Chapter 4

THE USERS OF THE PAINTED GREY WARE INTRODUCED IRON IN NORTH INDIA

A. General.-- The earliest occurrence of iron in north India, associated with the Painted Grey Ware, as shown in chapter 2, leads directly to the question as to who these people were and wherefrom they imbibed this new metal and its technology. Wheeler has modified Lal's provisional attribution of the ware to the Aryans by equating the users of the Painted Grey Ware, as a concession, with the second wave of invasion of the Aryans from the Panjab into the Ganga plain.

Over the past years more than one cultural ensemble has been sought to be claimed as Aryan. They comprise the Harappa civilization at one end of the chronological scale and the Painted Grey Ware at the other, with the people of Cemetery 'H' at Harappa, and the people associated with the 'copper hoards' also being thrown into the competition.

The problem of identifying the Aryans among these divergent claimants is not merely difficult, it is also complicated by the diversity of the claims. One apparently simple standard of judgement is provided by the Rigveda, substantiated and complemented by the Vedic literature
in general. It sounds reasonable enough to seek the material remains of the Vedic people in the light of their earliest literary lore, but the task is a difficult one and it is as yet a far cry to equate any material remains with the literary accounts of the Vedas. Nevertheless, the divergent claims are examined below.

B. Harappa Civilization and the Aryans.

(i) Geographical Extent.- Geographically the extent of the Harappa civilization (fig. 3) has far exceeded the special bounds to which it owes its name, and it is expanding to this day by leaps and bounds. The geographical area extends over the regions known to the Rigveda and beyond, in the region of the subsequent settlement of the Aryans. This, therefore, presents no difficulty, though the possibility of other early cultures spreading over the same region complicates the matter a little. It cannot, therefore, be treated as the sole or even a major criterion for solving the problem.

(ii) Architecture and Urban Life.- Architecturally, the excavations at Harappa and Mohenjo-daro and more recently at Lothal and Kalibangan have shown the civilization to be largely urban in its evolution with, no doubt, the backbone lying in small villages. Nevertheless, the urban character of the civilization is basically opposed to the simple pastoral
and agricultural life of the Vedic people, divided initially into tribal groups, spreading out independently of one another, though culturally and socially linked quite closely. The urban character of the Harappa civilization is indicated by the well planned storeyed houses of bricks, containing many chambers, baths and drains and well planned streets, underground and deep sewage ways, connected by gentle but effective gradients with intermittent cesspools, all suggesting even municipal control. The citadel-like defences at Mohenjo-daro and Harappa, built on high platforms to save the enclosed city from floods as well as from extraneous attacks, indicate a controlled administrative machinery. No less are the public buildings, like the Great Bath and Hall at Mohenjo-daro, and granaries and workmen's quarters at Harappa, or the harbour at Lothal indicative of many sided advance. These reflect an elaboration of material life known to the Rigveda.

(iii) Religion. In the matter of the religious life of the Harappa people, surmise, in the absence of aid from the still undeciphered script of the seals, is nearly the only guide. The well known seal, bearing a Yojin with horned heads and a circle of animals, identified by
Marshall with Siva as Mahayogin or Rudra (Pasupati) of the Rigveda dominates the field. It is recognized as the Siva of the later Indian pantheon. This identification receives a good deal of prop from the numerous phallic symbols and even the prototypes of the Yoni, in stone, recognized as objects of worship. But far more prolific are the terracotta figurines in female form with an elaborate head-dress, recognized as objects of worship as the Mother Goddess. The seals also portray a number of bizarre animal forms, installed before what looks like an incense burner, and a composite form of man and beast (bovine), recalling the Sumerian Eabali or Enkidu, also included in the pantheon. The method of worship is not known, though a singular male bust, wearing a trefoil patterned cloth, thrown over the left shoulder, a beard, with the upper lip shaven, a fillet with a disc around the head, covering the forehead, and arm bands, has been identified as a priest.

The composite picture presented by this array of deities, godheads and priest recalls some aspects, no doubt, of later day Hindu religious life, but does not reflect the Vedic concept of religion comprising Indra, Agni, Varuna, Marut, Rudra, Dyau and Sūrya. Nor is the Vedic emphasis on sacrifices indicated.
Recently, however, T.N. Ramachandran, a competent Sanskrit scholar, has brought out several parallelisms between Rigvedic passages and the picture conjured up by some of the seals. The Pasupati seal, in particular, is stated to be no other than the embodiment of the Mahisa as well as Mahadeva mentioned in the Rigveda, according to him. The mention of the 'Sisnadeva' in the Rigveda recalls to him the phallic emblems and the little nude figure of a male, with the phallus damaged, in sandstone, found at Harappa. Of course, Sisnadevas are not looked upon with favour, but, no doubt, denote the existence of this cult among a section of the people. Nor was Pasupati looked upon with favour. The figure identified as priest is actually interpreted to be a 'Yajamana', the person intending to sacrifice, pointing to an implied ritual of sacrifice.

