

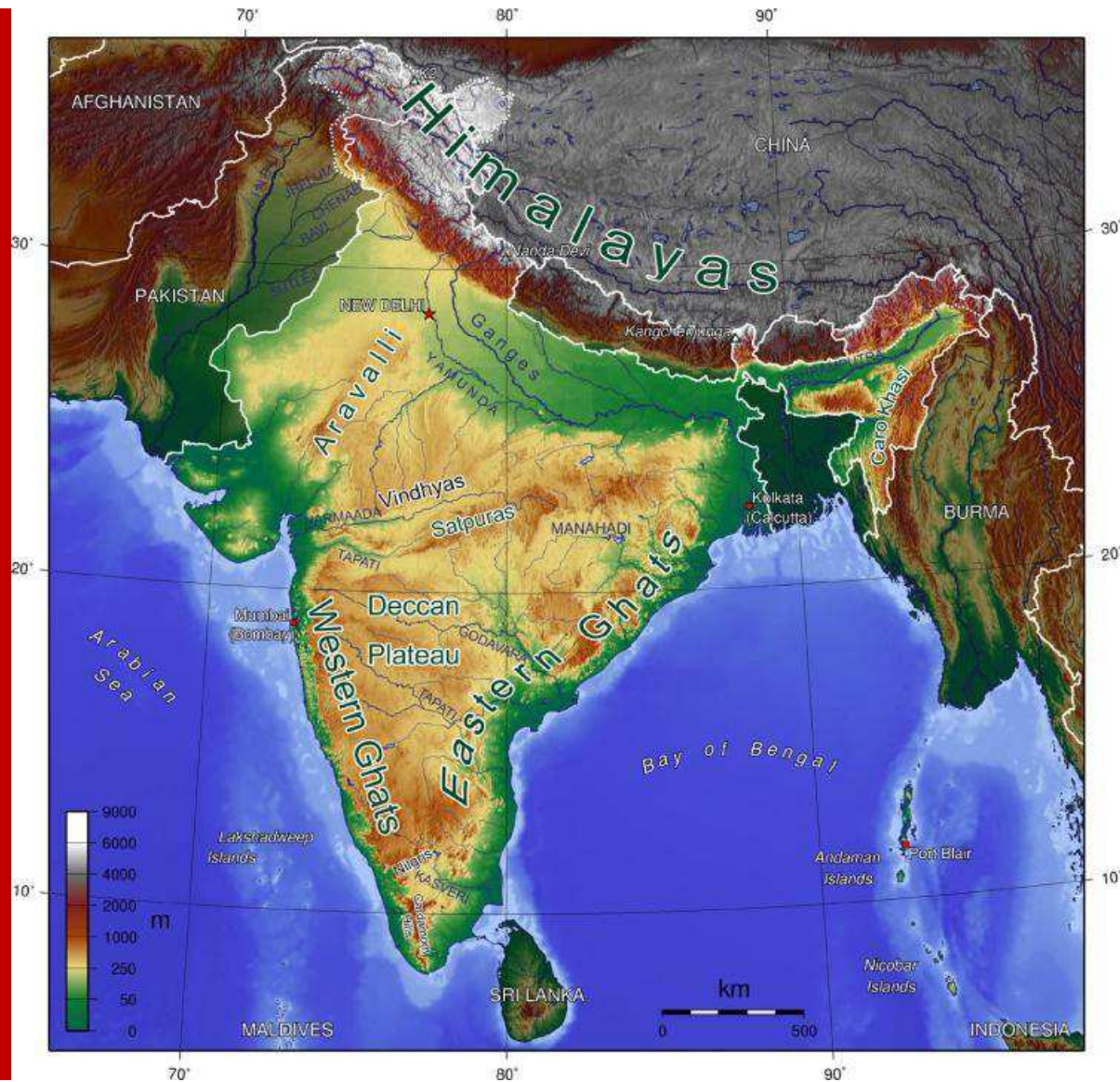
# **Signatures of Human Settlements before 1500 BC in the Indian Sub-continent: Inputs from Archaeology**

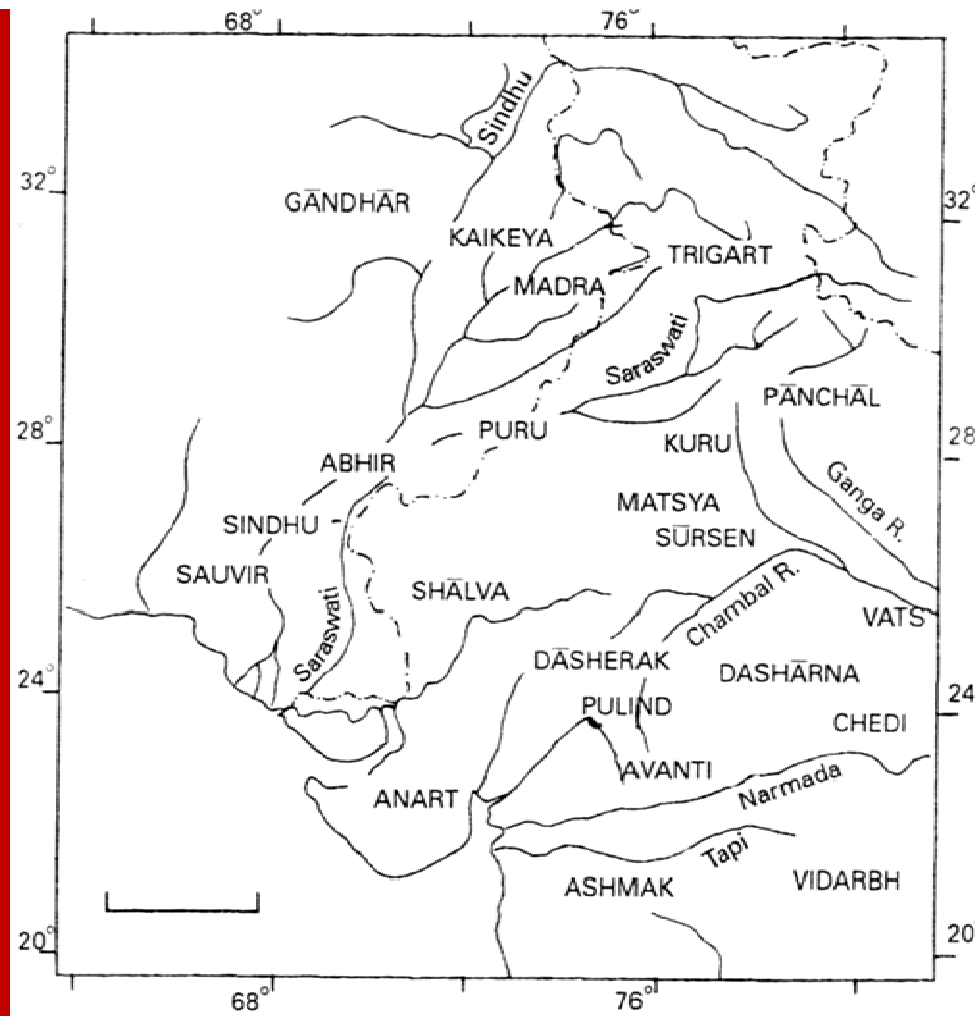
**Kulbhushan Mishra**

Indian Archaeological Society, New Delhi  
mishra90@gmail.com

**Vimal Tiwari**

Archaeological Survey of India, Lucknow  
vimal311@gmail.com





**Geographical location of States mentioned in Mahabharata,  
after Valdiya**



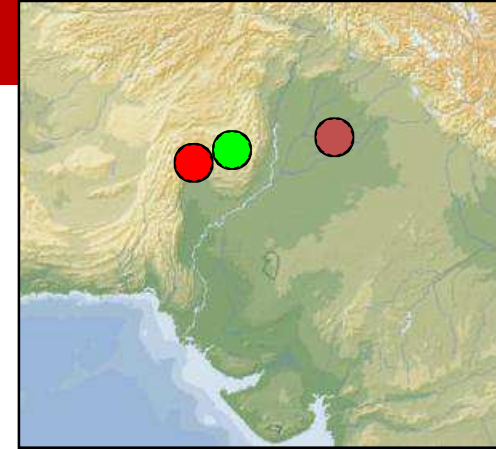
Northern part of Indian Subcontinent during 8<sup>th</sup> to 2<sup>nd</sup> millennium BC



## **Significant Data from North- West Frontier**

- Located on the Bolan river in Baluchistan region, Mehrgarh provides remarkable & continuous evidence of human settlement from 8<sup>th</sup> to 2<sup>nd</sup> millennium BC.
- The French Archaeological Mission in collaboration with Pakistan Archaeology Department has conducted excavation from 1974 to 1985, under the direction of Jean-Francois Jarrige.
- Mehrgarh has also provided excellent evidence of technology, economy, material culture and social organization of pioneering farmers of South Asia.

# The Indus-Saraswati Tradition



Mehrgarh 7000-5500 a.C.  
Periodo I ACERAMIC NEOLITHIC

Mehrgarh 5500-4800 a.C.  
Periodo II CERAMIC NEOLITHIC

Mehrgarh 4800-3500 a.C.  
Periodo III

Mehrgarh 3500-2800 a.C.  
Periodi IV-VI

Mehrgarh 2800-2600 a.C.  
Periodo VII  
Nausharo  
Periodo I

Nausharo 2600-2500 a.C.  
Periodo II

Nausharo 2500-2300 a.C.  
Periodo III

Nausharo 2300-2000 a.C.  
Periodo IV

Rehman Dheri 3300-2850 a.C.  
Periodo I

Rehman Dheri 2850-2500 a.C.  
Periodo II

Rehman Dheri 2500-2400 a.C.  
Periodo IIIA

Rehman Dheri 2400-1900 a.C.  
Periodo IIIB

Harappa 3300-2800 a.C.  
Periodo I RAVI PHASE

Harappa 2800-2600 a.C.  
Periodo 2 KOT-DIJJIAN PHASE

Harappa 2600-2450 a.C.  
Periodo 3A

Harappa 2450-2200 a.C.  
Periodo 3B

Harappa 2200-1900 a.C.  
Periodo 3C

Harappa 1900-1700 a.C.  
Periodi 4 e 5

The cultural history of period VI onwards at Mehrgarh is continued at the nearby site of Nausharo where the habitation starts from first quarter of the 3rd millennium BC.



**House structure, Pd. IIA**



**Superimposed compartmented buildings used for storage, Pd. IIA**



**Compartmented building, Pd. I to III**



**Store rooms of a granary from Mehrgarh, pd III 5000-4000 BC**





Dentalium Head-dress



Limestone and shell beads

Shell Ankles & Bracelets









Mehrgarh pottery with sun and bull motifs



Pot with bull motif  
from Nausharo



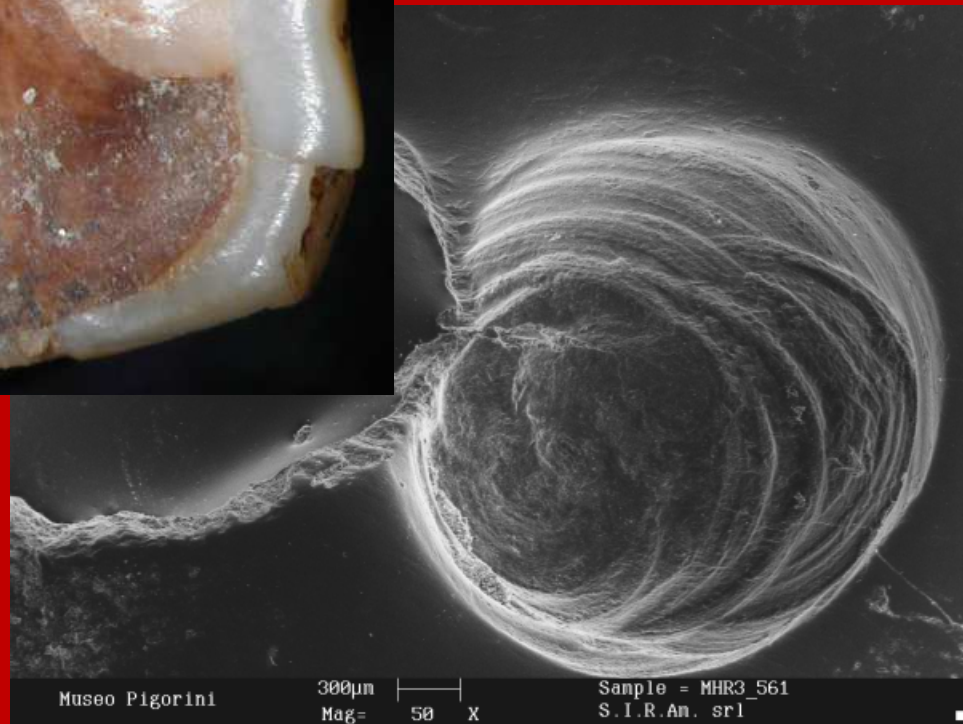
Pot with with antelope  
motif, Amri



Pots with Pipal & gazelle motif, Mehrgarh



A total of 9 individuals had one or more cases of teeth drilled in vivo, most probably after therapeutic operations, 7000 BC



after A. Cuppa, *et.al.*, 2006



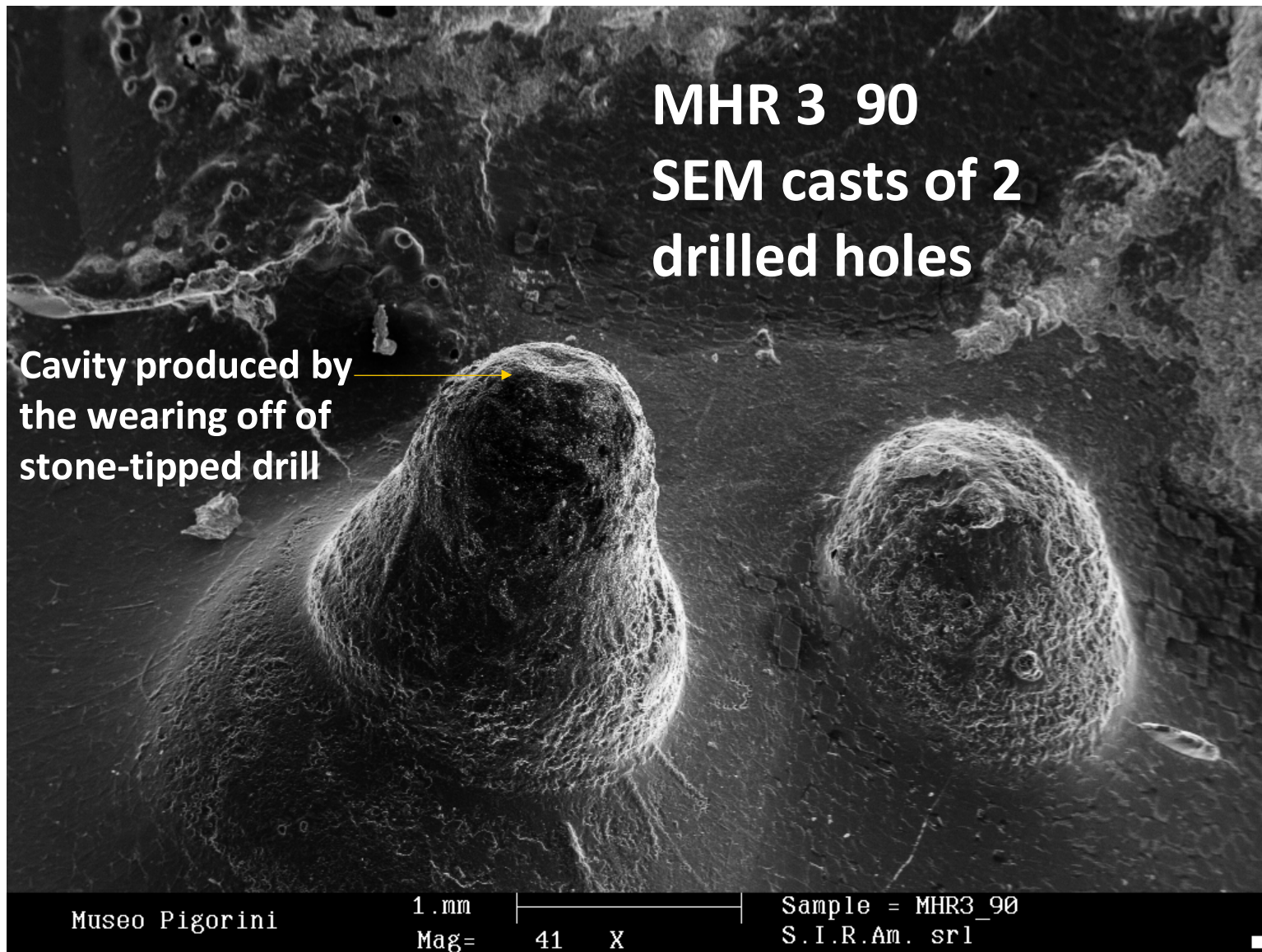


A group of chert drill heads  
found on the floor of a  
Neolithic house



# MHR 3 90 SEM casts of 2 drilled holes

Cavity produced by  
the wearing off of  
stone-tipped drill



Museo Pigorini

1 mm  
Mag=

41 X

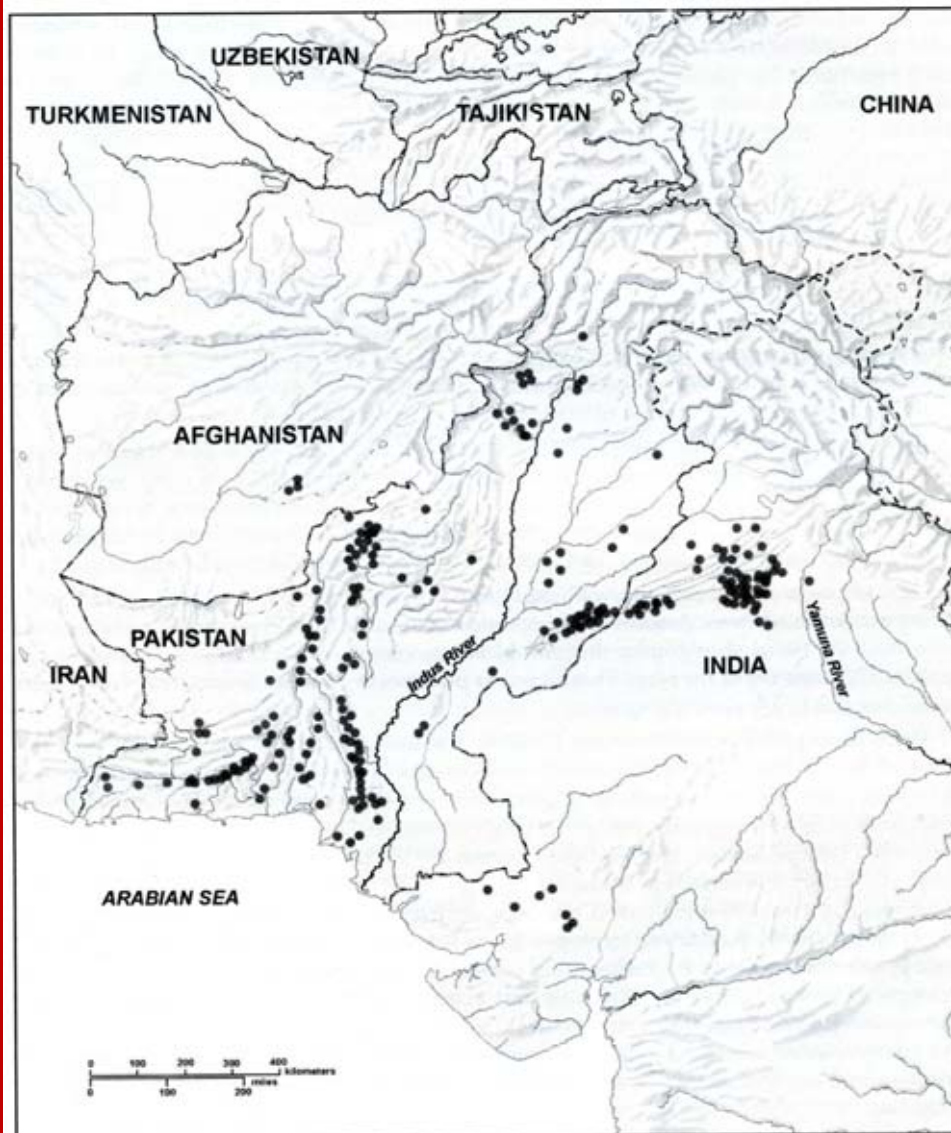
Sample = MHR3\_90  
S.I.R.Am. srl

## **INDUS-SARASWATI CIVILIZATION**

- For several decades following its discovery in 1921-22, the origin of this Civilization have remained much debated.
- During the last fifty years, excavations at many sites, particularly at Harappa, Mohenjodaro, Kot Diji, Amri, Kalibangan, Dholavira and Bhirana have revealed the process of the growth of urban settlement from the settled village societies.

