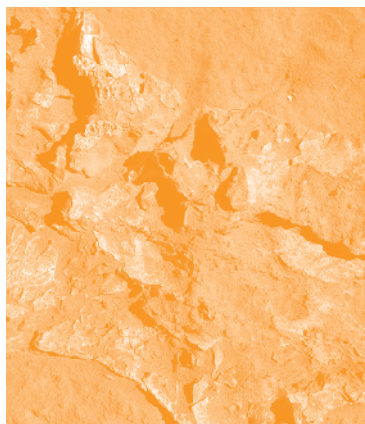


# AFFAD 3.0/Cattle+. Field seasons 2017 and 2018 of the PalaeoAffad Project



**Abstract:** The first Affad was the one we saw when the archaeological sites there were first investigated at the beginning of the century. The second Affad, which is the region that we have been exploring in the past 15 years, bore many signs of modern Sudanese culture encroaching upon the desert. In 2009, an asphalt road cut through the desert and shortly thereafter, the Debba bridge and power lines were constructed, the latter coming from a hydroelectric power station on the Fourth Cataract. Affad 3.0 is what the location looks like today—extensive industrial-scale farms on terraces too far away for traditional agriculture. The investment has already caused irreversible destruction to the archaeological heritage. Cattle+ in the title of this article refers to new data on large ruminants. The discovery of auroch remains and the Neolithic cattle data are both extremely important proxies for the adaptation strategies of people inhabiting the Southern Dongola Reach in prehistory.

**Keywords:** fieldreport, Affad, Southern Dongola Reach, prehistory

Two successive seasons of fieldwork were carried out in 2017 and 2018 by an interdisciplinary project financed by the Polish National Science Centre in the Southern Dongola Reach in Sudan. The “Epigones and precursors. Adaptation strategies for sub-Saharan Africa in the late pleistocene and early holocene” project studies stratified Palaeolithic and Neolithic open sites in the microregion of the Affad Basin [Fig. 1].

**Marta Osypińska<sup>1</sup>**  
**Piotr Osypiński<sup>2</sup>**  
**Marek Chłodnicki<sup>3</sup>**  
**Michał Kuc<sup>4</sup>**  
**Paweł Wiktorowicz<sup>5</sup>**  
**Robert Ryndziewicz<sup>6</sup>**

<sup>1,2,5</sup> Institute of Archaeology and Ethnology, Polish Academy of Sciences, Poznań

<sup>6</sup> Institute of Archaeology and Ethnology, Polish Academy of Sciences, Warsaw

<sup>3</sup> Archaeological Museum in Poznań

<sup>4</sup> Independent researcher

**Team**

*Dates of work:* November–December 2017; November–December 2018

*Director:* Assist. Prof. Marta Osypińska, archaeozoologist (Institute of Archaeology and Ethnology, Polish Academy of Sciences, Poznań; 2017, 2018)

*NCAM representative:* Samael Mohammed

*Archaeologists:* Dr. Piotr Osypiński (Institute of Archaeology and Ethnology, Polish Academy of Sciences, Poznań; 2017, 2018); Dr. Marek Chłodnicki (Archaeological Museum in Ponań; 2017, 2018)

*Geoarchaeologist:* Dr. Michał Kuc (Independent, PalaeoAffad Project scholarship; 2017, 2018)

*GIS specialist:* Paweł Wiktorowicz (Institute of Archaeology and Ethnology, Polish Academy of Sciences, Poznań; 2017, 2018)

*Magnetometric survey:* Robert Ryndziewicz (Institute of Archaeology and Ethnology, Polish Academy of Sciences, Warsaw; 2017, 2018)

*Funding body:* Polish National Science Centre (NCN grant no. 2015/18/E/HS3/00416)

*Principal Investigator:* Assist. Prof. Marta Osypińska from the Institute of Archaeology and Ethnology, Polish Academy of Sciences, Poznań.

**Acknowledgment**

Special thanks go to our friends in Sudan, especially Salah Fadul struggling with the supply lines, as well as to our volunteers – photographer Tytus Grodzicki and our young assistant Franek. Their contribution to the mission was of immeasurable value.

## THE SURVEY IN 2017

The threat posed to the desert by a large recultivation project and industrial-scale farms being set up in the region was observed by the present researchers from the beginning of fieldwork at Affad in 2012. In 2017, agriculture encroaching into the western part of the Affad Basin had threatened directly numerous archaeological sites of both pleistocene and early holocene age. In view of this, a detailed reexamination of the northwestern part of this microregion, which had been relatively the least investigated because of the focus on the excavation of the most

important site, Affad 23, and neighbouring loci, was urgently needed.