Besides these, the long perforated cylindrical vessels are likened to vessels called 'Sahasradhara' or thousand-streamed, and were obviously meant for crushing Soma plants inside; allowing the juice to flow out in numerous streams. The little clay carts are not to be taken as playthings, but as the very vehicles employed to carry Soma plants to the altar or platform of sacrifice.
A seal bearing three heads emanating from the shoulder of an animal, a bull, seems to provide another parallel yet. One of its heads is twisted backward, the central one is erect and the third one is projected towards the fore. Ramachandran reads in them the call of the past, present and future, respectively, paralleled in a Rigvedic passage.

Besides these, there are several other similarities noted by Ramachandran.

The revolutionary interpretation, if aided a little by imagination, strikes very persuasively indeed, but has not yet carried conviction. These parallelisms do not connect all or even the major aspects of the life of either the Harappans or of the Rigvedic Aryans. The context of the passages is not yet clear and the factor of accident, in view of the very limited scope of similarities, cannot be altogether forgotten. Is there anything to prevent echoes of life in the past in later records, on the assumption that the interpretation fits the facts? Heinrich Zimmer has traced many an iconic form of later Hinduism to ideas rooted and visually expressed more than a couple of thousand years earlier in West Asia. If the hypothesis of Zimmer were true, ideas should be
imbued with a gift for lying dormant in human breast for ages and ages before blooming to flower again. Though the case in point is not exactly similar but it almost touches upon Zimmer's interpretation of the inscrutably curious human mind.

(iv) Cultural Life—No doubt, before the Harappa civilization came to an end, a battle or skirmishes between the invaders and the defenders may have taken place. The seventeen skeletons found at Mohenjo-daro lying in the streets, drains or pits without a formal burial recall such a possibility. Nevertheless, the defeat and discomfiture of the invaded can hardly account for their total annihilation or complete extinction, and a sizable volume of the surviving population has necessarily to be reckoned with. Would they be so oblivious of all that their culture meant as not to represent their way of life in the new society that evolved in India when their own had met with an end? Some of the ideas of the seals, as the new interpretation conjures up, may reasonably be attributed to the contribution of the Harappan survivors. The disfavour extended to Pasupati, granting that the interpretation preferred is correct, and Sispadeva would strengthen such an inference. These, at least, would imply, as Wheeler has aptly pointed out in the following words, on the adoption and retention of the Harappan way of life.
in the non-material field. Wheeler says, "But reason has been shown to suspect that the later Hinduism, in spite of its Aryan garb, did, in fact, retain not a little of the non-Aryan Harappan mentality and relationships, perhaps to a far greater extent than can now be proved."

In contrast, the succeeding culture, inexplicably, or out of abhorrence, adopted next to nothing of the advanced urban experience of the civilization that had just ended even in the expectedly urban capital cities. The Rigveda is supposed to have been composed in the course of several centuries and there is some non-Aryan influence in it. The fact that the Aryans remained alien to urban life during several centuries of their stay in the country indicates that they had a strong bias for village life.

The later people were doubtless Aryan settlers, fore-runners of present day Indians, and if they had been the makers of the Harappa civilization as well, the sharp difference in this material aspect of life poses a problem that cannot be surmounted. The utter impossibility of the situation renders the attempt to identify the two distinct cultural groups futile, if not ridiculous.

(v) Harappan Script.— The fact that the script of the Indus seals has not yet been deciphered calls at once for caution and patience in preference
to speculation. Even apart from the question of the language of the seals, there is no agreement among scholars about the direction in which it is to be read, i.e., whether from the left to right or from the right to left. Lal has recently succeeded in establishing, beyond any reasonable doubt, that the writing was meant to be read from the right to left and the possibility of the script, in some cases, being boustrophedon has also been admitted.

It has been thought that the rudiments of the proto-Brahmi script, the mother of all Indian scripts, are to be traced to the Harappan script. If the attempted identification, Harappans = Aryans were true, is it not surprising that the vast Vedic lore was not committed to writing in the already available script as the easier and more practical means but entrusted to the tender mercies of memory through an elaborate and tortuous time-killing process of recital to aid the memory, transmitted from teacher to pupil from generation to generation?

(vi) Disposal of the Dead. Even the mode of disposal of the dead practised by the Harappans, viz., by burial was gradually given up in favour of cremation, which was practiced side by side by the Rigvedic Aryans.

(vii) Racial and linguistic affinities. If the limited number of skulls studied from.
Mohenjo-daro, were to be treated as a random sample, far from being representative, they would show a mixed population with a bulk of the Mediterranean type. The Mediterranean racial type has been attributed to the Dravidian speaking people of India in general. While Siva with his consort, Uma, a form of Mother Goddess, as found among the Dravidians, are to be traced to the Pasupati seal and to the Mother Goddess idea, a Dravidian bias for these aspects of the Harappan religion would be indicated. The phallic emblems are likewise to be found at home among the Austrooid speech groups, and the presence of the proto-Australoid element among the dead in Mohenjo-daro are significant though not conclusive in this context. An attempt has been made on linguistic and racial grounds to connect the Harappans with the Dravidians. The racial grounds as also the linguistic are inadequate for the present to lead to any conclusion.

