The Mesolithic Settlement of Sindh - New Evidence from the Khadeji River Course

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THE MESOLITHIC SETTLEMENT OF SINDH (PAKISTAN): NEW EVIDENCE FROM THE KHADEJI RIVER COURSE

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Abstract

The surveys carried out by the Italian Archaeological Mission in the Thar Desert (Upper Sindh, Pakistan), and the study of the chipped stone assemblages collected by the late Professor A. R. Khan on the Mulri Hills (Karachi), have contributed to the definition of the characteristics of the Mesolithic assemblages of this region of the Indian Subcontinent. At present two important groups of sites are known whose distribution covers the two aforementioned territories. In the Thar Desert, east of the caravan town of Thari, the sites are located inside depressions between the highest sand dunes that surround old freshwater basins. East of Karachi many sites have been found in the Mulri Hills, a small elevation rich in springs, between the Malir and Layari Rivers both flowing into the Arabian Sea, some 15 kms to the south. Preliminary surveys carried out along the banks of the Khadeji River have shown that Mesolithic sites existed also along this watercourse. An AMS date obtained from a marine bivalve collected from site KDJ-1 yielded a late ninth millennium BP result. This paper describes and discusses the Khadeji River Mesolithic sites recovered by Professor A. R. Khan in the 1970s in the general framework of the new discoveries made in Sindh.

1. Introduction

This paper presents and discusses the results of the research carried out during the last thirty years by the Italian Archaeological Mission on the Mesolithic settlement of Sindh. Research on the topic was first introduced by the late Professor A. R. Khan in the 1970s (Khan 1979a). His surveys were carried out mainly in Lower Sindh, within a radius of ca. 40 km around Karachi, more precisely between the courses of the Malir, in the east, and the Hab Rivers, in the west. His geoarchaeological project led to the discovery of an impressive number of archaeological sites, attributed to different periods, from the Acheulian Palaeolithic to the Indus and Kulli Bronze Ages. Unfortunately only a small part of his collection has been published (Khan 1979b: 22), and very little has been left to us of the original notes he took during fieldwork.

Before Professor A. R. Khan's surveys almost nothing was known of the Mesolithic period in Sindh (Gordon 1958; Allchin *et al.* 1978: 99). Blade and bladelet assemblages characterised by geometric microliths, often obtained with the microburin technique, were known in India since the end of the 19th century (Carleyle 1883; Black 1892; Smith 1906). They were generically attributed to the beginning of the Holocene just a few decades later (see Gordon 1950; Todd 1950; Misra 1985).

However, despite the many sites known to date, the absolute chronology of the Mesolithic of the Indian Subcontinent is still greatly debated (Lukacs *et al.* 1996). Many of the available radiocarbon dates are unreliable, the chronological sequence of the Mesolithic period controversial, and the periodization of its assemblages badly defined (Sosnowska 2010: Table 1; Misra 2013: 181–182). Moreover, the absence of Mesolithic finds all over wide territories of India is difficult to explain (Sosnowska 2010: 100)

Commander K. R. U. Todd discovered the first Mesolithic site of Lower Sindh in the 1930s. He collected a small chipped stone industry with trapezoidal microliths along the banks of the Layari River inside Karachi Country Golf Club (Todd & Paterson 1947; Allchin 1985: 131; Biagi 2004). Although the site was later

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destroyed by the intensive urbanization of the area, his discovery was the first to show that Holocene hunter-gatherers settled along the banks of a watercourse flowing down to the northern Arabian Sea coast.

The discoveries made by Professor A. R. Khan in the 1970s confirmed the presence of Late Palaeolithic and Mesolithic sites both along the banks of perennial rivers and streams, and close to freshwater springs. This is the case for the chert scatters he discovered along the Mol, Khadeji, Malir and other river valleys, the Mulri Hills, before Karachi University Campus, as well as Rehri, along the bank of Kadiro Creek (Khan 1979b). Despite the fact that unfortunately Professor A. R. Khan never recorded the precise location of the sites he discovered, he has provided us with quite an interesting and detailed map of his finds, from which the general distribution of the Mesolithic sites can be summarily, though not precisely reconstructed.

The great typological and dimensional variability of the chipped stone implements collected during his surveys has already been partly discussed. The chronological sequence of the assemblages has been summarily proposed, according to the characteristics of the lithic complexes, mainly those from the Mulri Hills, in the eastern outskirts of Karachi, from which come the richest complexes so far discovered in Sindh (Biagi 2003–2004).

The oldest radiocarbon date obtained from the Mulri Hills, shows that the terrace was settled at least since the second half of the eighth millennium BP (GrA-63863: 7320±40 BP from a single specimen of *Terebralia palustris* mangrove shell collected from the surface of site MH-15), though the typological characteristics of some of the assemblages recovered from the hilltop would suggest quite an older date, to the end of the Late (Upper) Palaeolithic for some sites (Biagi 2017). Interestingly a comparable date comes from another *T. palustris* shell scatter collected at Rehri, a village facing Kadiro Creek, ca. 15 km south-southeast of the Mulri Hills (RHR-3bis: GrA-66631: 7045±45 BP) (see Fig. 2). The chipped stone assemblage from the latter site is quite interesting. It is represented mainly by microlithic lunates manufactured with the microburin technique, and a few microlithic backed points, a few of which obtained by bipolar retouch (Biagi 2003–2004: Fig. 13, nn. 12–22).

2. The Khadeji River site KDJ-1 and its chronology

In his seminal volume on the geomorphology and prehistory of Lower Sindh and Las Bela (Balochistan), Professor A. R. Khan reports the presence of many prehistoric sites along the banks of the rivers that flow from Kohistan Mahal into Karachi Gulf (Khan 1979b: 11–13). Their approximate distribution is shown in Table 1 of the aforementioned paper. According to his map the banks of the Thado, Bazar, Mol, Langheji, Khadeji and other rivers and stream are rich in prehistoric sites. They consist mainly of scatters of chipped stone artefacts among which are geometric microliths of different shape and size (see Biagi 2003–2004: Fig. 17, nn. 1–21) as well as bladelet cores.

