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Early to Mid–Holocene Pottery from Two Sites in the Bayuda Desert, Sudan

Introduction

The Bayuda desert is the subject of an interdisciplinary research project of Gdańsk Archaeological Museum (MAG) intended to recognize the history of settlement in this desert area from the earliest periods of prehistory to modern times, including its geological structure in the context of palaeogeography. The research work in the Bayuda was initiated in 2009. The concession covers an area of ca. 140,000 km excluding all sites situated in the Nile Valley and at its edges (Paner and Pudło 2010).

So far nearly a thousand archaeological sites have been discovered and documented, including several dozen early to middle Holocene sites (for a general commentary on the excavated sites see Masojć and Paner 2014). This article discusses the pottery material from two early to middle Holocene sites from the western part of the Bayuda desert (Fig. 1): BP133 and BP424. The sites are situated at a distance of ca. 60 km from each other in very different geological contexts. The site situated closer to the Nile – BP133, is located in the area of volcanic culminations (Basement Complex), while site BP424 is located within sedimentary deposits (Cretaceous Nubian Sandstone Formation). In both sites a small area was excavated.

1. Site BP133

The site is situated in the western part of the Bayuda desert (N18° 21.818' E31° 59.520'), ca. 20 km to the east of the locality of Karima, within the extensive massif of Jebel Naser (Fig. 1) which is of volcanic origins (Palaeozoic and Mesozoic igneous complexes and dyke swarms areas). Occupying an area exceeding 100 square kilometres, the massif is situated between two big wadis running along a SE–NW axis: Wadi Abu Dom in the north and Wadi Korai in the south. The site is located in the massif's western part, within a small basin surrounded by culminations largely shielding the site. In the west the basin adjoins a small, nameless wadi originating in the volcanic massif, running towards the south and joining Wadi Korai further away at a distance of 8 km from the site.

The remains of three residential objects were excavated in the basin's central part. These are areas of oval outlines devoid of rock material (obviously cleared of the volcanic rocks occurring in large amounts at the site), with an occasional

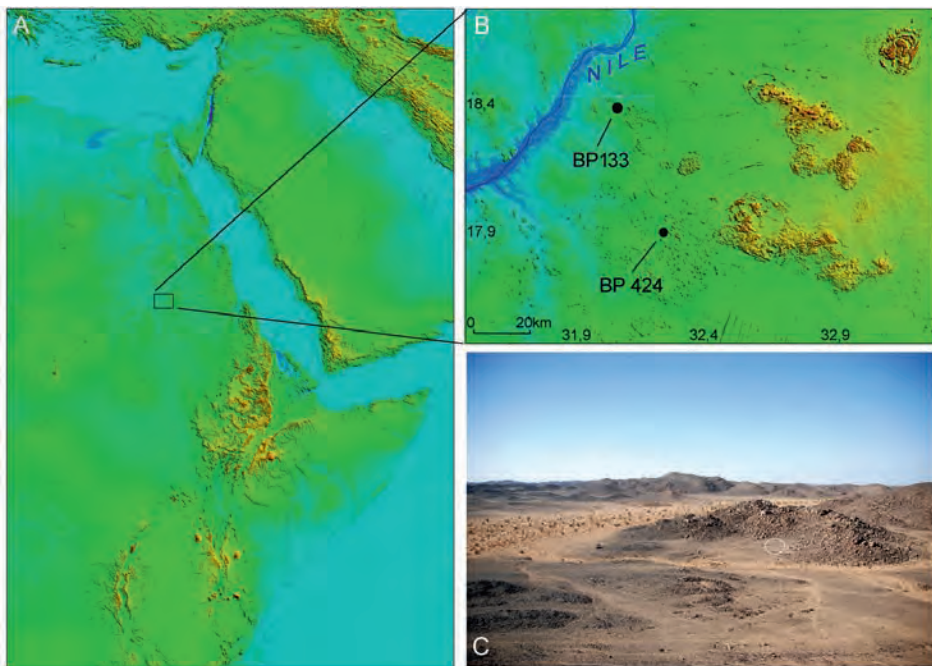


Fig. 1. North-eastern Africa with the Bayuda desert in Sudan. On the right: B – location of sites BP133 and BP424 in the western part of the Bayuda with big volcanic massifs east of the sites and hundreds of small volcanic structures south of the sites; C – view of the site BP133 from the south (white ellipse) (photo: M. Masojć)