(viii) Chronological Incompatibility between the Harappan Civilization and the Rigveda—It may be recalled that one of the factors that has gone a long way to influence the dating of the Rigveda is the date of the Boghazkeui inscription, fixed firmly at 1367 B.C. The form of the proper names recorded in the inscription, as in the contemporary Hittite text of Kikkuli on the training of horses are of a
period before the Aryan language was bifurcated into Iranian and Indo-Aryan. Maxmuller had suggested a date around circa 1200 B.C. as the date of the composition of the Rigveda and B.K. Ghosh, a profound Vedic scholar, fixed it at circa 1000 B.C. on linguistic grounds with reference to Panini's Astadhyayi. On this showing, the presently unresolved chronological incompatibility between the Harappa civilization, dated provisionally between circa 2500 and 1500 B.C. and the Rigveda is a formidable factor in the way of commendation of Ramachandran's interpretation to ready acceptance.

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To sum up, inspite of indications of parallelism between the Rigveda and the Harappa civilization, which are at best indications of spiritual contact and indebtedness, there is a priori no definite ground yet for tracing the Aryans to the Indus valley in the sense in which this geographical name is employed.

C. The Chalcolithic Cultures of Western India and northern Deccan and the Aryans

(i) General: A hesitant claim has been voiced in recent times by H.D. Sankalia for certain late features in the chalcolithic cultures of western India and northern Deccan for attribution to Aryan immigration from the direction of Iran.
about 1000 B.C. The materials are to be traced in inspiration to Hissar and Sialk. Alternatively, he has suggested that the chalcolithic culture might as well be pre-Aryan.

(ii) Geographical Distribution.— The geographical extent of this culture is broadly bound by Gilund, in District Udaipur, Rajasthan, in the north, Nasik-Jorwe, in District Nasik, in Maharashtra, in the west, Brahmagiri, in District Chitaldrug, Mysore, in the south and Tripuri, near Jabalpur, in District Jabalpur, Madhya Pradesh in the east (fig. 5). It has clearly a much southern focus in comparison with the early habitat of the Aryans in the Panjab, and the Sarasvati-Drisadvati valley. This remains a major stumbling block in the way of its being equated with the Aryans, as one understands them in India, as the authors of the Vedas and of the Vedic culture.

(iii) Stratigraphy.— Stratigraphically, it belongs to a post-Harappa horizon as indicated by the evidence of Rangpur, District Jhalawar and Somnath, District Sorath in the Surashtra area of the Gujarat. The trend in the course of cultural expansion, is from the north to south.

(iv) Chronological Considerations.— Chronologically, the earliest phase at Navdatoli seems to recede to a date prior to circa 1500 B.C., on the basis of Carbon-14 assessment. But with the terminal date of the Harappa culture being fixed presently at circa 1500 B.C., this incompatibility
is an obvious incongruity. Combining this circumstance with a central Carbon-14 date around circa 1200 B.C., for the end-phase of Harappan culture, as suggested by Fairser, it behoves one to point to the lack of accuracy of these dates and the consequential unreliability of the present methods for the chronological assessments. Besides, if it is to be conceded that this culture begins earlier than the end-phase of the Harappa culture, as Carbon-14 dates would have it, it becomes difficult to explain the absence of Harappa features from this culture, even though the two cultures overlapped geographically, to a considerable extent. It is well known to-day that the geographical expanse of the Harappa culture extends now to Bhagatrav on the Tapti, and encompasses the chalcolithic centres lying further to the north. Yet the paradox remains that some obvious parallels with Iran do occur in this culture, but almost none with the nearer Harappa culture. Under the circumstances, the chronological position of the culture, as indicated by stratigraphy, should be posterior to the Harappa culture.

(v) Iranian Influence — The limited Iranian influence, such as is recognizable, confines itself to some pot shapes in the ceramic or metallic materials, designs of paintings or shapes of weapons. Such borrowings, neither on
a large scale nor as a regular feature, would imply contacts of some kind. If the contact of the chalcolithic cultures of west-central India with the Iron Age phase of Iran, Sialk VI, cemetery B, was really effective, in the sense of a folk movement instead of merely commercial exchanges it would be but natural to expect that some iron, more than pottery or other metallic vessels, should have been imported, because by virtue of its being the most utile metal, bringing differences in the amenities of life and placing a new power into the hands of its possessor, iron would be naturally most coveted. The possible exchanges of commercial merchandise could not have been substantial, as otherwise iron would hardly be excluded as an article par excellence with an exchange potential.

(vi) Ethnic Movement.— The chalcolithic culture in question does not, therefore, seem to owe itself to any ethnic movement from Iran, nor any substantial flow of cultural influence at any stage from that direction. It does not have any basically admissible links with the Harappa civilization, and on the whole, it is stratigraphically posterior to the latter. Geographically it covers a region to the south and south-west of the original habitat of the Aryans in India, and cannot, therefore, lay any claims to being identified with the Vedic Aryans. Its basic cultural equipment is different from that of the
Aryan zone lying further to the north of a comparable post-Harappan period, indicating that it had no conformity with the culture presently (provisionally) attributed to the Aryans and exemplified in the Painted Grey Ware and its associate cultural wherewithal. Its chronological data forbid such a comparison or equation, or even with a late Aryan phase of Aryan expansion. The facts and circumstances lead tentatively to the conclusion that the chalcolithic culture was the creation of an indigenous people, with lateral, but not basic, influences from Iran in a post-Harappan period, almost, if not equally, contemporaneously with the so-called Aryan infiltration. Linguistic palaeontology and racial features should name the people who were responsible for the culture. The Purāṇas have suggested the name of Nāgas, which, in all probability, they were, as indicated by Sankalia. The study of the skeletal and cranial remains from Nevasa and Daimabad would forward the presently inferable position a step ahead and put the scientific stamp of either approval or rejection on the inference based till now, partially, on circumstantial evidence.

