

New advances in research on pre- and proto-historic settlement of Argi and Letti, Upper Nubia



Abstract: New fieldwork in Argi and Letti (Southern Dongola Reach) has produced unique data on early Holocene settlement and burial practices. New surveys, backed by GIS data, shed light on true forms and preservation of settlements dating from the Paleolithic to the Kerma periods, providing an absolute chronology as well as exciting future directions.

Keywords: survey, Argi, Letti, early Holocene, Paleolithic, Neolithic, Kerma

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INTRODUCTION

From 6 January to 7 February 2023, a team from the Polish Academy of Sciences explored two areas located between the 3rd and 4th Nile Cataracts (Sudan), opposite the modern city of Debba. Presented herein are the outcomes of this survey and excavation work, as well as new radiocarbon and OSL dating results.

Acknowledgments

In January–February 2023, the project team was directed by Dr. Piotr Osypiński (prehistorian). The team also comprised Assoc. Prof. Marta Osypińska (archaeozoologist), Justyna Kokolus (archaeologist), Roman Łopaciuk and Paweł Wiktorowicz (surveyors), as well as Franciszek Osypiński and Fatima Idris (students and assistants). Ms Amel Hassan Gismallah, an NCAM inspector, was a valuable and helpful addition to the team. Field activities took place between 6 January and 7 February 2023. The mission was housed in the Banganarti Archaeological Station created and managed by Bogdan Żurawski. The research was financed by the National Science Centre, Poland (NCN): grant UMO-2020/37/B/HS3/00519.

The Southern Dongola Reach follow-up research project involved excavations on two archaeological sites in Letti: LTD1 and LTD2 [Fig. 1]. Other field activities included large-

scale mapping with RTK GPS, mapping of three Holocene sites (Argi Cemetery, Argi Crossroad, and Argi 2), and follow-up surveys of the entire area (Argi).

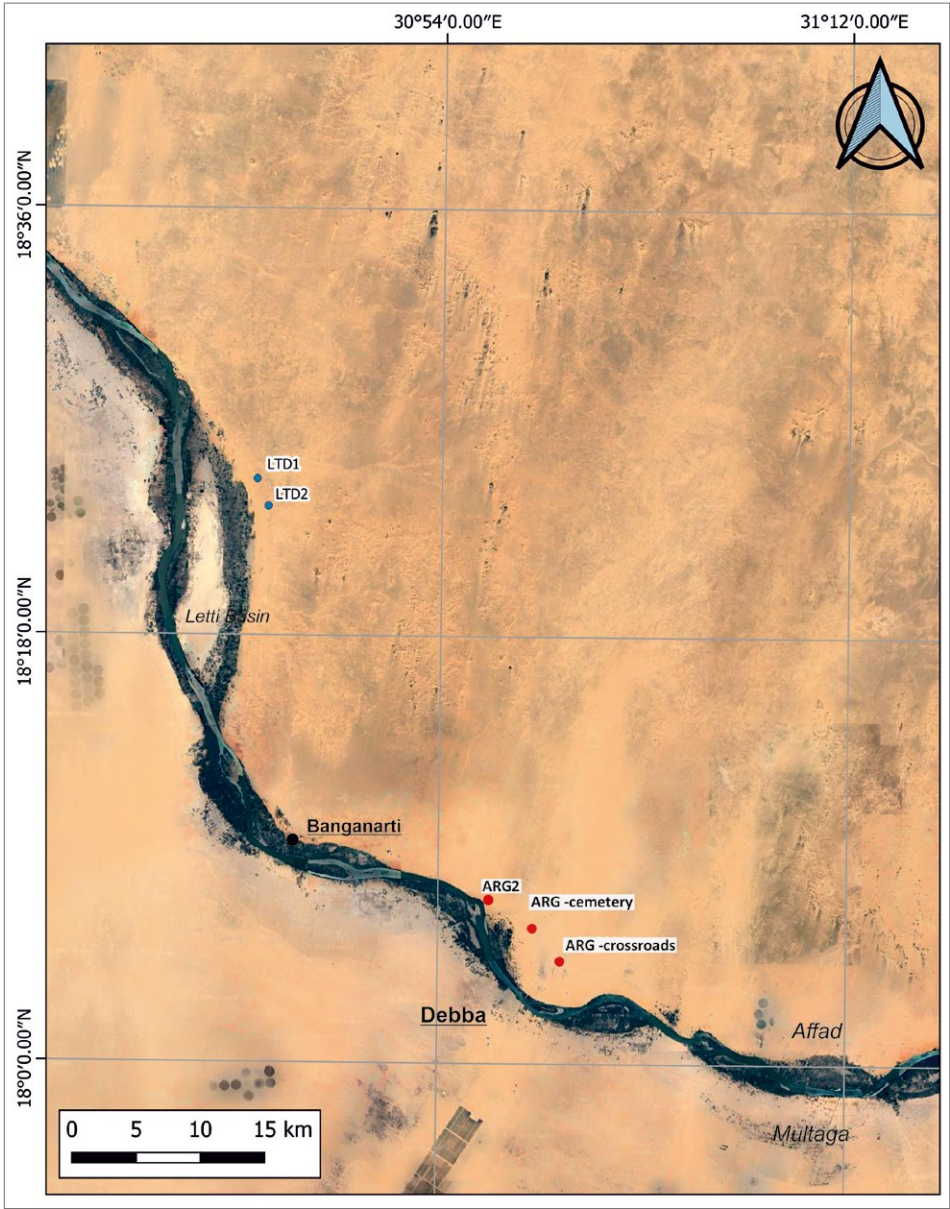


Fig. 1. Area investigated in January–February 2023 (Mapping P. Wiktorowicz)

Both areas (Letti and Argi) are widely known for the presence of prehistoric sites, noted already in publications from the mid-20th century (Arkell 1950). Subsequent generations of Dongola Reach researchers have mapped the prehistoric settlement in both the Letti Basin (Grzymski 1987; Kobusiewicz and Kabaciński 1996; Usai 1998; Chłodnicki and Kabaciński 2003) and the Argi *mantiga* (Arab.: district) (Żurawski 2003). The previous field season of the current project expanded the knowledge on the prehistoric settlement in the desert part of Letti and its absolute chronology (Osypiński et al. 2022). Three stages of the human presence on

the Middle Nile were the focus of our attention. The oldest was the Pleistocene period, with settlement remains that provide the geographically closest parallels to the Affad discoveries (Osypińska and Osypiński forthcoming). The second focal point were the early Holocene sites. The 2022 research at the LTD2 site allowed for the first time to structure the settlement phases of communities that used pottery, a standardized set of insert (lithic) tools, and stone querns. These were the oldest post-Pleistocene communities in the Nile Valley, although it has so far been problematic to segregate mixed assemblages comprising material correlates of both