Fig. 2. Site BP133 during the excavation (photo: M. Masojć)

stone casing and a considerable accumulation of artefacts in their interiors. The excavation comprised one of such a residential object with a surface area of 15 m² (Fig. 2).

Within the excavated area – the interior of such a residential object – a great number of artefacts were recorded. Apart from animal bones (Tab. 1)¹ and pottery, over 2000 knapped stone products were found (including nearly 300 cores and 78 tools).² The predominant raw materials are volcanic rocks, quartzite and flint. The stone material indicates a constant presence of microlithic tools and the presence of segments and backed bladelets among the microliths (Fig. 3: 1–5). Microlithic cores for bladelets are also present. These are mainly single platform cores with a prepared flaking platform in form of one or two side blows (Fig. 3: 6–8). The stone artefacts were relatively evenly distributed within the excavated area, without forming any bigger concentrations (Fig. 4).

¹ The archaeozoological analysis was carried out by Dr Marta Osypińska, Polish Academy of Sciences, Poznań Branch.

² A detailed analysis of the lithic material of sites BP 133 and BP 424 is still ongoing.

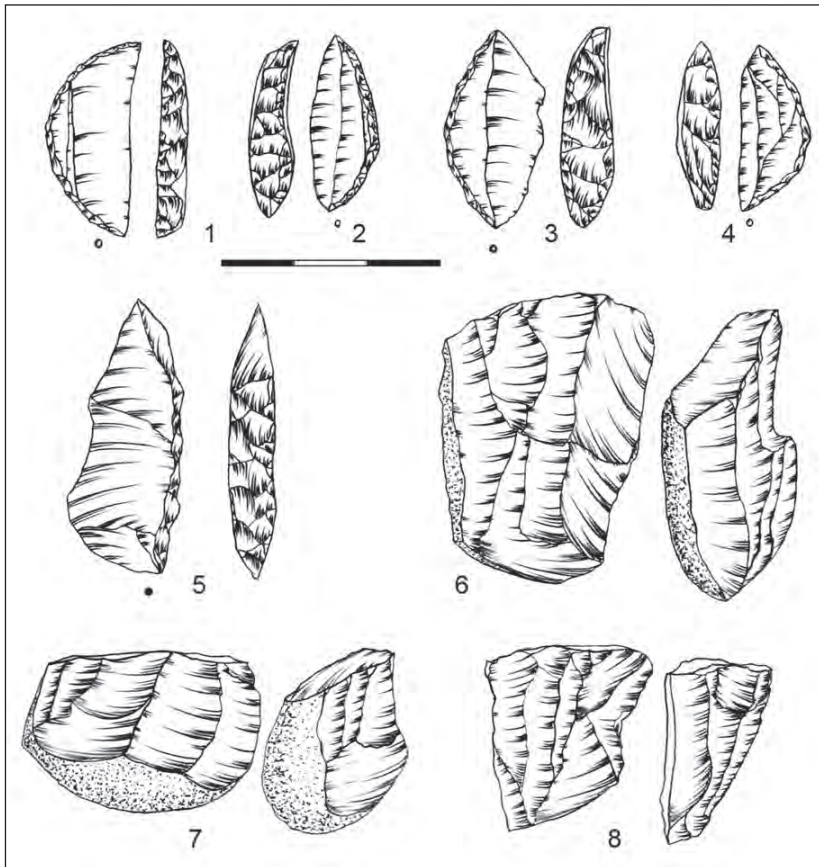
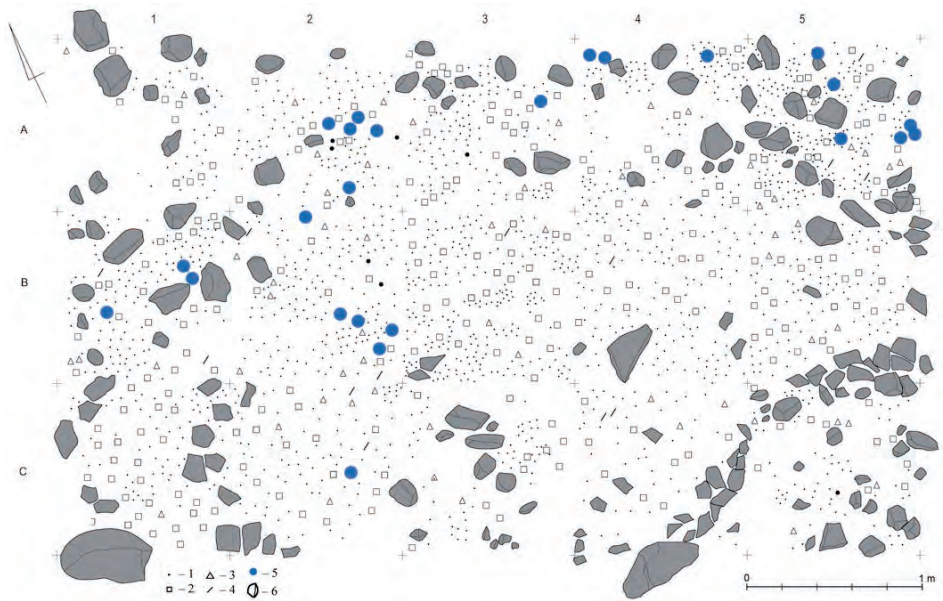


