

## SYNOPSIS OF THE PALEOLITHIC INDIA

Period	Sites	Tools/ <i>Hominids</i> / Symbolic Behavior	Fauna
<b>‘Pre-Oldowan’/ ‘Oldowan’ (Lower or Early Paleolithic)</b>	General: pebble cores and flakes		
	Riwat, Upper Siwilak Formation, Pakistan (paleomag. and geostrat.) >1.9 or 2.0 – 2.1 MYA ( <i>RH1989, MV2001</i> ); (revised paleomag.) <b>2.35 MYA</b> ( <i>DR1998</i> )	Quartzite pebble cores and flakes ( <i>RH1989</i> ); but dating is controversial ( <i>KRP1998</i> )	
	Pabbi Hills, Upper Siwilak Formation, Pakistan (paleomag. and geostrat.) <b>1.2-1.4 MYA</b> and in older strata ( <i>DR1998</i> )	350 artifacts, quartzite, simple flakes, ‘pre-Acheulian’, no Acheulian tools, rare retouch, rare standardized forms (Dennell 1992) ( <i>DR1998</i> )	

<b>Early Acheulian</b>	EA General: core tools, including handaxe, chopper, polyhedron, spheroid; low number of cleavers and flake tools; hard hammer; absent Levallois ( <i>MV2001</i> ) ( <i>CP2004</i> ). Hand-sized flakes from large cores; secondary flaking rare; sharp edges made by intersect dorsal flake scar and ventral surface; Kombewa technique common; trihedral picks most common form of handaxe; pointed working edge more important than shaping; small flakes with no secondary retouch; small cores suggest functional ( <i>MS2004</i> )		
	Isampur, Hunsgi Valley, Karnataka (ESR on bone, mean age LU) 1.27±0.17 MYA and (EU minimum age) 730±100 ka and (RU maximum age 3.12±0.4 MYA ( <i>PK2002</i> )	quarry site: mostly large limestone slabs prepared and then large flakes removed, some flakes shaped into handaxes, cleavers, trihedral picks, others with min. chipping into knives and choppers/chopping tools; scrapers, polyhedrons, discoid cores, uniface ( <i>PK2002</i> )	bovid, equid, cervid, turtle shell ( <i>PK2002</i> )

<b>'Middle Acheulian'</b> (my designation)	Dina and Jalapur, Pakistan (paleomag. Upper Siwilak Conglomerate) <780 ka (BAMP 1980s) and (geol. 400-600 ka) (Gaillard & Mishra 2001) ( <i>CP2004</i> )	Acheulian handaxes (Rendell et al 1989, Rendell and Dennell 1985) ( <i>CP2003</i> )	
	Bori, Kukdi River, Maharashtra (Ar/Ar on tephra layer above artifacts) 670±30 ka ( <i>MS1995</i> ) (K/AR) 537±47 ka (Horn 1993) ( <i>CP2004</i> ) (tephra) = Toba ash 73±4 (Shane, 1995; <i>WJ1998</i> , <i>SA1998</i> ) but contradicted by geology (paleomag. Matuyama) >780 ka and EA technology ( <i>MS2004</i> )	'Early Acheulian', 152 artifacts, mostly basalt, dolerite, chert; 6 bifaces = 4 trihedral picks // Ubeidya, 1 crude ovate handaxe and 1 bifacial chopper; and 3 choppers or cores; 3 polyhedrons; 142 flakes ( <i>MS1995</i> ) [but Fig 2 illustrates 2 pointed partial handaxes and 1 rough cleaver??]	
	Moregaon, Maharashtra (paleomag. Matuyama) >780 ka ( <i>MS2004</i> )	'Early Acheulian' bifaces (Kale 1993; Mishra 2002) ( <i>CP2004</i> )	
	Chirki-Nevasa, Pravara Basin, Maharashtra (Th/U) >350 ka (limit) (Atkinson et al 1990) ( <i>MS1992</i> ) (paleomag. Matuyama) >780 ka ( <i>MS2004</i> )	'Early Acheulian' underlies MP (Corvinus 1969, 1989), high% core tools; hard hammer; no Levallois; cleavers > handaxes; choppers prominent ( <i>CP2004</i> ) and trihedral picks, polyhedrons and low % scrapers ( <i>MV1978</i> )	
	Attirampakkam, Kortallayar Valley, Tamil Nadu Layer 6 = Acheulian (paleomag.) ~780 ka Layer 5 = transitional LA- MP; Layer 2 = Late MP-UP; ( <i>PSG2003</i> , <i>PS2003</i> )	Mostly quartzite: irregular, discoid, flake, flake-blade and 1 Levallois core; tools mostly 22+6+6 scrapers on flakes, 7 borers, 5 denticulates, 6 'cutters'; 2 handaxes (with min. symmetry), 2 cleavers, 8 picks, 9 knives, 6 core scrapers ( <i>PSG2003</i> )	<i>Bos</i> sp (or <i>Bubalus</i> ), <i>Equus</i> sp. <i>Caprinae</i> or <i>Boselaphini</i> suggesting open wet landscape ( <i>PSG2003</i> )