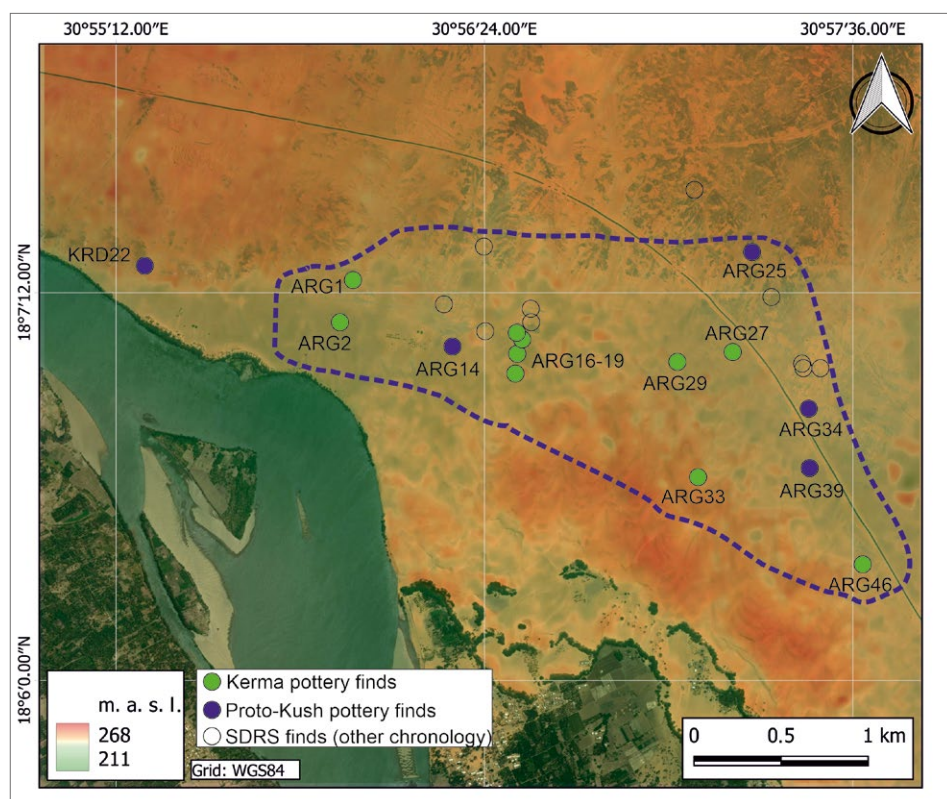


Fig. 2. Argi, cluster of SDRS sites; maximum extent of settlement with finds of Kerma and proto-Kush pottery (DEM by P. Wiktorowicz; edited by P. Osypiński)

aquatic/riverine (Karmakol) cultures and other proto-pastoral (Tergis) groups (see Marks, Hays, and de Heinzelin 1968). Both of these adaptation strategies were in place before the Holocene climatic optimum (8.2 ka). Finally, the third phase that captured our attention was the period of formation of the first civilizations along the

Nile. Both Neolithic (5th millennium BC) and Kerman (3rd–2nd millennium BC) sites provide new data on the emergence of Nilotic/Kushite communities whose economic and ideological focus was on cattle herding. Reminiscences of this cultural complex are present in all later Nubian civilizations (Osypińska et al. 2023).

SURVEY IN THE ARGİ AREA

Research to date identified about 100 prehistoric sites preserved in the Argi area. All of them were recorded as part of the Southern Dongola Reach Survey (SDRS) project and published in 2003 (Żurawski 2003). However, the current project revealed large-scale damage to some sites and deterioration of the state

of preservation of all loci. The surface survey consisted in a systematic scrutiny of selected locations (SDRS archaeological sites) by a team of specialists (prehistorians and an archaeozoologist), involving GIS ground-based documentation (RTK GPS) and aerial photography (drone).



Fig. 3. Clusters of animal bones and pottery on site ARG2 (Photo P. Osypiński)

KERMA/PROTO-KUSH PERIOD SITES

The first goal was to verify the presence of settlements dating back to the Kerma period (2500–1500 BC), which, until now, have been very poorly known in the area. A concentration of SDRS sites with fragments of pottery resembling Kerman wares was noted in the northwestern part of the Argi area, on both sides of the Nawa – Karima asphalt road: ARG2, ARG16, ARG17, ARG18, ARG19, ARG27, ARG29, ARG33, ARG46; locations with ceramics identified as proto-Kushite were ARG14, ARG25, ARG34, ARG39 [Fig. 2].

The current survey has shown the presence of one large settlement inhabited until the Napata period, perhaps with roots in the Kerma period. Loci ARG2 and ARG14 were the exposed parts of this settlement [Fig. 3], while the remaining parts were covered with dunes. A number of sites (14 loci) recorded during the SDRS project were local exposures of anthropogenic sediments between the dunes.

During the current prospection, numerous well-preserved remains of settlement sites were found: clusters of Kush-period pottery fragments, domestic animal bones (also bearing traces of burning), and stone artifacts [see Fig. 3].

The survey also revealed recent looting of a Kush-period cemetery located slightly west of the Argi settlement (the site identified during the SDRS as Karendiwai 22/KRD22, see Fig. 2). The site bore traces of damage with bulldozers [Fig. 4].

EARLY HOLOCENE SETTLEMENTS

Another goal of the verification survey was to identify early Holocene sites in Argi. Already during the SDRS fieldwork, two large clusters of loci with “Neolithic” pottery, lithic artifacts and animal bones were recognized. Large fragments of querns and partly exposed graves pointed to their identification as well-preserved prehistoric settlements and burial grounds. One of the sites



Fig. 4. Necropolis from the Kush period near Argi (SDRS site KRD22) (Photo R. Łopaciuk)

(ARG113=MG4), excavated in 2001, revealed a multi-phase early Holocene settlement (Osypiński 2003).