# Early Indus-Saraswati Period

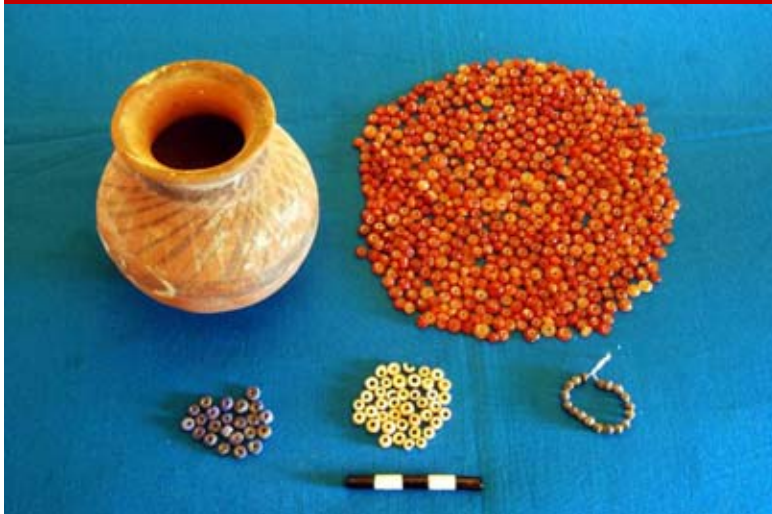
- In 1980, M.R. Mughal published an article entitled 'New research on the origin of Indus civilization', and uses the term 'Early Harappan Period' for the first time.
- The term 'Early' shows the transition or continuity or formative stage of the Harappan civilization.
- It is characterized by the emergence of several urban features like town planning, developed metal technology and incipient Harappan script which are represented at several sites like Harappa, Kot Diji, Sothi, Siswal, Kalibangan, Kunal, Bhirrana and Dholavira.







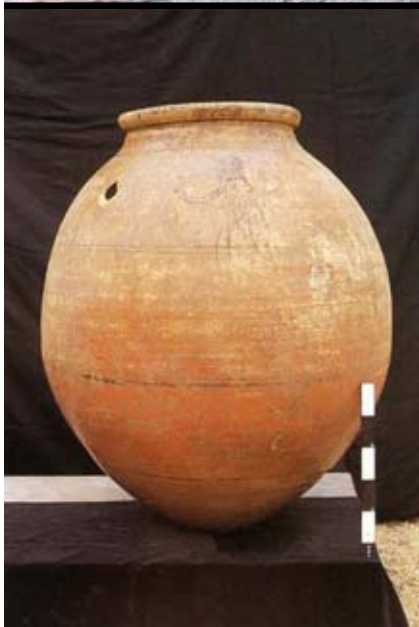
Antiquities from Bhirrana



Silver ornaments, Kunal



Mud brick structure, Pottery  
and copper object from Padri,  
Gujarat, after Shinde



Classification of dates from Bhirrana		Relative Chronology	Time Bracket (after Dikshit & Mani, 2012)
I	7570-7180 BCE 6689-6201 BCE	Period I (Neolithic)	1. C. 7500-6000 BCE
II	6200-5850 BCE 5316-4775 BCE	Period IIA (Transitional Period)	IIA C. 6000-4500 BCE
III	4714-4360 BCE 3970-3640 BCE 3370-2890 BCE 3100-2880 BCE 3020-2700 BCE	Period IIB (Early Indus-Saraswati)	IIBC. 4500-3000 BCE
IV	2920-2640 BCE 2880-2580 BCE 2856-2414 BCE 2471-2273 BCE 2310-1980 BCE	Period III (Mature- Indus-Saraswati)	III C. 3000-1800 BCE
V	1950-1640 BCE 1878-1839 BCE 1641-1287 BCE	Period IV (Late- Indus-Saraswati)	

## **Mature Indus-Saraswati Civilization**

- In the mature Indus-Saraswati phase, there was an all-round development, particularly a remarkable development of the urban life characterised by a highly sophisticated lifestyle and advanced construction technology which is represented at many sites like Mohenjodaro, Harappa, Kalibangan, Rakhigarhi, Lothal and Dholavira.



	Early Harappan phase	Mature Harappan phase	
ARCHITECTURE	FORTIFICATION	✓	✓
	FORTIFICATION WITH BASTIONS	?	✓
	CITADEL	?	✓
	PLANNED CITIES	?	✓
	CEMETERY	?	✓
	CIVIC ARCHITECTURE	?	✓
RELIGION	MOTHER GODDESS FIGURINES	?	✓
	FIRE ALTARS	?	✓
ART	STONE SCULPTURES	?	✓
	BRONZE SCULPTURES	?	✓
POTTERY MOTIFS	INTERSECTING CIRCLES	✓	✓
	FISH SCALE	✓	✓
	FISH	✓	✓
	PIPAL LEAF	✓	✓

TERRACOTTAS	CART FRAMES	✓	✓
	CART WHEEL	✓	✓
	CAKES	✓	✓
	BANGLES	✓	✓
	ANIMAL FIGURINES HORSE	?	✓
	HUMAN FIGURINES	✓	✓
SEMI PRECIOUS STONES	TURQUOISE	✓	✓
	LAPIS LAZULI	✓	✓
	CORNELIAN	✓	✓
	SHELL	✓	✓
	IVORY	✓	✓
	STONE DRILLS	✓	✓
COPPER BRONZE TECHNOLOGY	LOST WAX PROCESS	?	✓
	CRUCIBLES	✓	✓
	FLAT IMPLEMENTS	✓	✓
OTHER ITEMS	GRAFFITI MARKS	✓	✓
	WRITING	?	✓
	INSCRIBED SEALS & SEALING	?	✓
	WEIGHT & MEASURES	?	✓
	TRADE WITH MESOPOTAMIA	?	✓

Continuity and Change from Early to Mature Indus-Saraswati Phase

## **GEOGRAPHICAL EXTENT**

- The Indus-Saraswati civilization was extended in an area of more than one million sq. km and covers a large area of Indian subcontinent including western U.P., Haryana, Rajasthan, Punjab & Gujarat in India and Pakistan.
- It extends from Sutkagen-dor (Makran) in the west to Alamgirpur (U.P.) in the east and Shortughai (Afghanistan) in the north-west and Manda (J&K) on the north to Bhagatrao (Gujarat) in the south.
- All the four sites above represent the outer limits of the civilization.



## Important Excavated Sites

Sites	Excavator
Mohenjo-daro	Sir John Marshall
Chanhudaro	E.J.H. Mackay
Kot Diji	F.A. Khan
Amri	J.M. Casal
Balakot	George F. Dales
Allahdino	W.A. Fairervis
Nausharo	J.F. Jarrige
Harappa	M.S. Vats
Shortughai	H.P. Francfort
Ropar	Y.D. Sharma
Banawali	R.S. Bisht
Rakhigarhi	Amarendra Nath
Bhirrana	L.S. Rao
Kalibangan	B.B. Lal & B.K. Thapar

Sites	Excavators
Alamgirpur	Y.D. Sharma
Hulas	K.N. Dikshit
Lothal	S.R. Rao
Rangpur	S.R. Rao
Surkotada	J. P. Joshi
Dholavira	R.S. Bisht
Bhagwanpura	J.P. Joshi
Mitathal	Surajbhan
Jhuni Kuran	Shubhra Pramanik
Kunal	Madhav Acharaya
Rajdi	G. L. Possehl
Farmana	V.S. Shinde



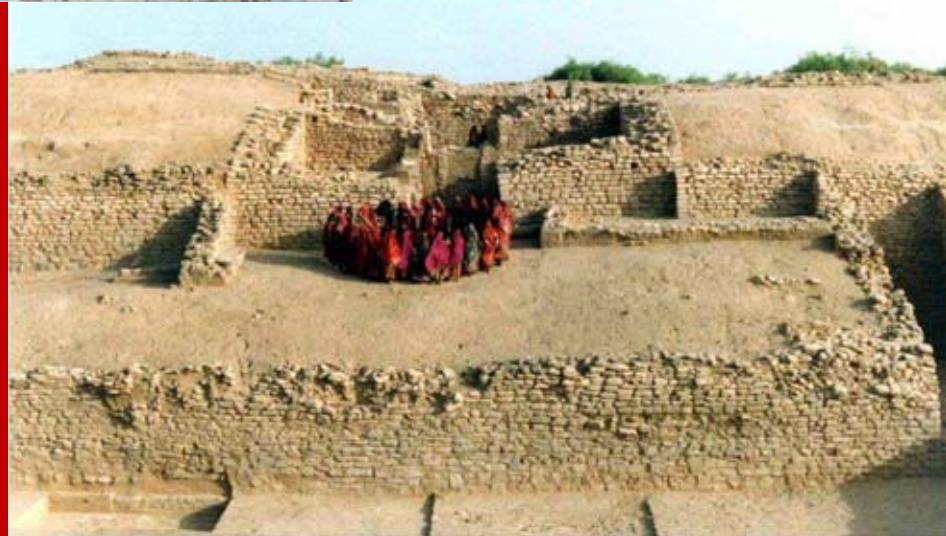
## **Major Characteristics of Indus-Saraswati Civilization**

- Planned and fortified cities comprising a citadel and a lower town with roads and streets running at right angles and elaborate drainage system.
- Use of kiln and sun-baked bricks, wheel made pottery, decorated with naturalistic and geometric motifs.
- Uniform chert weights and measures of metal and ivory.
- A uniform script depicted on seals and tablets, often accompanied by masterly carved animal and human figures.
- Fine Jewellery made of gold, silver, copper, ivory, shell, semi-precious stones, steatite, faience and terracotta.



Reconstructed view of  
Dholavira

Northern Gate of  
Dholavira



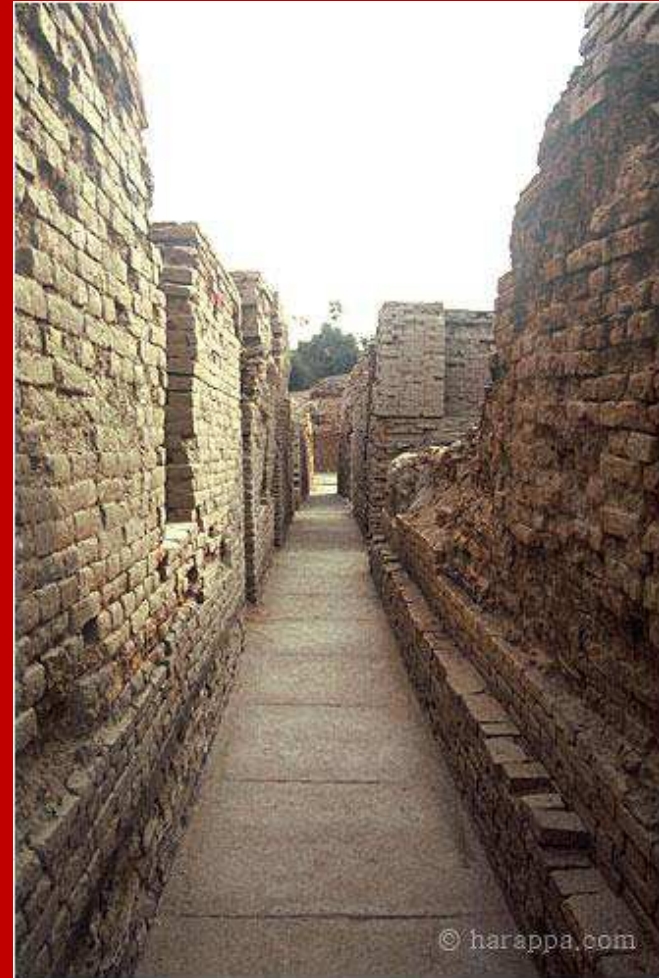
## Reconstructed view of Lothal



© bharatdiscovery.org



## Side lanes of Harappa







Stone foundations from Rojdi  
after Possehl, 2004



Stone fortification wall from Kuntasi  
after Vashant Shinde, 2004

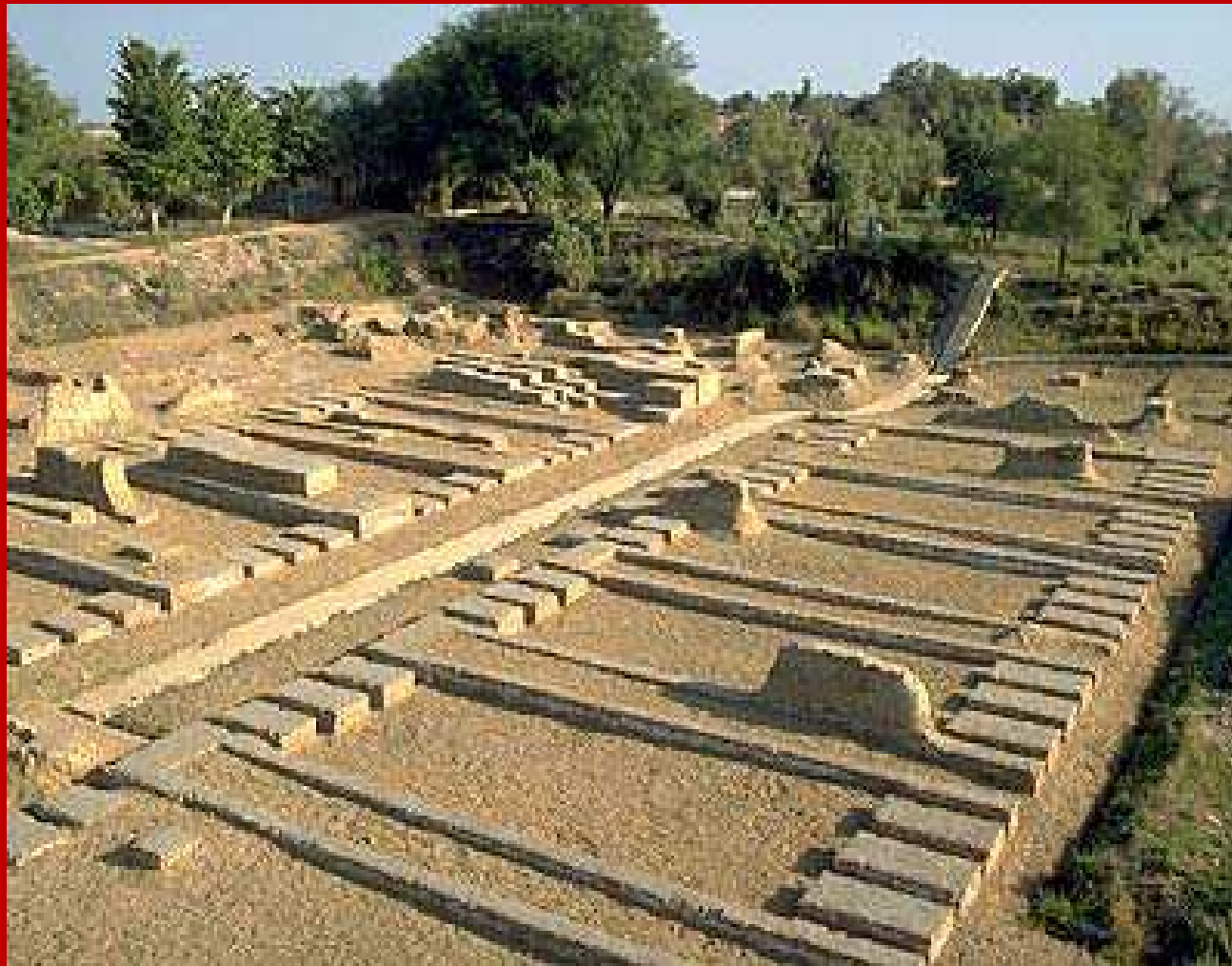


Furnaces from Kuntasi,  
after Shinde, 2004

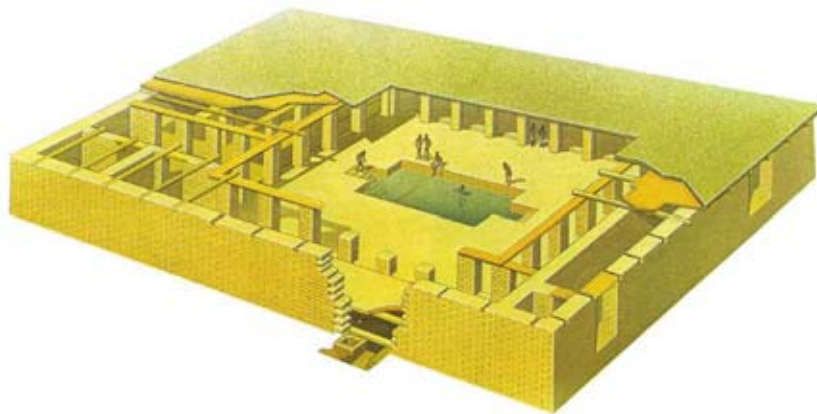
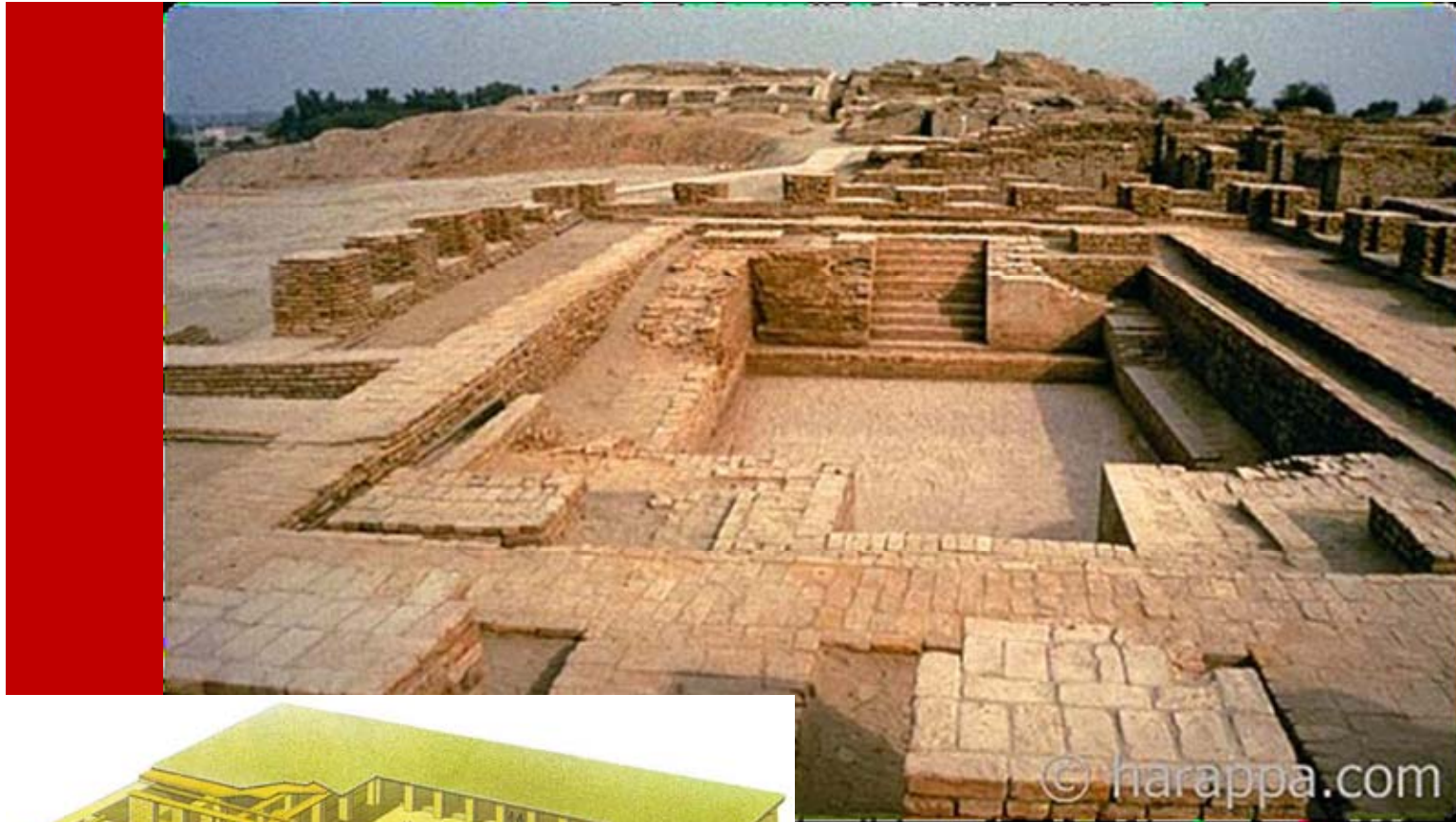