Fig. 3. Site BP133. Chosen stone artefacts: 1-5 – microliths; 6-8 – cores (drawing: by M. Masojć)

Table 1. Composition of the bone remains at site BP133: LSM / LSR – large size mammal / large size ruminant; MSM / MSR – middle size mammals / middle size ruminants. (data after Marta Osypińska)

TAXA	n
LSM	17
MSM/MSR	5
Ostrich eggshell	1
Unidentified mammals	7
TOTAL	30



ig. 4. Site BP133. Spatial arrangement of the feature: 1 –debitage; 2 – cores; 3 – tools; 4 – bones; 5 – pottery sherds; 6 – rocks (drawing: M. Ehlert, N. Lenkow, M. Masojć)

The pottery from BP133 is very fragmented and abraded. Altogether 61 pieces (only wall sherds) with a total weight of 150.9 g are present. For analysis only the pieces bigger than 1 cm² were taken into consideration, 35 pieces of pottery were therefore not considered. Among the remaining 26 sherds, 23 are decorated and 3 sherds have an eroded exterior surface. These 26 sherds can be grouped to 20 vessel units (VU): 18 with decoration and 2 with eroded exterior surface. No rim or base sherds are preserved.

The surfaces of the sherds were smoothed. The colour of the exterior surface is mainly brown, of the interior surface – brown to dark brown. Cores are mainly black to grey. Wall thickness ranges between 6 and 13 mm, most frequent is a wall



Fig. 5. Site BP133. Decorated pottery sherds: horizontal rows of dots; the pottery is tempered with plant material (Photo: F. Jesse)



Fig. 6. Site BP133. Decorated pottery sherds: packed dotted zigzag; to the right: sherd with a probably intentionally rounded edge (photo: F. Jesse)

thickness of 9–10 mm. In two cases coiling technique is clearly recognizable as a mode of production.