The distribution map of Fig. 1 shows that all the aforementioned rivers and streams converge into the Malir River that flows across the eastern outskirts of Karachi. Even more interesting is the discovery of dense concentrations of Late (Upper) Palaeolithic and Mesolithic sites on the Mulri Hills. At present they are the most important area of Lower Sindh from which sites of the two periods have been discovered. The Mulri Hills are located at the eastern outskirts of Karachi, just in front of Karachi University Campus. They consist of limestone terraces rich in freshwater sources that spring out of several east-west oriented faults (Zaidi *et al.* 1999). Small, perennial streams originate from these springs that in turn flow into the Malir River and reach the Arabian Sea at Ghizri Creek, ca. 15 km to the south-southwest (Fig. 2). All these data remark the important role played by the Malir River around the end of the Pleistocene

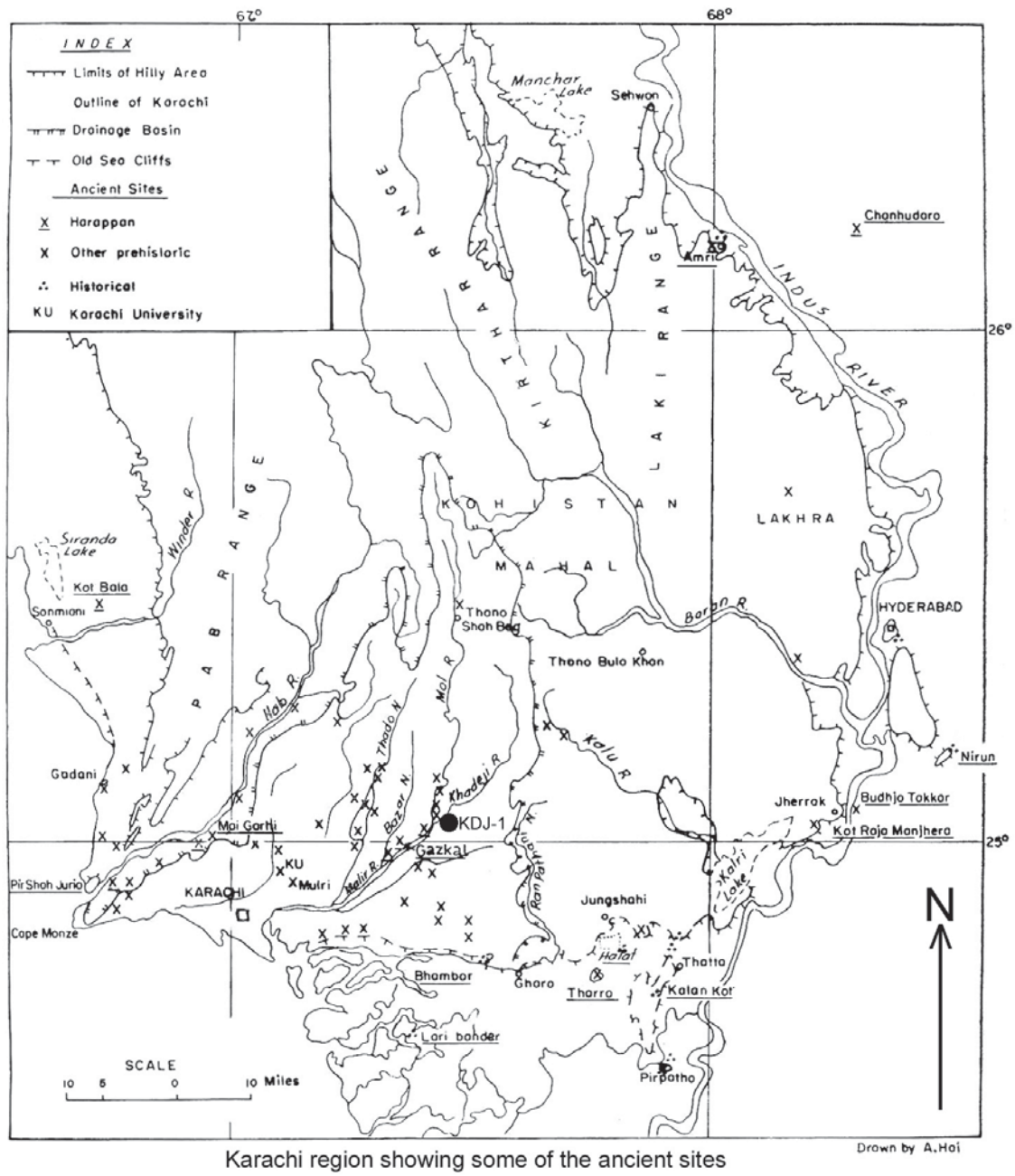

Fig. 1. Distribution map of the prehistoric sites discovered by Professor A. R. Khan during his 1970s geoarchaeological surveys. The Indus Civilisation settlements are underlined (after Khan 1979b: Table 1)

and the beginning of the Holocene, as the main watercourse of the region.

The study of the chipped stone assemblages recovered by Professor A. R. Khan during his 1970s surveys around Karachi has confirmed the presence of Mesolithic scatters of chipped stone artefacts also along the Khadeji River course. Unfortunately all the sites he discovered were imprecisely recorded, unnumbered, and simply X-marked on his unpublished map (Fig. 3). Just a few sites were summarily described in his field notes, handwritten on paper bags inside which he stored the finds collected during the surveys.

The rediscovery of one of A. R. Khan's sites along the left (southern) bank of the Khadeji River, close to its confluence into the Mol, is unique for its importance. The site KDJ-1 was revisited in January 2014. It is located