Upon investigation during the current survey, both clusters of early Holocene finds turned out to be large settlement and sepulchral sites surrounded by vast zones of deflation/erosion. The first cluster of SDRS loci comprised a central zone featuring the best-preserved and exposed graves on SDRS sites ARG62, ARG61, ARG53, ARG59, and a number of heavily degraded loci in the periphery: from ARG54 to the west and ARG76 to the south to ARG71 to the northeast [Figs 5, 6]. A characteristic feature of the landscape in this area

is an extensive modern cemetery directly adjacent to the Neolithic settlement [see Fig. 6: inset photo], hence the reference to this complex of sites as “Argi Cemetery”. In 2008, the central part of the complex was destroyed during the construction of the Nawa – Karima road.

To the south of ARG111 is a Neolithic settlement of a similar nature to the first cluster, also with partly exposed graves, but much smaller in size [Fig. 7].

The second large cluster of SDRS sites with early Holocene ceramics comprised a central zone with well-preserved settlement remains (ARG115, ARG114, ARG113) and a peripheral deflated area [see Figs 7,

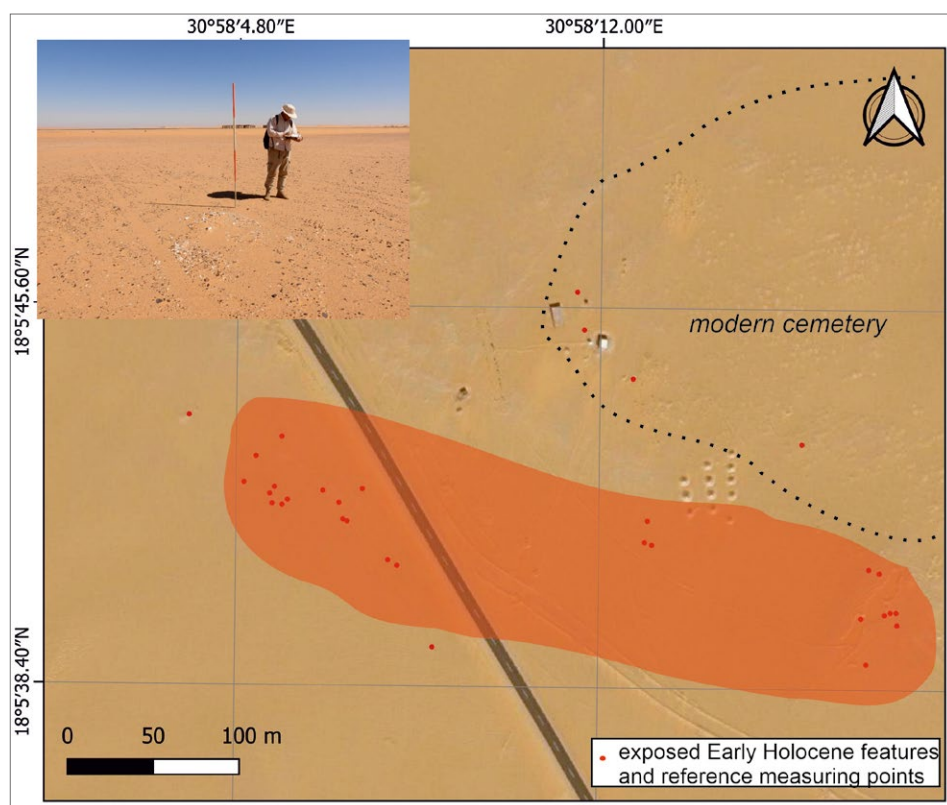


Fig. 5. “Argi Cemetery” site. Total extent of early Holocene graves/artifacts marked in red; inset: an example of the state of preservation of features (Mapping P. Wiktorowicz; photo M. Osypińska)

8]. The site complex is referred to as “Argi Crossroads” due to its location at a cross-roads near the Debba bridge. In 2008, during the construction of the Nawa – Karima road and the connection to the Nile bridge at Debba, a part of the site was completely destroyed. In the 2023 season, construction dumps containing a large number of pottery fragments, stone artifacts, and animal and human bones [see Fig. 8: inset photo] were subjected to surface exploration and partially screened.

The recovered ceramics [Fig. 9] represented three major technological workshops (groups) corresponding to the three general phases of early Holocene settle-

ment in the region (see Marks, Hays, and de Heinzelin 1968): Karmakol with wavy-line and dotted wavy-line pottery, fully decorated and tempered with chaff; Tergis with decoration only in the upper parts of the vessels, tempered with sand; and Karat — thin-walled cups (most probably grave furnishings). No fragments of red slip vessels that could be associated with Kerma culture manufacture have been recorded, although such material was found in the area during past research (locality ARG117, Żurawski 2003: 204).

Stone artifacts represented an inventory based on the production of blades from cryptocrystalline raw materials:

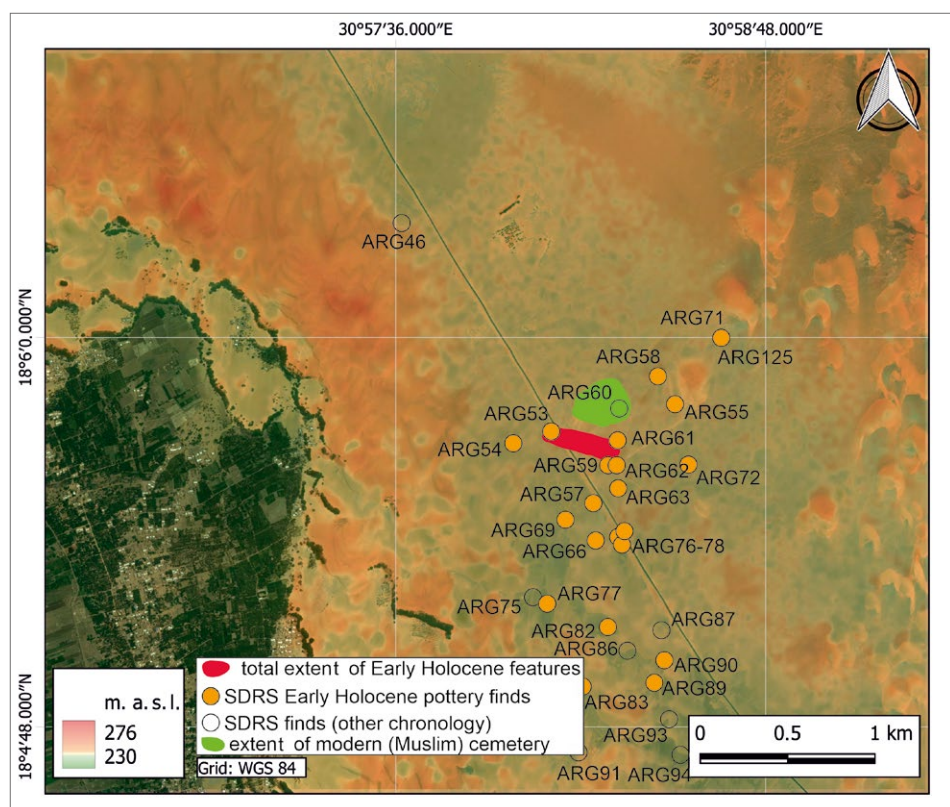


Fig. 6. Argi, a cluster of early Holocene loci around the modern cemetery (DEM by P. Wiktorowicz; edited by P. Osypiński)