The pottery is mainly tempered with rounded to angular quartz grains, only seldom exceeding 1 mm in size, sometimes mica was also added. Two vessel units show organic temper (Fig. 5), in one case only plant material was added as a tempering agent, in the second case a mixture of quartz and plant temper was used. All of the decoration was made by impression. Rocker stamping using a comb is the preferred technique and closely packed dotted zigzags (12 VU) or horizontal rows of dots (5 VU) are the most common decorative patterns (Fig. 6). The sherds might have been used as tools: in one case a later modification is probably present – a worked (rounded) edge (Fig. 6, right sherd).

The pottery from the site BP133 fits in the early to middle Holocene, the so-called Mesolithic/Neolithic period.

2. Site BP424

The site is situated in the western part of the Bayuda desert (N17° 52.943' E32° 08.014'), ca. 65 km to the south–east of the Nile valley, within the large Wadi Abu Rugheiwa running along a SE–NW axis and ca. 1 km to the north of a well (*bir*) of the same name (Fig. 1). In this part the Bayuda is formed of Palaeozoic and Mesozoic sedimentary rocks. The site is situated at the foot of a small sandstone culmination in the centre of the wadi and surrounded by Quaternary sediments (Fig. 7).

Seven square metres of the site were excavated (Fig. 8), where – apart from pottery and animal bones (Tab. 2) – over 6000 stone artefacts were found, including over 700 cores and 150 tools. Among the tools the dominant microliths

Table 2. Composition of the bone remains at site BP424: BSM – big size mammal/ mega fauna; LSM / LSR– large size mammal / large size ruminant; MSM / MSR – middle size mammals / middle size ruminants; SSM / SSR – small size mammals / small size ruminants; R – hare. (data after Marta Osypińska)

TAXA	n
BSM	3
LSM	19
MSM/MSR	87
SSM/SSR	75
R	5
Unidentified mammals	160
TOTAL	349



Fig. 7. Location of the site BP424 at the foot of a small sandstone culmination in the centre of the Wadi Abu Rugheiwā (photo: M. Masojć)

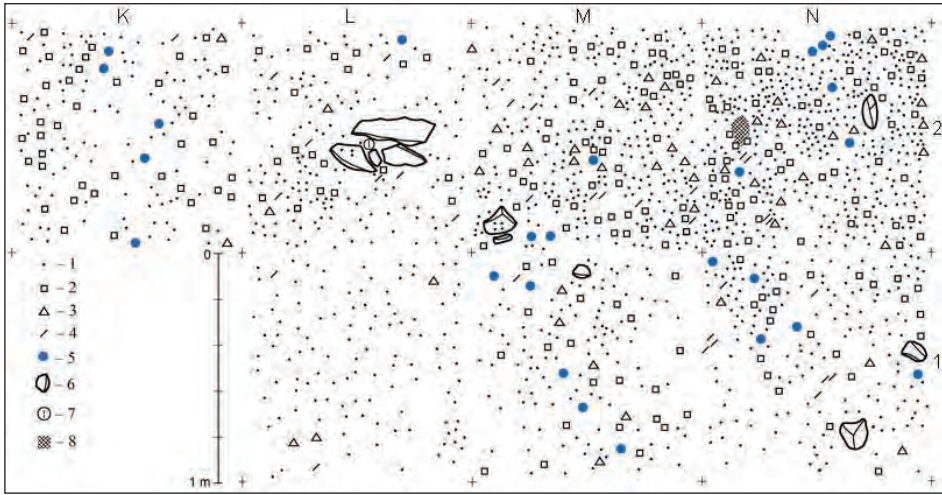


Fig. 8. Site BP424. Spatial arrangement of the excavated area (level 0-5 cm): 1 – debitage; 2 – cores; 3 – tools; 4 – bones; 5 – pottery sherds; 6 – rocks; 7 – grinding stone; 8 – charcoal concentration (drawing: M. Ehlert, N. Lenkow, M. Masojć)