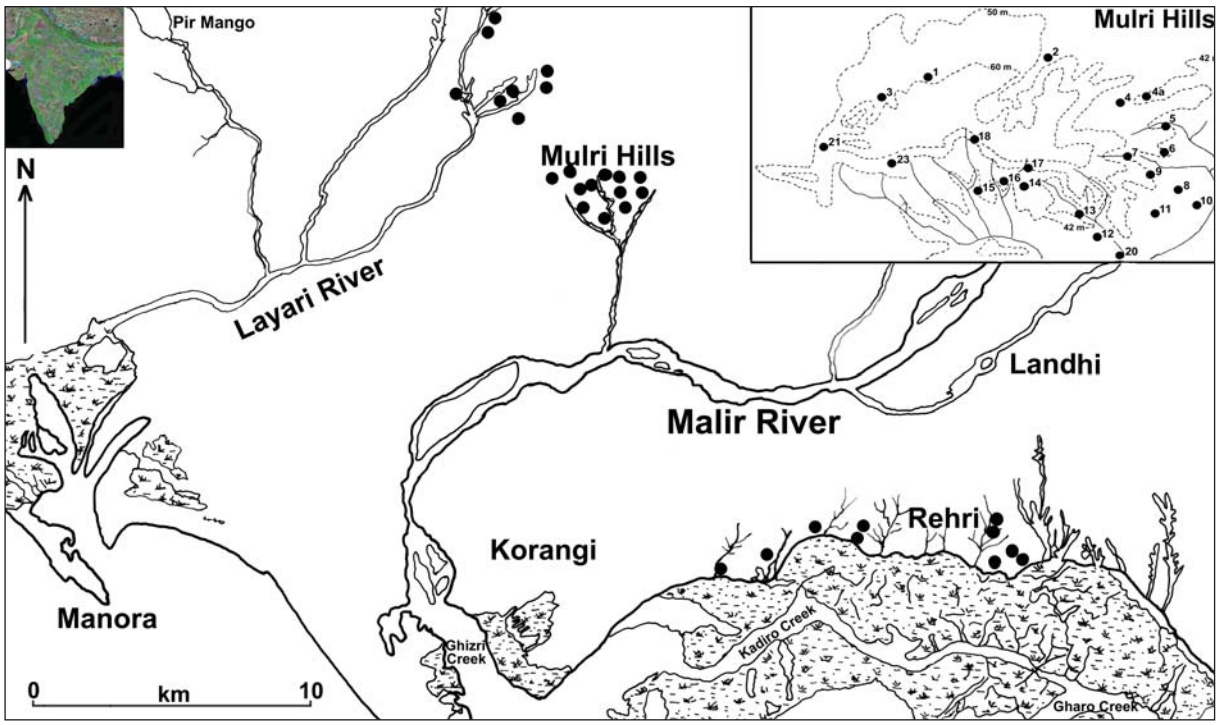

Fig. 2. Distribution map of the Late (Upper) Palaeolithic and Mesolithic sites discovered east of Karachi according to the field notes of Professor A. R. Khan. Note the concentration of sites on the Mulri Hills in the upper, right square (drawing by P. Biagi)

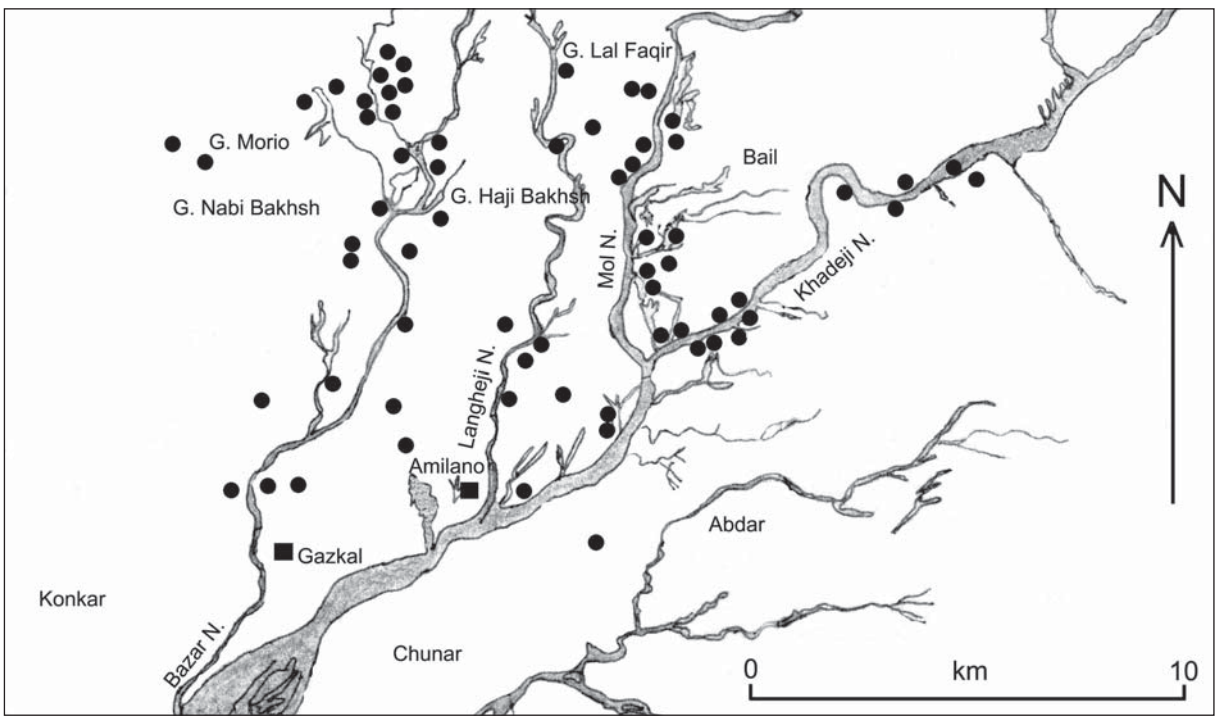

Fig. 3. Distribution map of the sites discovered by Professor A. R. Khan, north of the Malir River course (dots), Amilano and Gazkal (squares) (redrawn by P. Biagi from an unpublished original map of the aforementioned author)

at the eastern edge of a small village. More precisely it lies on an oval-shaped limestone terrace that runs parallel to the river, at the altitude of ca. 115 m. Its precise location is 25°02'15.85"N-67°25'14.90"E (Figs. 4 and 5). The chipped stone assemblage collected from its surface consists of 50 slightly patinated and weathered chert artefacts of brown to reddish brown colour. They are represented by 1 microbladelet core, 1 core fragment, 1 long end scraper with traces of wear along one of the sides, 1 lateral side scraper and 1 probable, though atypical microlithic point with traces of impact fractures (B. A. Voytek pers. comm. 2016). The collection includes also a few small potsherds of undefined cultural attribution.

One fragment of a large, unidentifiable marine bivalve was collected from the site's surface and AMS-dated to 8275±45 BP (KDJ-1: GrA-63862). This result is ca. one thousand years older than those obtained from the Mulri Hills (Biagi *et al.* 2018). GrA-63862 is the oldest radiocarbon date at present available from