	16R Dune, Didwana, Thar Desert, Rajasthan (Th/U) 390±50 (beyond limit) (Raghvan, Rajaguru, Misra 1989) ( <i>MS1992</i> , <i>JH2005</i> )	‘Early Acheulian’ artifacts, quartz crystal manuports ( <i>PSo2001</i> )	
	Singi Talav, Didwana, Thar Desert, Rajasthan, lowest level (U/Th) > 390K (limit) (Raghavan et al 1989) ( <i>CP2004</i> )	‘Early Acheulian’ quartz and quartzite underlies early MP, handaxes, polyhedrons, spheroids, cores, flakes, few crude cleavers (Gaillard et al 1986, Misra 1987) ( <i>CP2004</i> ). 6 quartz crystals, no use-wear, too small for tool manufacture, non-local (d’Errico, Gaillard, Misra 1989) ( <i>BR2003</i> , <i>BR1993</i> ; <i>JH2005</i> )	
	Hunsgi II, V, Hunsgi Valley, Karnataka ca. 166 to >350 ka for related sites in Valley (Szabo 1990) ( <i>NN2003</i> )	MA, mostly limestone handaxes, cleavers, scrapers, picks, knives, choppers, polyhedrons; <u>hard hammer</u> and core tools predominant; // Olorgesailie [MA] raw material exploitation, reduction strategies, and transport ( <i>NN2003</i> ); ochre nodules (Sankalia 1976); hematite with wear facets, striated, ‘crayon’ ( <i>BR1990</i> ; <i>BR1993</i> ; <i>BR1994</i> )	
	Yedurwadi, Krishna Basin, Maharastra (Th/U) >350 ka (limit) (Atkinson et al 1990) ( <i>MS1992</i> )	tri-hedral ‘handaxes’ [picks], polyhedrons, choppers, flakes ( <i>MS1992</i> )	
	Durkadi, Narmada Valley, Madhya Pradesh	‘Early Acheulian bifaces and pebble tools’ (Armand 1983) ( <i>CP2004</i> )	
	Pilkarar, central Narmada Valley, Madhya Pradesh	‘Early Acheulian’ discoidal cores, large unrtouched flakes, handaxes, cleavers, overlying level with cores, choppers (Patnaik 2004) ( <i>CP2004</i> )	

<b>Later Acheulian</b>	LA General: low % bifaces, high ratio cleavers to handaxes, high % flake tools, e.g., scrapers, extensive use of soft hammer and indirect percussion; Levallois and discoidal core, generally smaller, thinner flakes, more refined and increased retouch and bifacial thinning/flaking ( <i>MV2001, CP2004, MS2004</i> ).		
	Sadab, Hunsgi-Baichbal Valley, Karnataka (Th/U Elaphas molar) 290.4+21.0/-18.2 ka (Szabo 1990) ( <i>MS1992</i> )	Later Acheulian	
	Teggihalli, Hunsgi-Baichbal Valley, Karnataka (Th/U Bos molar) 287.7+27.2/-22.4 ka and (Elaphas molar) > 350 ka (Szabo 1990) ( <i>MS1992</i> )	Later Acheulian	
	Kaldevanhalli-I, Hunsgi Valley, Karnataka (Th/U on travertine under artefacts) 174±35 or 166+15 /-13 ka (Szabo 1990) ( <i>MS1992</i> )	Later Acheulian	
	Kaladgi Basin, Karnataka ( <i>PM2003</i> )	Acheulian underlies MP	
	Umrethi, Hiran Valley, Gujarat (Th/U above tools) 190+29/-22 ka (Baskaran 1986) ( <i>MS1992</i> )	Handaxe (Marathe 1981) ( <i>MS1992</i> )	
	Indola-ki-Dhani, Didwana, Thar Desert, Rajasthan	Acheulian underlies early MP (Misra 1982) ( <i>JH2005</i> )	