(vii) Links with the Painted Grey Ware Culture
The possible stratigraphic links of this culture with the Painted Grey Ware cultural assemblage may be sought in north Rajasthan on the common
borderlands of the respective cultural zones, as also along the lower reaches of the Chambal, where mutual cultural relationship, if any, are also likely to be revealed. The chalcolithic culture in Ahar seems to have shown some signs of such a link in the form of similarity of painted designs on the pottery.

(viii) Conclusion.— It must also be admitted that this culture was not rudimentary in scope, nor primitive, though, no doubt, somewhat retrograde in comparison with its obvious predecessor, the Harappa culture. This is indicated by the many-sidedness of their cultural life comprising modest architectural development, defences, careful funerals, a wide miscellany of ceramic types, a taste for decoration that the painted designs implied, if a little perfunctory and repetitive, its acquaintance with metallurgy, textiles, religious concepts and the great expansive force that accounts for its geographical expanse. The representatives of the culture were, therefore, fairly advanced in cultural level, and had some kind of organized civic life.

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To sum up, it cannot, therefore, be claimed that the chalcolithic cultures were the handiwork of the Aryans. Nor is the limited Iranian influence suggestive of an ethnic movement from that direction. The lack of influences
from the Harappan civilization points for the present to their indigenous inspiration in a post-Harappan context.

D. Post-Harappan Cultures in the North-West of the Indo-Pakistan Subcontinent and the Aryans

(i) General. — The end of the Harappa civilization was followed by a number of scrappy cultural complexes, limited alike, in chronological range, as judged from the depth of strata and regional distribution (fig. 8) in the north-west of the subcontinent. This limited aspect, more than any other, would depreciate an attempted equation of these complexes with the Aryans. As Wheeler sought to explain it, the decline and decay of the great Indus civilization was followed by "cultural fragmentation", which displayed itself in the emergence of distinct and mutually exclusive cultural groups, described by Wheeler as "beggarly successors" of the great Indus civilization but "deriving very little from a sub-Indus heritage".

These comprise the cultural traits represented by (i) the cemetery 'H' at Harappa and a few other sites, (ii) the cemetery at Shahitump, (iii) Jhukar, and (iv) Jhangar, as represented by Periods II and III, respectively, at Chanhu-daro, (v) the cairn-burials at Moghul Ghundai, Zangian and Jiwanri, Dambakoh etc, and the (vi) Londo Ware, (vii) Ranaghundai IV and V, besides (viii) the Trihni ware interposing itself between Jhukar and Jhangar.
The cemetery 'H' at Harappa was first excavated by Vats in the year 1928, 1929-30, 1930-31 and 1933-34, and subsequently by Wheeler in 1946. The cemetery, which had two successive levels, representing two different modes of disposal of the dead, overlay an extensive 5 to 7 ft. (152.4 to 213.36 cms) debris. The flimsy structures associable with this cemetery were found in the fourth phase of construction in the western gateway, separated from the Harappan deposits by an intervening debris deposit 3 to 4 ft. (91.44 to 122 cms) thick. The cemetery 'H' burials were posterior to the Harappan burials, R 37.

The earlier and lower group of burials of cemetery 'H' called Stratum IX, were characterized generally by full inhumations, accompanied by ample grave goods, represented by pots and often a full animal.

The later or second group of burials, occurring in Stratum I, consisted of fractional burials in large pots without any grave goods. The pottery from both the phases share common features, and are basically uniform in character. The ware is a well made, sturdy, bright red ware, painted in black, which has a tendency to run. The designs consist of plant forms, ring and dot patterns, zigzag lines, groups of straight and crinkled lines, besides animal forms, in symbolic conventional shapes. The designs and motifs are entirely different from those met with in the Harappan ceramics.
Similar pottery is found only at two other sites, in Bahawalpur area, namely, at Lurewata and Hatha Theri, both in Pakistan.

Wheeler suggested that it was the cemetery 'H' people, whom he tentatively equated, after Gordon Childe, with the Aryans, who had destroyed the Harappan civilization. The extremely limited distribution of the remains of the cemetery 'H' and the entire absence of the cemetery 'H' ceramics from the ceramics of later periods, discount the proposed suggestion of their being the successors of the Harappans. Besides, the presence of an intervening debris layer of respectable depth, 3 to 4 ft, in the habitation area and 5 to 7 ft, in the cemetery 'H' area poses a chronological gap between the decline of Harappa and the arrival on the scene of the cemetery 'H' folks. Notwithstanding the presence of proto-Australoid skulls among the burials, the dominant element seems to have been the aboriginal people of the land itself.