category are lunates (Fig. 9: 1–6). Besides segments, truncations are present and a few triangles (Fig. 9: 8). Among the other tools end-scrapers are frequent (Fig. 9: 7,9–12) and irregularly retouched flakes (Fig. 9: 13,14). Microlithic cores for bladelets are the most common ones. These are mainly single platform cores with a prepared flaking platform (Fig. 9: 15–16). The predominant raw material is quartzite, but also volcanic rocks and flint are present. The most characteristic tool in the assemblage is the lunate. The stone artefacts were relatively evenly distributed within the excavated area, without forming any bigger concentrations.

Altogether 186 sherds with a total weight of 1,265.3 g are present, among them 47 smaller than 1 cm². The remaining 138 sherds include 10 rim sherds (9 are decorated and 1 has an eroded exterior surface) and 128 wall sherds (113 sherds are decorated, 3 undecorated and 12 have an eroded surface). The sherds can be grouped into 68 vessel units (VU): 62 VU with decoration, 4 VU with an eroded exterior surface and 2 VU with plain surface (no decoration). A fragment of a pottery disk bead is also present. The edges of the sherds are heavily abraded.

The surfaces of the sherds were smoothed to carefully smoothed. The surface colour of the sherds is mainly brown, followed by reddish-brown. Cores are mainly black, dark brown or grey. Wall thickness ranges between 5 and 13 mm, most frequent is a wall thickness of 7–8 mm (41 VU).