('transsubcontinental Narmada River route')			
	<p>Bhimbetka, near Narmada River, Raisen District, Madhya Pradesh</p> <p>Wakankar trench II, site III F-24, Misra Shelter, trench I, site III F-23</p> <p>754 #ed shelters, over 500 with <i>rock paintings</i>;</p> <p>(microerosion) Chief's Rock <i>cupule</i> &gt;100 ka (BR2005)</p> <p>Acheulian layer underlies FA layer OSL preliminary dating 106±20 ka, hence well before &gt;106±20 ka (BR2005)</p>	<p>IIIF-24: overlying layer 8 of cobble tool choppers and scrapers, two LA layers: Layer 6, handaxes, cleavers, scrapers; Layer 5, cleavers, handaxes, scrapers; <b>cupule and undulating groove petroglyph</b> of Acheulian level; overlain by MP, Mesolithic, Chalcolithic &amp; historical;</p> <p><b>Chief's Rock 9 cupules and marks of red pigment</b> (BR2005, KG1996)</p> <p>III F-23: 3 A layers, chalcedony, chert: amorphous, bifacial and discoidal cores; few Levallois; 28% scrapers (incl. blade, 12% backed knife, notch, denticulate); 3% cleavers handaxes on flakes // Europe M.A.T. (MV1978)</p>	<p>Upper Pleistocene Narmada (associated with Hathnora hominid – see below): hippopotamus (<i>Hexaprotodon namadicus</i>), horse (<i>Equus namadicus</i>), cattle (<i>Bos namadicus</i>), <i>Bubalos palaeindicus</i>, elephant (<i>Elephas namadicus</i> and <i>Stegodon insigni and-ganesa</i>), <i>Cervus sp.</i>; wild boar (<i>Sus namadicus</i>); <i>Gazella sp.</i> (MV1978, SA1997, MV2001)</p> <p>In III F-24 Acheulian layer, <b>chalcedony stone disc</b> (Wakankar) similar to Maihar Acheulian stone disc (Kumar 1990) (BR1992)</p> <p>[Chief's Rock has shape of 'elephant', natural and/or flaked – JBH, OriginsNet.org online]</p>
	<p>Daraki-Chattan, Madhya Pradesh; <b>500+ cupules, 2 engraved grooves, stone floors</b> to lowest EP level (BR2005, KG1996)</p>	<p>Levels 1 and 2 Acheulian or A/MP 'intermediate', flakes, few handaxes, cleavers, Levallois; Level 3 EP cobble and flake tools, Levallois and discoid cores; 4, 5 &amp; 6: chopping tools and cobble tools, spheroids, discoids, rare polyhedrons, with rare handaxe, cleaver in Level 5; Levels 3-6: <b>exfoliated slabs bearing cupules &amp; hammerstones for engraving; 6: hematite nodule</b> (BR2005, KG1996)</p>	<p>[Natural relief shapes of cave walls gives vague appearance of two or three 'elephants' processing toward cave entrance – JBH, OriginsNet.org online]</p>

	Hathnora, Narmada Valley, Madhya Pradesh (faunal) <b>200K-300K</b> (Acharyya and Basu 1993) (Kennedy 2000) ( <i>JH2005</i> ) (paleomag.) < 780 K ( <i>SA1997, BR2005</i> ) (Useries bovid bone) <b>min. age 236 ka</b> ( <i>CD2004</i> )	Partial cranium, 1150-1420cc, <i>archaic sapiens</i> ( <i>KK1991</i> ) // Steinheim <i>H. heidelberg.</i> ( <i>CD 2004</i> ) L, R clavicle and rib, <i>pygmy archaic</i> ; similar stratum = Middle to Late Acheulian handaxe, cleaver ( <i>SA1997, 2005</i> )	
	Maihar, Satna, Madhya Pradesh	Late Acheulian, 27.5% bifaces; flat sandstone disc, centripetally flaked, ~70 mm diam., too soft to be a tool (JN Pal) // Bhimbetka Acheulian disc ( <i>BR1992; BR1993</i> )	
	Middle Son Valley Belan Valley	Acheulian underlies MP Acheulian underlies MP	