Storage pits and square  
mud brick chambers from  
Kuntasi, after Shinde, 2004

## Granary from Harappa

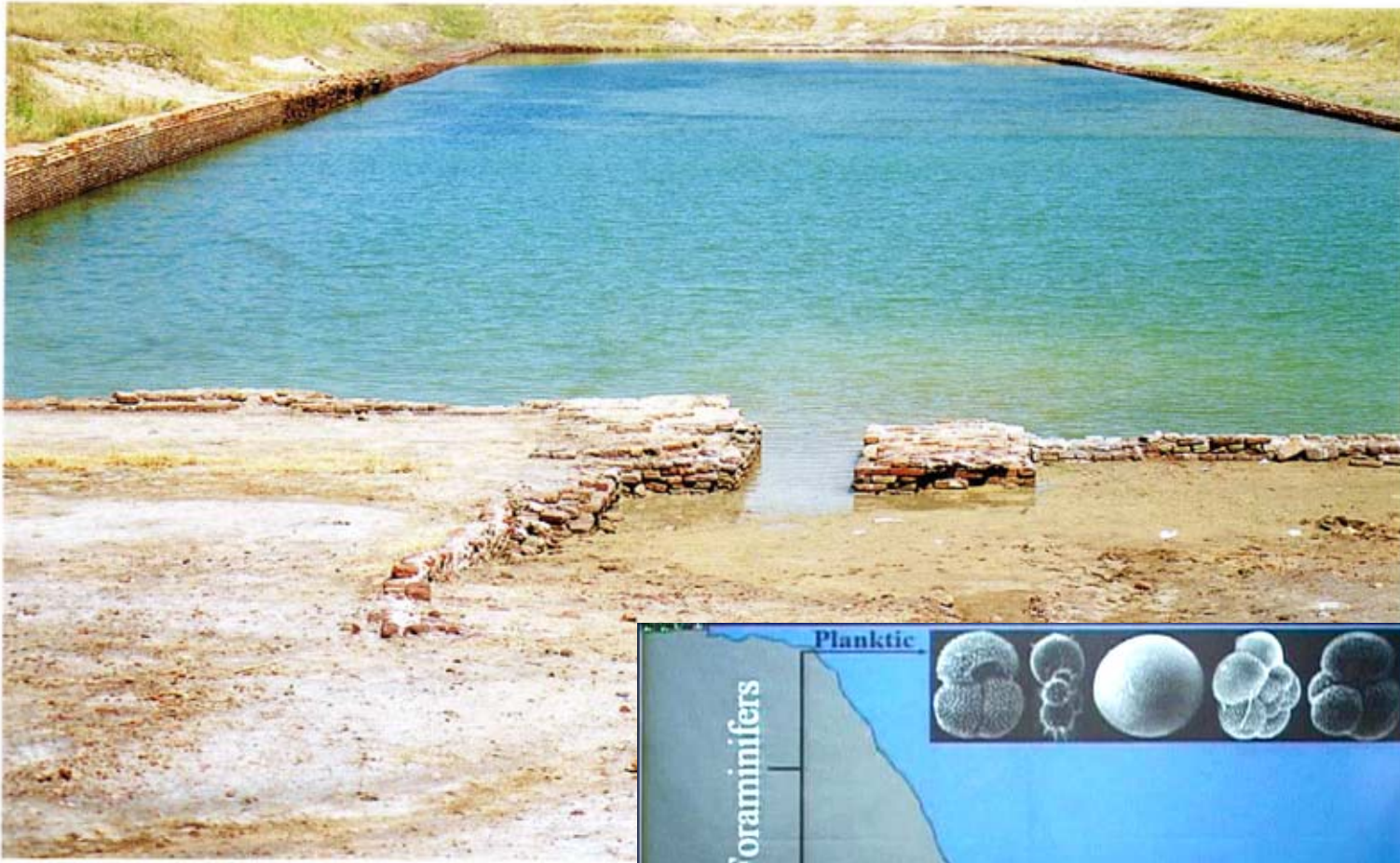






Great bath of  
Mohenjodaro





Lothal  
Tank or dockyard?



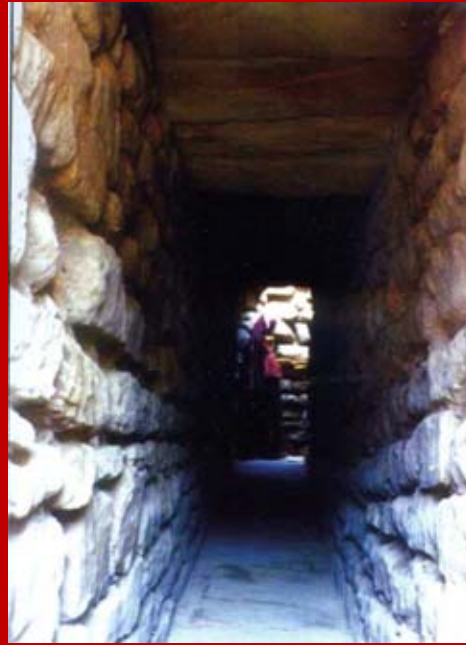
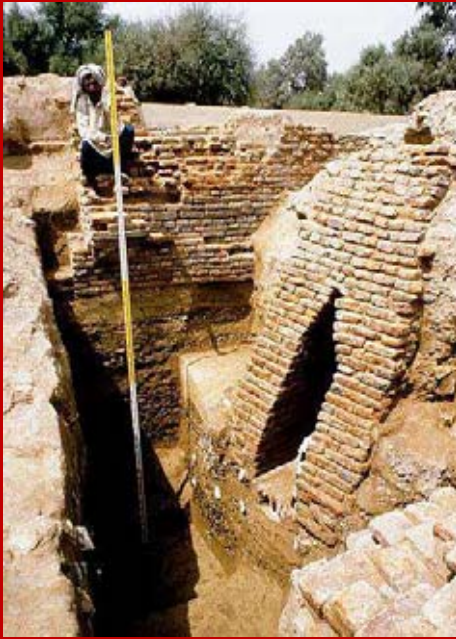


The well in the city of  
Harappa

The well in the city of Lothal







Sophisticated drainage system of  
Indus-Saraswati people



Water tank from Dholavira







Copper objects from  
Dholavira





Gold ornaments from Mohenjodaro



GOLD  
ORNAMENTS  
FROM BANAWALI



AGATE BEADS  
FROM  
BANAWALI



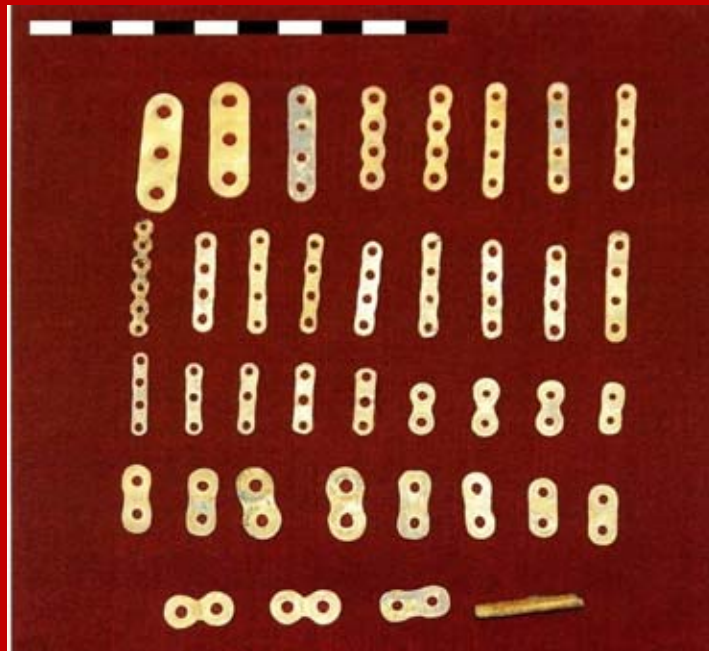
NECKLACE  
FROM  
MOHENJODARO



ORNAMENTS  
FROM  
MOHENJODARO



## Gold ornaments from Mandi hoard







Shell artefacts, Gujarat



Vessel of conch shell,  
Mohenjo-daro

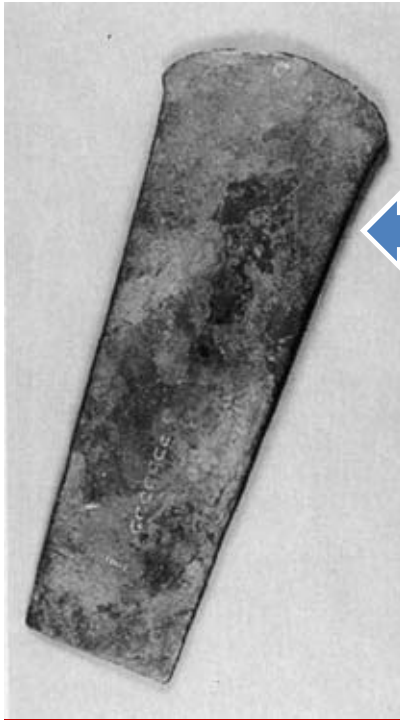


Steatite seals and sealing's



Cylinder seal and its impression from Kalibangan





Inscribed  
Bronze axe  
from  
Mohenjodaro



Inscribed bone rod from Mohenjodaro

Cooper/Bronze axe from Rojdi after  
Possehl, 2004



Painted  
Bangle with  
script from  
Balkot



Golden pendent from jewellery hoard from  
Mohenjodaro





Bronze bull from  
Kalibanga

Copper mirror from Dholavira



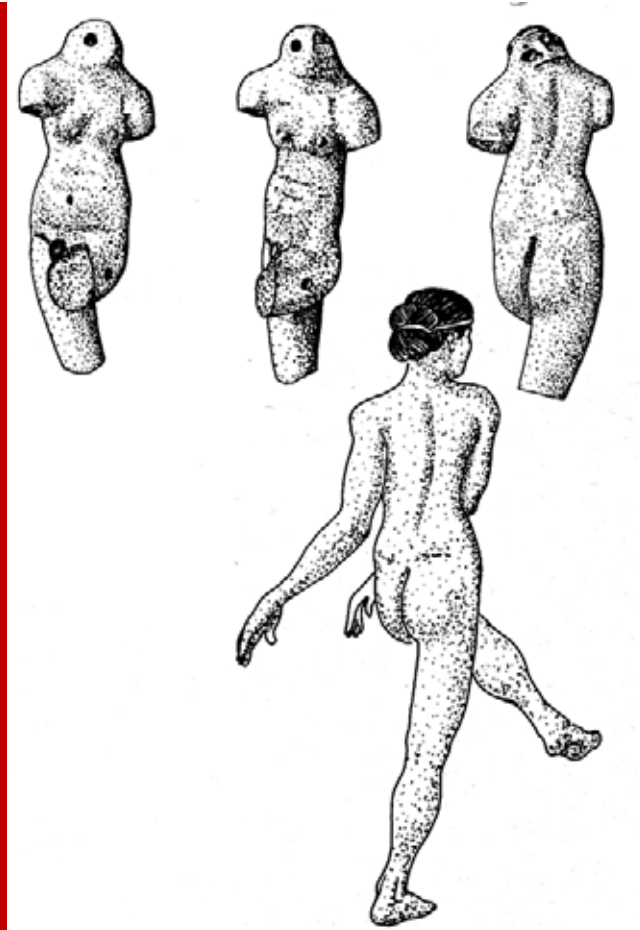




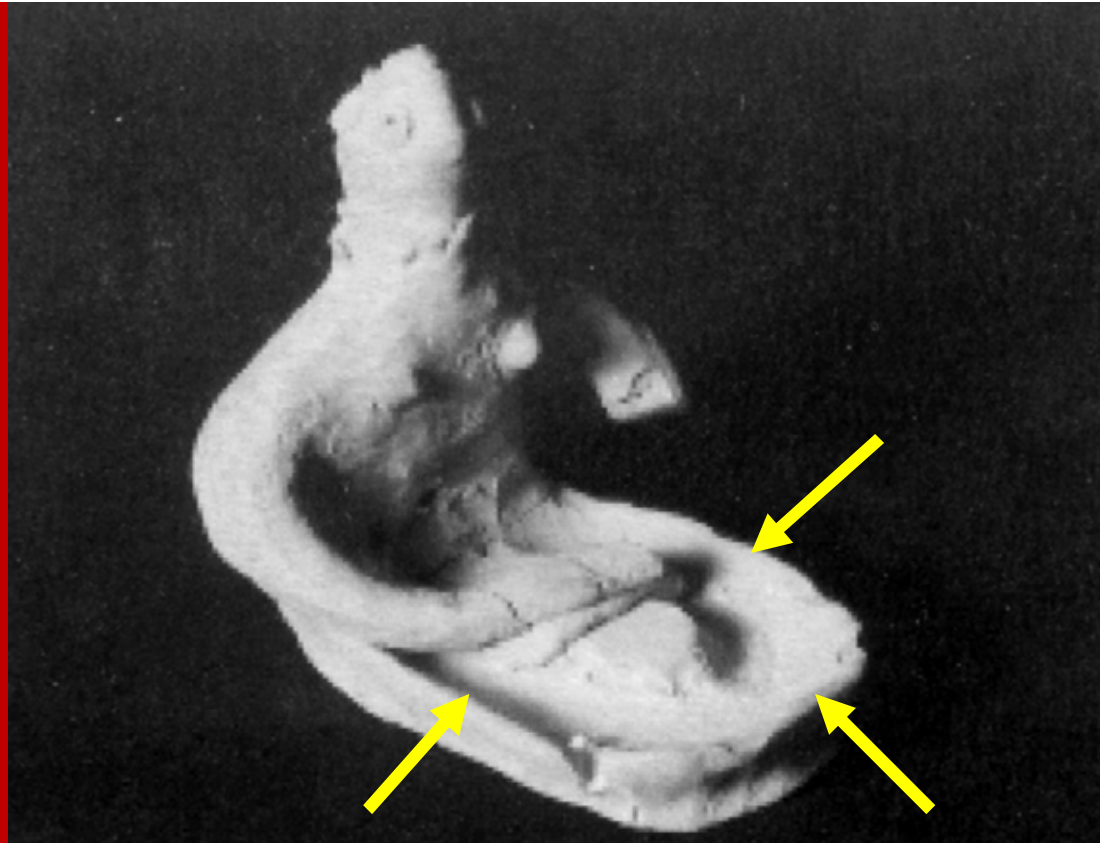
Weights



Dancing girl from  
Mohenjodaro



Male dancers in twisting pose  
and a conjectural sketch from  
Harappa



The women wear a choker and she holds a pastel in both hands and rough it on a flat stone. The edge of grinding stone area are raised to keep grain from scattering, Nausharo period III 2300-2200 BC

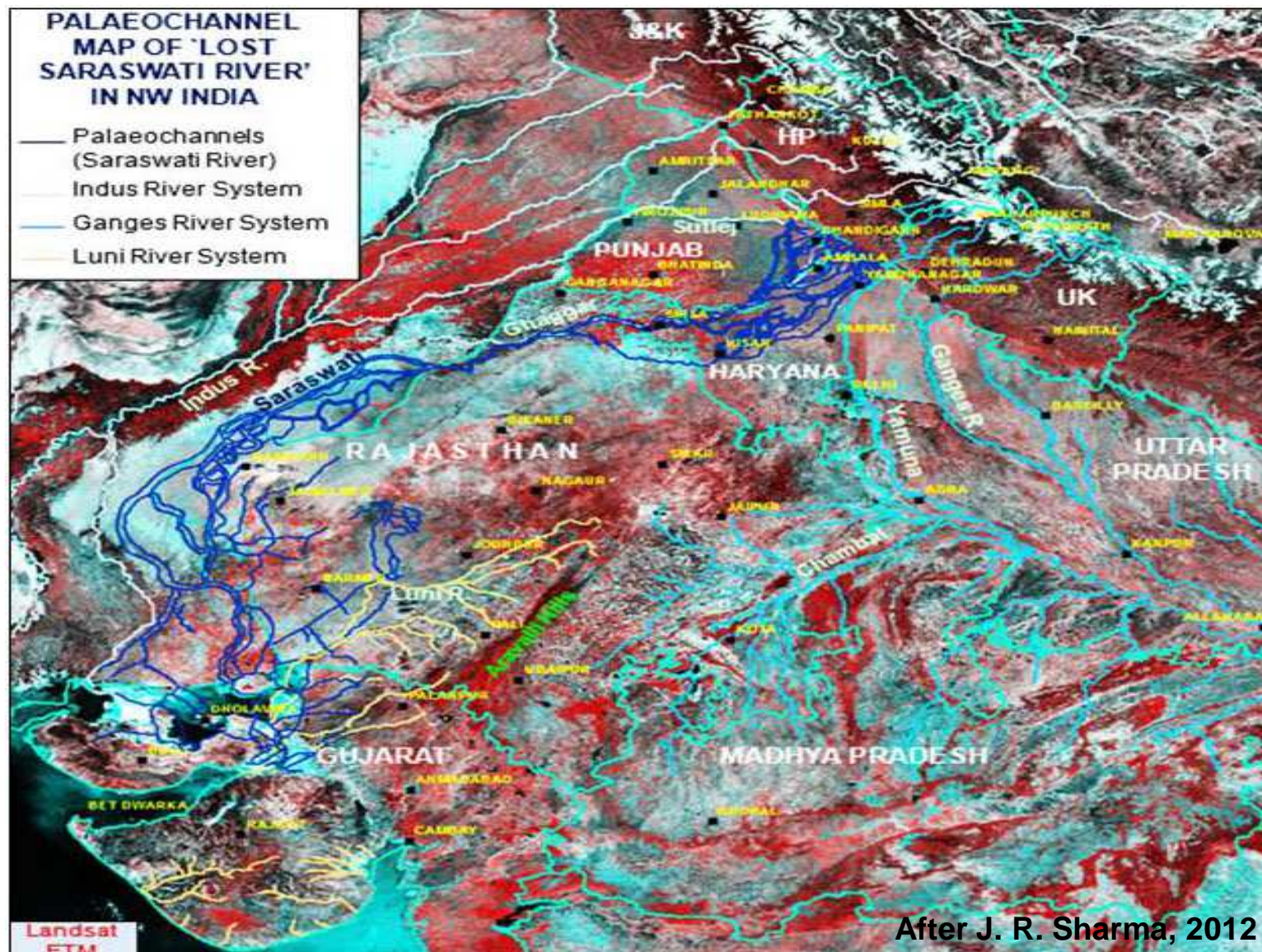


Steatite seal with a flat-bottomed boat incised on a steatite seal

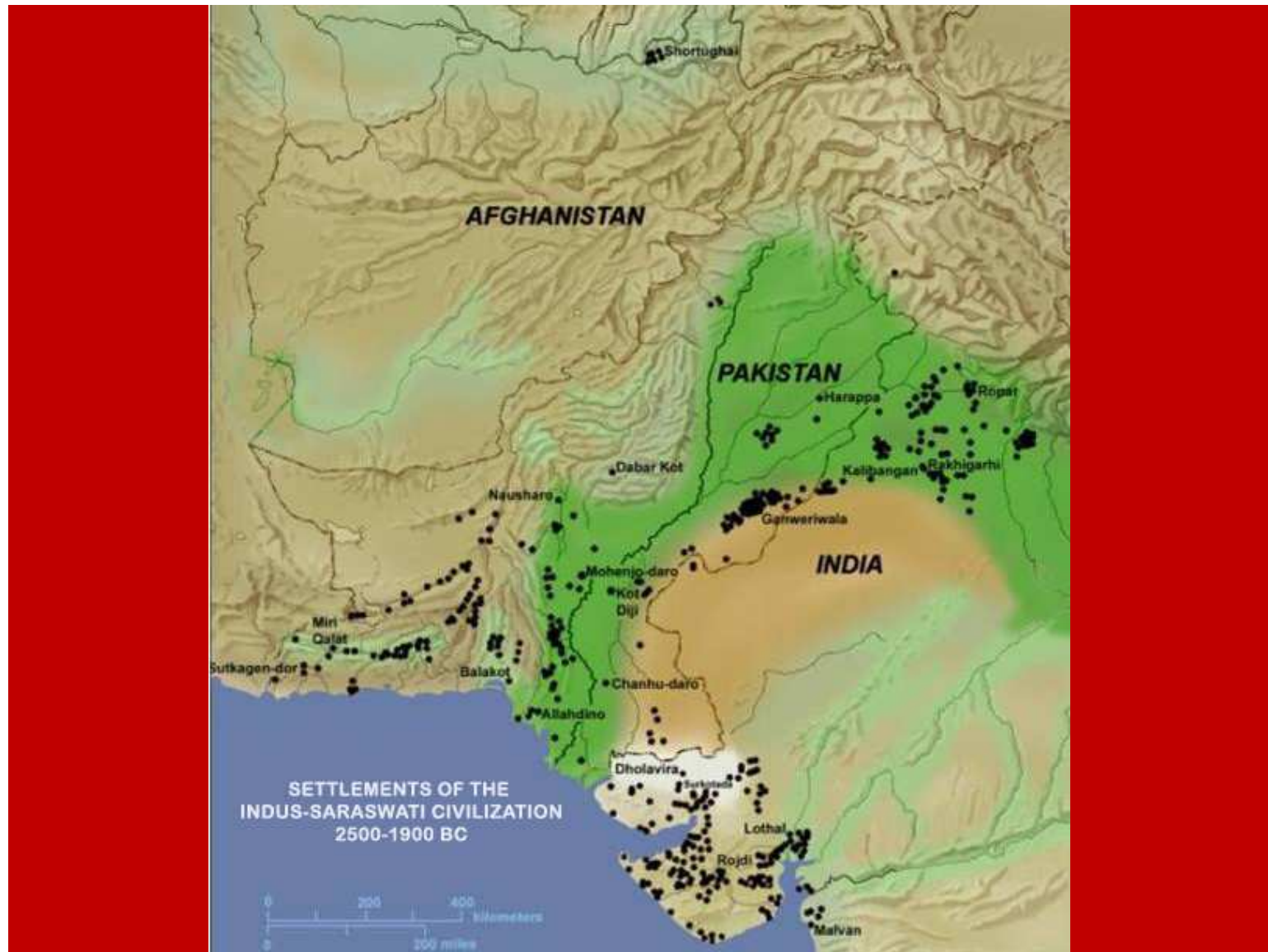
Traditional Sindhi house boats on the Indus near Mohenjodaro