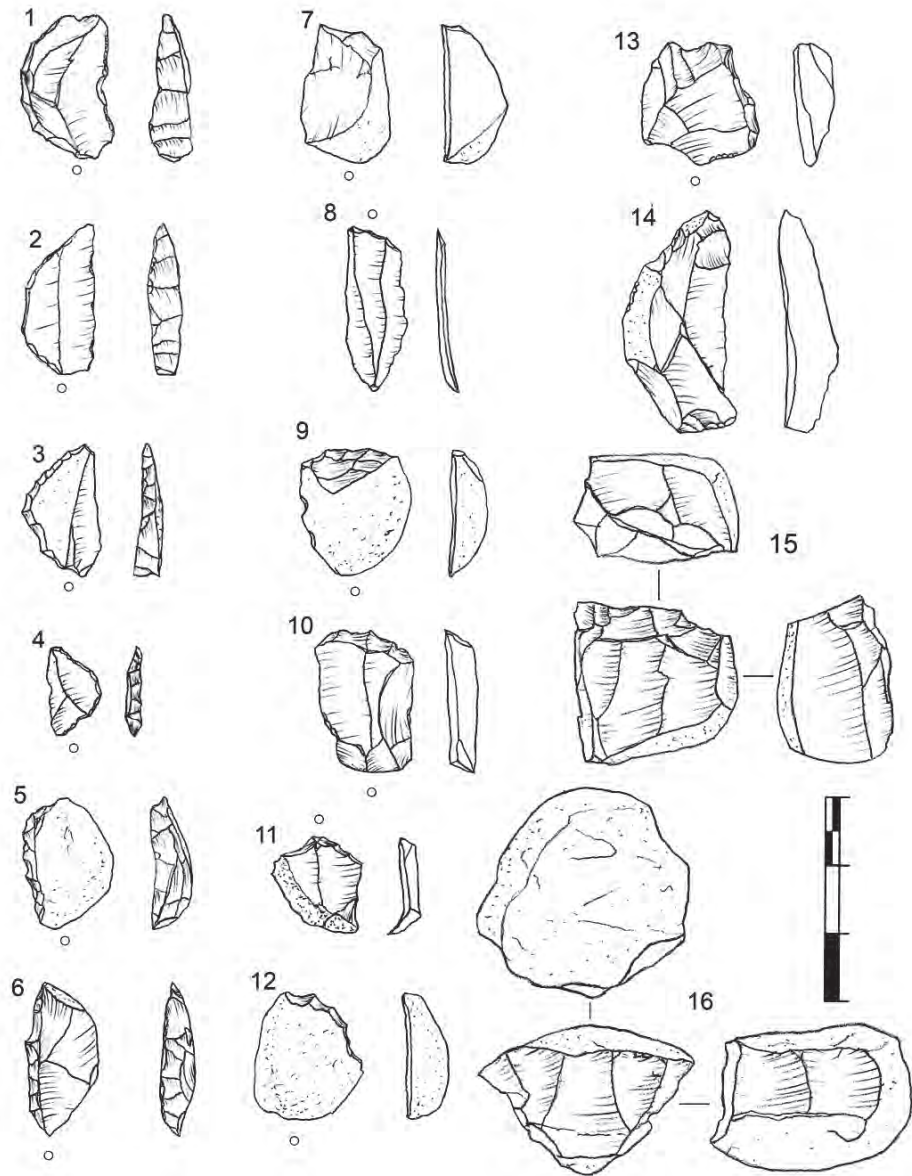


Fig. 9. Site BP424. Chosen chipped stone artefacts: 1-6 – segments; 8 – truncation; 7, 9-12 – end-scrapers; 13-14 – retouched flakes; 15-16 – cores (drawings: M. Ehlert)



Fig. 10. Site BP424. Decorated pottery sherd: the rim is decorated with a band of simple impressions (probably fingernail), the wall is decorated with horizontal rows of dots (photo: F. Jesse)

The pottery is tempered with rounded and angular quartz grains seldom exceeding 1 mm in size, or quartz and mica. The addition of mica sometimes gave the sherds a lustrous appearance. Five VU show organic temper: four times a mixture of plant material and quartz was used as a tempering agent, in one case only plant material was added.

Coiling technique is recognizable as a mode of production. The rim forms are simply rounded, but due to the predominantly rather small size of the rim sherds the reconstruction of the rim diameter was only possible in one case. Here a rim diameter of 24 cm could be identified. The recognizable vessel forms are all closed ones.

All of the decoration was made by impression. Only in one case a decoration of the rim lip was observed: shallow notches made by simple impression. A discrete decoration of the rim zone was recorded on 5 VU. The decorative patterns

are either a band of fingernail impressions (Fig. 10) or oval or oblique impressions. The decoration of the wall zone was mostly made using a comb and the rocker technique. Closely packed dotted zigzags (17 VU) or horizontal rows of impressions (22 VU) are the most common decorative patterns (Fig. 11: 1–5). Alternately pivoting stamp with a two-toothed implement was recognized on 5 VU. Remarkable is the decoration of VU 68 (Fig. 11:6): the rim lip is partly decorated with shallow notches (see above). A small implement producing dashes (probably a cord wrapped stick) was then used to create a complex pattern of horizontal rows of packed dotted zigzags and Dotted Wavy Line covering the vessel from the rim zone downwards.

The sherds were also used as tools: intentionally rounded edges are present. Further modifications were also observed: in one case a hole was drilled through the sherd from the interior surface (probably a repair hole), a further sherd shows traces of drilling on the interior surface, probably the start of a perforation and in one case the edge of a sherd was modified by notches to give it a dentate appearance.

An interesting object is the fragment of a ceramic disk bead with a dentate edge (Fig. 12). This bead was very probably made of a decorated sherd. The diam-



Fig. 11. Site BP424. Decorated pottery sherds: 1-5 – horizontal rows of dots; 6 – complex pattern of Dotted Wavy Line and packed dotted zigzags (photos: F. Jesse)

eter of the bead is 26 mm, the perforation hole has a diameter of 9 mm.

With the exception of some surface finds, the pottery sample from site BP 424 is rather homogenous in terms of paste, temper and decoration. No significant changes are observable in the different excavated layers. Refitting was seldom possible due to the abraded edges of the pottery. However, the large vessel unit (VU 68; see Fig. 11: 6) was distributed over several squares and layers.