The post-Harappan chalcolithic cultures of west-central India have only a 'technical similarity' with the basic black-on-red painted ware. In all other respects the disparity is complete, and the chronological horizon remains yet an unknown factor. The end of Harappa is marked generally by emergence of newer cultural strains which presuppose disturbed conditions. Such a situation is encountered at Mohenjo-daro, where the evidence of destruction is in the form of mass murders, at Harappa in the debris.
layers, at Chanhu-daro, where the Jhukar folks built into the ruins of the Harappans, at Jhukar itself, at Lohumjo-daro and at Rana Ghundai, after IIIC occupation.

(iii) Shahi-tump.— The distinctive post-Harappan cultural trait known from Shahi-tump is that represented by the finds in a site of the name near Turbat. The cemetery itself was laid into the abandoned site of the Kulli culture associable in the later phase with Harappa.

The burials were of two types, namely,

(a) inhuman burials to the accompaniment of grave goods, and (b) groups of grave goods without any human remains. The inhumation burials are interesting in themselves and consisted of full inhumations on sides or backs with legs flexed. The accompanying grave goods included pottery, beads of stone, and alabaster cups, objects of copper or bronze in the form of tools, ornaments or seals, stone blades and pestles and the like. Occasionally cooked food was also offered and is evidenced by animal bones, sometimes charred. The pottery from all the burials is uniform in character, being a thin hard and well made ware, usually grey, but changing through pinkish to yellowish buff colour, and painted interiorly as well as exteriorly in black which changes occasionally to reddish brown. The designs consisting of the Svastika, angular spirals, lozenges, chevrons and triangles, are arranged in zones or panels on the exterior, and the interior is often divided into squares within which the
Among the objects of copper the spearhead, shafthole axe and stamp-seals have special significance in regard to chronology and folk movements. The large spearhead recalls similar shapes from Harappa. The splayed and socketed axe, called the shafthole axe is compared with Sumerian and Akkadian parallels, and is available at the chalcolithic site at Nagda, in iron, in Period III.

The circular stamp-seals are similar to those occurring at Hissar IIb, and IIIb, in Anau III, and Susa, and are datable to circa 2000 B.C. or later. The skull type at Shahi-tump is recognized to be of mixed nature, approaching the Caspian or Nordic type of skull. This limited evidence would also suggest movement from the west towards the later phases of the Harappan civilization.

(iv) Jhukar.- The Jhukar Culture, met with at Jhukar, Lohumjo-daro and Chanhu-daro, was represented by Period II at Chanhu-daro in the 1935-36 excavations of E. Mackay. It occurs as an overlap in the last phase of Harappan occupation at the site, and represents, limitedly, the culture of a people who succeeded the Harappans. That they could not have exercised a lasting or effective influence on posterity is indicated by the limited distribution of the cultural repertoire stated above.
The culture was characterized by faltamah housing made of matting walls on brick-floors, a distinctive painted pottery, and a miscellany of objects, which serve at best to emphasize the differences with Harappa. The pottery, a buff ware, with painted decoration in black-and-red, comprised small footed jars, bottles, offering stands and saucers. The painted designs comprise geometric and stylized plant motifs. Piggott, who made a critical and comparative study of the pottery, holds the view that it arose as a result of the combination of a variety of elements, in which influences from Kulli, Harappa and Amri could be traced. Some motifs have parallels in Sialk III as well as Hissar IIb, and turn up again in the accreditedly late cemetery at Jiwani in Makran. To quote his words, "on the whole, there seems no reason to regard Jhukar pottery as any thing but a native product arising out of the disturbed conditions and folk movements after the fall of the Harappa empire, when refugee tribes were leaving Baluchistan and settling in Sind."

Among the various objects of daily life a painted head rest, a shaft-hole axe, resembling one from Shahi-tump, copper stamp-seals, bearing motifs, far removed from those at Harappa, with no legend, deserve special mention. The seals appear to indicate, on the contrary, contacts with Sumer, Elam, and even with the Hittite Asia Minor. The beads again show contacts with Hissar IIIc, Anau III, and Jemdet Nasr or elsewhere in Sumer, Elam, and even with the Hittite Asia Minor. The beads again show contacts with Hissar IIIc, Anau III, and Jemdet Nasr or elsewhere in Sumer in early Dynastic contexts.
The pins of copper, which were used obviously in the dress, have no parallels in Harappa, and only one is said to be vaguely reminiscent of a type found in Sialk IV.

The pins, meant to be used for fixing folds of dress, bears close resemblance to a pin with a revolving upper part found at Nagda. A bead with decorative circlets found at Jhukar recalls one from Magda.

Otherwise the cultural repertoire at Jhukar appears to have nothing positively in common with the later chalcolithic cultures in general, and is intrinsically richer in variety.

(v) Jhangar.-- The Jhangar culture is represented at the site itself, in phase III at Chanhu-daro, and at Lohumjo-daro in Sind. Its exact chronological horizon is unknown. Stratigraphically it is later than Jhukar and had obviously no connection with it.

The pottery was a grey or black ware produced on a slow wheel or tournette, and decorated with incised designs in the shape of chevrons, herring bone patterns or hatched triangles.

These obviously have no claims to being designated as the Aryan cultures not merely because of their fragmentary nature, but also the limited distribution, the absence from the main focus of Aryan settlements in the Ganga plains, or the lack of any lateral influence on
the cultural life of the Aryans.