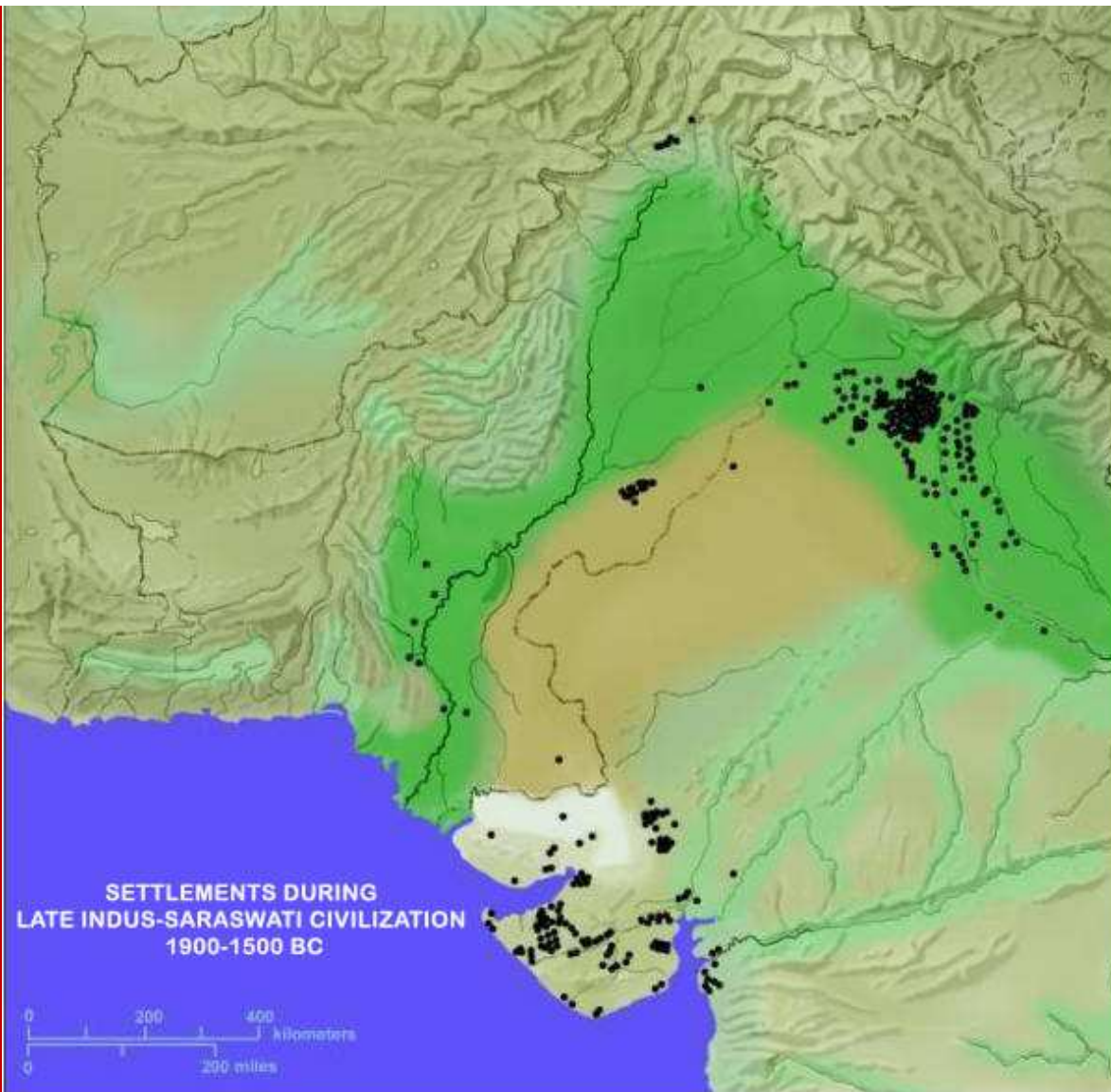










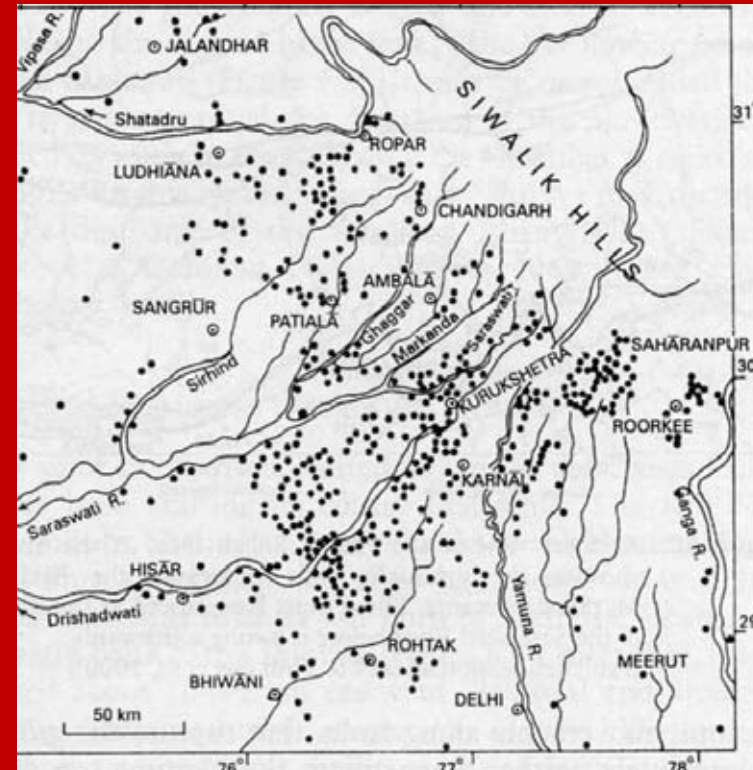




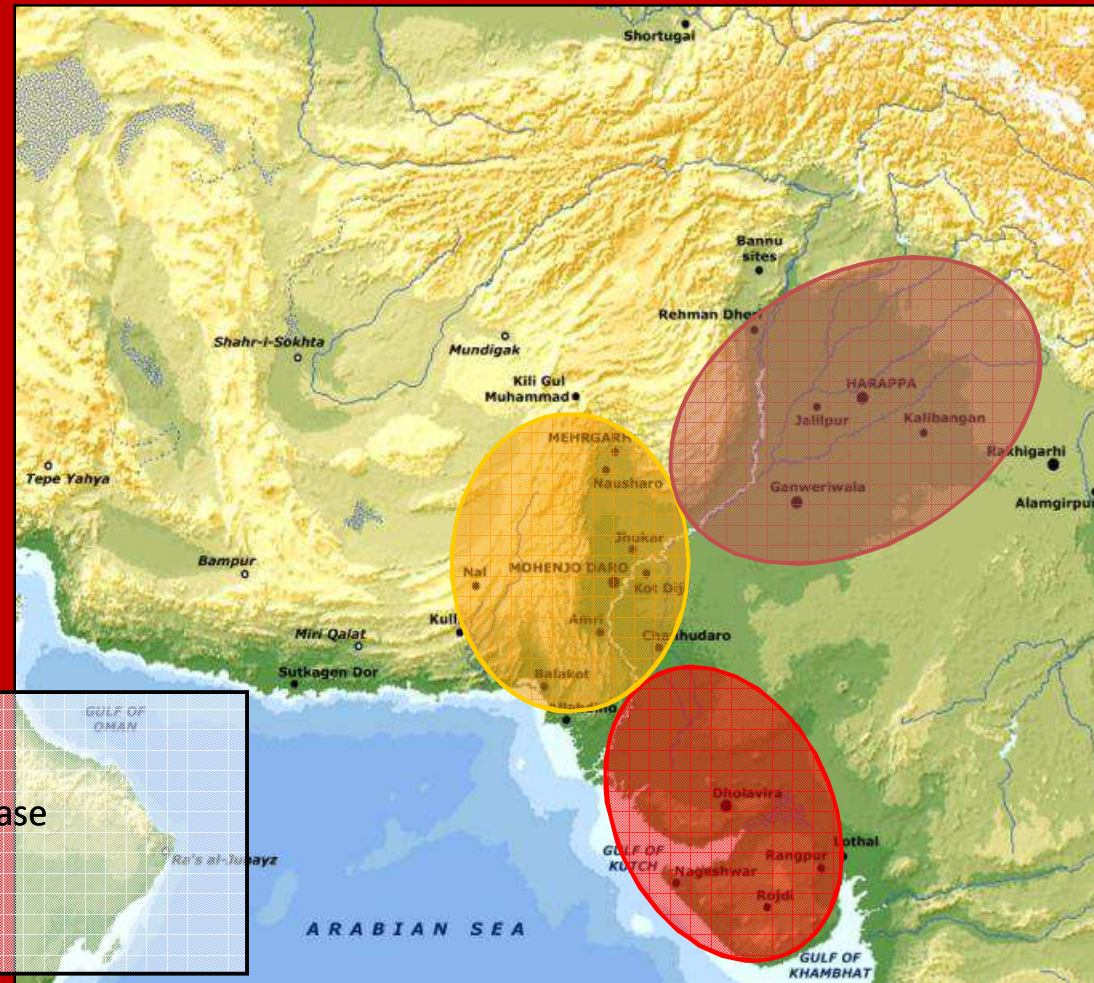
- Changes of the settlement pattern during late Indus-Saraswati period clearly suggested the mass migration of the people.
- What was the reason behind it that they were forced to leave their fertile land in the middle reaches of the Saraswati?

Did it was the search for water and food resources that impel them out of their land?

They were migrated and settled down in the upper reaches of Ganga-Yamuna plain, Gujarat coast and beyond.



# Post Indus-Saraswati Culture



Cemetery H Culture

Jhukar / Late Kulli Phase

Rangpur Phase

## **Beyond Indus-Saraswati Region**

- Archaeological researches during the last five decades have thrown a flood of light on the diffusion of farming-based settled societies beyond the domain of the Indus-Saraswati civilization.
- More than a thousands sites covering all parts of the country have been discovered and divided into two cultural groups.

1- Neolithic Culture

2- Chalcolithic Culture



## **Neolithic Culture**

Kashmir Valley

Middle Ganga Plain &  
Northern Vindhya

Eastern and Northeastern  
Region and

South India

## **Chalcolithic culture**

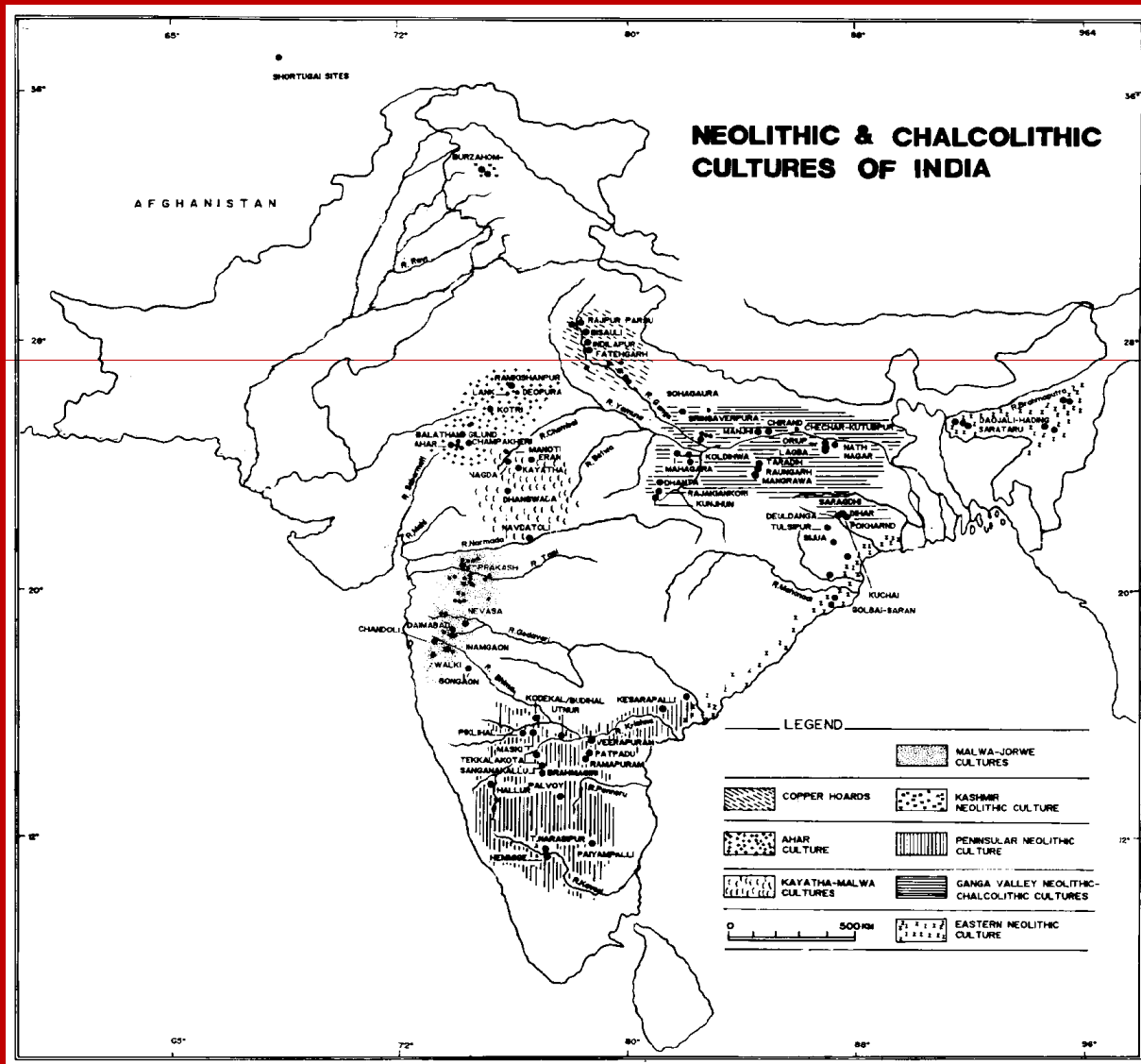
Entire Ganga Plain &  
Northern Vindhya

Eastern Rajasthan

Malwa or western Madhya  
Pradesh

Some parts of Gujarat

Western Maharashtra



# Neolithic Culture

- The term was invented by Sir John Lubbok in 1865.
- This period is marked by food producing economy and settled life ways.
- For a long time, this culture was supposed to have four basic characteristic features:

1. Polished celts

3. Domestication of plants  
and animals

2. Pottery

4. Sedentary settlements



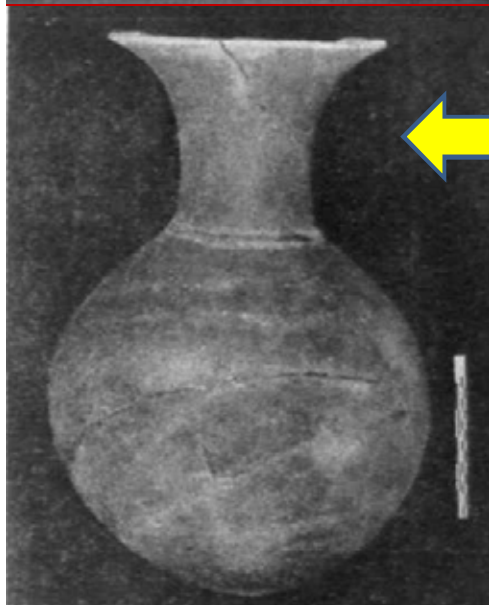
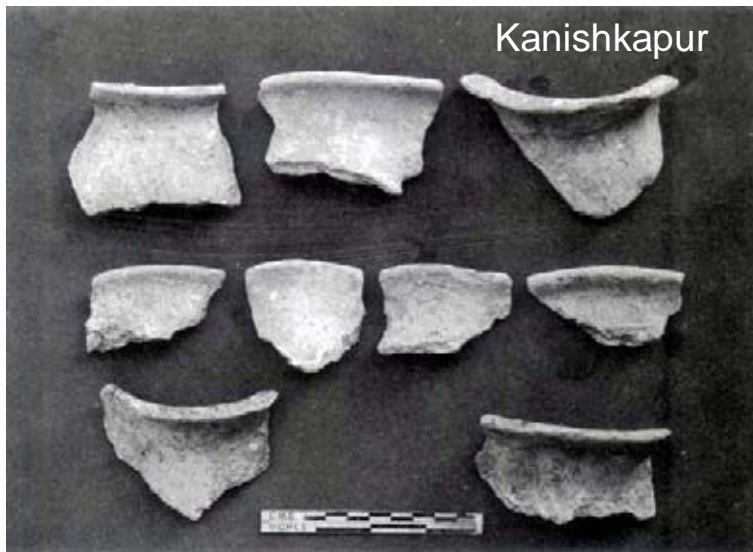
# Kashmir Neolithic

- More than 40 sites have been reported.
- These are located on the elevated Karewa deposits.
- The understanding of the Neolithic culture is based on excavations at three sites.

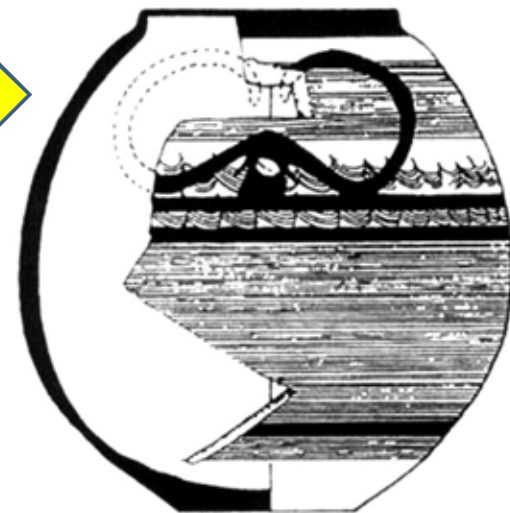
Sites	Excavator	Year
Burzahom	T.N. Khazanchi	1960-71
Gufkral	A.K. Sharma	1980-82
Kanishkapura	B.R. Mani	1998-99

## Characteristic features

- Handmade and wheel turned pottery which include grey ware, red ware, black ware & burnished black ware and shapes include jar, vases, globular pots, basins, dish-on-stand, bowls, etc.
- Mat impression on the base.
- A globular pot with painting of a horned deity from Burzahom.
- Cultivated crops include wheat, barley, lentil and field pea.
- Domesticated animals include sheep, goat, cattle, dog.



Burzahom





# TECHNOLOGY

- Consist of stone, bone and antler tools.
- Stone tools include Celts, chisels, ring stones, borers, mullers, querns, adzes, harvesters, pounders, mace head, hoe, etc.
- Bone and antler tool industry include harpoon, needles, spear points, arrow heads, daggers, borers, etc.