chert and agate [see Fig. 9]. Animal bones tended to originate from wild species (ranging from fish to mammals such as warthogs, Oribi antelopes, and hippos), but remains of domesticated cattle were also relatively numerous [see Fig. 9]. Unlike LTD2, these SDRS sites yielded no ostrich eggshell beads.

The area is at risk of further destruction as a result of the establishment of industrial farms, one of which is already operating to the south of the site.

PLEISTOCENE FINDS

The third goal of the current survey was to determine the nature of the Pleisto-

cene SDRS finds (MSA?) between the two clusters of early Holocene sites [see Fig. 7]. Due to their location in the lowest parts of the terrain, we believe that they are secondary deposits of Pleistocene settlements, washed out from the higher ground to the northeast. Therefore, they cannot be used in comparative studies with sites/collections from Affad or Letti.

Vestigially preserved relics of the natural environment (riparian forest?), which can be linked to the pre-Holocene period, were recorded near site ARG124 [see Fig. 7]. They consisted of petrified trunks and roots of trees. However, no human-made artifacts of any period were found there.

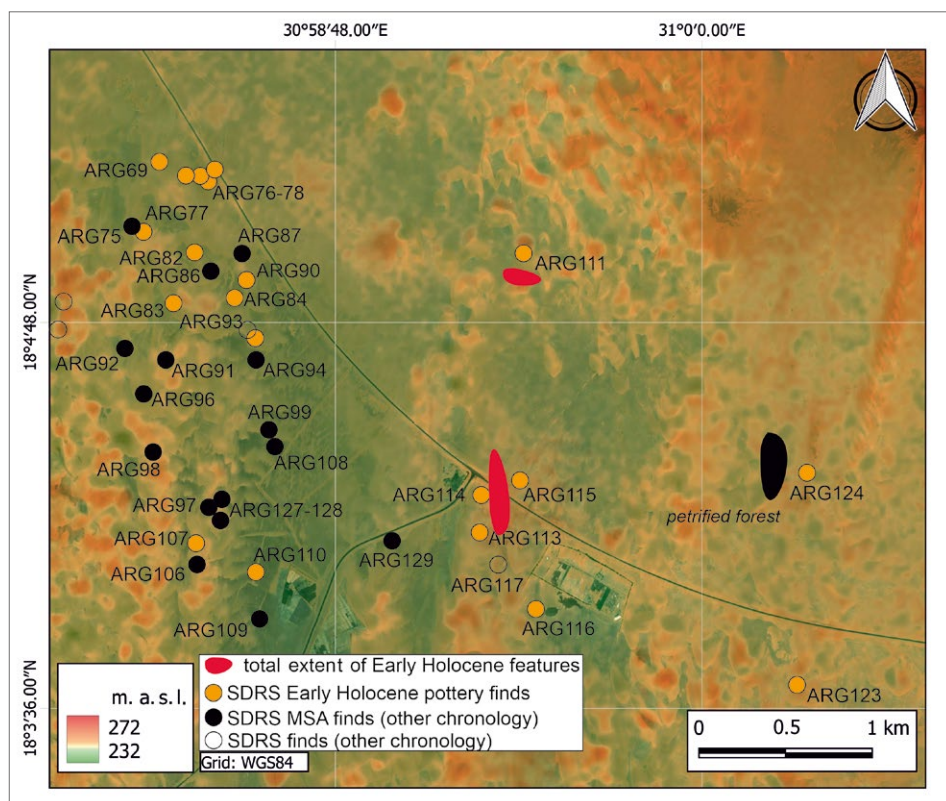


Fig. 7. Cluster of early Holocene SDRS loci: "Argi Crossroads" and Pleistocene locations including the "petrified forest" and clusters of MSA stone artifacts (DEM by P. Wiktorowicz; edited by P. Osypiński)

EXCAVATIONS AT LETTI: LTD1 AND LTD2

The sites were discovered during the 2022 survey and have been explored since then (Osypiński et al. 2022). During the 2023 season, three trenches were excavated at LTD1 and the results have been published separately (Bobrowski et al. 2023, in this volume). At site LTD2, in 2023 work continued in a trench opened in the previous year (designated as Area A), as well as at LTD2/B, a Neolithic cemetery about 180 m to the east.

Early Holocene artifacts in Area A, present at a depth of approximately 0.5 m below ground level, represented a homogeneous complex defined as the Tergis Group level (after Marks, Hays, and de Heinzelin 1968). Numerous stone artifacts, pottery fragments and animal bones were found. According to radiocarbon dates of samples collected in the preceding season, the assemblages recovered at this site are datable to the middle of the 8th millennium BC (Osypiński et al. 2022: Table 2).

