an example against which to compare other areas of the Indus system, by now the pendulum has swung towards the latter region and Mehrgarh appears somewhat peripheral.

In what follows I shall try to describe Stage III as it is known to

us from the Indus valley, leaving aside the contemporary developments which were witnessed either to the west in Baluchistan or farther east. It is possible to do this because whereas in the preceding stages there was considerable divergence between the 'cultures' of the different regions within the Indus system, now, all at once, there is an equally striking convergence towards a common pattern. Within this common pattern no doubt regional variations can still be observed, but they are less striking than are the new similarities of style throughout. The stage is known to us primarily through excavations at a number of sites. The chronology is established on the basis of radio-carbon dates from several sites. It suggests that the period begins around 3000 BC and continues to around 2500 BC. In some areas it may have continued for some centuries longer, but this has yet to be firmly established. The extent of this apparently uniform culture is truly remarkable. If we include sites known from surface collection and sites which appear to belong only marginally, such as Surkotada in Kacch, the extent of the culture is very little different from that of the succeeding mature Indus civilization. In view of the small number of the excavated sites, the small scale of several of the excavations, and the fact that several are as yet unpublished or incompletely published, I shall start by referring briefly to the principal sites.

At Amri, period II follows the preceding Amrian phase without any major break in the pattern of occupation. Even the painted style of the pottery continues, but it is now augmented with a growing number of new elements which the excavator speaks of as 'Harappan'. The painted pottery indeed permits one to conclude that the regional character of the previous stage is not altogether lost during the second period. There are a number of other sites in southern Sind which probably belong to this complex, among them the fortified promontory of Tharro on the edge of the Indus delta, and near Karachi the early occupation of the small settlement of Allahdino, excavated by Fairservis.

More important than Amri is Kot Diji, lying about a hundred miles north-east, on the left side of the Indus. The settlement here seems to have been founded only at this time. It was built on a rocky outcrop above the plain, surrounded by a massive wall with lower courses of limestone rubble and mud brick above. The wall was strengthened by bastions. The material culture does not differ substantially from that of the preceding stage, being based upon a stone blade industry, augmented by comparatively rare copper and bronze. The pottery however introduces a new style, in that there is comparatively less complex painted decoration, with a

predominance of plain bands of black or brown paint on a red ground, and of wavy lines or loops. A rare occurrence is a fish-scale pattern, also noticed at Amri, and later common in the mature Indus period. Almost the only type which preserves the polychrome tradition of the earlier period is a range of vessels with flanged rims, pierced with small holes, apparently so as to secure a lid. This feature is found at almost all sites of this stage. The total depth of occupation in the excavated area was *c.*4.5 m, followed by layers of conflagration and above by occupation of the mature Harappan period. The small number of radio-carbon dates available suggest a span of *c.*3200–2500 BC. Kot Diji, it seems, presents a new regional variant, without evidence of continuity from the earlier Amrian phase to the south. In view of the proximity of Mohenjo-daro and Chanhu-daro, it may be expected that these sites too will be found to contain comparable evidence of an earlier occupation than that at present known.

A rather different regional situation is to be found in the sites of the Derajat. Here a distinctive 'Kot Dijian' element is already present in small quantity in Gumla II and early Rahman Dheri, but in Gumla III and IV and middle and late Rahman Dheri it becomes increasingly common. The local painted tradition appears to continue alongside the 'Kot Dijian' style, although it virtually disappears by the end of the occupation. At none of these sites is there evidence of a typical mature Harappan stage. The Bannu basin sites reflect almost the same picture. At Lewan the early occupation corresponds to Stage II, but the later occupation, found only in one part of the site and then in disturbed deposits, appears to be almost purely Kot Dijian.