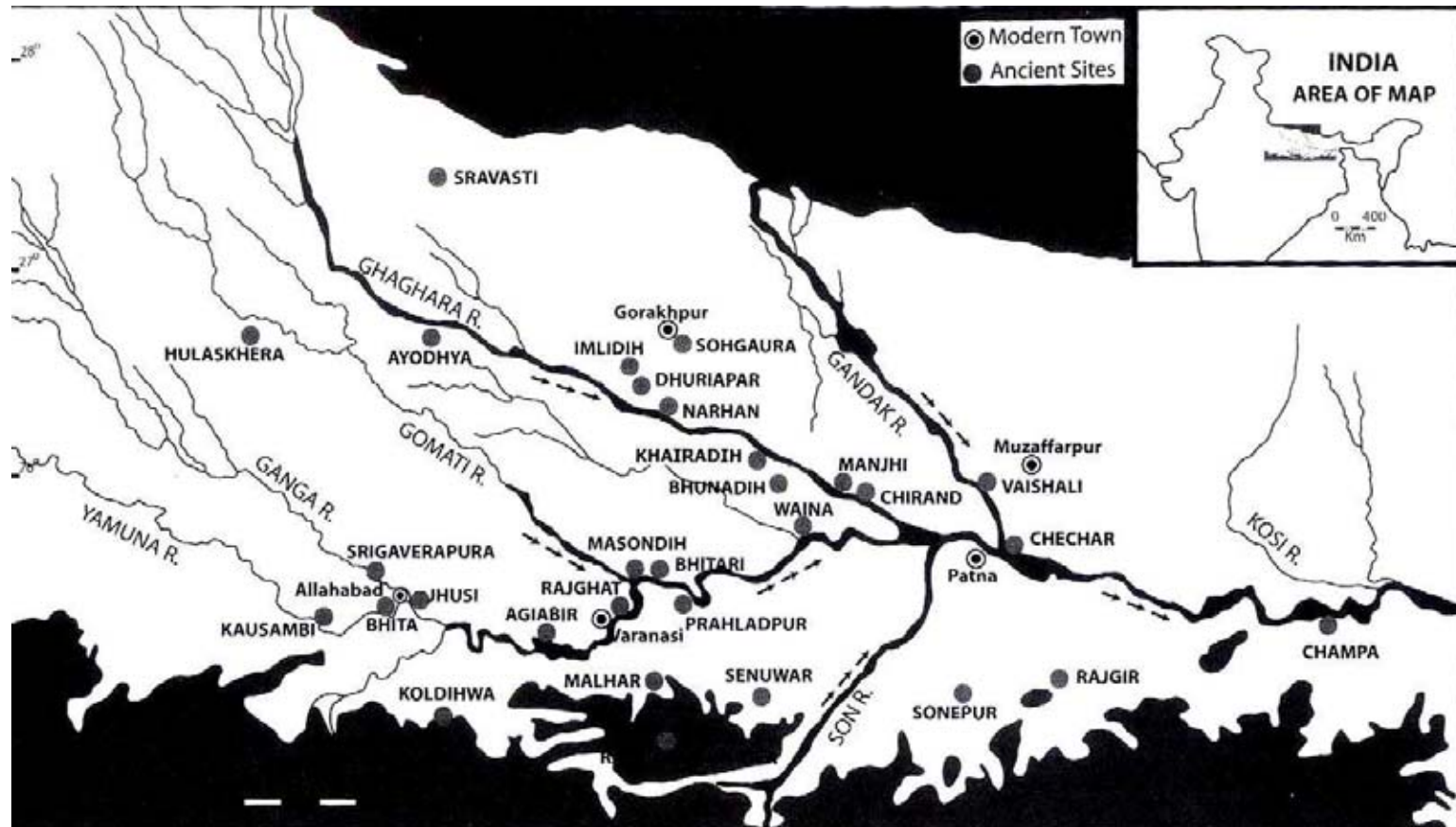
## Rock art

- Hunting scene engraved on the stone slab. (Burzahom)



## Chronology

Site	Date
Burzahom	2800-1600 B.C
Gufkral	2400- 1400 B.C
Kanishakpur	Middle of 4 <sup>th</sup> millennium BC to around 2 <sup>nd</sup> millennium BC



Map showing important settlements in middle Ganga plain & northern Vindhayas



# Important excavated Neolithic sites

Name of the site	Location
Koldihwa	Allahabad, U.P.
Jhusi	Allahabad, U.P.
Mahgara	Allahabad, U.P.
Hetapatti	Allahabad, U.P.
Tokwa	Mirzapur, U.P.
Sohgaura	Gorakhpur, U.P.
Imlidih Khurd	Gorakhpur, U.P.
Waina	Ballia, U.P.
Bhunadih	Ballia, U.P.
Lahuradewa	Sant Kabir Nagar, U.P.

Name of the site	Location
Chirand	Saran, Bihar
Chechar Kutubpur	Vaisali, Bihar
Taradih	Gaya, Bihar
Senuar	Rohtas, Bihar
Maner	Patna, Bihar
Ghora Katora	Nalanda, Bihar
Manjhi	Saran, Bihar

## Chalcolithic Culture

- This phase is marked by the multiple crop raising, advanced form of farming, first appearance of copper tools with limited quantity of stone objects
- It is also characterized by the presence of Black and Red ware, Black Slipped ware, Red slipped ware and Red ware

# Important excavated Chalcolithic sites

Name of the site	Location
Sohgaura	Gorakhpur, U.P.
Narhan	Gorakhpur, U.P.
Dhuriapar	Gorakhpur, U.P.
Imlidih Khurd	Gorakhpur, U.P.
Lahuradewa	Sant Kabir Nagar
Gulrihwaghat	Basti, U.P.
Bhunadih	Ballia, U.P.
Khairadih	Ballia, U.P.
Waina	Ballia, U.P.
Koldihwa	Allahabad, U.P.
Jhusi	Allahabad, U.P.
Hetapatti	Allahabad, U.P.
Tokwa	Mirzapur, U.P.

Name of the site	Location
Agiabir	Mirzapur, U.P.
Malhar	Chandauli, U.P.
Raja-Nal-ka-Tila	Sonbhadra, U.P.
Chirand	Saran, Bihar
Maner	Patna, Bihar
Taradih	Gaya, Bihar
Senuar	Rohtas, Bihar
Chechar	Vaisali, Bihar
Sonepur	Gaya, Bihar
Champa	Bhagalpur, Bihar
Ghora Katora	Nalanda, Bihar
Juafar Dih	Nalanda, Bihar
Oriup	Bhagalpur, Bihar

# Ceramic tradition

- The ceramic assemblage of Neolithic period include red ware, corded ware, black-and-red ware, burnished ware, rusticated ware, grey ware & black ware whereas the Chalcolithic period include painted black slipped ware & black-and-red ware alongwith the Neolithic pottery.
- The shapes include bowls with varying profiles, pedestal bowls, vessels, dish-on-stands, perforated legged vessels, beakers, spouted pots, etc.

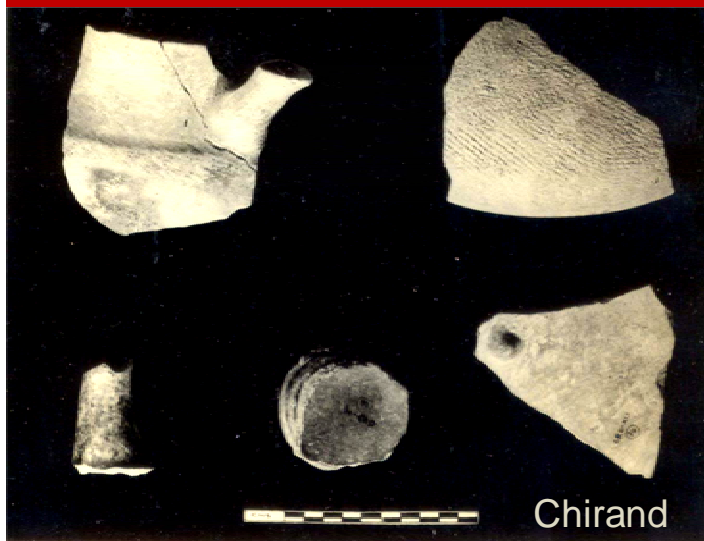




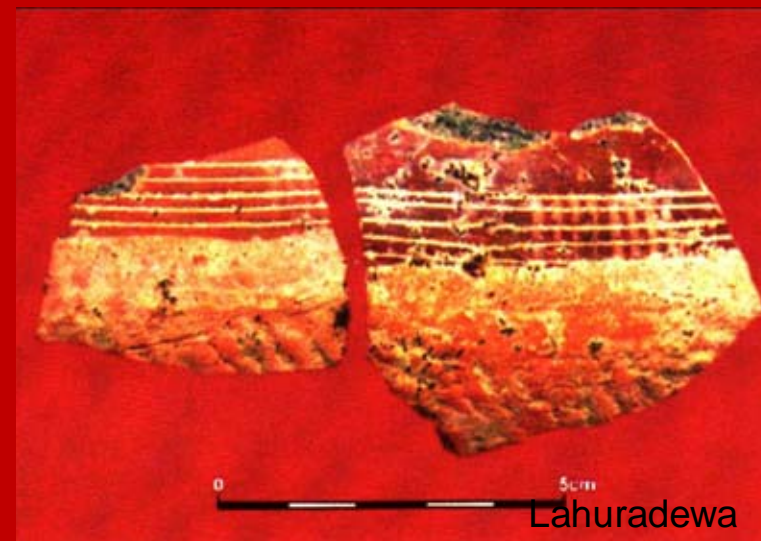
Hetapatti



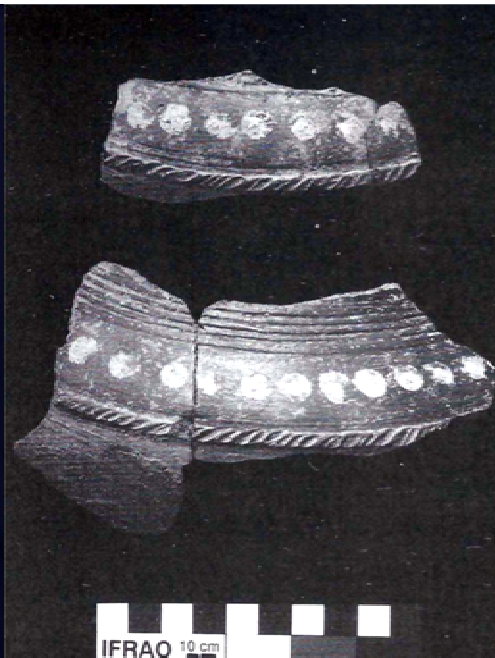
Sohgaura



Chirand



Lahuradewa





## Residential Pattern



Evidence of circular huts from  
Lahuradewa & Jhusi and mud  
plaster from Lahuradewa,  
Neolithic period



## Chalcolithic Period





# Agriculture & animal husbandry

- The studies carried out at different sites suggests that rice was the first crop which was cultivated for the first time in this region around 7<sup>th</sup> millennium B.C.

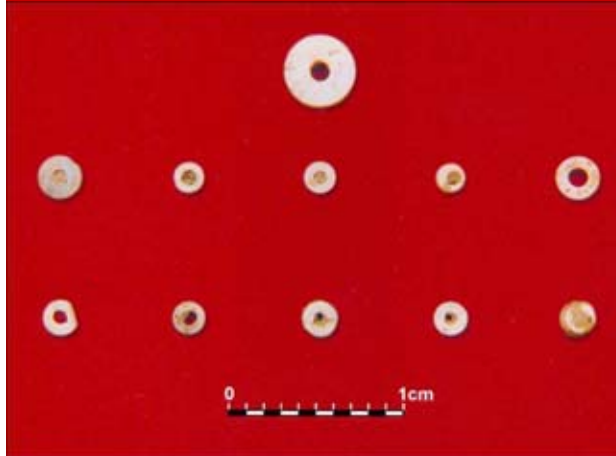


## CROPS

- Cereals (wheat & barley),
- Pulses (field pea, grass pea, lentil, green gram, ragi, jowar, bajra),
- Oil seeds (sesame, linseed, safflower & castor)

## DOMESTICATED ANIMALS

- Cattle,
- Buffalo,
- Sheep & goat
- Pig



# Chronology

- Radio carbon dates are available from Koldihwa, Tokwa, Lahuradeva, Jhusi, Chirand, Senuar.
- These dates suggest the beginning of Neolithic culture in the middle Ganga plain around 7<sup>th</sup> millennium B.C. and continued till the beginning of second millennium B.C.
- The Chalcolithic phase started around first half of 3<sup>rd</sup> millennium BC and continues up to 1<sup>st</sup> millennium BC



## O.C.P. CULTURE

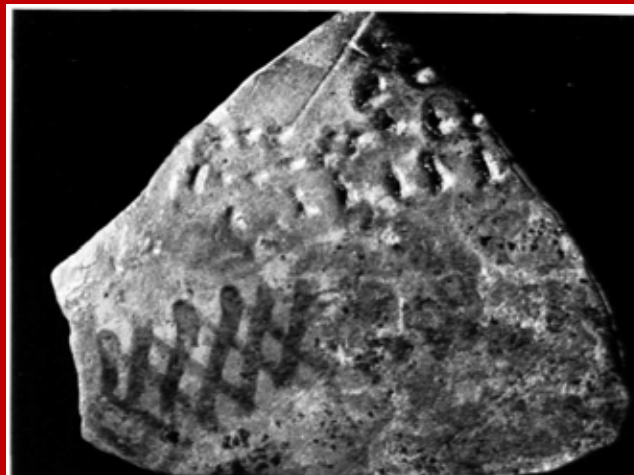
- This type of pottery was first discovered at Bisauli in Badaun district & Rajpur Parsu in Bijnaur district by B.B. Lal in 1950-51.
- Since then a large number of sites have been discovered especially in upper Ganga Doab.
- OCP sites have also been found in the neighboring states of Punjab, Haryana and Rajasthan.

# Important sites

Site	District/state
Hastinapur	Meerut
Atranjikhhera	Etah
Lal Qila	Bulandsahar
Bahdarabad	Hardwar
Ambakheri	Saharanpur
Bargaon	Saharanpur
Ahichhatra	Bareilly
Sringaverpur	Allahabad
Saipai	Itawa



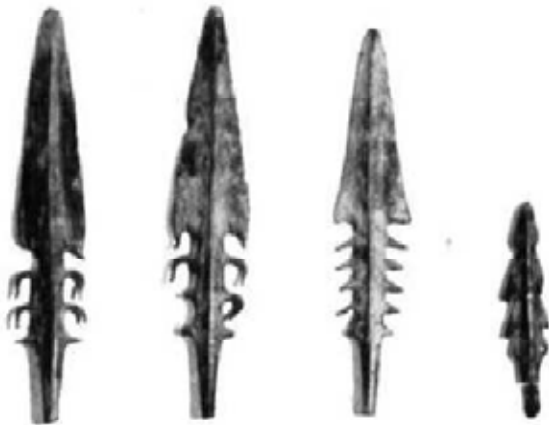
OCP from  
Ahichchhatra &  
Saipai



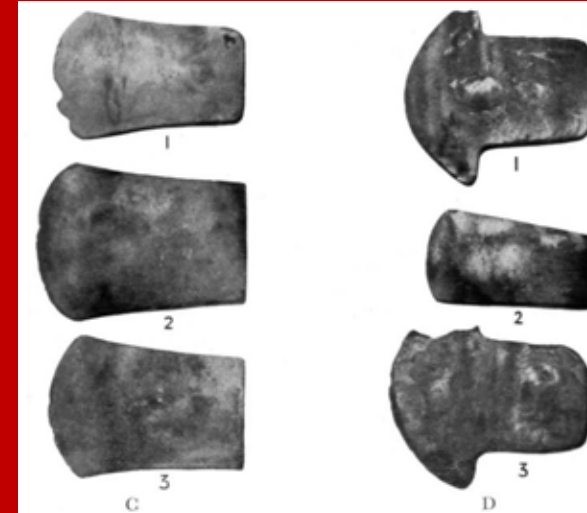
# Copper Hoards



Madarpur, U.P.



Sitapur, U.P.







Copper Hoard  
from Udaipurwa,  
U.P.



# Chronology (TL dates)

Site	Date in BC
Atranjikhhera	1610
	1170
	2280
	1250
	2130
Lal Qila	1730
	2030
Jhinhina	1990
	1570
	2650
Nasirpur	1500
	1180

## Eastern India

- The region marked by Chota Nagpur plateau in Bihar, Orissa and West Bengal.
- Small scale excavations at a few sites in Orissa like Kuchai in Mayurbhanj district, Golbai Sasan in Khurda district, Hikudi in Subarnpur district, Kuanr in Keonjhar district and Sankar-jang in Angul district provides evidence of Neolithic culture in Orissa.





- Excavation have yielded pointed-butt celts and cord-impressed pottery, bone tool industry and evidence of circular and rectangular wattle-and-daub houses and copper bangles.
- Radiocarbon dates from Golbai Sasan, Sankarjang & Hikudi suggest a duration of 2500 BC to 1700 BC for the Neolithic culture of this region.

# Northeast India

- Major Neolithic sites are: Daojali Hading, Sarutaru and Marakdola in Assam; Selbalgiri and Pynphorlangtein in Meghalaya; Parsi-Parlo in Arunachal Pradesh; Phunan Hills, Napachik, Nongpoh and Keithelmandi in Manipur; Chungliyaimati in Nagaland
- Important findings are Cord impressed pottery and different kind of stone tools
- According to T.C. Sharma, the Neolithic people were practicing a kind of agriculture similar to the present day shifting cultivation.
- Very few C14 & TL dates have obtained so far:  
4460  $\pm$  120 and 3450  $\pm$  150 BP are a few examples.

## South Indian Neolithic

- The Neolithic culture of south India is comparatively well understood, it is primarily a product of human adaptation to the semi-arid environment, marked by low rainfall.
- It has been found in northern Karnataka and western Andhra Pradesh, southern Karnataka, coastal Andhra Pradesh and northern Tamil Nadu.

- Over two hundred sites of this culture are presently known, many of them occur on the flat tops, slopes and foot of granitic hills but some are also found on the alluvial banks of rivers like the Godavari, Krishna, Penneru, Tungabhadra and Kaveri.



Some important Neolithic sites in South India



## MAJOR EXCAVATED SITES ARE:

SL. No.	Sites	District	State
1	Sangnakallu	Bellary	Karnataka
2	Tekkalakot	Bellary	Karnataka
3	Brahmagiri	Chitradurg	Karnataka
4	Maski	Raichur	Karnataka
5	Piklihal	Raichur	Karnataka
6	Watgal	Raichur	Karnataka
7	Hallur	Dharwad	Karnataka
8	T.Narasipur	Mysore	Karnataka
9	Hemmige	Mysore	Karnataka
10	Nagarjunakonda	Guntur	Andhra Pradesh
11	Ramapuram	Kurnool	Andhra Pradesh
12	Veerapuram	Kurnool	Andhra Pradesh
13	Paiyampalli	North Arcot	Tamil Nadu

## Ash mounds

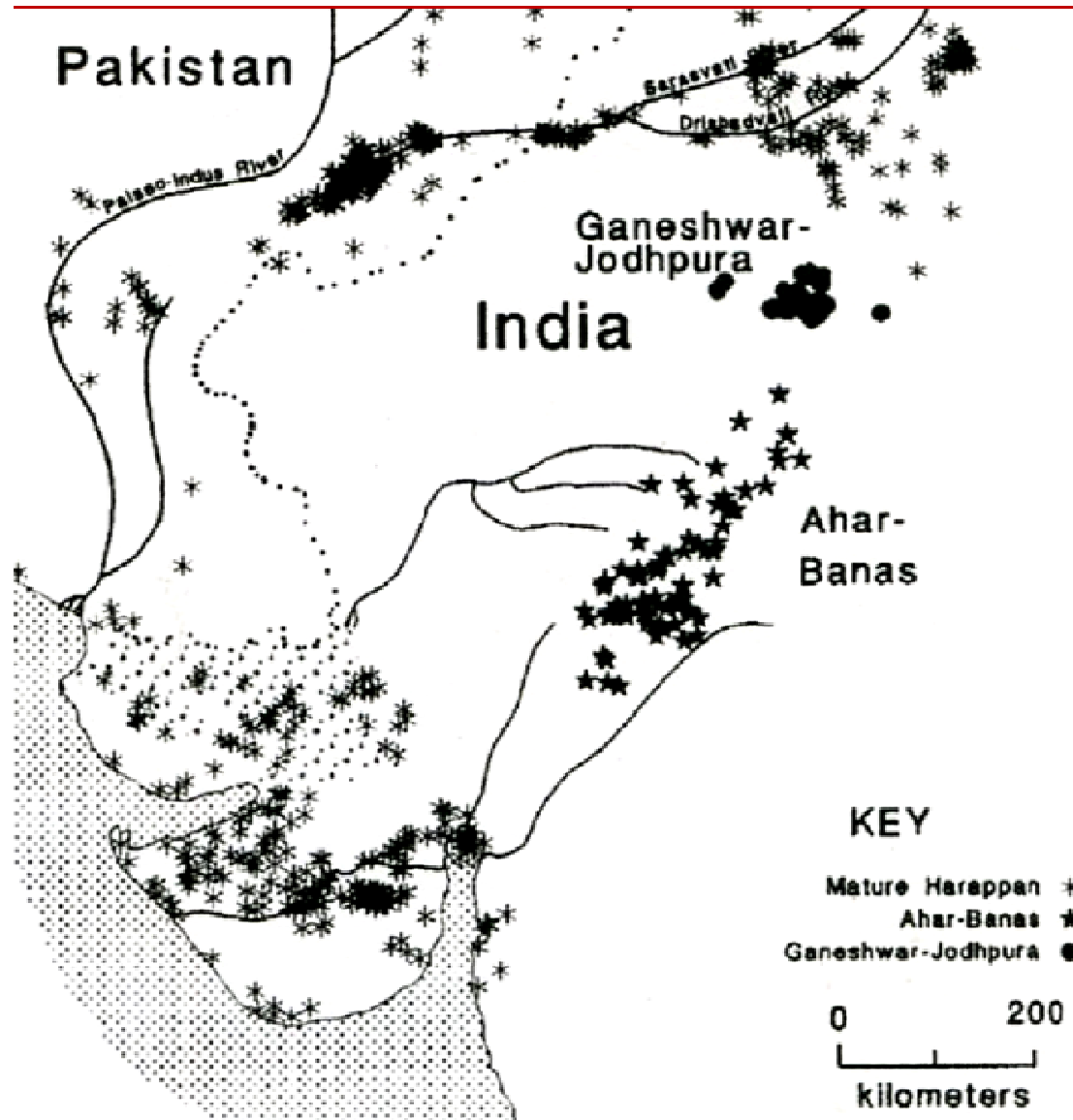
- A very distinctive feature of the Southern Neolithic culture is the presence of ash mounds, which are heaps of ash produced by the burning of cow dung. They are closely associated with habitation sites and provide tell-tale evidence of the role of cattle pastoralism in the economy.
- The Neolithic people domesticated animals such as cattle (*Bos indicus*), buffalo (*Bubalus bubalis*), sheep (*Ovis aries*), goat (*Capra hircus aegagrus*), pig (*Sus scrofa cristatus*), dog (*Canis fami- liaris*) and fowl.