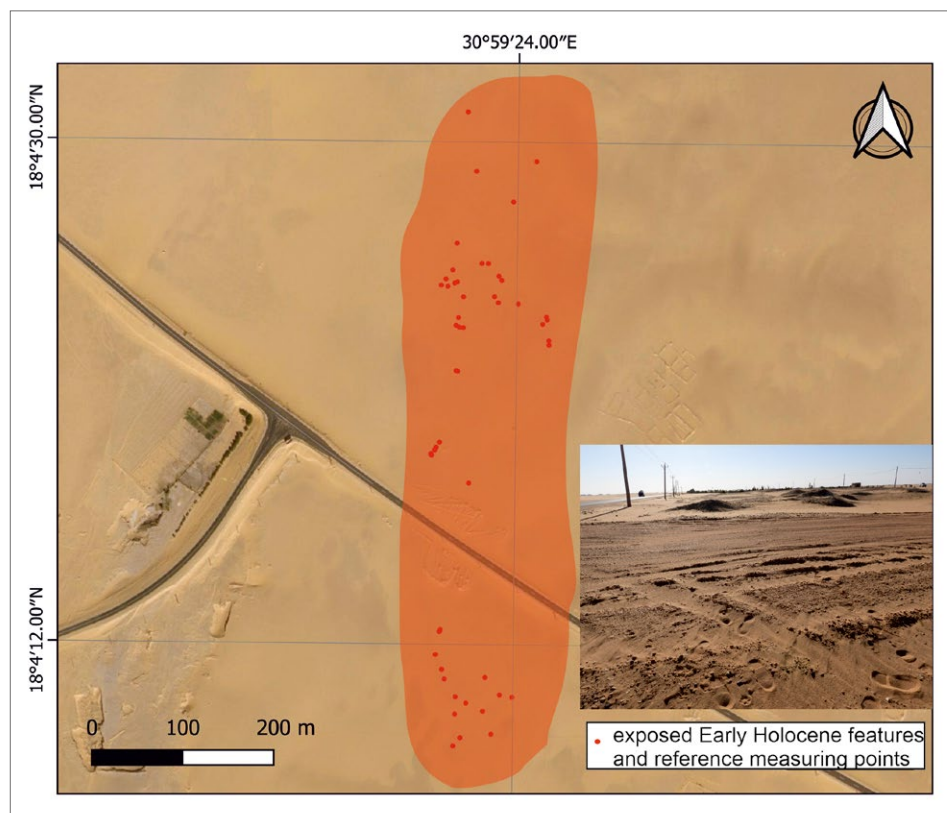


Fig. 8. "Argi Crossroads" site. Total extent of early Holocene graves/features (shaded red) and road-side dumps containing vast quantities of Neolithic artifacts (inset photo) (Mapping P. Wiktorowicz; photo M. Osypińska)

Early Holocene layers containing artifacts filled a natural depression of the ground, covering some rock debris (Context 6). The latter layer included stone slabs, which formed a kind of flat surface (floor?) recorded in the northeastern [Fig. 10] and southeastern corners of the trench [Fig. 11]. The origin and purpose of these slabs is puzzling; however, the nearby clusters of stones (including quern fragments) were deliberately placed, most likely to serve as pillar supports [see

Fig. 10]. They are the first evidence for early Holocene settlement architecture known from the southern part of the Dongola Reach. They are, however, different from the known semi-pit houses from el-Barga near Kerma (Honegger 2004).

Among the materials discovered during the current season, an important category were archaeozoological finds including a concentration of cattle bones and two distinct clusters of Nile oyster shells [Table 1].

Table 1. LTD2/A. Animal remains excavated in the 2022 and 2023 seasons (early Holocene strata)

TAXONS	n	%
Cattle (<i>Bos primigenius</i> f. <i>domestica</i>)	39	8.1
Common tsessebe (<i>Damaliscus l. lunatus</i>)	5	1.0
Oribi (<i>Oureba ourebi</i>)	5	1.0
Jackal (<i>Lupulella</i> sp.)	4	0.2
<i>Gazella</i> sp.	14	3.0
Cape hare (<i>Lepus capensis</i>)	3	0.6
Common warthog (<i>Phacochoerus africanus</i>)	16	3.3
Crested porcupine (<i>Hystrix cristata</i>)	2	0.4
Aardvark (<i>Orycteropus afer</i>)	3	0.6
Waterbuck (<i>Kobus ellipsiprymnus</i>)	52	10.8
Common ostrich (<i>Struthio camelus</i>) – eggshell	114	23.7
Catfish (<i>Siluriformes</i> sp.)	59	12.2
Nile oyster (<i>Etheria nilotica</i>)	135	28.0
<i>Pila africana</i>	30	6.2
NISP	481	100 / 35.2
Mega fauna	1	0.07
Large ruminants	81	5.9
Medium ruminants	152	11.1
Small mammals	79	5.8
Mammals	240	17.6
Unidentified	330	24.2
TOTAL	1364	100



Fig. 9. Selection of pottery fragments (a), stone artifacts (b) and animal bones (c) excavated from dumps at the "Argi Crossroads" site (Photos P. Osypiński)

During exploration of the early Holocene strata, stone tools showing characteristics of a much older technological tradition —Levallois flakes— were noted. From Level 3 onward, their share in the material increased. In Context 6 (rock debris with silt, which constituted the natural substrate in the Holocene era), Paleolithic artifacts already dominated the assemblage. The tools included bifacial points (various raw materials — from chert to quartz to ferruginous sandstone), Mousterian points, denticulated tools, and distinctive notch tools with wide, shallow cavities. Also characteristic are wide, fan-shaped scrapers made of massive cortical flakes. Most formal tools were made of massive cortical blanks or Levallois flakes. One Mousterian point in particular is unique, retouched much

later than the time of making the blank Levallois point, as evidenced by a completely different patina [Fig. 12, lower left]. Thus, during the period of Paleolithic settlement at LTD2/A, much older products with similar features were available in the landscape.

An unusual feature of the preservation of approximately 20 percent of the Pleistocene stone artifacts was a white patina covering their surfaces and edges [see Fig. 12, top row]. This probably indicates long-term surface exposure of these artifacts, suggesting the absence of plant cover and soil formation processes. Ultimately, however, all these artifacts were recovered from buried contexts (mostly from Context 6). A lengthy time on the surface may be responsible for some natural breakage and accidental retouching,



Fig. 10. Assumed elements of early Holocene settlement structures: stone clusters with pillar supports and a flat surface made of stone slabs (upper right corner of the excavation area). View from the south (Photo P. Osypiński)

but the formal types of the tools are identifiable with confidence. The white patina formation leads us to hypothesize that the dry period (e.g., during MIS₄) occurred immediately after (or during) the Paleolithic settlement phase. It was not until much later that the whole area was covered with another series of silts related to Nile flooding. In order to con-

firm the chronology of the Paleolithic assemblage at LTD2/A, two OSL samples were collected from sediments preceding (Context 8) and subsequent (Context 5) to the rock debris (Context 6) [Table 2]. The results obtained date the Paleolithic deposits from LTD2/A to the end of MIS₅ and suggest that they remained exposed until MIS₃.