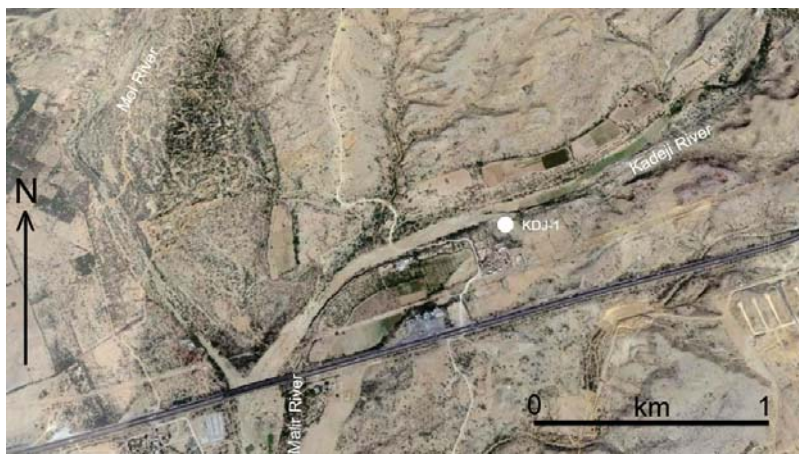

Fig. 4. KDJ-1: location of site along the left (southern) terrace of the Khadeji River at its confluence with the Mol (drawing by P. Biagi)

Fig. 5. KDJ-1: the narrow, oval terrace on which the site is located. The Khadeji River is in the background (photograph by P. Biagi)

an early Holocene site of Lower Sindh. It fits well into the range of the few ninth millennium BP dates obtained from other Mesolithic sites in India, namely Loteshwar (Gujarat: CAMS-55902: 8170±50 BP, from charred bone), Baghor II (Madhya Pradesh: PRI-715: 8090±220 BP, from charcoal), Damdama (Uttar Pradesh: GX-20829-AMS: 8840±65 BP and GX-20827-AMS: 8865±65 BP, both from human bones), and Lekhahia (Madhya Pradesh: GX-20983: 8370±75 BP and GX-20984: 8000±75 BP, both from human bones) (Misra 1973; Lukacs *et al.* 1996; Sonawane 2002; Sosnowska 2010: Tab. 1).

According to the marine curve developed from the sea core off the Makran coast (56KA: von Rad *et al.* 1999; Saliège *et al.* 2005: Fig. 1) ca. 300 km north-west of Port Okha in Gujarat (229±27 ^{14}C years: Reimer & Reimer 2001), the calibration of GrA-63862 falls around the middle of the 7th millennium BC (6607–6482 BC at 1σ and 6670–6434 BC at 2σ respectively). It is roughly 3–4 centuries more recent than the dates obtained from charcoal and charred bone from Loteshwar and Baghor II in India (see above).

Moreover, the KDJ-1 result confirms that well before the beginning of the Atlantic, groups of early Holocene hunter-gatherers settled in the region. We can suggest that they seasonally moved from the rich mangrove environments flourishing along the northern coast of the Arabian Sea towards the interior, following the courses of perennial rivers and their affluents. These suggestions are in agreement with the negative δ^{13}C value (-4.44) of the AMS-dated KDJ-1 marine bivalve. It falls into the values one would expect from a mangrove shell sample, which is quite lower than those yielded by specimens grown in a marine environment.

The presence of marine shells from some sites of the interior, among which are those located along the courses of the Mol and Khadeji Rivers, had already been reported by Professor A. R. Khan. He was also the first to suggest that their presence helped follow the coastal/inland seasonal movements of the last Holocene hunter-gatherers of Lower Sindh (Khan 1979b: 18).

3. Khadeji River sites discovered by Professor A. R. Khan in the 1970s

Fig. 3 is a revised version of an unpublished map drawn by Professor A. R. Khan summarizing the results of is 1970s surveys. Leaving apart the Bronze Age settlements of Amilano and Gazkal (Khan 1979b: 4, 22), most of the sites are attributable to the Late (Upper) Palaeolithic and Mesolithic periods. Their distribution along the river banks is impressive. It indicates that Lower Sindh had been repeatedly settled in this period by groups of Holocene hunter-gatherers, though nothing is known of the absolute chronology of their sites.

Some of the chipped stone assemblages from Langheji, Mol and Khadeji River courses were studied by the present author for the first time in 2003. At present, only two Khadeji River assemblages are kept in the Museum of Prehistory and Palaeogeography, Department of Geography, Karachi University, organised by Professor A. R. Khan to store his collections. According to the field notes that he left to us, the first site is Khadeji Gorge 1 (Fig. 7, nn. 1–8), the second Khadeji Left Bank that we know was discovered on May 28th, 1970 (Fig. 6). Though their precise location in unknown, the differences between the assemblages from the two sites is striking from both typological and dimensional points of view. The first consists of a few microlithic tools among which are lunates, backed points and one microburin; the second is represented mainly by large trapezoidal geometrics of transversal arrowhead type, obtained from large blades or flakelets, without microburin technique, that show variable typological characteristics and shapes. The tools are of brown colour (7.5YR5/4) non-patinated chert, possibly of Ongar provenance. As far as we know, the distribution of this specific type of large trapezoidal geometrics is limited to the region around Karachi, the Malir River and its affluents, though one single specimen has been