- Neolithic people of south India were using ground stone tools like axes, adzes, wedges and chisels and of microliths and stone blades.
- They lived in circular or rectangular wattle-and-daub huts with floors having stone paving, large stones were placed around the huts on the outside to protect them from winds
- The pottery types are jars, spouted vessels and bowls of various sizes, sometimes decorated with incised designs. An important ceramic was the black-and-red ware

# Chronology

- The Neolithic culture of South India is dated by C14 dating from the middle of the third millennium BC to the beginning of the first millennium BC.





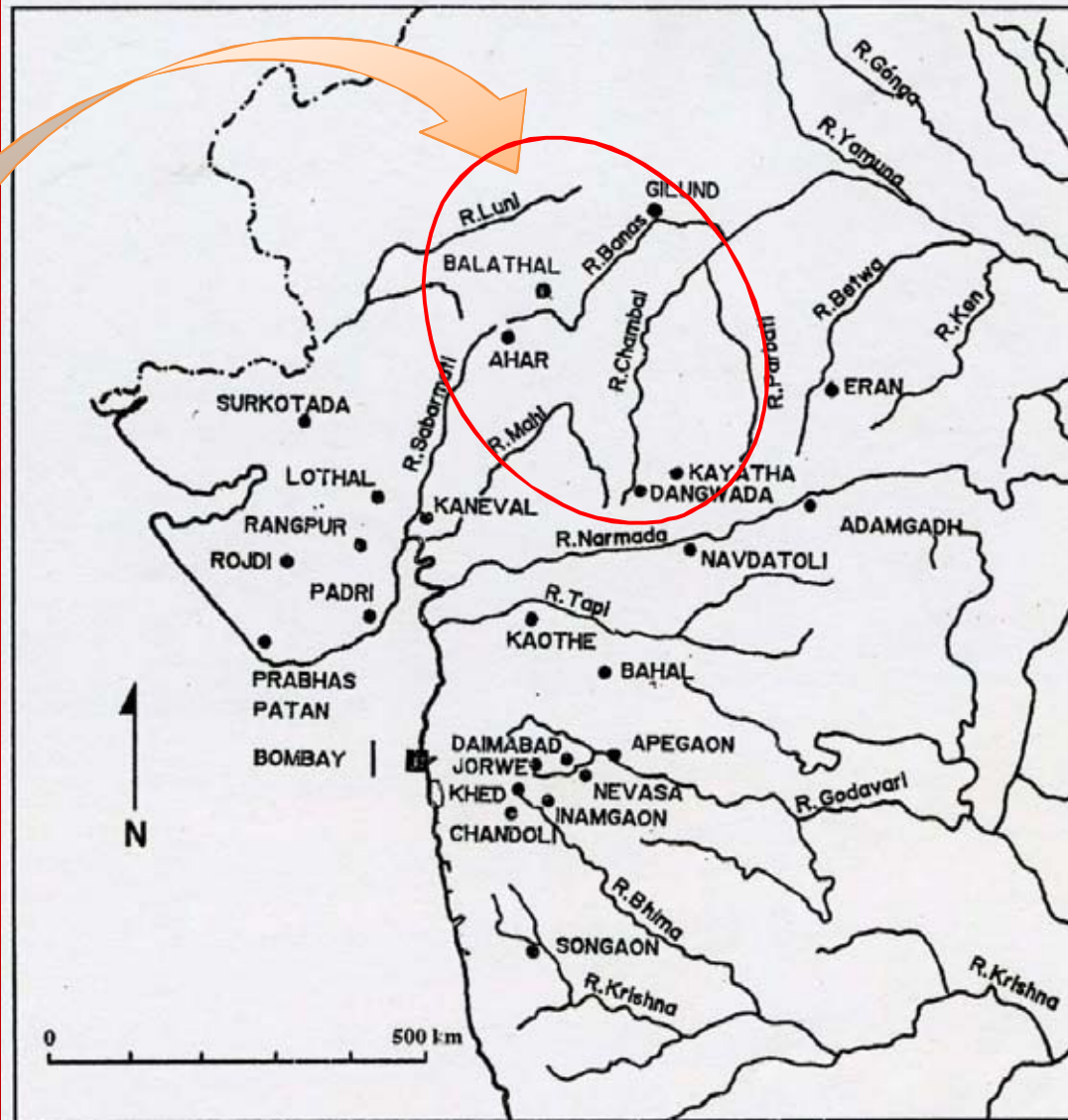
## Ganeshwar Jodhpura Culture

- Ganeshwar and Jodhpura, both type sites, were discovered and excavated in 1970 by R.C Agrawal and Vijaya Kumar.
- Jodhpura is situated in Kotputli, Jaipur & Ganeshwar in Nim-Ka-Thana, Sikar District, Rajasthan
- Evidence of copper smelting were noticed on the surface at Ganeshwar
- Around 1000 copper objects, including variety of arrow heads, flat celts, fish hooks were found in association with Red ware pottery.
- The C14 dates of Jodhpura, place this culture in early part of 3<sup>rd</sup> millennium BC.

# Ahar Culture

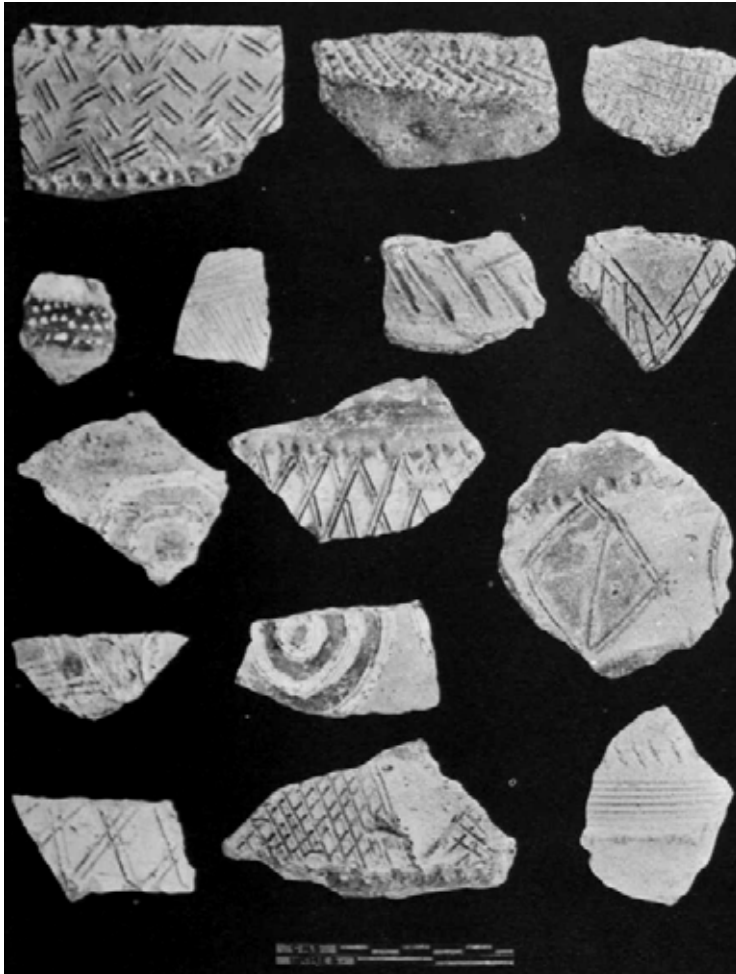
- About 91 sites have been discovered in south eastern Rajasthan, traditionally known as Mewar region, all these sites are located on the banks of the river Banas and its tributary
- Major excavated sites are Ahar and Balathal in Udaipur district, Gilund in Rajsamanad district, Ojiyana in Bhilwara district Rajasthan
- Ahar culture had a rich ceramic tradition consisting of Tan ware, thin Red ware, Black and Red ware and Grey ware
- Shapes include dishes, dish on stands and globular jars etc.

# AHAR CULTURE

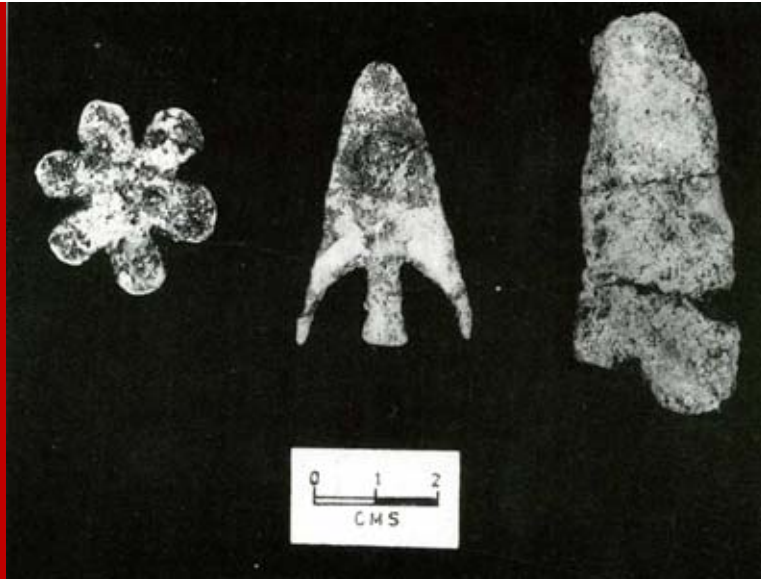




- Copper objects: flat axes, choppers, Knives, razors, chisels and tanged arrow heads
- Ornaments are: beads of semiprecious stones, steatite and terracotta; rings of copper.
- Ahar people lived in single, double and multi-roomed; rectangular, squarish and circular houses made of stone and mud brick.
- At Balathal, evidence of planned settlement, granaries, stone, brick and mud brick structure have been reported
- Nearly 35 C14 dates, mainly from Balathal, clearly established the duration of this culture from 3500 to 2000 BC



Incised pottery, Ahar culture,  
Dhangwada

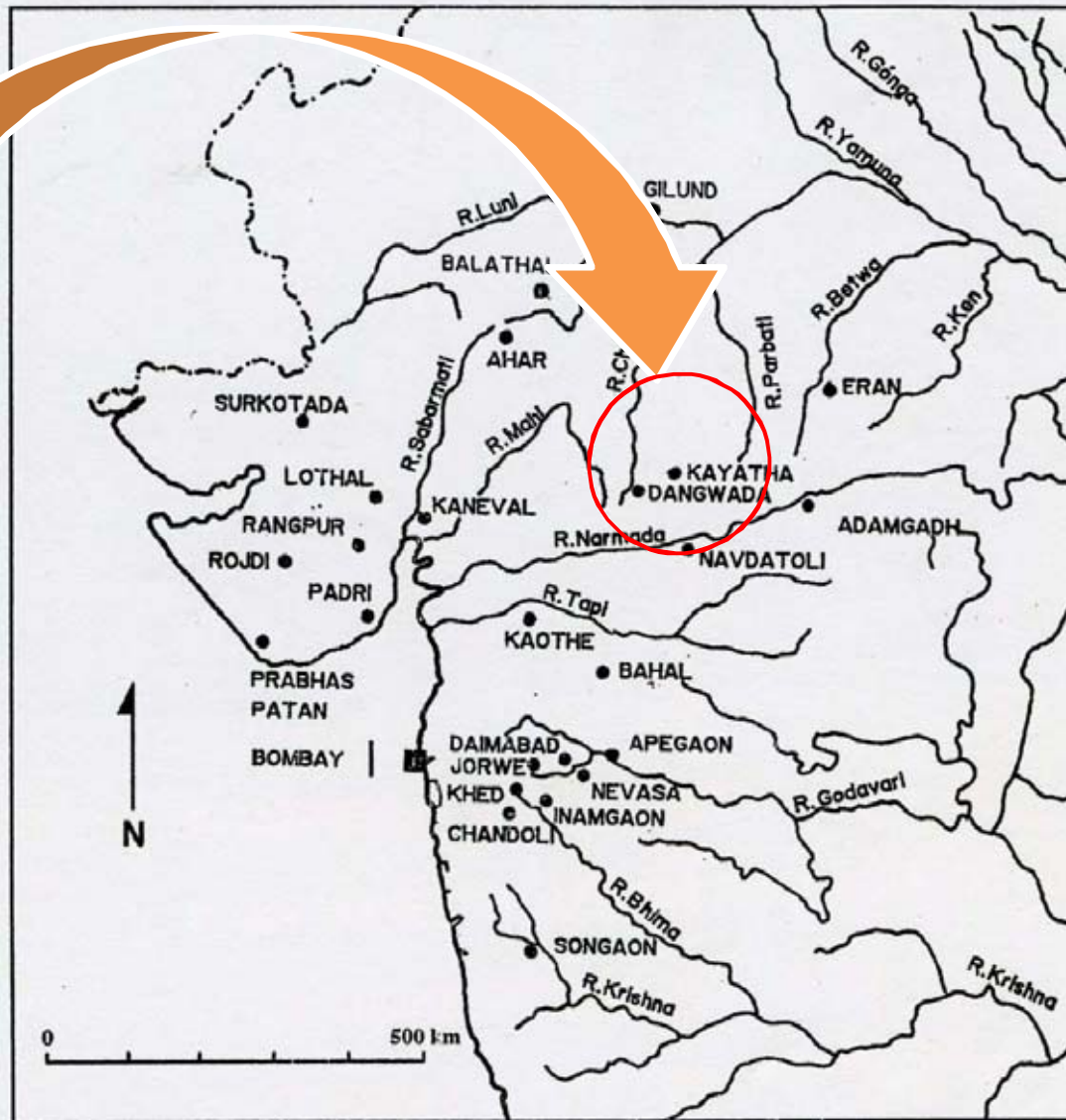


Copper artefacts from Balathal



Parallel mud-brick wall structure probably a granary at Gilund

# KAYATHA CULTURE





## **Kayatha Culture**

- Out of over 40 sites of Kayatha Culture, two of them namely Kayatha and Dangwada have been excavated
- They lived in small huts having well-rammed floors
- The main ceramics of Kayatha: Chocolate-slipped, sturdy and well baked Kayatha ware.
- The important shapes are: convex sided jars and carinated dishes, occasionally pots were decorated with linear designs in black pigment.
- Radiocarbon dates suggest a period of 2000 to 1800 BC.

# MALWA CULTURE



## Malwa Culture

- The Major excavated sites are: Nagda, Kayatha, Navdatoli and Eran, Navdatoli was horizontally excavated and has provided the best evidence.
- The Malwa culture people lived in wattle-and-daub houses of rectangular and round shape.
- At Nagada and Eran, A defense wall made of mud and mud bricks, have been reported
- The main pottery were known as Malwa ware, which is made on wheel and has a buff or cream slip bearing dark brown or black pigment

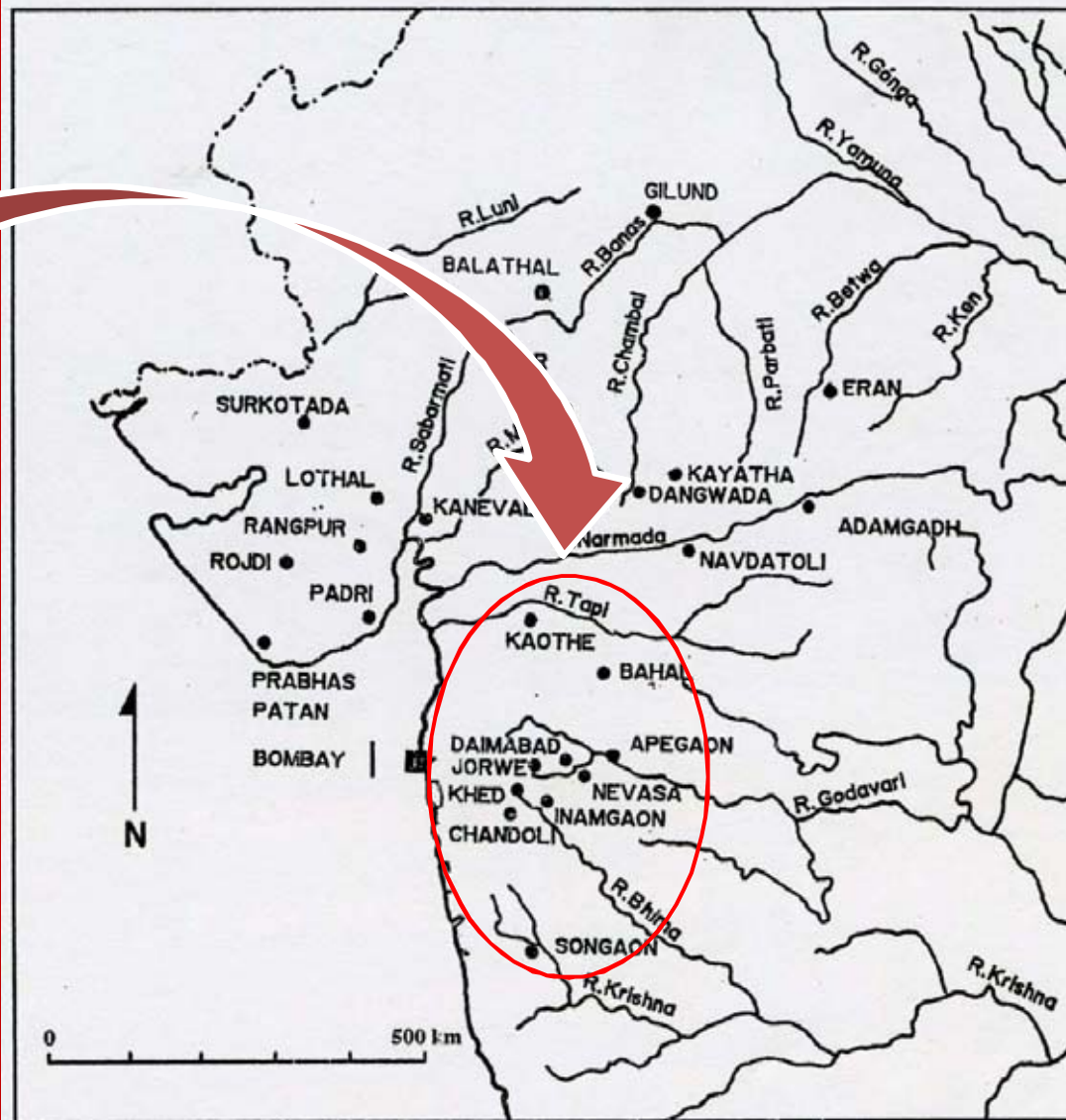


Painted potsherds,  
Malwa Culture,  
Dhangwada



- Ornaments of Malwa People: beads of semiprecious stone, rings and bangles of copper,
- At Navdatoli, beads manufacturing evidence has also been reported
- Other findings are: saddle quern, elongated rubbing stone, hammer stone and terracotta female figurines
- The radiocarbon dates from Navdatoli suggest a period of 1800-1500 BC.