On the basis of the pottery the time of the site's functioning may be determined as the early to middle Holocene.

3. Discussion

Sites BP133 and BP424 are so far the only early to mid-Holocene sites excavated within the concession of the Gdańsk Archaeological Museum in the Bayuda desert. Parallels for the heavily plant tempered pottery found at site BP133 can be found in the Nile Valley, for example among the pottery of the Karmakol Industry sites (see Hays 1971a: 127–131; Gatto 2006). The range of the Karmakol Industry includes the area between the Debba bend and the 4th Nile Cataract region. At site MTG 3 at El Multaga, pottery attributed to the Karmakol Industry could be dated by radiocarbon to the 8th millennium bp (Gatto 2006: 77).

Comparisons for the pottery from BP424 can be found at other sites in the Bayuda and the surrounding Nile Valley: for example, site ELG 13/15 south of the 5th Nile Cataract (rim decoration and packed dotted zigzag; see Jesse et al. 2013: 63, Fig. 5), on Mograta Island (packed dotted zigzag: MOG086 [Dittrich and Gessner 2014: Fig. 20. 13, 15, 16]; alternately pivoting stamp: MOG027 [Dittrich and Gessner 2014: Fig. 20. 5,7,8]; small implement producing dashes: MOG027 [Dittrich and Gessner 2014: Fig. 20. 6]), on Boni Island, sites S 05/140 and S 05/142 (rim decoration: Petrick 2012: Plate 20.1–2; alternately pivoting stamp: Petrick 2012: Plate 20.15–16), El Multaga – site MTG3 (rim decoration and packed dotted zigzag; see Gatto 2006: 84, Pl. IId) and Aneibis (rim decoration and packed dotted zigzag; Haaland and Magid (eds.) 1995: 91, Fig. 7.d). All these sites belong to the early to middle Holocene, the so-called Mesolithic and Neolithic period.



Fig. 12. Site BP424. Fragment of a ceramic disk bead (photos: F. Jesse)

Early to mid-Holocene settlement in the Bayuda desert has not been extensively researched. Apart from the work carried out at the two sites discussed here, excavations were conducted only within Wadi Muqaddam in the 1990s, resulting from the construction of a road from Khartoum to the Nile valley in the area of Ganetti (Fuller and Smith 2004). “Artefactual evidence from sites 115.1 and 61.3 assessed to date, comprising ceramics and ground stone implements, provided a general dating for the associated paleoenvironmental evidence within the period of the ‘Khartoum Mesolithic’ (...). Apparent stylistic similarities, most striking in the ceramics, further indicate links between the sites in or near the Wadi Muqaddam and areas to the north and south within the Nile Valley itself and, potentially, much further west into Saharan regions like the Wadi Howar.” (Fuller and Smith 2004: 275). Also the pottery of sites BP133 and BP424 find parallels in the near and also broader regional context. Of great interest regarding supra-regional contacts is the large vessel unit (VU 68) found at site BP424 (see Fig. 11:6): The complex pattern of Dotted Wavy Line and packed dotted zigzags reminds from a stylistic point of view the arrangement of (Dotted) Wavy Line in the Khartoum Variant (see Gatto 2002: 77, Fig. 5.10), in the Nabta-Kiseiba Area (see Gatto 2002: 69–74) and in the Atbara region (see Gatto 2002: 75, Fig. 5.8). The idea of a “Khartoum-Horizon Style” to account for broad similarities over a large area while still taking into account regional stylistic variations has already been proposed in the 1970s (Hays 1971b). To further elucidate the role of the Bayuda desert within such a larger “Khartoum-Horizon-Style” network and especially its role as a possible intermediary between central Sudan and northern Nubia (see also Gatto 2006: 77) further excavations and surveys will certainly contribute.

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