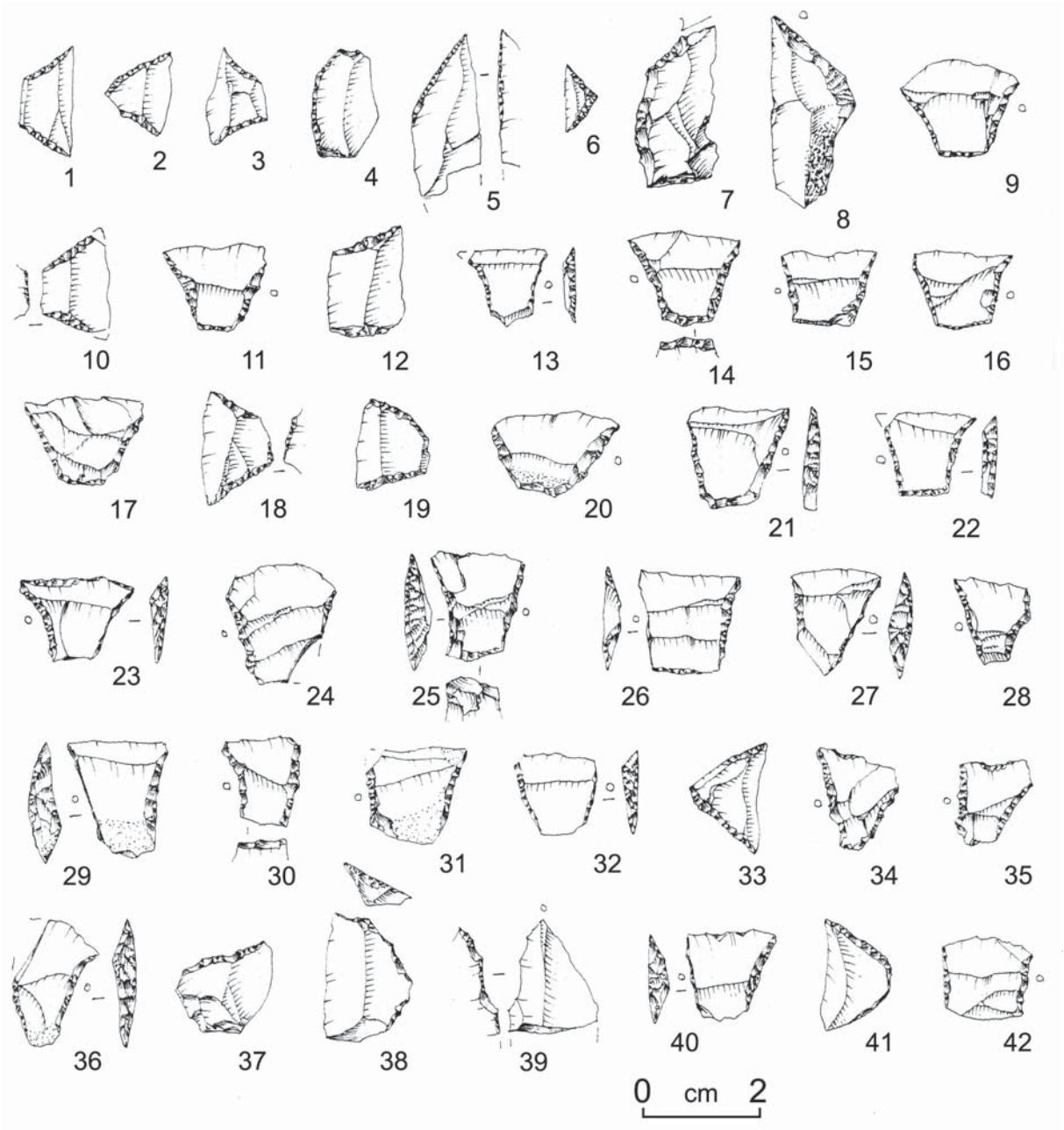

Fig. 6. Khadeji Left Bank: the chipped stone tools, mainly characterised by large trapeze retouched from blades and flakelets. The small circle indicates the butt (drawings by P. Biagi, inking by G. Almerigogna)

recovered from the surface of Shah Husein (JSH), south west of Thatta. The specimen from site JSH-1 was found in association with a few Oyster shells, one specimen of which was AMS-dated to 5325±40 BP (GrA-45180) (Biagi 2010: 10). This type of large trapezes are not known from Las Bela in Balochistan in the west (Biagi *et al.* 2018), and Gujarat, in the east (Sonawane 2002), both regions from which we have a reasonable number of sites characterised by assemblages with trapezes, and good palaeoenvironmental results (Gupta 1972; Sonawane 2002; Biagi *et al.* 2018).

Similar observations can be made for the four assemblages from Langheji (Langheji 2: Fig. 7, nn. 9–43, Langheji 7B, Langheji 8: Fig. 7, nn. 53–62, and Langheji 8a: Fig. 7, nn. 44–52). The chipped stone tools from these sites show very different typological and dimensional

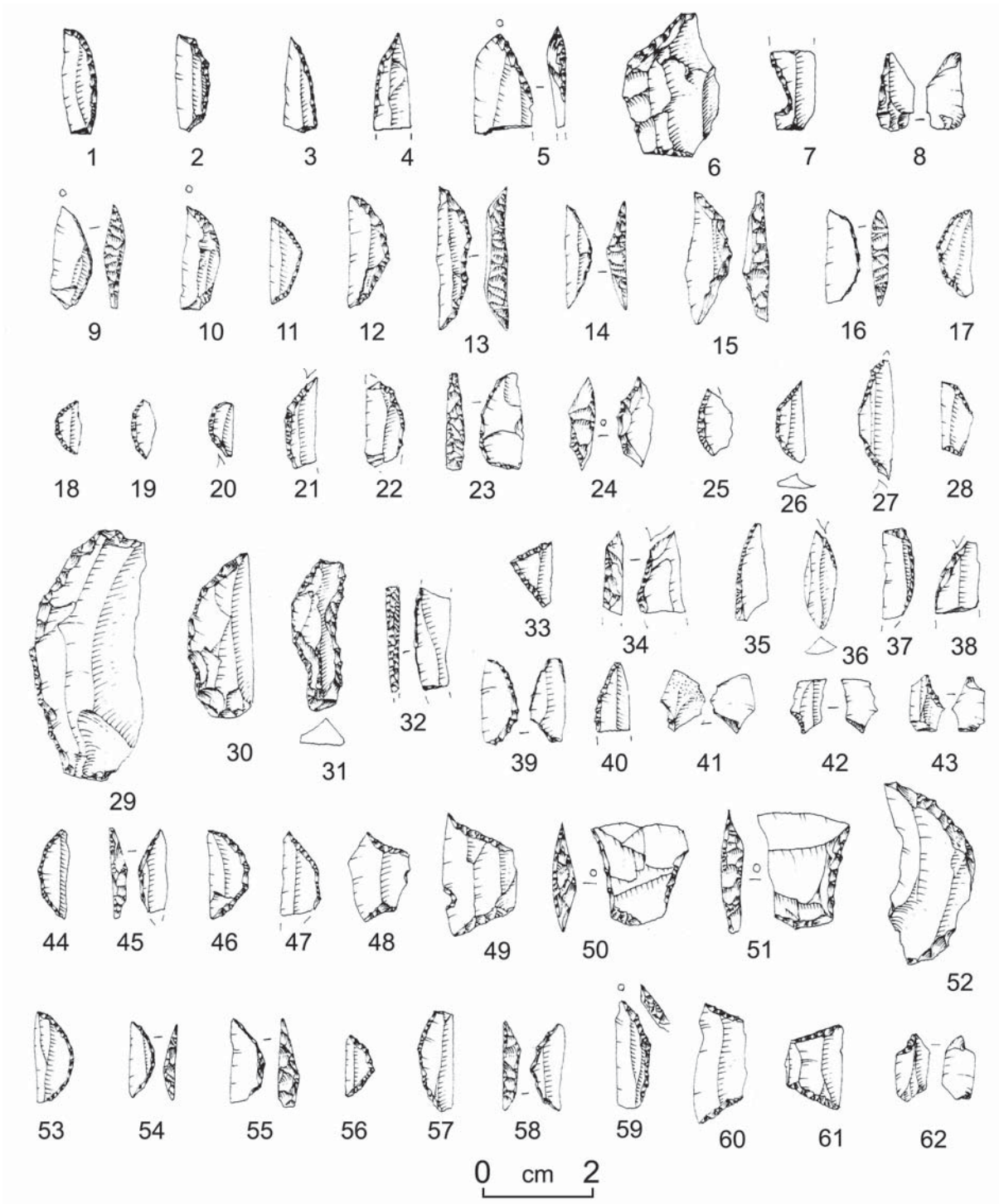

Fig. 7. Khadeji Gorge 1: nn. 1–8; Langheji 2: nn. 9–43; Langheji 8a: nn. 44–52, and Langheji 8: nn. 53–62. Chipped stone tools (drawings by P. Biagi, inking by G. Almerigogna)