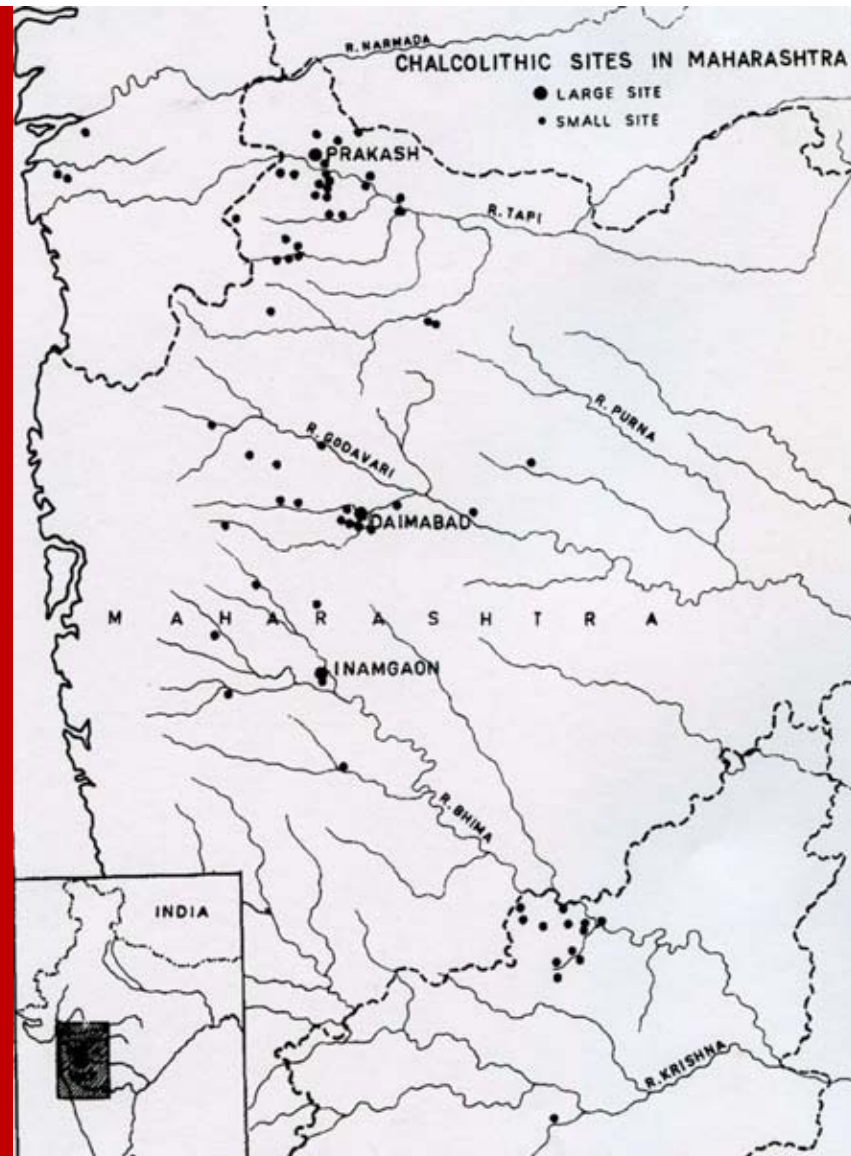
# DECCAN CHALCOLITHIC CULTURE



## **Deccan Chalcolithic Culture**

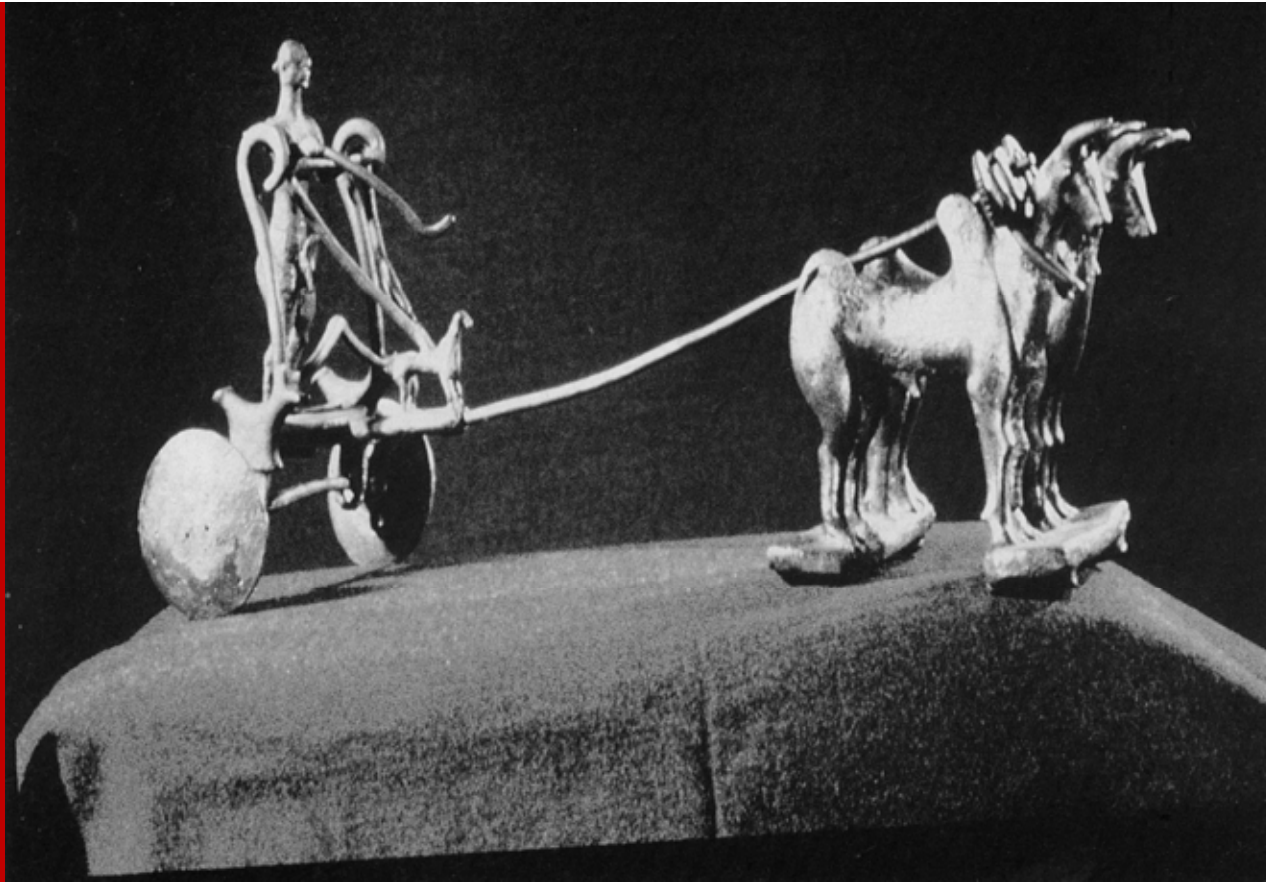
- The northern Deccan or western Maharashtra, particularly the semi-arid region to the east of the Sahayadris, drained by the Tapti, Godavari and Bhima rivers and their tributaries has provided the best evidence of the Chalcolithic cultures in India
- The Major excavated sites of this region: Prakash, Kaothe, Daimabad, Nevasa, Jorwe, Inamgaon and Walki.
- Inamgaon was horizontally excavated over more than a decade and has provided the richest evidence of Chalcolithic culture in this region

## Distribution of Chalcolithic sites in Maharashtra





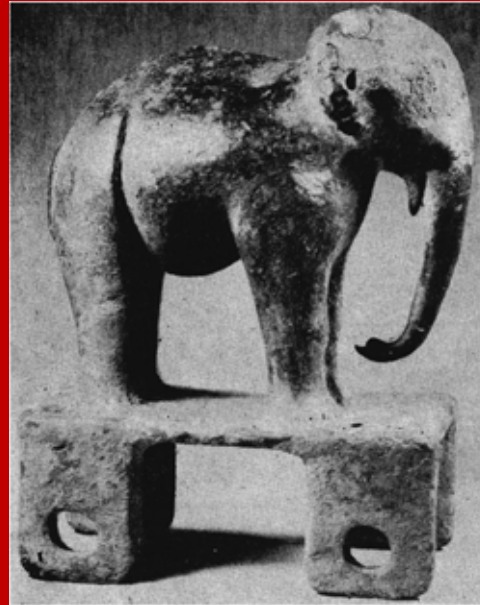
- Deccan Chalcolithic culture is characterized by painted Black and red ceramics, developed copper technology and blade tool industry.
- Inamgaon yielded a variety of copper objects like bangles, pins, discs, rings, crescents, drills, antimony rods, chisels and arrowheads.
- At Daimabad, a hoard of four bronzes was discovered i.e. A chariot and bull, The elephant, standing on a platform, A rhinoceros standing on two horizontal bars over two sets of wheels, A water buffalo



**Bronze Chariot with driver from Daimabad**



1



2



3

**1-Bronze Rhinoceros 2- Elephant 3- Buffalo from Daimabad**



**A spouted jar from Jorwe**



**A bowl from Jorwe**



➤ Chalcolithic Sequence of Diamabad represented following chronological order:

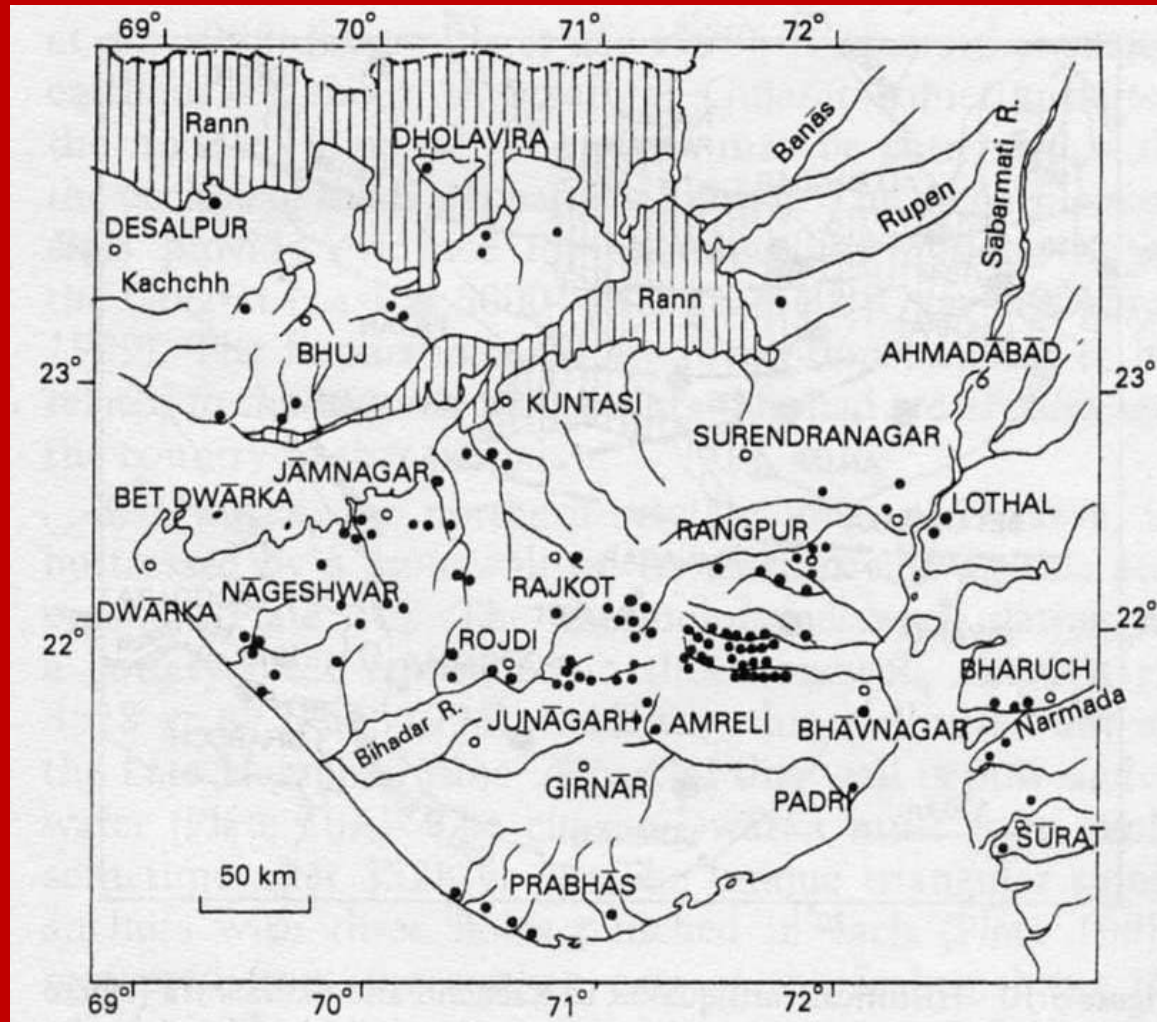
(1) 2300-2000 BC (Savalda Culture)

(2) 2200-1800 BC ( Late Harappa Culture)

(3) 1800-1500 BC (Malwa Culture )

(4) 1500-900 BC (Jorwe Culture)

## Data from Gujarat



- It is interesting to note that the Gujarat (North region) is dotted with several Chalcolithic sites e.g. Bagasara, Loteshwar, Santhali, Moti Pipli, Datrana, Nagwada, Zekhda, Ratanpura etc.
- These Chalcolithic sites are termed as Anarta tradition, Pre-Prabhas, Micaceous red ware and Padri on the basis of characteristic pottery of the region.
- They lived on rammed mud floors and used a variety of pottery, which include Black and Red ware, Reserve Slip ware, Fine Red ware, Buff ware, Grey ware, Gritty Red ware and Burnished Red ware

- Bowl, basins, dishes and dish on stand are some of the common forms of Gujarat Chalcolithic culture.
- Recent C14 dating have been suggested the time span around middle of 4<sup>th</sup> millennium BC to 3<sup>rd</sup> millennium BC.
- Dates from some of the sites:

Loteshtar-	3698 - 2991 BC
Padri -	3680 - 3049 BC
Parabhas Patan -	2911 - 2892 BC



- The *Mahabharata*, *Harivamsa*, *Vayu*, *Matsya*, *Bhagavata* & *Vishnu Puranas* refer to a migration of the Yadavas from Mathura to Dwarka under Krisna's leadership after he killed Kansa.
- He chose a remote place called Kushasthali on the coast of Anarta (Gujarat), enlarged it and named the new town Dwarka.
- The site of Dwarka has been identified by the Marine Archaeologists with the island of Bet Dwarka in Gujarat.

- The excavations at Bet Dwarka in different localities revealed a rubble wall, lustrous red pottery associated with the late Indus-Saraswati culture, black-and-red ware, seal engraved with the motif of a three headed animal- bull, unicorn & goat, inscribed jars, stone mould of a smith, glazed olpin (cosmetic bottle), etc.
- The above findings and TL date of pottery suggest the beginning of habitation at Dwarka around 1800-1700 BC.

Marine Archaeological explorations at Dwarka

**DWARKA: Underwater Stone structure**



- The structural remains have been traced over an area of 1 x 0.5 km and whatever has been traced conforms to the description of Dwarka in the Mahabharata to a large extent.
- Marine Archaeology has proved that the existence of Dwarka and its submergence by the sea in the 2<sup>nd</sup> millennium BC is a fact and not a fiction.
- Reclamation of land when the sea level was 7 to 8 meter lower around 1800-1700 BC is attested by the boulder foundation on which the walls & bastions were build. The reclamation of land for building in water logged areas is referred to the Mahabharata.

(after S.R. Rao, 1996)

## Some references of interesting phenomena in Mahabharata just before Dwarka was submerged in Sea

- “The streets swarmed with rats and mice, earthen pots broken from no apparent cause, *sarikas* chirped ceaselessly day and night, *saras* hooted like owls, goats cried like jackals, pigeons departed from their homes, and asses brayed aloud in disconsonant and awful voices” (Mausala Parva, Mahabharata, section 2, Ganguli, 1998)
- Krishna must have understood the meaning of these signs and persuaded his people to move away to safer place including Prabhas.

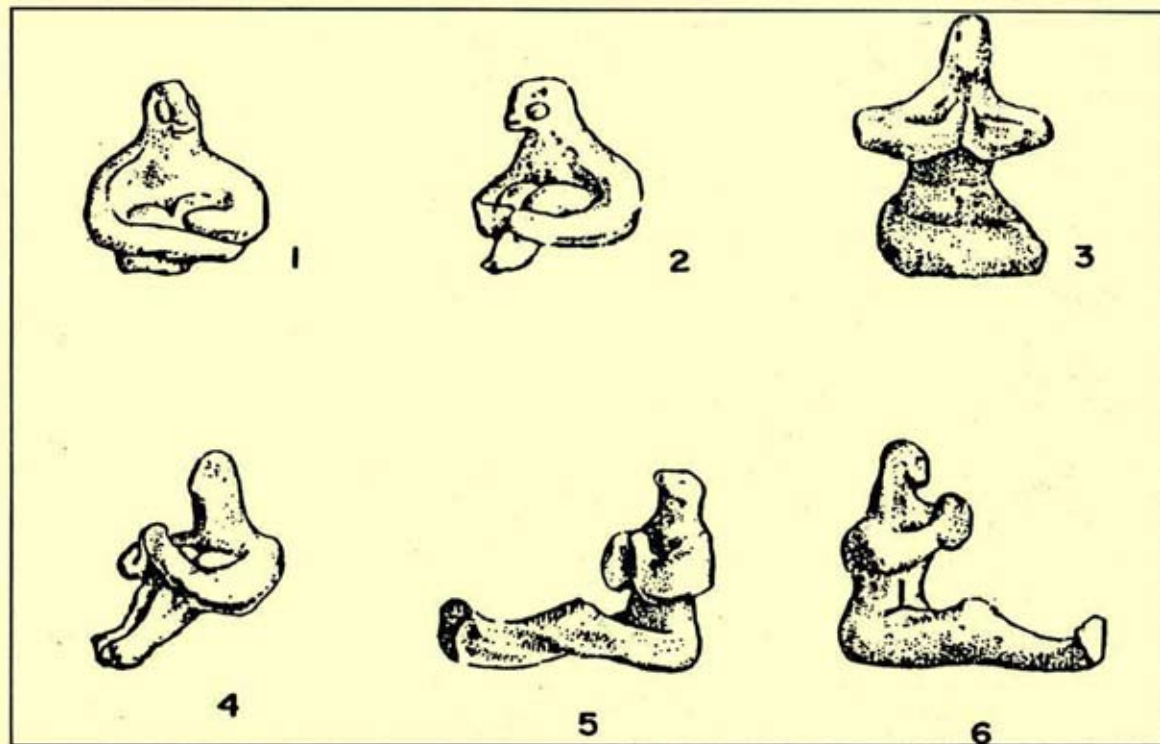


## Some earthquakes/tectonic movements and their timing northwest India

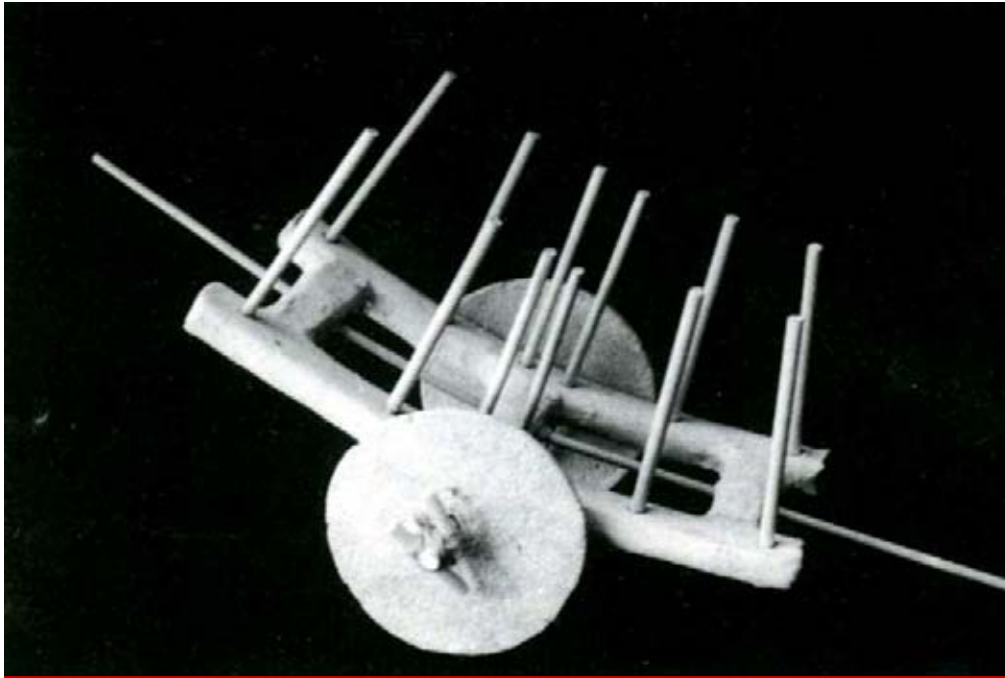
Event	Years in BC	References
Sea level fluctuations on the Gujarat coast	3000-2000	Gaur and Vora 1999
Sinking of Dwarka	1600	Rao 1996
Earthquake at Dholavira	2200	Bisht 1993
Uplift of Yamuna terrace in Dun valley	$<1663 \pm 215$	Wesnousky 1999
Eastward diversion of Yamuna river	1750	Raikas 1968
Westward shift of Satluj	Mid of 2 <sup>nd</sup> millennium BC	Mughal 1995

After Valdiya

## Determining the Cultural Continuity from 3<sup>rd</sup> millennium BC: Inferences from Archaeology



Terracotta figurines in Yogic *āsanas*: 1-4, from Harappa; 5-6, from Mohenjo-daro.  
Mature Harappan



**Terracotta cart  
model from  
Nausharo,  
2800-2600 BC**



**Modern bullock carts**



- Dancing Girl from Mohenjodaro





Flat copper tablet with  
incised script on one side  
and endless – knot motif on  
the reverse from  
Mohenjodaro

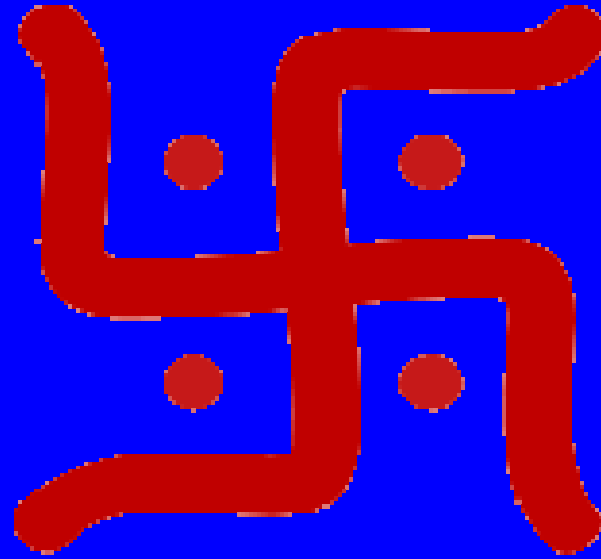
It continues to be used in later Buddhist & Hindu context.