At the neighbouring site of Tarakai Qila only the 'Kot Dijian' stage is in evidence. Here, on the banks of the Tochi river, is a large site, with not less than five metres of deposits, containing in one of the excavated areas ten building periods, but from start to finish typically 'Kot Dijian', showing no sign of the earlier phases of Rahman Dheri or Lewan, nor of any distinctly mature Harappan phase at the conclusion. The houses were built in mud brick on foundation courses of river cobbles and small boulders. There is evidence on the edge of the site of an unusually thick mud brick wall, which may have formed part of a surrounding defence. Stone blades, including some with serrated edges and some with sickle gloss, confirm that one of their uses was hafted as sickles for the harvesting of the wheat and barley which were found in large quantities at the site. The material culture of the areas so far excavated was remarkably poor, and metal objects were rare.

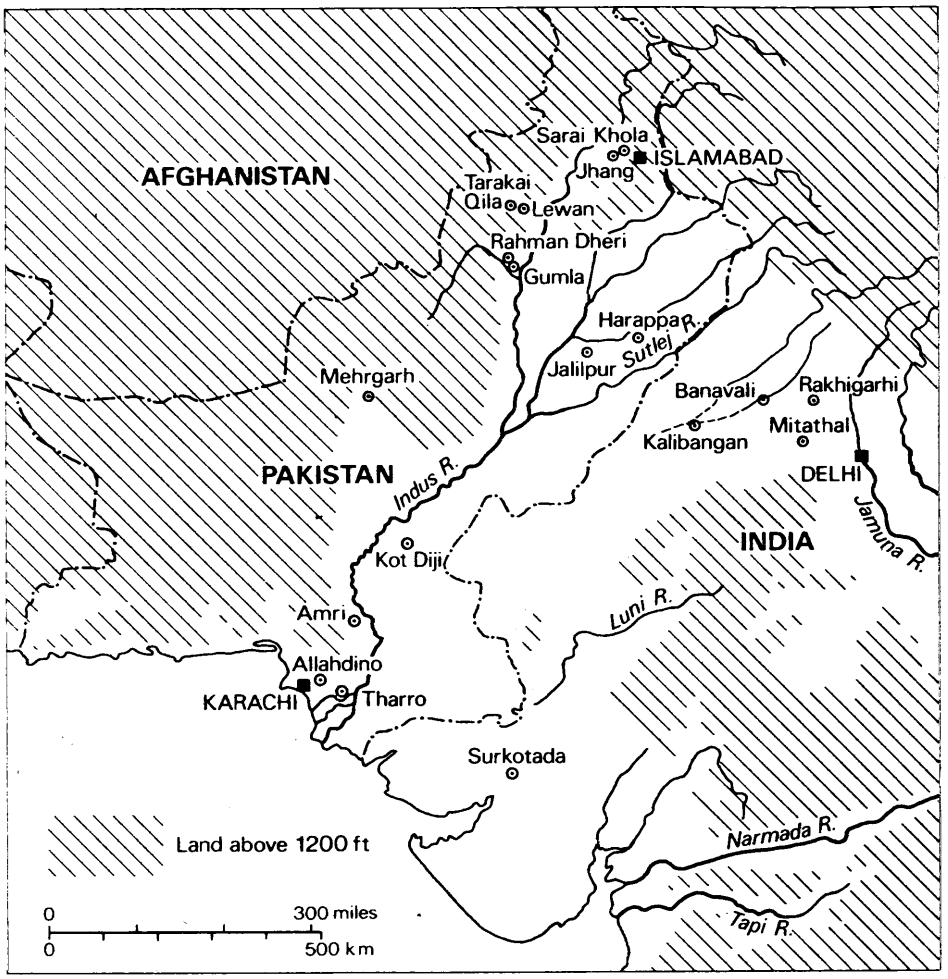

FIG. 3. Map of excavated sites: Stage III, Early Indus period.

Among the finds were four small stone seals, all of clearly non-Harappan type. The as yet unpublished radio-carbon dates from this site are perplexing in that they appear to indicate that the occupation continued through the four or five centuries of the mature Indus civilization. How this is to be accounted for remains to be seen.