(vi) The Cairn-Burials and the Londo Ware.— These have been described before, as also their chronology, and it requires no effort to discount any claims for these cultural traits to be equated with the Aryans on the twin grounds of their restricted distribution and location entirely in the north-western parts, outside the central pale of the early Aryan home in India, besides, of course, the grounds of chronology.

(vii) Ranaghundai IV and V.— The same remarks as above hold good for the post-Harappan phases, viz., Periods IV and V, respectively, at Ranaghundai.

The occupation at Rana Ghundai in north Baluchistan, began indeed before the emergence of the Harappa civilization, but towards the end of the IIIc phase of occupation it overlapped with an early part of the Harappa civilization about 2000 B.C.

At this stage the site appears to have been burnt and sacked, and a new settlement arose upon the debris, called RG IV. The pottery of this period is entirely different from that of the earlier levels, and is marked by a coarse ware — in the form of painted bowls. Still later, but not after the occupation of RG IV was destroyed again, by fire, there arose another settlement on the site christened RG V. With the changing folks came a change in pottery which is decorated with relief pattern, but not painted.
Similar evidence of repeated burning down of the traces of habitation was also observed at Dabarkot, the last phase of which was Harappan. The occurrence of the relief-decorated pottery of RG V on the surface indicates the chronological level of the destruction by fire.

(viii) Trihni Ware. A distinctive ceramic ware marked by bold floral decorations, recalling the Londo ware decorations, was found at Lal Chhato, near Trihni, at Shah Hasan, Lohri, round the lake Manchhar, and at Chanhu-daro in central Sind, (Pakistan). It is associated with chert blades or flakes and is roughly dated to circa 1400-1200 B.C. Neither well known nor widely distributed, the Trihni cultural ensemble represents one of the 'beggarly successors' of the Harappans, and can scarcely lay any claims to Aryan inspiration.

To sum up, the limited aspects and distribution of these cultural fragments would deprecate any attempted equation with the Aryans.
E. "Copper Hoards" and the Aryans

(i) General - The views of B.B. Lal. - A distinctive cultural ensemble as yet not clearly correlated either in stratigraphy or the sequence of Indian cultures, is formed by the finds of 'copper hoards' in varying volumes over widely expansive regions, but with a marked concentration in the Ganga plains, reaching up to Chhota Nagpur and Ranchi in Bihar.

The 'copper hoards' have remained, however, the strongest candidates to be associated with the Aryans, ever since R. Heine-Geldern first formulated his theory on the equation in 1936. These hoards have been reported from time to time from different parts of Uttar Pradesh, Bihar, Madhya Pradesh, West Bengal and Orissa. (fig. 9) Lal's treatment of the subject has not been improved upon, though a hoard was recovered from Bahadarabad in 1953, and with this the story of actual finds is practically up-to-date, save for one relatable object from the upper levels of Lothal.

The bulk of the copper implements found in hoards or otherwise have occurred in the Ganga plains, though some have also occurred outside. These have also a typological affinity suggesting a composite class by itself. The objects can be divided into
eight types (pl. Fig. 1c), namely, (i) flat celts, (ii) shouldered celts, (iii) barcelts, (iv) rings, (v) harpoons (vi) hooked spearheads, (vii) antennae swords, and (viii) anthropomorphic figures of indeterminate use. Chemical analysis has shown that they are, nearly all, made of copper, out of ores extracted locally with a minor admixture of nickel.

Though most of the specimens occur in the Ganga plains or towards its east, specimens of the flat celt, antennae sword, harpoons, and, so far, a single specimen, broken and fragmentary, of the anthropomorphic figure, has been found at Lothal, outside this zone.

Flat celts have been reported from Harappa and several other Indus sites, besides four at Jorwe near Nasik, Maharashtra. As Lal has pointed out, the shape of the celts is so basic that it cannot be used as a means of typological comparison or related conclusions.

Harpoons, similar to those from India, have occurred among bone objects in Magdalenian culture, widely removed from the specimens in time and space. Though simple barbs from Transcaucasia, Talish and Luristan in Iran are known, they can, in spite of Heine-Geldern's insistence, scarcely have inspired the Indian specimens. Besides the intermediate land mass has not yielded specimens to suggest any definite cultural link. Nearer home they are comparable, on the contrary, to cave paintings in Ghor-mangar in District Mirzapur, Uttar Pradesh, and suggest the
source of inspiration.

Antennae swords, of a comparable shape, have been found occurred in the Kofean region of upper Iran with a difference in that the hilt and handle are separate pieces that have been joined subsequently, besides being of plain cross-section as compared to the ridged one of the Indian specimens and having a hole in addition. These are made of bronze within India but outside the Canga plain have occurred also at Kallur in Andhra Pradesh.

(ii) Views of Heine-Geldern. Heine-Geldern has brought within the same complex a certain number of specific shapes with moorings and inspiration in the west. These comprise (i) a truncheon axe, found at Shalozen, in the Kurram valley, near the Afghan border, (ii) a bronze dagger with a hilt and a splayed fan-shaped end, found near Fort Munro, in the Sulaiman hills, (iii) a shaft hole axe found at Shahi-tump, and (iv) an axe-adze from Hohenjo-daro.