Traditional Hindu women throughout the continent  
continue to make similar ritual design to protect & purify  
their home





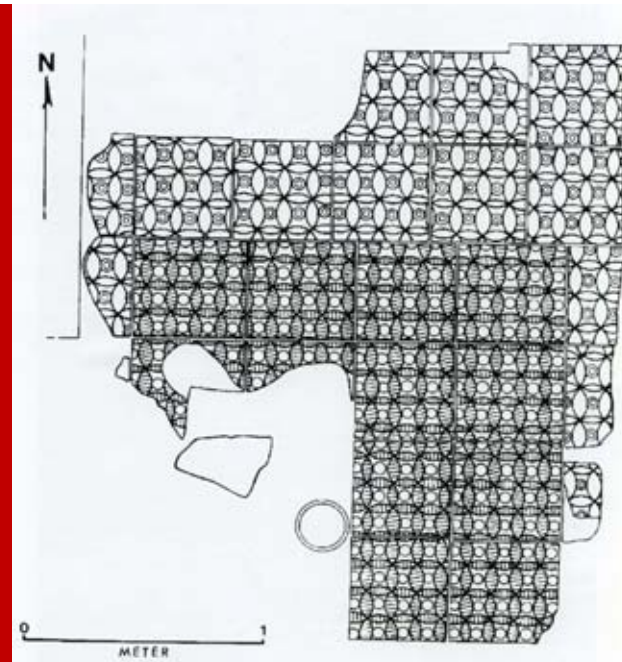
Swastika Motifs from  
Mohenjodaro, Mature  
Indus-Saraswati phase



Modern Swastika image



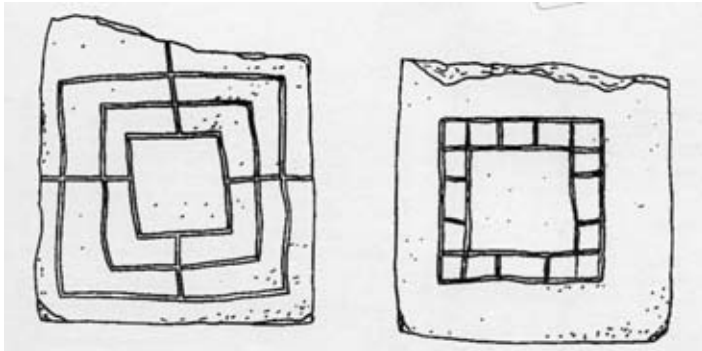
**Ornamented  
floor of a  
room from  
Balakot  
(after G. F.  
Dales)**



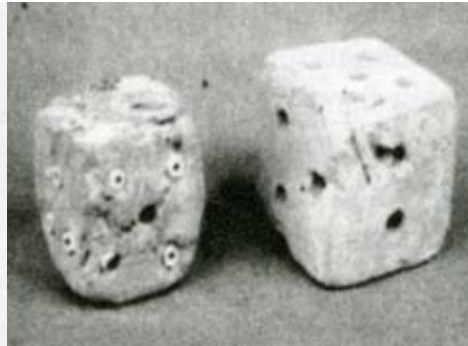
**The flooring with  
ornamented tiles from  
Kalibangan**

**Bathroom tile or base of large tub,  
intersecting-circle motive from  
Mohenjo-daro**





Gaming Board Design from Lothal and Harappa (After S.R. Rao 1985 and Kenoyer 1998)

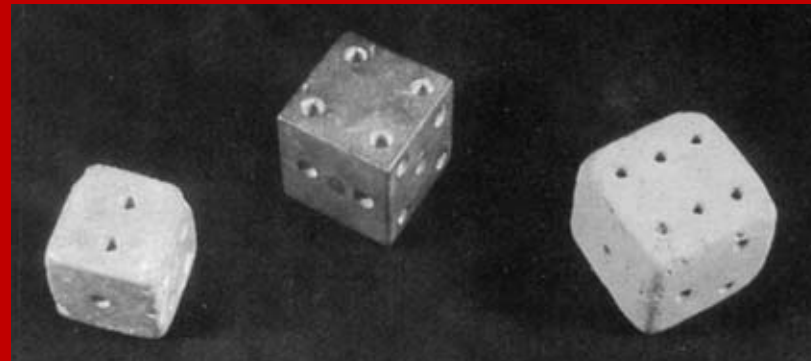


TC Cubical dice with 1-6 holes, Mohenjodaro

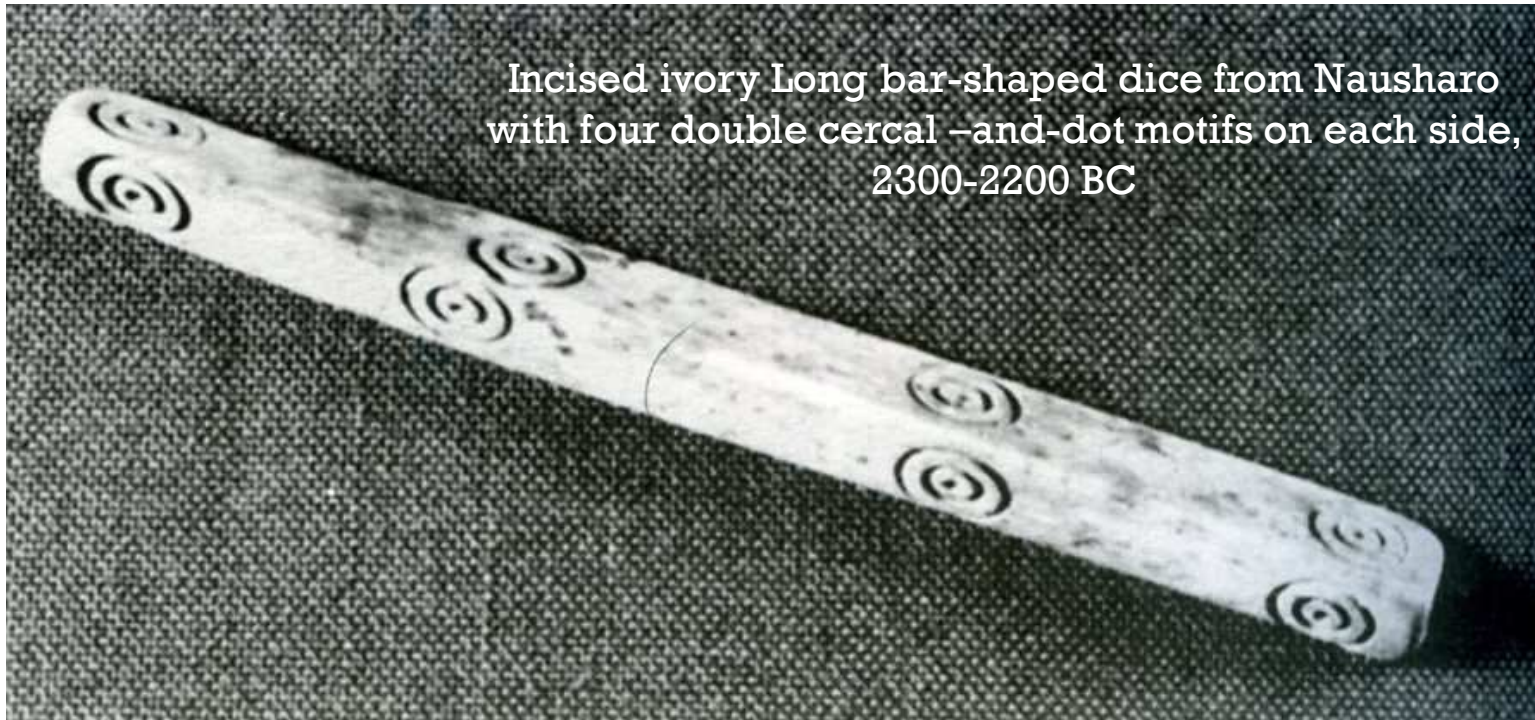


Modern dice with 1-6 holes

Similar gaming boards are still used in northern sub continent to play strategy games such as capturing tiger with elephant, fortune telling & gambling



Cubical dice made of clay and stone, mature Indus-Saraswati phase

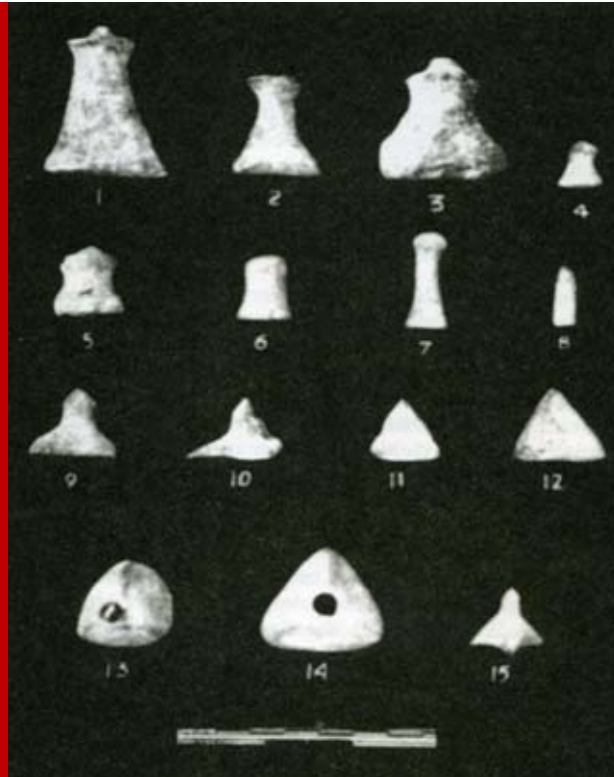


Incised ivory Long bar-shaped dice from Nausharo  
with four double spiral –and-dot motifs on each side,  
2300-2200 BC

Similar type of dices are still used in Pakistan & India to play the game namely *Pachchisi* or *Chaupad*.

There are several references of *Chaupad* in Sabha Parva of Mahabharata.





Terracotta gamesmen from Lothal,  
Mature Indus-Saraswati phase



Use of Gamesmen in chess;  
reconstructed by S.R. Rao





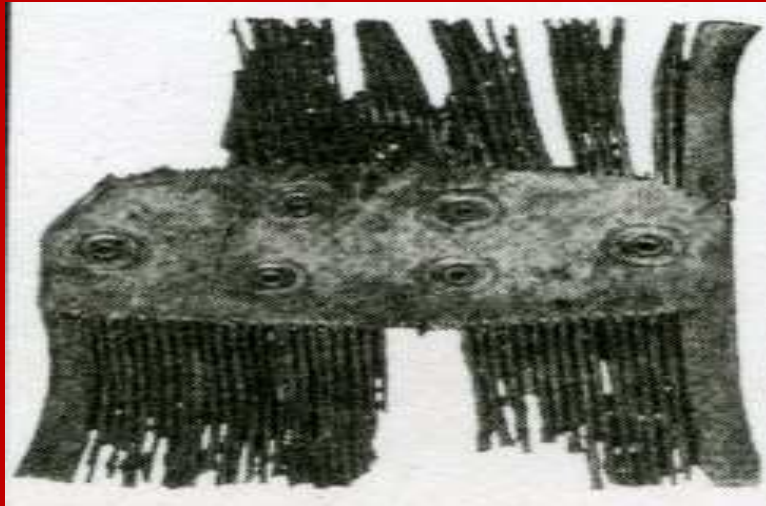
Another example of gamesmen from  
Dholavira,  
Mature Indus-Saraswati phase



Young boys near Harappa, playing *pittu* with pottery discs

Chipped pottery discs made in graduated size have been found in recent excavation at Harappa (After Kenoyer 1998)

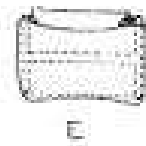
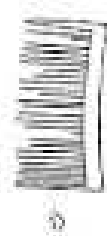




Ivory comb with on two opposite sides from Nausharo

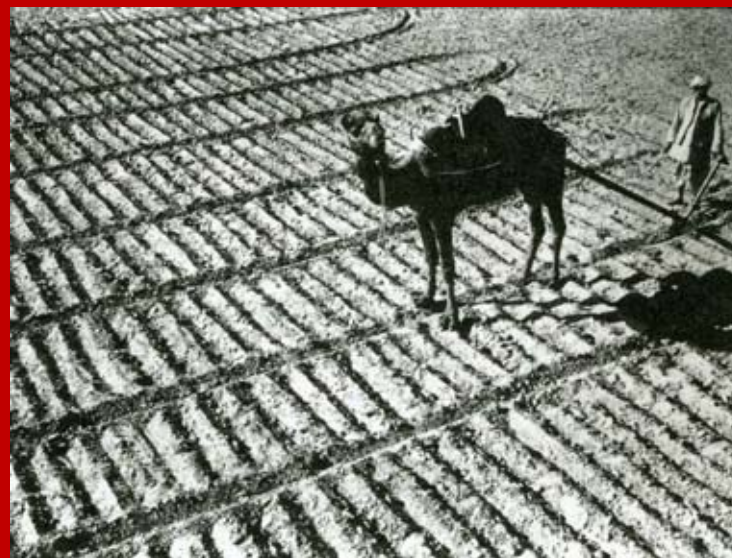


Modern Ivory comb





An Agricultural field, showing  
criss- cross pattern of the furrows,  
early Indus-Saraswati period,  
Kalibangan

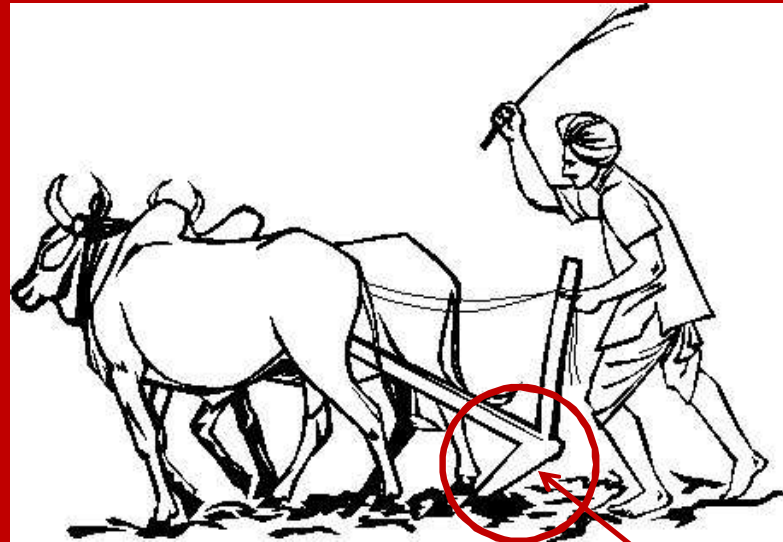


The system of ploughing the field,  
which also has the criss-cross  
pattern of the furrows



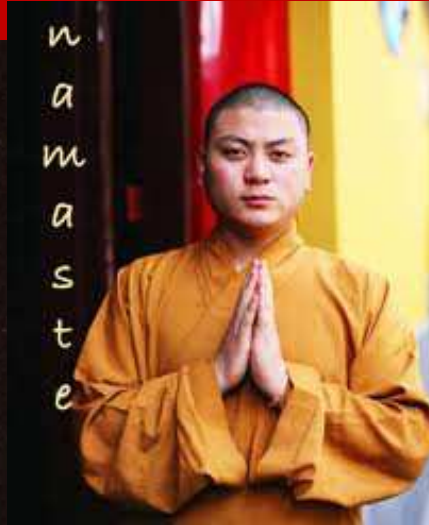
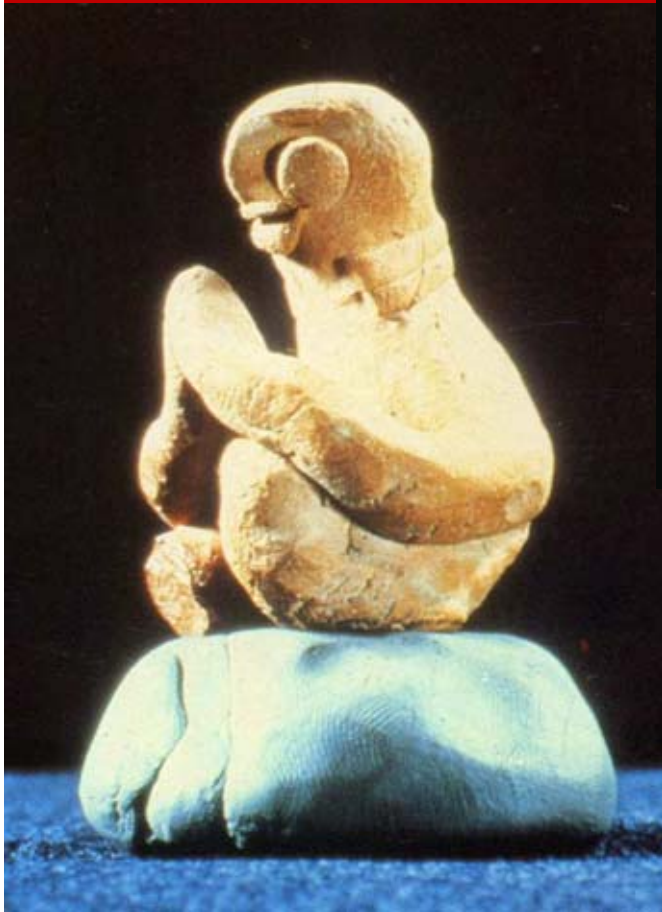


Terracotta Model of a plough From Banawali Mature  
Indus-Saraswati phase



These two are the modern example of plough





A Terracotta figure  
greeting with *namaste*,  
from  
Harappa, mature Indus-  
Saraswati phase



Terracotta female figurine indicates the use of vermilion  
from Nausharo, 2800-2600 BC



Terracotta writing tablets  
from Mohenjodaro, mature  
Indus-Saraswati phase



Modern writing tablet



Painted Jar Depicting Story of Clever Crow, Lothal

- ‘How can we lament lack of National pride in Indians, without first acquainting them with country’s phenomenal scientific achievement in the dim distant past?’

Dr. D.S. Kothari, Nuclear Physicist



## Concluding Remarks

- The above discussion leads to conclude that the Cultural elements found in large number of sites in the northwest frontier, Kashmir and in the dried up river bed of Saraswati–Drishadvati divide to the Ganga plains on the east indicate an indigenous evolution and gradual development of civilization for a period of almost eight thousand years.

# Acknowledgments

All those scholars whose pioneering contributions have been utilized in the making of this presentation



**Thank you very much  
for your patient  
hearing**