Further north at Sarai Khola there is a somewhat similar story. The early occupation which appears to be culturally 'neolithic', even though it probably belongs only to the second stage chronologically, gives way to a new style with characteristically Kot Dijian pottery, and a considerable increase in metal objects, etc. This period has not yet been dated by radio-carbon, but may be expected to belong to the first half of the third millennium. Interestingly it was noticed by Bob Knox and Ken Thomas, two members of the Cambridge Archaeological Mission who last

winter carried out a small exploratory survey at the site, with a view to recovering charcoal and organic materials including seeds, that in the earliest part of the Kot Dijian period the habitations were in pits reminiscent of the pit dwellings of Burzahom and of Loebanr in Swat. Thus the cultural affinity to the other sites of the northern 'Neolithic' seems to be reinforced. Several other sites of the Kot Dijian period are known in the same region, including the extensive mound at Jhang, and the smaller mound at Hathial, in the heart of the early historic city of Taxila. This site, incidentally, is of peculiar interest because there are indications that the occupation continued through the second millennium and distinctive red burnished ware, reminiscent of the earliest period of Sir Mortimer Wheeler's excavations at Bala Hissar, Charsada, must mean that a settlement was in existence at Taxila before the foundation of the Bhir mound, hitherto always thought of as the first city of Taxila; but I digress from our present subject.

An apparently closely related pattern of culture also succeeded the early occupation at Jalilpur, but little has yet been published regarding it. Its excavator, however, has indicated that many characteristic Kot Dijian forms occur along with painted wares including flanged rim pots reminiscent of middle and late Rahman Dheri and related sites of the end of Stage II. The pre-defence pottery found by Wheeler at Harappa also belongs without doubt to the same Kot Dijian style, and may be assigned with confidence to Stage III. Recent explorations by Dr Mughal in the valley of the now dry Ghaggar-Hakra river in Bahawalpur suggest that many more sites of this stage are preserved there in the desert environment.

Following the Ghaggar valley eastwards across the modern frontier into India more sites are reported which clearly belong to the same complex. Among them Kalibangan is particularly important, both because of the extensive excavation of the mature Indus settlement, carried on over ten seasons by the Archaeological Survey of India, and because it was found to be built over the remains of an earlier settlement, producing pottery which indicates its association with the Kot Dijian period. Here too there is a good series of radio-carbon dates whose calibrated results suggest that the period lasted from around 2920–2550 BC, and was followed by a century of transition during which the mature Harappan style emerged. Regretably there was excavation of only a small area of the early period, and the full report has still to be published. But it is apparent that the Kalibangan pottery contains two elements; one wholly Kot Dijian in style; and the other more

individual and, although related to painted pottery from other sites, here the mark of a new regional province. The researches of Dr Suraj Bhan and others have revealed many related sites to the east of Kalibangan and excavations at Banavali and Rakhigarhi confirm their surface observations. These sites appear to indicate that the full extent of the eastern province of the early Harappan period reaches almost to the Jamuna river. East of the Jamuna there may be sites which go back to this stage in time and which show features related to those of the eastern province, but they have yet to be dated conclusively and they do not appear to show the characteristically Kot Dijian style. Therefore we are inclined to regard them as lying beyond the area of our present concern. Similarly there may well be sites in Saurashtra and Malwa which go back to this time but which belong to separate culture regions.

This survey of the Indus system during the course of the first half of the third millennium, indicates that during these centuries a new pattern of settlements spread throughout a large part of it, apparently bringing in a uniform life style, and a new style of ceramic design which either entirely replaced, or at least appeared alongside, the regional pottery of the settlements of Stage II, where these existed. Many new settlements undoubtedly sprang up. The inter-regional style may be called, after the site where it was first clearly identified and is still best exemplified, Kot Dijian. The number, scale and state of publication of the excavations involved are all insufficient for any very firm conclusions to be drawn. But it appears that the settlements of this period shared many common features. For instance, there are surrounding walls at Tharro, Kot Diji, Rahman Dheri, Tarakai Qila, Kalibangan, and probably also at Harappa. The houses appear with one exception (the earliest phase of Sarai Khola) to be substantially built of mud brick, often with a few courses of stone for foundations. The indications are that the economy in all cases was based upon an agricultural regime, with cattle, sheep and goats, and wheat and barley. At several of the sites stone seals of a type quite unlike those of the mature Indus occur. Metal is present but used only in limited quantity. There is a continuing use of a stone blade industry. Terracotta figurines of animals, particularly bulls are common, but human figurines are very rare. Terracotta bangles are common. A variety of stone beads occur and there are indications that these were subjects of trade.