<p><b>Final Acheulian</b> FA/MP Transition ca. 150-200 ka (<i>BR2005</i>)</p>	<p>Bori, Kukdi River, Maharashtra (Th/U) ~200K</p> <p>Nevasa, Pravara Basin, Maharashtra (Th/U) ~200K</p> <p>Yedurwadi, Krishna Basin, Maharastra (Th/U) ~200K (Korisettar 2002) (<i>BR2005</i>)</p>	<p>Final Acheulian</p> <p>Final Acheulian</p> <p>Final Acheulian</p>	
	<p>Bhimbetka, near Narmada River, Raisen District, Madhya Pradesh Misra Shelter, III F-23: FA/Intermediate Layer (EIP Project Preliminary OSL central) <b>106±20K</b> (<i>BR2005</i>)</p>	<p>Terminal phase of LA to beginning of MP with some 'Eastern Micoquian' - like bifaces (<i>BR2005</i>)</p>	
	<p>Adi Chadi Wao, Junagadh, Gujarat (Th/U (above tool) 69.0+3.8/-3.6 (Baskaran 1986) (<i>MS1992</i>)</p>	<p>Handaxe (Marathe 1981) (<i>MS1992</i>)</p>	
	<p>Satpati and Gadari, Nepal (geostat. dun valley sediment) late Middle to early Upper Pleistocene after ~ 200 ka (Corvinus 1980s-90s) (<i>CP2003</i>)</p>	<p>Gadari: handaxes made on quartzite cobbles and large flakes, pick, cleaver, cores and flakes Satpati: handaxes, etc. (Corvinus 1990, 1995) (<i>CP2003</i>)</p>	
	<p>Attirampakkam, Kortallayar Valley, Tamil Nadu Layer 5 = transitional LA- MP; (<i>PSG2003, PS2003</i>)</p>	<p>Transitional Later Acheulian – Middle Paleolithic</p>	

<b>Soanian</b>		General: non-biface tradition	
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<b>Middle Paleolithic</b> <b>150,000 BP – 30,000 BP</b> Not yet any hominin remains for MP	General MP = Levallois and discoidal, ‘cylindrical’ prepared cores, overall decrease in artifact size; tools primarily on flakes and blades, scrapers predominant (include end, points, notches, denticulates, borers), diminutive bifaces, shift to fine grained material, chert, jasper, chalcedony, flint, crypto-crystalline silica ( <i>MV2001, CP2006</i> )		
	16R Dune, Didwana, Thar Desert, Rajasthan (Th/U) 150±10 ka and 144±12 ka; (TL) 163±21 from underlying level (Raghvan, Rajaguru, Misra 1989) ( <i>MS1992, JH2005</i> )	MP, scrapers, point, core (Misra 1995) ( <i>JH2005</i> ) [discoidal core]	
	Singi Talav, Didwana, Thar Desert, Rajasthan (Misra et al 1982) ( <i>JH2005</i> )	Early MP overlies Late Acheulian, include polyhedrons ( <i>JH2005</i> )	
	Indola-ki-Dhani, Didwana, Thar Desert, Rajasthan (Misra et al 1982) ( <i>JH2005</i> )	Early MP overlies Late Acheulian, include polyhedrons ( <i>JH2005</i> )	
	Patne, Maharashtra Level 13 (Sali 1989) ( <i>JH2005</i> )	MP (Sali 1989) ( <i>JH2005</i> )	

	Lakhmapur East and Benkaneri (Malaprabha Valley) and 189 other MP localities, Kaladgi Basin, Karnataka Sites range 50 to 100 ka ( <i>PM2003</i> )	'Early MP' quarry site: flakes struck from radially prepared cores and bifacial discoidal cores; flakes retouched for scrapers; diminutive handaxes and cleavers on flake blanks ( <i>PM2003</i> )	
	Wagan Basin and Kadmali Basin	MP, discoidal core reduction most common (Misra 1967, 1968) ( <i>JH2005</i> )	
	Hokra 1-a and Gurha, Thar Desert, Rajasthan (Allchin, Goudie, Hegde 1978) ( <i>JH2005</i> )	Unidirectional cores yield large flake blanks into blades and smaller flakes; 'the goal to make narrow elongated flakes' ( <i>JH2005</i> )	