The truncheon axe from Shalozen is shown to have parallels in the Mediterranean region in Europe, Transcaucasia and Iran, in a chronological range of circa 1200-1000 B.C., and later.

The bronze dagger from Fort Munro is stated to be similar to those from western Iran, "dating from approximately 1200 to 1000 B.C."

About the antennae swords, Heine-Geldern is positive, inspite of Lal's reasoned emphasis on the basic differences between the antennae swords of India and those of the Kofan region, that they were inspired from the west and that they occur in the Kofan region between
The axe-adze at Mohenjo-daro, is to be traced to anywhere in Rumania, the Ukraine, the northern Caucasus, Assyria and Iran. It is said to have evolved in Transylvania in the first half of the second millennium B.C. From there it travelled to the Near East, where it occurs at Hissar IIIc and Turşeng Tepe, between 1200 and 1000 B.C.

Heine-Geldern also refers to the occurrence of a copper rod from the uppermost level of Harappa, topped by a dog and an antelope as comparable to copper rods from Hissar IIIc and to bronze pins from Koban and Luristan. Though Piggott had dated the objects to circa 1500 B.C., Heine-Geldern would not date them earlier than 1200 B.C.

A pin from Mohenjo-daro, topped by two deer heads is again comparable to similar pins in Koban, and to copper rods with horse heads at Hissar IIIc, and on this basis, the date would not be earlier than the twelfth century B.C., in spite of its occurrence at a considerable depth.

To this array of arguments on evidence, he had added that of a bronze mace-head from Chanhu-daro, recovered "either from the final phase of the Harappa level or from the subsequent Jhukar level", and which had been compared by Piggott to mace-heads from Luristan and Hissar IIIc, again agreeing in chronology with the general date, 1200-1000 B.C.
for almost all these objects. The list is not yet exhausted. The seals from Jhukar levels from Chanhu-daro, which are button seals, discoid in shape, with a transversely perforated boss at the back, are stated to be comparable to Hittite seals, datable to about 1200 B.C.

To sum up, the presence of these diversely large quantum of comparable objects of cultural equipment in the north-western parts of the Indo-Pakistan subcontinent in a post-Harappan (or a late Harappan) chronological context cannot be set down to a mere accident, but has to be traced further to the west in Iran, Transcaucasia or Anatolia, in chronological ranges extending between 1200 and 1000 B.C. Since these objects could not be held as of Indian origin and since the inspiration is to be sought in the west, the suggested chronological range has also to be held as correct and would call for a corresponding change in the upper dating of the Harappa civilization.

Since broadly also the Aryans are taken to have passed through Transcaucasia and Iran on their way to India at a corresponding date, and since they are also held as post-Harappan in point of emergence, the objects in question would have to be associated with the Aryan immigration but need not be attributed to them. In view of Lal's emphasis on the basic differences between the objects found in the north-western parts of the subcontinent with those found
in the Ganga plains, Heine-Geldern modifies his earlier views slightly, but insists that the antennae swords are definitely of western inspiration. He goes on to state, "The archaeology of India and particularly of the period in question, is still very imperfectly known. Therefore it would be rash to draw conclusion ex absentia. Moreover we cannot be sure that all groups of invading Aryans shared the same material equipment. There is even a possibility that groups of other peoples - other Indo-European or, perhaps, Caucasian tribes - joined the Aryans in their migration towards the East. This might explain cultural differences within the same movement and the same period."

Despite the revised arguments of Heine-Geldern, the broad and almost mutually exclusive division of the two sets of the bronze and copper objects, respectively, into those of foreign inspiration in the north-western parts of the India on the one hand and those of the Ganga plain and further eastern regions on the other still holds good, in spite of the possible extraneous affinities of the antennae sword of the latter group. Nevertheless, its limited distribution and the occurrence of its prototype or counterpart, the hooked spearhead, besides, of course, the retrogressive step of its manufacture, generally, in copper and the basic differences in its form would support an indigenous origin. In the present stage of knowledge the genetic connection between the two similar objects separated by wide expanses of
space cannot be said to have been established beyond any reasonable measure of doubt. Notwithstanding this difference, Heine-Geldern has succeeded in establishing the presence of objects of foreign extraction towards the end-phase of the Harappan culture, about 1200 B.C. or slightly later, presuming that the dates ascribed to the corresponding levels in the west are correct. The Aryan invasion into India after the disappearance of the Harappan culture or towards its end-phase, is almost an accepted fact in history and archaeology. The disjointed nature of the evidence as also its extreme scrappiness would call for a counsel of caution on its interpretation, and, as though in deference to it, Heine-Geldern has already attributed these objects, suggestively, to other contemporary tribes which shared in the invasion of India with the Aryans. It may, in fact, be borne out by the evidence of several scrappy and often flimsy, but distinct, cultural traits occurring in immediately post-Harappan stratigraphy in the north-western parts of the subcontinent, and this interpretation goes a long way towards explaining the stunted and regionally restricted cultural complexes that did not or could not, owing to circumstances, share in the colonisation and Aryatisation of the rest of India. This must be set down, in part, and presumably, to their small numbers. Hence, perhaps was the 'cultural fragmentation', observed by Wheeler. It must also be stated at once that the other accompaniments of the cultural influx implied by the bronze objects in
question in the form of any indistinct ceramics etc., have not come up in any influential position of strength or force, to be able to acquire in course of time, an expansive, if not an all-India, field. It may, therefore, be stated that the 'copper hoards' did not have any connection with the Aryan immigrants.