Perhaps the most striking indication that behind this whole complex of sites there was emerging a common culture and common ideology, is provided by the discovery of distinctive

iconographic types from several of the sites. An outstanding example is of a horned buffalo head often with flowers or other vegetal motif appearing between the horns. This subject, which is often referred to as the 'buffalo deity', is found even at outlying sites, such as Burzahom. In one particular example, on a painted pot from Lewan, two horned heads occur on either side of the pot, on one side a buffalo and on the other a *Bos indicus*, in both cases with branches of pipal leaves emerging from between the horns. Whatever the symbolism of these subjects may have been, their widespread distribution must indicate that the communities who made and used them enjoyed a fairly close measure of cultural interaction.

We are led to the conclusion that during Stage III the cultural 'convergence' over so large an area must have resulted from increasing contact and interaction between the several separate regional cultures which we recognized during the previous stage. We would expect that this interaction would have involved growing trade and communication, and perhaps also greater political control. What I think strikes us is that both the actual extent and these types of interaction, are among the things which have hitherto been regarded as the special marks of the mature Indus civilization. If they are indeed present in their early form during the third stage then they point towards the conclusion that this represents the formative period of the Indus civilization. If we add to the similarities of style and craft traditions, the mythological types I mentioned above, along with the common use of potter's marks which appear at many of the sites during this stage, and the use of various types of stamp seal, I think the conclusion is inescapable.

Stage IV (c.2500–2000 BC)

During the century from 2550–2450 BC a major change is witnessed at Kalibangan and Kot Diji, the only two sites which are sufficiently well dated to determine the event with any precision. A similar change, however, appears to have taken place elsewhere, notably at Harappa and Amri. At Kalibangan the event is not very clearly marked in the sections, but at Kot Diji it is accompanied by several layers of widespread burning, suggesting some unusual happenings, perhaps assault from without. At Amri and Harappa there is no such clear evidence of violent change or cultural break. But in all cases alongside the new developments there is every indication that the existing population and its established pattern of life continued as the base of the settlement.

The succeeding period is, of course, the mature Indus civilization, our Stage IV. It is not my intention to discuss this stage in any detail, it is already well known. Instead I shall confine myself to considering some of the main elements of the change from the incipient to the mature stage, because until we know more about it and what it involved, it is difficult to speculate on its underlying causes. I shall therefore restrict myself to pointing to one or two salient features:

(1) First, the geographical extent remained virtually unchanged. Only one part of the area we included in our Stage III, a triangle of the plains of north-western Pakistan, extending roughly from Dera Ismail Khan to Peshawar and Lahore, appears for some unexplained reason never to have participated in the mature Harappan culture. To date not a single mature Harappan seal or other proven inscription has been reported in this area, and almost all the distinctive features of the mature Indus style are absent. On the other hand, the mature Indus culture extended further along the coast, both to east and west, and even for a time penetrated into parts of Baluchistan which we excluded, perhaps arbitrarily, from the culture region of Stage III. Finally, the extraordinary and unquestionably mature Harappan settlement at Shortughai near the Oxus in north-east Afghanistan must represent a colonizing development which carried the mature Harappan culture far beyond the confines of the early stage (Francfort and Pottier 1978). Once these comparatively small changes have been noted, the remainder of the Indus Valley witnessed apparently a direct continuity from the early to mature Indus culture.