characteristics. The four Langheji industries are most probably to be attributed to different periods of Mesolithic occupation. The assemblage from Langheji 2 is characterised by microlithic lunates obtained with the microburin technique. That from Langheji 7B is composed of only 6 tools among which are 2 large trapezes and 2 curved points. Langheji 8 includes both lunates and isosceles trapezoidal geometrics obtained with the microburin technique, while that from Langheji 8a consists of both microlithic lunates and larger tools, among which are large trapezes

similar to those from Khadeji Left Bank, and one curved backed point.

The observations reported above show that the banks of the two rivers were settled in different periods of the Mesolithic. Apart from the case of KDJ-1, their chronology cannot be defined because of the absence of radiocarbon dates.

4. Discussion

Most of the sites discovered by Professor A. R. Khan along the Khadeji, Mol and Langheji River banks, fall into the general picture already described for the Mesolithic period of Lower Sindh. The new AMS date from KDJ-1 is the oldest currently available for a Mesolithic site of Pakistan, and one of the oldest of the entire Indian Subcontinent (Misra 2013: 181–182). It shows that Lower Sindh was already settled around the beginning of the Holocene by communities of hunter-gatherers, who seasonally exploited the mangrove swamps flourishing along the northern coast of the Arabian Sea (Fig. 8).

In Upper Sindh, Mesolithic sites are known only from the Thar Desert lake region of the caravan town of Thari. This scarcity of finds around this region is most probably due to our insufficient archaeological knowledge of the territory, and the absence of systematic surveys south and north of Thari. The Thar Desert Mesolithic tools are produced from Rohri Hills chert, whose precise exploitation source is still unknown. The typological and dimensional characteristics of the Thar Desert Mesolithic tools, geometrics in particular, differ from those of Lower Sindh. Most sites yielded isosceles trapezes with oblique, straight truncations, lunates are absent, and microburins are very rare (Biagi 2008: 80). Large trapezes of Khadeji Left Bank type are absent, and also cores are different from both a typological and dimensional point of view. This latter difference is easy to observe in the large collection of subconical and prismatic microbladelet cores from site MH-12, the largest Late Mesolithic chipped stone assemblage recovered by Professor A. R. Khan in the Mulri Hills that consists of a few thousand artefacts (Biagi 2003–2004: Fig. 5 and Fig. 8).

As far as we know, the distribution of large trapezoidal geometrics is restricted to the coastal zone of Lower Sindh and its close interior. Their chronology is difficult to define, and their manufacture technology differs from that of the other trapezoidal Mesolithic tools of the region. They have been obtained from large blanks, and their bulb is lateral to the functional edge. Some have been obtained by bipolar retouch, which contrasts with the abrupt, direct retouch commonly employed for the production of Mesolithic geometric microliths. Other specimens show a complementary retouch along the short edge.

The morphological, technological and dimensional characteristics of the trapezoidal geometrics of Pakistan are of basic importance for the definition of their distribution pattern, chronology, manufacturing technique, and function. According to the available data the problems related with these important tools can be summarised as follows:

1) Trapezoidal geometrics of different type and size are typical of a few aspects of the (Late) Mesolithic and Early Neolithic of both Sindh and Balochistan. While in most cases the assemblages from Sindh are undoubtedly attributable to the Mesolithic (f.i. MH-12 in the Karachi region [Biagi 2003–2004: Figs. 8–10] as are some of those from the Thar Desert [see GNR-4 and JS-1 for instance: Biagi & Veesar 1998–1999: Fig. 5 and Fig. 9]), those from Balochistan come from Early Neolithic aceramic (?) shell middens discovered along the coast of Las Bela (Biagi *et al.* 2012; Biagi 2013) and the aceramic Neolithic village of Mehrgarh along the right (western) bank of the Bolan River (Lechevallier 2003). The Las Bela finds have been radiocarbon-dated, from mangrove shells, to 6380±40 BP (GrN-26368: Daun 1: Biagi *et al.* 2012: 37), and 6595±35 BP (GrA-54299: SRN-29: Biagi *et al.* 2018: Table 1) respectively.