Lal has already pointed out the possibility of the 'copper hoards' of India being associated with the ancestors of the aboriginal proto-Australoids of India, represented to-day by the Mundas and Santhals etc., inhabiting to this day the area wherefrom the hoards have been recovered. Another ground adduced by Lal is the similarity in shape of the bar-celts to the neolithic stone celts found in the eastern parts of India, implying the existence of inspirational prototype models in stone. The harpoons again are paralleled by weapon shapes in rock paintings in the caves in the Mirzapur District. While the parallelism is tempting enough to encourage the suggestion of a genetic connection between the prehistoric way of life and the later metallic equipments, the question continues to pose a problem. Lal has also referred to the mention of flat nosed Nisadas in the Vedic literature, whom the Aryans encountered in the Ganga plains, and has raised the possibility of the Vedic tribal name being a reference to the makers of the 'copper hoards'. At present the problem is beset with difficulties as the stratigraphic contexts of
none of the 'hoards' is clear, and no other cultural equipment can, in fact, with certainty, be associated with them. In this connection it has to be borne in mind that the Aryans, a vigorous group, had not only had knowledge of bronze, but also of iron, a point which will be made clear in the next chapter, before their immigration into India. It was, therefore, unlikely that they receded to a retrograde step of pure copper metallurgy. The specific shapes of the objects, distinct from anything known in the west, would also counsel against such an identification. The neolithic prototypes would serve as another criterion for distinction. The literary reference to an autochthonous people in the area comparing well with possibly their modern primitive representatives is another point to emphasize.

The apparent anomaly and contrast between their present low standards of living and the high degree of technical skill and variety of life's many-sidedness indicated by the objects themselves present no insuperable problem for such an equation, as the disappearance of the civilization of the Harappans, which was never emulated by their successors, would tend to prove.

(fiii) Conclusion. Thus it is established that the 'copper hoards' cannot be attributed to the Aryans.

F. Claims of the Scythians to the Introduction or Popularization of Iron in India.

As Scythians played a considerable role in
India's past in the early historical period, and also employed iron, the possibility of Scythians doing anything in the matter of the introduction or popularization of iron in India deserves a consideration in passing.

It is clear that the Scythians had some contact with the Hittites as some of their works of art can be traced to the Hittites. It is likely, therefore, that their indebtedness to the Hittites would extend beyond art motifs and would encompass more fundamental equipments of life, namely, objects of iron. Some Scythian tribes began to use iron about 1200 B.C., in north-east Siberia. By 800 B.C., they were obtaining their supplies of iron from the regions of the Dnieper and from the Caucasus. It is also quite significant that their first burials, prior to 1200 B.C., were 'flattish graves marked with a circle of boulders. Later they started building large barrows or tumuli.

The Scythians are mentioned in the cuneiform inscriptions of Darius I at Persepolis and Nakshi Rustam. Herodotus states that the expeditionary forces of Keres included the Sakas wearing trousers and pointed headgears.

J.N. Banerjee, writes that "they may have spread in course of time over far distant regions and there is reason to believe that smaller migrations of these peoples in countries south of the Hindukush were taking place in comparatively early times."
It is also conceded that the Sakas on the borders of the Persian Achaemenid empire were the descendants of the older immigrants in the area from Central Asia, and this movement may have begun as early as the 8th century B.C. Though the Scythian period of Indian history does not begin until several centuries later, it is possible, however, that the Scythians periodically trickled into India in the wake of the Persian conquest of the north-western regions of India, which took place about 520 B.C. If they knew indeed the use of iron, they surely have used iron objects but it is clear that they had no hand in either its first introduction into India or even in its popularization, for during the Scythian Period of Indian history iron had already entrenched itself as an utile metal.

C. Users of the Painted Grey Ware, who were among the first to use iron in India and the Aryans.

In view of discussion of the divergent claims of the various cultural complexes to be associated with the Aryans in India it becomes clear that the case of the Painted Grey Ware to be recognised as the ceramic of the Aryan settlers in the Ganga-Yamuna plains gains ground. The process of elimination has thus left the field free for the users of the Painted Grey Ware to be equated with the Aryans. The presence of the bones of a horse at Hastinsapura in association with the Painted Grey Ware brings home a traditional concept of association of the horse with the Aryans.
The proven association of iron with the Painted Grey Ware as the earliest evidence, stratigraphically on the occurrence of iron in India points to the obvious source of its inspiration in India. But this cannot be regarded as an independent evolution in this country, in view of the earlier evidences of iron elsewhere in the ancient world, as also of the emergence of Aryan speaking people in other spheres outside India. When, where and how the connection between the Aryan speaking peoples and the Iron Age metallurgy took place, remain to be seen, especially in their implication on the introduction of iron into this subcontinent as also the infiltration of the Aryans into India. This will be discussed in the next chapter.