(2) There appears to have been a notable increase in the scale and development of style of monumental architecture and planning at the beginning of the mature stage. The best information comes from Kalibangan where the orientation and line of the walls of the early town formed the basis for the construction of the twin mounds of the mature. The construction of a heavily walled 'Citadel' mound on a north–south axis, with a less strongly protected but larger area of settlement, the so called 'Lower Town' to its east, is apparently repeated more or less exactly at Harappa and Mohenjo-daro, on a larger scale. It may be inferred that in all these cases the development coincides with the emergence of the mature style.

(3) The main elements of subsistence appear to have been unchanged from the previous stage, that is to say, the same staple crops, wheat and barley, and animals, cattle, sheep, and goats.

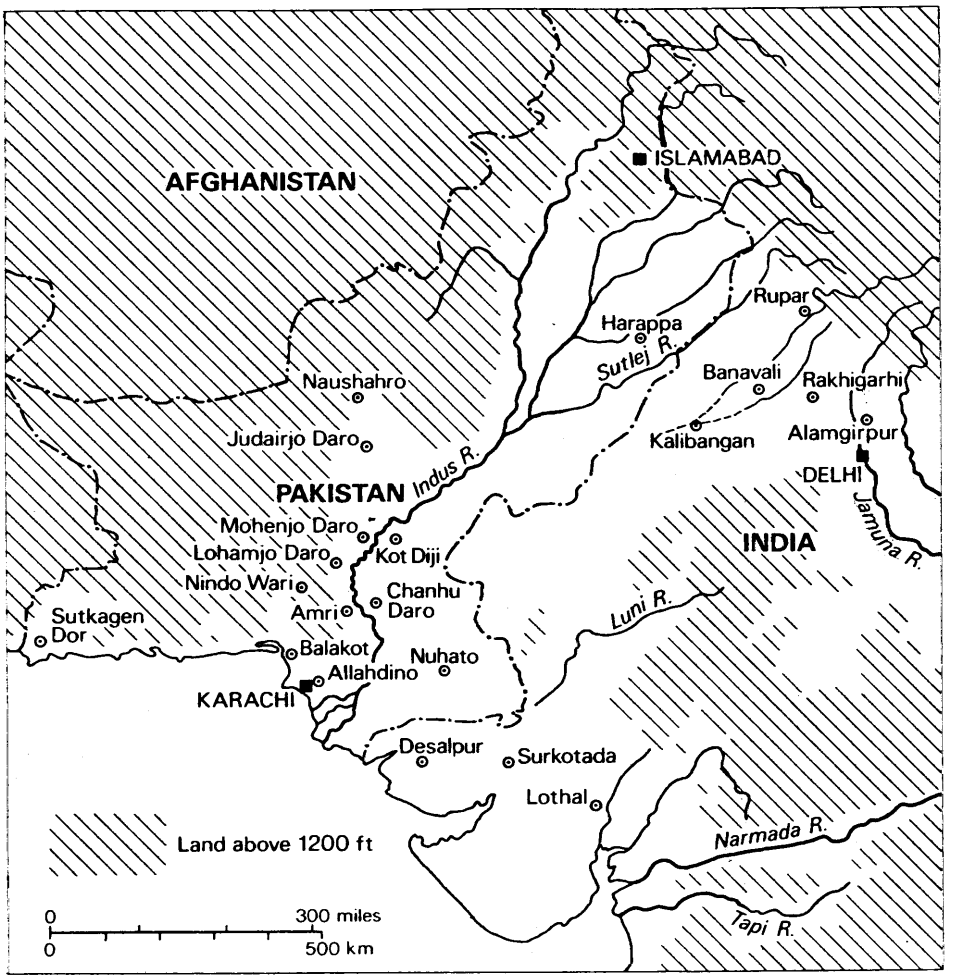

FIG. 4. Map of sites of the Mature Indus period, identified by finds of Harappan seals or inscriptions.