Mid MP (Homo sapiens sapiens with MP?) (Narmada Son Passage Route?)			
	Patpara, Middle Son Valley <103 ka (100-150 ka) (Blumenschine et al 1983, Williams et al 1995) (JH2005)	Blade and flake-blade cores; polyhedrons absent (Blumenschine et al 1983) 'scraper-based industry' (JH2005)	
	Samnapur, Narmada Valley, Madhya Pradesh Youngest Toba Ash <b>74±2 ka</b> (Misra et al 1990) (JH2005)	MP	
	Baghor Formation, Son Valley Youngest Toba Ash <b>74±2 ka</b> (RB2005)		
	Balotra, Luni River Valley, Rajasthan >60 ka (Mishra et al 1999) (JH2005)	MP	Thar desert wet phase 60-40K; arid during LGM ca. 20K (JH2005)
	Jetpur, Hiran Valley, Saurashtra, Gujarat (Th/U) <b>56.8±5.4/-4.8 ka</b> (above 2 layers MP tools) (Baskaran et al 1986) (JH2005)	MP with small choppers	
	Patne, Maharashtra	Late MP Phase 1: blade cores, retouched blades (Sali 1989) (JH2005)	
	Attirampakkam and 12 other sites; Kortallayar Basin, Tamil Nadu, India Layer 2 (ESR LU on teeth) <b>45-50 ka</b> (BB2005, PSG2003, PS2003)	'Late MP-UP', primarily quartzite, cobbles and pebble blanks; flakes, Levallois common and discoidal cores; scrapers, core scrapers, retouched flakes; chopping tools; knives, points; denticulates, rare handaxes and cleavers (PS2001)	
	Bhimbetka III F-23, near Narmada River, Raisen District, Madhya Pradesh Layers 4 and 5 (EIP Project Preliminary OSL central) <b>45±8 ka</b> (BR2005)	III F-23 (Misra Shelter) : 'Middle to late phase of MP': blade and flake-blade cores, scrapers, blades, knives, borers, denticulates, notches, burins (Misra 1985) (JH2005)	MP Narmada fauna: <i>Equus namadicus</i> , <i>Bos namadicus</i> , <i>Hexaprotodon palaeindicus</i> , <i>Elaphus hysudricus</i> , <i>Stegodon</i> , <i>Cervus sp.</i> (PSo2001)

	<p>Chancha Baluch, Indus Valley (Allchin, Goudie, Hegde 1978)</p> <p>Panchmahals (Sonawane 1984)</p> <p>Godavari Valley (Joshi et al 1979-80)</p> <p>Bhagi Mohari (Paddayya 1982-3) (<i>JH2005</i>)</p>	<p>Transitional MP-UP: blade-based tools, typically small % of total blank production (Allchin, Goudie, Hegde 1978) (<i>JH2005</i>)</p>	
	Belan Valley	MP	
	<p>Kalpi, Yamuna Valley, Ganga Plains, Uttar Pradesh, India (TL) ~45 ka (Tewari et al 2002) (<i>CP2006</i>)</p>	MP with choppers (Tewari et al 2002) ( <i>CP2006</i> )	
	<p>Rantikarar, Madhya Pradesh (14C) 33.7+1.82/-1.63 (Misra 1977) (<i>BR2005</i>)</p>	MP	
	<p>Mula Dam, Maharashtra (14C) 31.98+5.72/-3.34 (Misra 1977) (<i>BR2005</i>)</p>	MP	
	<p>Upper Son Valley (Ahmed 1984); Ramayogi Agraharam (Rath et al 1997) (<i>JH2005</i>)</p>	MP with tanged points ( <i>JH2005</i> )	
	<p>Arjun 3, Dang-Deokhuri Valley, Nepal &gt;30 ka (Corvinus 1994, 1995, 2002) (<i>JH2005</i>)</p>	<p>Levallois-based industry, scrapers, points and blades; succeeded by industries of unifacial choppers on large cobbles, without any evidence of core preparation (Corvinus 1994, 1995, 2002) (<i>JH2005</i>)</p>	