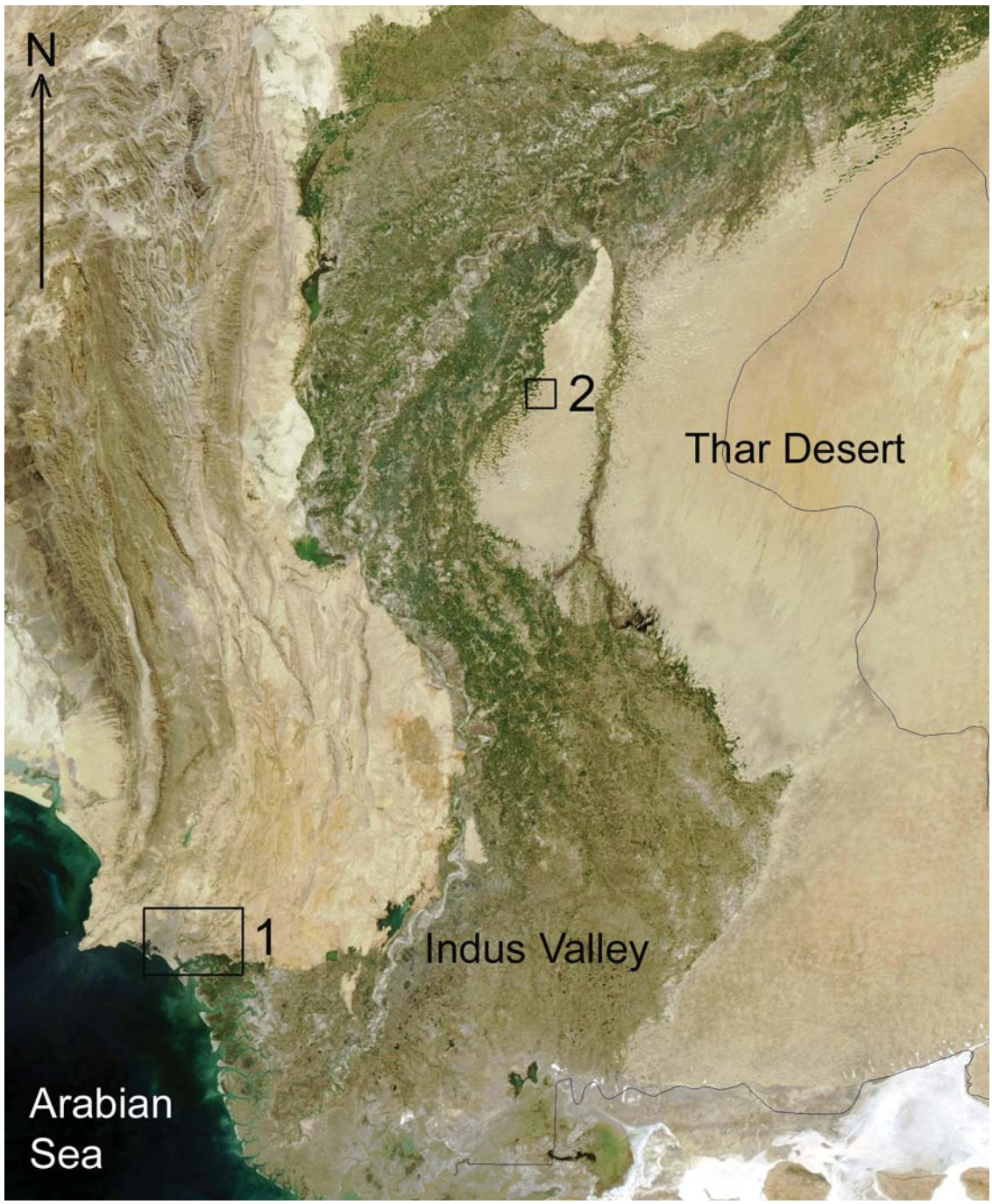

Fig. 8. Location of the two regions of Sindh where Mesolithic sites have been discovered: Karachi and its surroundings (n. 1), Thar Desert around Thari (n. 2) (drawing by P. Biagi)

2) The morphological and technological variability of the geometric tools is impressive. They vary according to the different places and even within the same site from which they have been recovered. To make an example: though many of the Mesolithic sites of the Mulri Hills have yielded trapezoidal geometrics, those from Mulri Hills 12 (MH-12) are absolutely different from those from the other sites discovered on the same hill. Among the several dozens of such tools, the MH-12 assemblage includes narrow or pointed short side types (tanged?) (Biagi 2003–2004: Fig. 10, nn. 9-37), and specimens with simple, inverse retouch along the short side (Biagi 2003–2004: Fig. 10, nn. 1-8). Moving to Balochistan, the few specimens

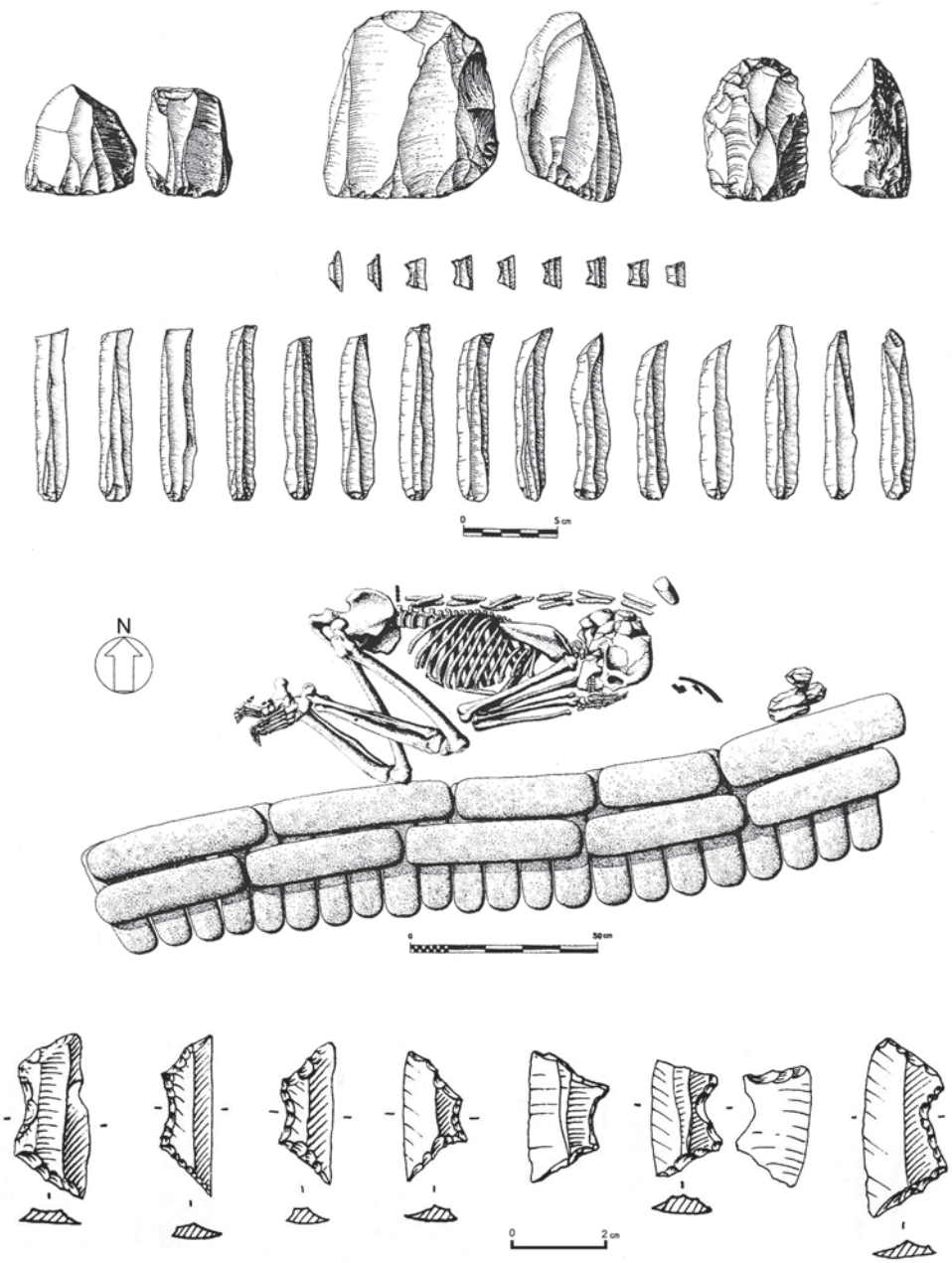

Fig. 9. Mehrgarh: Period IIA, Tomb 114 otherwise called Tomb of the flintknapper with horned trapezes at the bottom (Revised by the author from Jarrige et al. *1995: 5.8)*