One must expect that there were changes in the organization of their production and distribution, but this has still to be elucidated. The technological base too shows a continuity with the preceding period, combined with a number of clear advances and changes. For example, there is evidently much greater craft specialization in metallurgy and the variety of metals and alloys certainly increases along with the diversity of techniques employed. Again, the stone blade industry, even if descended from those which we have seen in every stage from the first, shows marked changes. There appears to have been large scale specialized production at certain great factories, notably at Rohri, where supplies of good raw materials were available, and export of cores or finished products to the major settlements. A comparative study of the artefacts shows that the varied range of types present

in Stage III drop away, leaving only one major type of parallel-sided blades (Allchin, B. 1979, 178–184).

(4) The introduction of a script and of a new style of seals, and the promulgation of what appears to have been an inter-provincial language and iconography are important developments, although, as we saw, elements of almost all were already present in some form in the previous stage. Indeed, it may be argued that many of the specifically Harappan features, the use of pipal leaf motis, the fish-scale motif, etc., derive from the previous stage.

(5) The mature Indus style appears to arise as a distinct development of something which was already there and already well established. In the process it created what we may follow Fairservis in regarding as a peculiarly Indus, even Indian, life style. It is now becoming necessary to consider what was involved in this process. For example, what led to the emergence of a largely (but not altogether) new range of pottery types, which were diffused thoughout the whole area? What led to the emergence of a largely (but not altogether) new style of painted decoration? Are we to invoke some outside force as 'bringing these things in with them'? Or should we rather think in terms of an internal evolutionary process? My own inclination is towards the second explanation. I may cite the interesting analogy from medieval India, where regional styles of architecture and sculpture seem to have emerged largely as a result of the aspirations of successive dynasties to create their own individual styles. This is not to say that external forces may not have played a part in the process, but that while we are dealing with a situation in which there was a gradual build-up of population and establishment of an inter-regional style, these things are likely to have provided the basis upon which such changes could be wrought.

III

Before I try to summarize my conclusions I should like to make it clear that the stages I have proposed can in no way claim to be original. Already in 1965 Dales had made an analysis of the culture sequence of Baluchistan and the Indus valley, characterizing five stages by the letters B–F. These passed from non-ceramic to ceramic Neolithic (B), through two stages of what I have been calling Chalcolithic (C–D), to the 'threshold of "civilization"' (E), and the mature urban phase (F) (Dales 1965). The soundness of this scheme can be seen in the way that it stands up to scrutiny in the light of the many subsequent discoveries. Then, in 1967, Fairservis proposed a fourfold scheme, in which Stage I represented

'pastoralism with limited cultivation'; II represented developed cultivation with increasing regional diversities; III the growth of inter-regional contacts; and IV the stage of full urbanism (Fairservis 1967). During the next three or four years my wife and I, Fairservis, and Mughal independently of each other pointed to the growing need to view the Kot Dijian phase as the early stage of the Indus civilization, etc. Thus many persons have contributed to this developing trend of thought. But today there is a new perspective deriving mainly from the tremendous access of new data from Dr Jarrige's remarkable discoveries at Mehrgarh, and in presenting a new statement, I have been able to use this to carry forward ideas which had hitherto been based on very slender data.

As we have seen the mature Indus civilization is the climax of a series of stages of settlement, advance, and expansion of population, in the Indus valley and along its western fringes. Stage I is in evidence only on the border between the Kacchi plain and the valleys of Baluchistan; and when radio-carbon dating is available, it will almost certainly be found to parallel developments elsewhere in the Iranian plateau, or on its northern or western fringes. It is by far the longest of the four stages, and it may conveniently be called Neolithic, even if it be found that odd fragments of copper occur before its end. Following the excavator of Mehrgarh we may divide it into several periods: first, non-ceramic Neolithic (ending around *c.*5000 BC); then ceramic Neolithic, ending early in the fourth millennium; and final Neolithic, ending around the middle of the fourth millennium. For the second stage I have followed current Indo-Pakistani usage in calling it Chalcolithic. It begins around the middle of the fourth millennium and ends around the close. It is during this time that we find the first evidence of the spread of settlements on to the Indus plains. There, at least three, and probably four, cultural provinces may be discerned at this time: a southern which we may name after the type site of Amri; a north-western which we may name after Gumla; a northern which we may name after Sarai Khola; and an eastern, whose boundaries have still to be clearly demonstrated. The third stage begins around 3000 BC and is marked by a continuing expansion of the number of settlements on the Indus plains. During this stage we can observe the establishment of an inter-regional style which superimposes itself upon the earlier provinces and which may be recognized, after the site where it was first demonstrated, as Kot Dijian. This stage is clearly very significant, as one of incipient urbanism and cultural interaction over a wide area; for this reason it should now be called