Table 2. LTD2/A. OSL dating results (multigrain, CAM – UMCS Laboratory)

Sample	Depth [m]	Annual Dose d_r [Gy/ka]	OSL Effective Dose d_e [Gy]	OSL Age [ka]
OSL1 (Context 8)	0.50	1.31 ± 0.16	120.87 ± 3.69	92.3 ± 11.6
OSL2 (Context 5)	0.30	1.50 ± 0.18	71.60 ± 2.55	47.7 ± 6.0



Fig. 11. Trench LTD2/A in the final stage of excavation, view from the north. In the front and in the section, rock detritus is visible (Context 6) containing Paleolithic artifacts. Above (in profile) early Holocene sediments and a stone slab in the left corner indicating the level of settlement (Photo P. Osypirski)

A new discovery on site LTD2 is a Neolithic burial ground located about 180 m east of Trench A [Fig. 13]. In this area, clusters of thin-walled Neolithic pottery and bones were visible on the surface. One of the bone clusters consisted mainly of cattle remains. The latter finds analogies at cemetery site AFD130, excavated in 2016 and dated to the 5th millennium BC (Osypińska et al. 2021). Radiocarbon dates obtained from the carbonate fraction of teeth from LTD2/B burials, as well

as from surface clusters of human bones at the LTD2/A excavation support this association [Table 3].

During construction of an asphalt road in 2008, a geodetic reference point was established in the immediate vicinity of the cemetery, and many graves were destroyed as a result of intensive use of construction machinery on the site. A 10 m × 10 m excavation trench, marked as LTD2/B, was established at the concentration of the destroyed burials.

Table 3. Radiocarbon dates obtained for human teeth from LTD2/A and LTD2/B burials (carbonate fractions dated at the Poznań Radiocarbon Laboratory)

Context	Sample type	Sample ID	Radiocarbon age (BP)	Calibration results (95.4% probability)
LTD2/A, Cluster 2	Human tooth 0.1%N 2.3%C carbonate U	Poz-164649	5590±35	4494 BC (7.1%) 4471 BC 4461 BC (88.3%) 4350 BC
LTD2/A, Cluster 3	Human tooth 0.1%N 2.9%C carbonate U	Poz-164650	5650±35	4551 BC (78.5%) 4436 BC 4430 BC (16.9%) 4363 BC
LTD2/B, Burial 3	Human tooth 0.1%N 1.0%C carbonate U	Poz-164654	5250±30	4168 BC (28.3%) 4094 BC 4228 BC (11.5%) 4197 BC 4076 BC (55.6%) 3979 BC
LTD2/B, Burial 4	Human tooth 0.3%N 1.2%C carbonate U	Poz-164655	5115±35	3985 BC (43.6%) 3893 BC 3882 BC (51.9%) 3798 BC
LTD2/B, Burial 5	Human tooth 0.1%N 1.0%C carbonate U	Poz-164656	5085±35	3964 BC (95.4%) 3794 BC
LTD2/B, Burial 6	Human tooth 0.1%N 1.8%C carbonate U	Poz-164657	5135±35	4041 BC (5.6%) 4018 BC 3994 BC (53.5%) 3907 BC 3879 BC (36.4%) 3802 BC
LTD2/B, Burial 7	Human tooth 0.3%N 0.8%C carbonate U	Poz-164658	5275±35	4236 BC (20.4%) 4189 BC 4174 BC (61.6%) 4036 BC 4027 BC (13.4%) 3987 BC

Exploration of the trench was carried out manually, with additional sieving of the entire sediment. The first two levels (down to a depth of 15 cm) were a mixed surface layer full of bone pieces and pottery from destroyed parts of the graves, as well as remains of the early Holocene settlement. Below, a dark gray silty mass with outlines of oval grave

cavities was recorded. A total of seven Neolithic burials were found within Trench B, with pit depths ranging from 5 cm to 40 cm below the modern surface. Originally there were more skeletons, as evidenced by several additional concentrations of small bones and pottery pieces in the northwestern part of the surveyed area.

Burial No. 1, discovered near the northern edge of the trench, was visible on the surface as a concentration of fragmented human bones [Figs 14, 15]. In 2008, its soft fill caused the wheels of excavation machinery to collapse and completely destroy part of the grave (or even two graves, as preliminary tooth analysis suggests the presence of two individuals). Only the lower body of one individual from the pelvis downward survived. The body was originally buried with the head to the west and the legs strongly bent [see Fig. 14]. No furnishings were recorded with the deceased, although this may be due to the severe destruction of this grave.

Burial No. 2 was found in the central part of the trench after removing the top layer. The irregular oval pit, filled with loose sand and a few burnt stones, contained the skeleton of an adult individual interred with bent legs and the head toward the west [see Fig. 14]. The skull had

a hole with healed edges — evidence of trepanation during life. A small stone pallet and a fragment of a bone point or awl were found at the knee [Fig. 16]. The burial pit had been dug in the bedrock to a depth of about 30 cm below the contemporary surface.

Burials Nos 3 and 4 were found in the central part of the excavated area after removal of the top layer. The burial pits had been dug into the silty subsoil to a depth of approximately 15–20 cm below the contemporary surface. The slightly earlier inhumation, No. 3, was deposited with the legs strongly bent and the head toward the west. The second inhumation was oriented in the opposite direction, with the head toward the east [see Fig. 14]. The pit of this grave partly cut into Burial No. 3, resulting in displacement of the latter's knee bones. Burial No. 3 lacked furnishings, while Burial No. 4 contained a complete ceramic vessel:



Fig. 12. Original white patina covering the surfaces of numerous Pleistocene artifacts from LTD2/A (top row) and a Mousterian point (lower left) retouched much later than the time of separation of the Levallois blank (double patina visible as a much more glossy surface of the ventral face than the flat-retouch negatives at the tip) (Photo P. Osypiński)

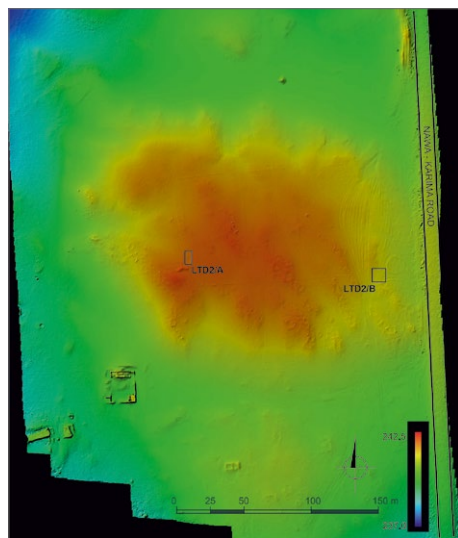


Fig. 13. Site plan of LTD2 and location of Trenches A and B (DEM by R. Łopaciuk and P. Wiktorowicz)

an undecorated bowl with the rim bent inward [see Fig. 16].