Three new sites, Affad 124, 131 and 134, were discovered in consequence. The last of these, Affad 134, has significantly enriched the body of data on seasonal strategies of environment exploration by Middle Stone Age (MSA) groups, which also included a collection of aquatic (riverine) mollusks. They were most probably subjected to some form of heat treatment [Fig. 2]. The AMS<sup>14</sup>C and TL dating confirmed that the remnants of shells and baked alluvium should be associated with

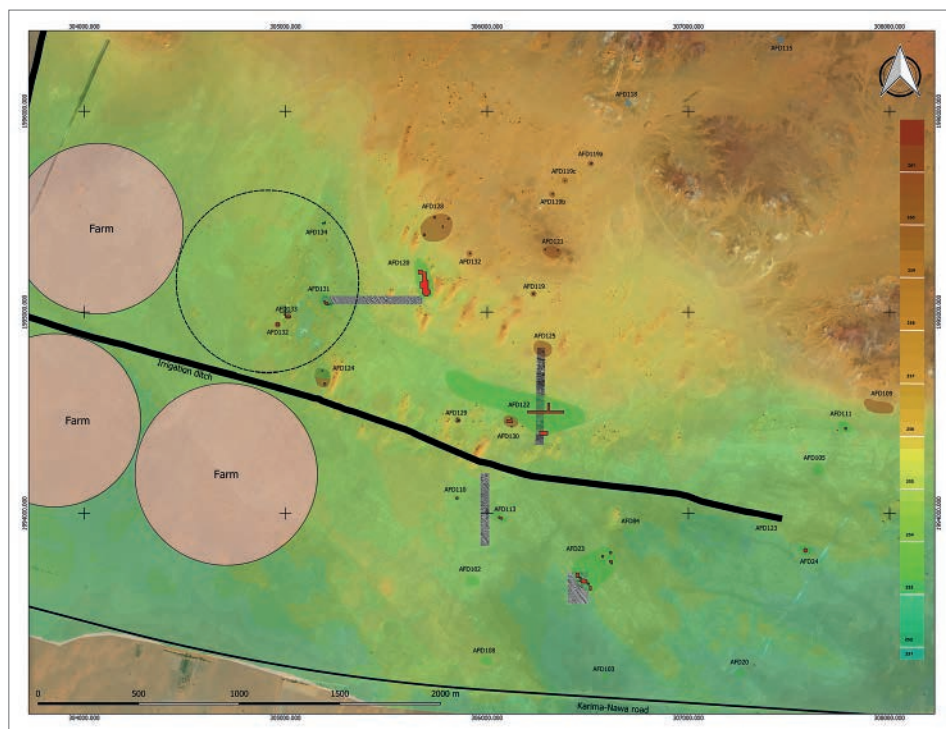


Fig. 1. General plan of the eastern part of Affad Basin with the location of the archaeological sites: green – pleistocene; brown – early holocene; also marked, a large irrigation ditch and industrial-scale farms present in December 2018 (PalaeoAffad Project | topographic survey and drawing P. Wiktorowicz and P. Osypiński).

the activities of the MSA community. This is the first known archaeological evidence of this type of practice in communities inhabiting the Middle Nile in the late Pleistocene period.

Particularly important were discoveries at two other late Pleistocene sites, namely Affad 131 and Affad 124, both constituting remnants of occupation by an MSA community. At Affad 124, an exceptionally rich collection of mineralized animal bones, including those of aurochs (*Bos primigenius*), was recorded. Currently, this constitutes the oldest and the only pleistocene-dated remains of this species in Sudan. It also determines the southernmost range of aurochs in Africa. At Affad 124, six clusters of bones were un-

earthed [Fig. 3]. A large fragment of a skull (complete frontal bone, Fig. 3 bottom left) and numerous fragments of a horncore, successfully reconstructed [Fig. 3 bottom right], were among the particularly important finds.

The teeth of aurochs and steppe zebra (*Equus quagga*) from the pleistocene site Affad 131 were included in the strontium isotope research program ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) with the objective of ascertaining the life behaviour of these animals. Other types of pleistocene (hippopotamus and kob) and holocene (cattle and sheep) species have been included in this type of research so far. The results of detailed biochemical and archaeozoological analyses greatly enrich the state of knowledge



Fig. 2. Large deposit of baked alluvium and mollusk shells at Affad 134 (PalaeoAffad Project | photo M. Osypińska)



about the range, behaviour, morphology and habitat of animals that constituted the focus of hunting by the MSA community in the Nile Valley. After consultations with the agrarian project manager and the National Corporation for Antiquities and Museums inspector, the most valuable sites were marked with metal posts [Fig. 4].