recovered from the shell middens of the Bay of Daun and Lake Siranda depression, have little in common with those of Sindh and Mehrgarh. They consist of a few isosceles specimens obtained from thin microbladelets of Gadani red chert, with oblique, straight truncations, apparently without microburin technique. The technological variability of all these specimens is striking if we consider that they are all attributable to the early and middle Atlantic climatic period, thought from very different sites and environmental conditions. Moreover, the microburin technique is not represented at Mehrgarh and Las Bela, it is rare from the Thar Desert sites, and well attested from the Lower Sindh sites. As mentioned above, the specimens from Las Bela are obtained from the local outcrop of Gadani red chert (Biagi *et al.* 2013: 79), while those from the Mulri Hills are almost exclusively from small chert pebbles

whose source is still unknown, though a few specimens knapped from Gadani red chert are also known.

3) Another important point regards the so-called "horned" trapezes. They are well known from the aceramic Neolithic phase IIA of Mehrgarh, whose radiocarbon dates fall between 5620±100 BP (Beta-7315) and 5400±90 BP (Beta-7314) (Jarrige *et al.* 1995: 556). Though the entire radiocarbon sequence of aceramic Neolithic Mehrgarh is very questionable and most probably unreliable (Petrie *et al.* 2010: 18) as is all the periodization of Neolithic Balochistan, J.-F. Jarrige (2008: 151) suggested a calendric date of 6000 cal BC (ca. 7000 uncal BP) for period IIA. The discovery of a line of "horned" trapezes inside the Mehrgarh AII cemetery "flint knapper" tomb is especially important (Inizan & Lechevallier 1985). The Mehrgarh specimens find close parallels with the horned geometrics from the Early Neolithic Kel'teminar Culture sites of Uzbekistan (Brunet 2004), more precisely they recur during the early phase of this culture whose radiocarbon chronology falls between the last two centuries of the eighth and the first half of the seventh millennium BP (Brunet 2005: 91). At present they are unknown from any other site either in Balochistan and Sindh. Do they show that trans-Himalayan connections were already active already at the beginning of the Neolithic?

5. Conclusion

The main problems regarding the Mesolithic in the Indian Subcontinent have already been pointed out by A. Sosnowska in her recent summary paper (Sosnowska 2010). Despite the great number of sites known to date (Misra 2002a: 11; 2013: 23), the study of the Mesolithic of India still suffers from the absence of a reliable radiocarbon chronology (Misra 2013: 181–182), non-standardized terminology employed by most authors (Ray 1985; Allchin & Allchin 1997: 89; Jayaswal 2002), absence of any precise description of the material culture complexes retrieved from both surface collections and excavations, absence of a typological list to describe in detail the chipped stone tools (Raju 2002: 202), limited number of vertical sequences and oversimplified interpretation of the few available (Misra 2013: 175), and scarcity of finds from some important territories, probably due to absence of research (Sosnowska 2010: Fig. 1, Fig. 3). As a consequence the Mesolithic period of India "*is one of the least understood stages in the prehistoric cultural sequence; considerable confusion still remains regarding the relevance of the term itself in the Indian context, and even in the parameters used for identifying Mesolithic sites*" (Ajithprasad 2002: 156), though it is still considered by a few authors "*a transition, lasting only a few thousand years, between the Palaeolithic or Old Stone Age, spanning half-a-million years and the Neolithic period, covering only a couple of thousand years*" (Misra 2002b: 112).

Even the most famous stratified sites excavated in the Belan and Ganga Valleys, though important, spanning the entire Mesolithic, are difficult to interpret because of the scarcity of data regarding the lithic assemblages, and the limited number of radiocarbon dates obtained from the Mesolithic occupations (Sharma & Misra 1980; Sharma *et al.* 1980; Singh 2010). The cultural sequences are often over-exemplified, as is the case for Chopani Mando into I) Epi-Palaeolithic, IIA) Early Mesolitic: Non-geometric Microliths, IIB) Early Mesolithic: Geometric Microliths, and III) Advanced Mesolithic or Proto-Neolithic (Sharma *et al.* 1980: 36–37). The same can be said of Bagor (Misra 2002), and Budha Pushkar (Allchin & Goudie 1974) in the Great Indian Thar Desert, though the two sequences are very different from each other. The lowermost layer of Bagor has been attributed to the Late Mesolithic period, radiocarbon dated to 6245±200 BP (TF-786) (Mirsa 1973: 107). The chipped stone tools from this layer are mainly knapped from bladelets. They are represented by many different types of geometric microliths tools among which are lunates, isosceles triangles and isosceles trapezes. The Budha Pushkar sequence is thicker, spanning from

the Acheulian Palaeolithic to the Copper Age. Thanks to this sequence, the first study of the environmental changes that took place in the Thar Desert region was made already in the 1970s. The Mesolithic artefacts were collected from the sequence's surface, just below the recent sand cover. They include scalene and isosceles triangular microliths of undefined Mesolithic age.

Despite the many steps forward made during the last 30 years in the study of the Holocene lithic assemblages of Pakistan, and the Indus Valley in particular (Allchin 1985), our knowledge of the Mesolithic period of the country is still in its infancy, and no improvement has been made during the last 15 years. Analysing the structure of the Mesolithic assemblages and their implements, we can observe that the technology employed in the production of chipped stone artefacts varied through the time, and most probably space, and that, in contrast with former opinions, they have nothing to share with those of the Chalcolithic Amri Culture assemblages (Allchin 1985: 132) and even less with those of the Indus Civilisation (Allchin 1977: 135; Cleland 1987: 96). The present opinion is that a well-defined lithic assemblage corresponds to each single cultural aspect. Lithics are in general very sensible to environmental and cultural changes, and their variability can be interpreted exclusively following a very detailed typological and metrical study of their production methods, typology and function. Our present limited knowledge is due not only to the aforementioned factors, but mainly to the insufficient retrieval methods adopted during field survey and even more excavation.

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