Burial No. 5, likewise located in the central part of the trench, also became visible after removal of the surface layers. The burial pit was excavated to a depth of about 20 cm below the modern surface. Originally the burial was interred with the head toward the west and the legs firmly bent. Unfortunately, in 2008, a part of the grave was destroyed by excavation machinery [see Fig. 14].

A fragment of a cattle metatarsal bone and a fragment of a rectangular bone plate, most probably original elements of grave equipment, were found in this mixed zone. The same context contained a crescent flint insert. However, its presence should be explained as a secondary deposit from the stratification of the settlement that functioned in the same place at a much earlier date. Slightly further to the south was a stone pallet, perhaps originally a part of grave equipment.

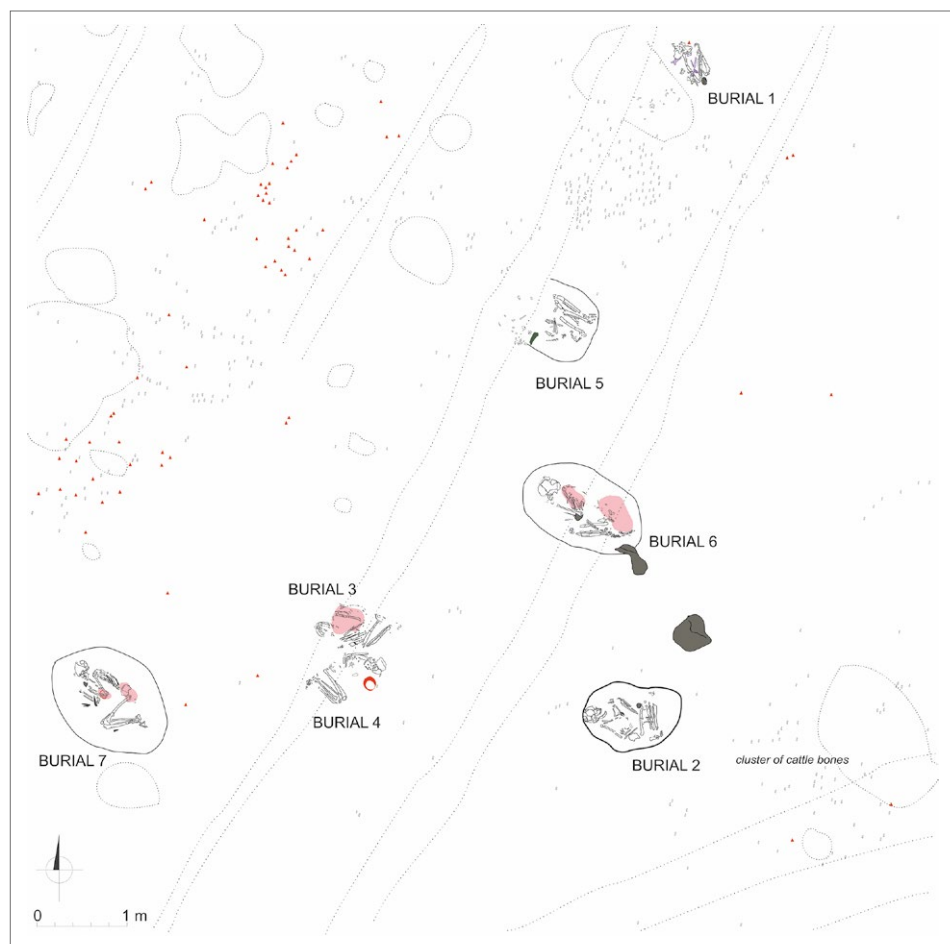


Fig. 14. Plan of the LTD2/B burial ground. Uniform red – pottery finds, pale red – ochre range (Processing P. Osypiński)

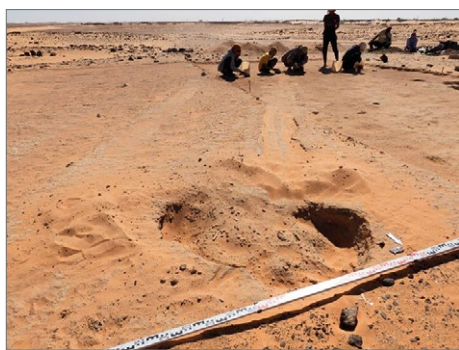


Fig. 15. Exploration of LTD2/B: a disturbed Neolithic tomb (Burial 1); bulldozer tracks from 2008 are visible in foreground (Photo M. Osypińska)

Burial No. 6 was also found in the central part of its pit following removal of the top layer. The grave was dug down to the level of the bedrock, that is, to a depth of about 25 cm below the modern surface. The body was laid with the head to the west and with the legs pulled up [see Fig. 14]. A small stone pallet was discovered under the left elbow [see Fig. 16], and red discoloration found on the pelvic bones indicated the presence of ochre.