<b>Upper Paleolithic 45K BP --</b>	General = blade-based; prismatic cores, scrapers, increase of burins and backed blades, microlithic, bifacial and tanged points, but standardization of retouched forms not comparable to Aurignacian or other UP Europe (MV2001); <b>ostrich eggshell in over 40 sites dating 25-40 ka</b> (BR2003)		
	Site 55, Pakistan (loess overlying artifacts) ~ <b>45 ka</b> (Rendell and Dennell 1987, Dennell 1992) (CP2006, JH2005)	Flake blades, microblades; stone lined pit, wall (Dennell et al 1992) (JH2005)	Typical UP fauna: ostrich, <i>Bubalus bubalis</i> , <i>Bos namadicus</i> , <i>Hexaprotodon palaeindicus</i> , <i>Cervus sp.</i> , <i>Canis sp.</i> (MV2001)
	Bhimbetka III A-28, Raisen District, Madhya Pradesh UP level (KG1988)	<b>2 ostrich eggshell tablet beads</b> ; found at neck of burial <i>H. sapiens sapiens</i> (KG1988; BR2003)	
	Chandresal, Kota, Chambal Valley, Rajasthan Lower Level (14C on eggshell) <b>38.9±0.7 ka</b> Upper Level (14C on eggshell) 36.55±0.5 ka (Mook 1982) (KG1988)	<b>ostrich eggshell beads and fragments, 1 engraved</b> (Mook 1982) (KG1988) Chambal UP: typically jasper, chalcedony, chert retouched blades, small and tanged points, scrapers, burins, lunates, flakes (KG1988)	<i>41 Indian Upper Palaeolithic sites have produced ostrich eggshell fragments, 10 engraved, and 14C dates range from 25 ka (Patne) to 39 ka (Chandresal) (KG1988)</i>
	Nagda, Ujjain and Ramnagar, Mandasor, Chambal Basin, Madhya Pradesh EUP Level (1 14C on eggshell for each site) <b>&gt; 31 ka</b> , so possibly MP (KG1988; BRm1992)	EUP; Nagda: <b>1 ostrich eggshell disc, 35 mm diam., smoothed margin</b> ; Ramnagar: <b>5 engraved eggshell fragments</b> (Agrawal 1987) (KG1988)	
	Patne, Maharashtra Levels 10-12 (Sali 1989) (JH2005)	EUP, IIB: blade cores, retouched and untrimmed blades, backed blades, burins (Sali 1989) 'no sudden shift to classic prismatic core' (JH2005)	
	Singhbum and Watru Abri, Bihar (Murty 1979, Paddayya 1984) (JH2005)	Large, thick blades; with scrapers, borers, points produced on flakes; choppers common! (JH2005)	
	Visadi, Gujarat, Narmada Basin	Both macro- and microblades (Allchin 1973) (JH2005)	
	Mehtakheri Dharamouri Nandipalle (Mishra 1995) (JH2005)	Mehtakheri: scrapers on flakes; small backed blades (Mishra 1995) (JH2005)	

	Fa Hien Cave, Sri Lanka <b>31 ka</b> (Deraniyagala 1992) ( <i>JH2005</i> )	<i>H. sapiens sapiens</i> ; geometric microliths; (Deraniyagala 1992) ( <i>JH2005</i> )	
	Batadomba-lena, Sri Lanka <b>28.5 ka</b> (Deraniyagala 1992) ( <i>JH2005</i> )	<i>H. sapiens sapiens</i> ; geometric microliths, bone points, <b>ostrich eggshell beads</b> (Deraniyagala 1992) ( <i>JH2005</i> )	
	Site 49 and Site 50, Sri Lanka <b>28 ka</b> (Deraniyagala 1992) ( <i>JH2005</i> )	geometric microliths, bone points (Deraniyagala 1992) ( <i>JH2005</i> )	
	16R Dune, Didwana, Thar Desert, Rajasthan, (TL) <b>26.210±2.2/-1.7 ka</b> (Misra 1989, 1995) ( <i>JH2005</i> )	Late UP	
	Patne, Maharashtra Levels 5-7 (14C) <b>25.5±0.2 ka</b> (Sali 1989) ( <i>JH2005</i> )	Late UP, IID: prismatic blade cores for blades, microlithic blade and bladelets, geometric lunates and triangles ( <i>JH2005</i> ); <b>3 ostrich eggshell beads</b> (1 perforated, 1 centrally scored, 1 disc) and eggshell fragments, 1 fragment engraved with <b>Xs in // lines</b> ( <i>BR1997</i> ; <i>BR2003</i> ; <i>KG1988</i> )	
	Lohanda Nala, Belan Valley (14C) 19 to 26 ka (Misra 1977) ( <i>BR1992</i> )	UP, bone harpoon, four symmetrical barbs ( <i>BR1992</i> )	
	Khaparkheda, Narmada Valley UP level (Ota and Mishra 1997) ( <i>KG2001</i> )	<b>Ostrich eggshell beads</b> manufacturing factory site (Ota and Mishra 1997) ( <i>KG2001</i> )	