Early Indus or *Early Harappan*, rather than *pre-Harappan*. The fourth stage is that first discovered at Harappa and therefore properly called Harappan, otherwise known as the mature Harappan or Indus civilization. This is the stage of full urbanism.

TABLE 1. *Stages of settlement in the Indus system*

Stage		Type sites	Other current terms
I	Neolithic	(*a*) Pre-Ceramic, Mehrgarh 1 (*b*) Ceramic, Mehrgarh 2, Kili Gul Muhammad 1 (*c*) Final, Mehrgarh 3, Mundigak 1	
II	Chalcolithic	Amri 1, Gumla 1–3, (Sarai Kholā 1, Jalilpur 1)	(Neolithic)
III	Early Indus	Kot Diji 1, Kalibangan 1, Amri 2, Sarai Khola 2	Early Harappan, Pre-Harappan
IV	Mature Indus	Harappa, Mohenjo-daro, etc.	Mature Harappan, Indus civilization, Harappan civilization

We are now therefore in a position to conclude that the Indus civilization does indeed have antecedents and that they span a considerable period of time, starting with the first long extended stage during which hunting was augmented by the herding of sheep and/or goats, and when local wild cattle were first domesticated, and gradually took over from sheep or goats the role of major domestic animals, and during which men began to gather and then to plant seeds of barley and wheat, and also at a surprisingly early date cotton, on the fringes of the Indus valley. From around the middle of the fourth millennium a new outward movement seems to have carried this settled agricultural life to settlements on almost all parts of the Indus plains. What population these already held we do not know, but this process may surely be spoken of as a colonization. The several rather separate culture regions of the second stage probably indicate that there were several more or less independent movements of this sort, and that at first there was comparatively little interaction between them. However, some five hundred years later, around the opening of the third millennium, there had evidently been a sufficient build up of population on the plains, to encourage greater interaction, bringing about a process of cultural convergence, so that increasingly during the opening centuries of the

third millennium common, often almost identical, features of culture appear over the whole Indus system. We are firmly of the opinion that this process must be regarded as the formative stage of the Indus civilization, and thus that it deserves to be henceforward referred to as the Early Indus period. It was these centuries which prepared the ground for the remarkable development which took place around the middle of the third millennium with the appearance of the mature Indus style, and the development of what must be seen as already a recognizably 'Indian' pattern of life. Thus, if we wish to enquire further of the early phases of the Indus civilization it is particularly within the Indus system that we must look.

There are of course many problems still to pose and many still demanding answers. I wish to finish by mentioning only one which seems to me to be assuming crucial interest. What were the causes behind the transformation from the early to the mature stage of the Indus civilization? Were they solely internal socio-economic developments within the population of the plains? or were they also influenced, perhaps hastened by external factors? And if the latter, then what were these factors? Surely at that date they must have included some stimulus from trade contacts with Mesopotamia, or with the interior of Iran? But were they also in any way a result of that pattern of movements of peoples from Central Asia which later history encourages us to expect even at this early date? And if so, then what if any relation do they bear to the movements which were responsible during the following ten or more centuries for the spread of Indo-Aryan speaking peoples over much of Iran and north and central India? Questions of this sort demand a better knowledge of the archaeology of the settlements of the Indus area, and systematic analysis of the concrete evidence which they already provide.

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