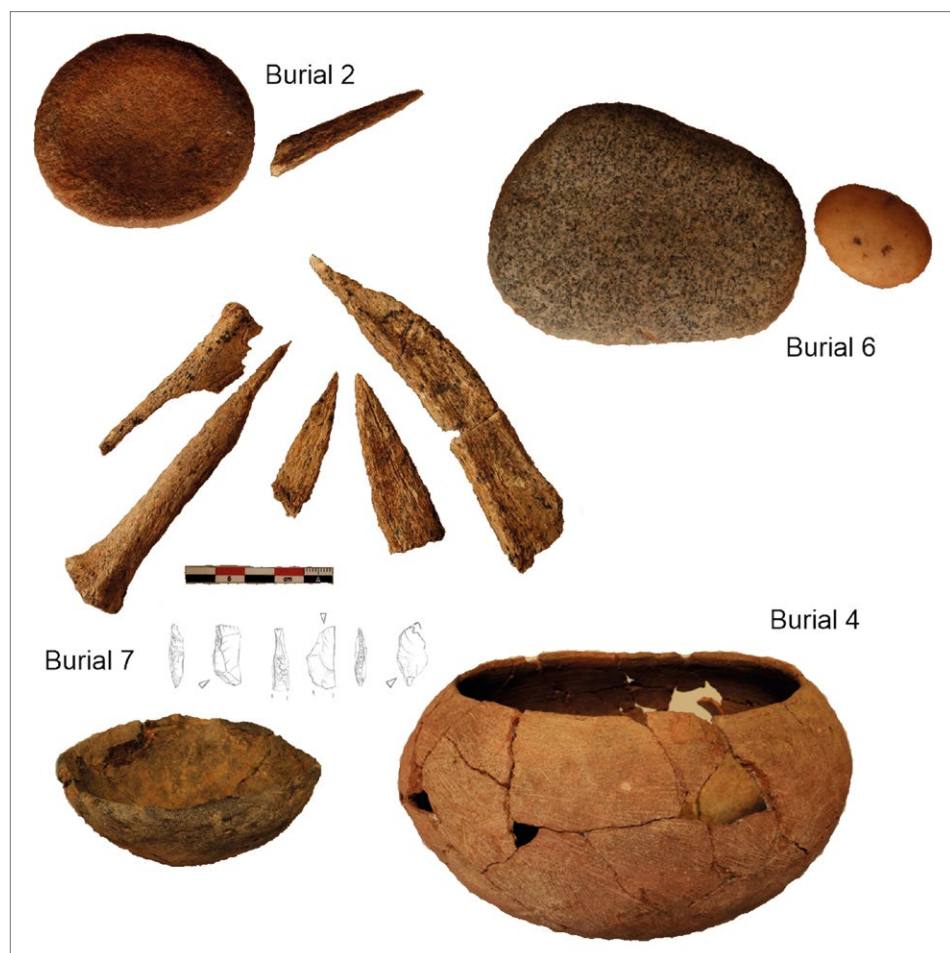


Fig. 16. Equipment of Neolithic burials LTD2/B (Photo M. Osypińska)

Burial No. 7 was discovered at the western edge of the excavation area, at relatively the greatest depth, reaching 40 cm below the current surface. The clusters of pottery found at the beginning of the exploration just by the burial pit seem not to be associated with it, as the interment bears no signs of disturbance. The material probably came from yet another, completely eroded deposit. Burial No. 7 was laid with the head to the west and with the legs folded up [see *Fig. 14*]. Several bone points or awls were recovered at the

level of the hand and chest, and a small, undecorated ceramic bowl was found below the elbow [see *Fig. 16*]. Several flint splinters and three sickle inserts had been placed under the head, undoubtedly as elements of the deceased's equipment. There were also traces of ochre around the chest and pelvis. The skeleton indicates the advanced age of the deceased, several dental diseases, and bone cancer (preliminary anthropological and pathological observations were carried out by M.O.; detailed analysis forthcoming).

CLOSING REMARKS

The new data from Letti facilitates a better understanding of each of the prehistoric periods under consideration and helps interpret the Argi findings.

The Paleolithic LTD2/A assemblage is similar to the 2022 surface assemblage from the LTD14 site (Osypiński et al. 2022), but it is fundamentally different from the Affad wares dated to MIS3. Bifacial points of a character and size analogous to those from LTD2/A are found both to the north, at Miseeda (D. Zielińska, personal communication) and in the el-Gaab depression (Tahir and Nassr 2015), as well as in the area of the 4th Cataract (Wąs 2006). None of these sites, however, has yielded data on the absolute chronology of bifacial points manufacture on the Nile. Our current findings, which place this tradition at the end of MIS5, constitute baseline data of crucial importance for a better understanding of the technological and cultural complexity of this region during the Paleolithic. Redeposited MSA

finds from Argi recovered by our team and previous surveys (SDRS) lacked bifacial items and white-patinated artifacts, permitting to hypothesize that the age of these artifacts was later than MIS4. Similar redepositions of MIS3 settlement remains were noted in the Tergis area, directly to the east of Affad (Osypińska and Osypiński 2015).

The study of the Neolithic cemetery provided data for reconstructing the next settlement phase of site LTD2. The burials from Area B provided a reference point for the clusters of human bones from Area A, which, however, proved diametrically different in character. It seems that, during the period of use of area A as a cemetery, complete and equipped burials were not practiced and did not come to be an accepted practice until a few centuries later. It should be noted that we explored a partial and unequipped burial at Argi 113 (now part of the "ARGI-Crossroads" site) more than

two decades ago (Osypiński 2003). Preliminary data from a micromorphology study of the molars of individuals from LTD₂/A and LTD₂/B sites, as well as from other Karat horizon cemeteries from Affad, suggest a biological identity of the Neolithic populations in the region (Isabelle Crevecoeur, Nicolas Martin forthcoming). Also the isotopic data has the potential to provide extremely important information on the origin of populations from the early Holocene Letti, Argi and Affad (in-depth analysis forthcoming).

Summing up, all evidence of sepulchral activities in Letti and Argi should be linked with the Neolithic (5th millennium BC), leaving previous phases of early Holocene human presence with no data from burials. Paradoxically, we now have rich evidence of early settlement with no burials and no less ample evidence of later cemeteries with no settlements. Thus, the huge settlements in Argi identified as multiphase sites could

potentially provide important data on both early Holocene and later inhabitants of the area.

Due to the dire ongoing geopolitical situation in Sudan from mid-April 2023, further research is currently postponed. Plans for next season included excavations of a well-preserved part of the “Argi Crossroads” site to test newly acquired knowledge of the multiphase nature of early Holocene settlement in the Southern Dongola Reach. Also planned were exploratory surveys on the other side of the Nile, at the outlets of Wadi Howar and Wadi el-Melik. At present, the only current data available is from the Section française de la direction des antiquités du Soudan (SFDAS) survey in Multaga. Its prospective publication is expected to enable a fuller understanding of early Holocene settlement and the so-called lithic economy, including the processing of excellent-quality cherts most likely derived from non-local limestone outcrops (in preparation).

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How to cite this article: Osypiński, P., Osypińska, M., Kokolus, J., Wiktorowicz, P., Łopaciuk, R., Amel Hassan Gismallah, and Standzikowski, K. (2023). New advances in research on pre- and proto-historic settlement of Argi and Letti, Upper Nubia. *Polish Archaeology in the Mediterranean*, 32/2, 217–238. <https://doi.org/10.37343/uw.2083-537X.pam32.2.06>

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