	Inamgaon, Maharashtra ~21-25 ka (Mishra 1995) (JH2005)	Scrapers, blades, points, fluted cores, rare backed blades (Murty 1979) (JH2005)	
	Chandrawati, Rajasthan UP level (KG2001)	Fluted core bearing pre- fluting spiral rhomboid design (KG2001)	
	Chancha Baluch, Indus Valley Late UP level	'Late UP developed out of Transitional MP-UP' (Allchin, Goudie, Hegde 1978) (JH2005)	
	Baghor I, Son Valley UP/Epipalaeolithic level ~8 to 9 ka (KJ1983)	UP/Epi-P: long plain, backed, truncated and serrated blades, scalene triangles and trapezes (MV2005); in center of circle of sandstone rocks, female anthropomorphic stone with concentric triangles in base// similar stones in rock circle <1 mi. away in current use representing Mai, the Mother Goddess (KJ1983)	

Mitochondrial DNA – haplogroups M and N (latter with subclades U and R) < haplogroup L3 (arose Africa, ca 85,000 BP). Coalescence date M, shared by most non-European populations average 73 – 55 K BP (Kivisild 2000), with geographic origin uncertain. SW Asian origin suggested by high number M lineages in SW Asia (M1 African only in Afro-Asiatic speakers, may be back migration). U2i, M2 and R5 share coalescence dates 50-70 K and may represent India-specific subclade related to initial dispersal from Africa. Supported by Andamanese M31 and M 32 and Malaysian M21 and M22 lineages. Supports possible modern human arrival in South Asia during Middle Paleolithic, at any point within past 70,000 years. By southern coastal route to SE Asia. A further demographic expansion suggested by coalescence of a number of India specific M lineages, 20-30K. [James and Petraglia].

Y chromosome DNA – supports much later South Asia to Australia dispersal. [James and Petraglia].

Y chromosome ages of accumulated microsatellite variation in majority of India haplogroups exceed 10,000-15,000 years, attesting to antiquity or regional differentiation, and does not support models of recent genetic input from Central Asia. R1a1 and R2 haplogroups consistent with peninsular origin of Dravidian speakers (not Indus Valley). [Sengupta et al]

MtDNA, Y chromosome and one autosomal locus compared with six caste groups and with western and central Asians. Coalescence times suggest early late Pleistocene settlement of southern Asia and that there has not been total replacement of these settlers by later migrations. H, L and R2 rarely found outside the subcontinent. Limited gene flow from external regions since the Holocene. [Kivisild et al 2003]

“Lack of L3 lineages other than M and N in India and among non-African mitochondria in general suggests that the earliest migrations(s) of modern humans already carried these two mtDNA ancestors, via a departure route over the horn of Africa (i.e., the southern route migration).” “The coalescence time of major M subclusters in the Indian subcontinent, which are comparable in diversity and even older than most eastern Asian and Papuan haplogroup M clusters suggests that the Indian subcontinent was settled soon after the African exodus and that there has been no complete extinction or replacement of the initial settlers.” Indians also show Y chromosomal C, F and K, but not D. [Kivisild et al 2003] Coalescence date for M2 = 73,000±22,900; M2a = 50,600±24,000 and M2b 55,500±21,000; R = 73,000±20,900 and overlaps with M dates [Kivisild et al 2003: figure 2]



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