At the onset of the 2018 season it turned out that the entire Affad Basin had been overrun by agrarian development works [Fig. 5]. The entire zone of archaeological sites in the western and northwestern part of the Affad Basin was lost to research. The Affad 124 and Affad 131 sites with remains of aurochs, as well as Affad 134, were found totally

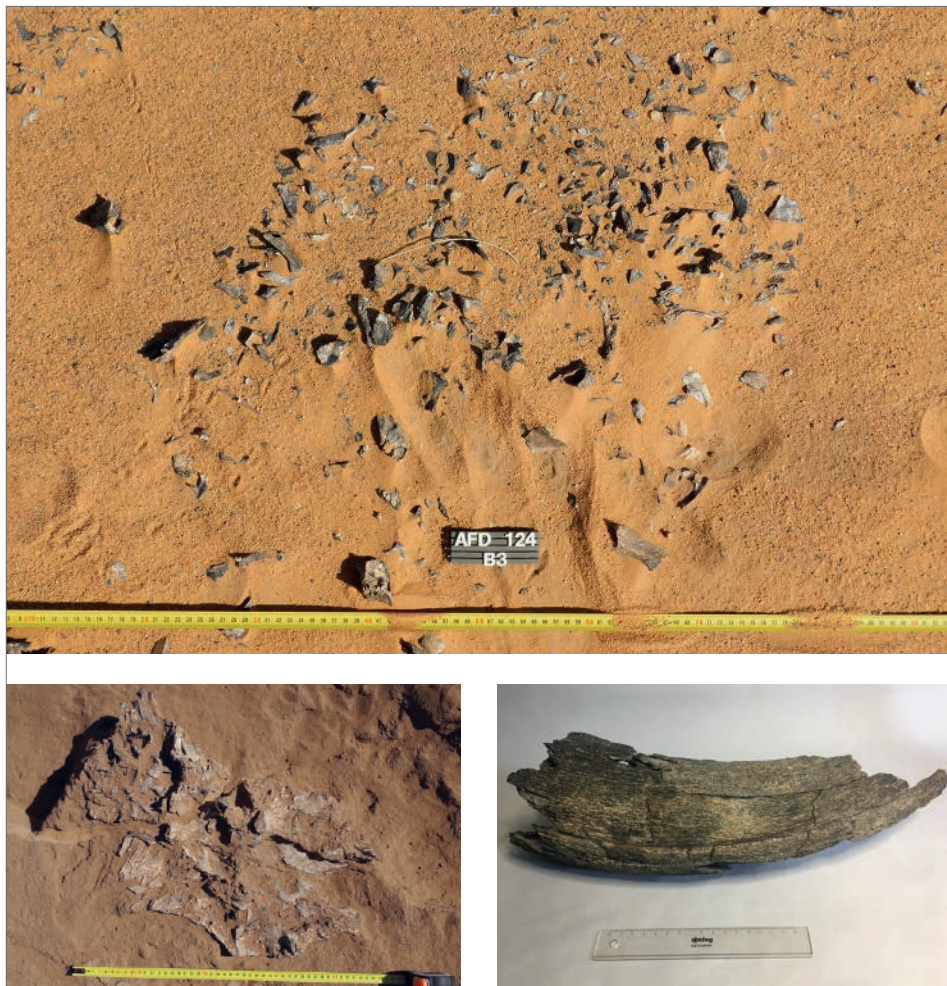


Fig. 3. Cluster of auroch bones at Affad 124 (top); bottom left, frontal bone (skull) of an auroch; bottom right, reconstructed auroch horncore (PalaeoAffad Project | photos M. Osypińska, M. Żukowska)



Fig. 5. Water-supply installations, 700 m wide, in the northwestern part of Affad Basin in December 2018 (PalaeoAffad Project | photo P. Osypiński)



Fig. 4. One of the posts erected in 2017 around five of the most valuable archaeological sites in the northwestern part of Affad Basin; all of them had disappeared within the next ten months (PalaeoAffad Project | photo M. Osypińska)

devastated. Deep drainage ditches also covered the vicinity of the central site of Affad 23, which meant that the area was to be ploughed in the nearest future. Salvage work was initiated immediately at two early holocene sites, Affad 128 and Affad 121. Both loci revealed clusters of eroded artifacts just below the present-day surface.

## AFFAD 69: EARLY KHARTOUM/MESOLITHIC SITE

In the face of this upsetting situation, research was transferred 7 km east, to an area apparently not covered by agrarian projects. Surveys conducted there in 1999 and 2012 (Osypiński 2003; Osypińska and Osypiński 2015) had indicated the presence of several early holocene sites in this region, including Affad 69.

The site comprised a gravel hill and a vast surrounding plain of about 20 ha in area, containing a complex of pre-historic sites, including settlements of

communities representing the so-called aquatic cultures (Mesolithic), as well as settlements and graveyards of Neolithic age [Fig. 6]. Detailed GIS documentation was made, covering both the topography and the cultural remnants preserved on the surface. Fieldwork included excavations focused on the state of preservation of the remains of Mesolithic settlements. In the location where the largest concentration of pottery and lithic artifacts was recorded, a 10 m by 10 m trench was dug

(C/VII/91, directed by Piotr Osypiński). Mesolithic artifacts appeared at the bottom of pits found about 40 cm below the surface, beneath the eroded levels. Three such features were recorded [Fig. 7]. In one of them, lithic artefacts (mainly quartz flakes) were accompanied by the remains

of catfish (*Syluriformes* sp.), small fragments of bones from small and medium ruminants, antelopes and well-preserved jaw fragments and teeth of hyenas (*Crocota crocuta*). This is the first record of an early-holocene site in the Southern Don-gola Reach with preserved underground

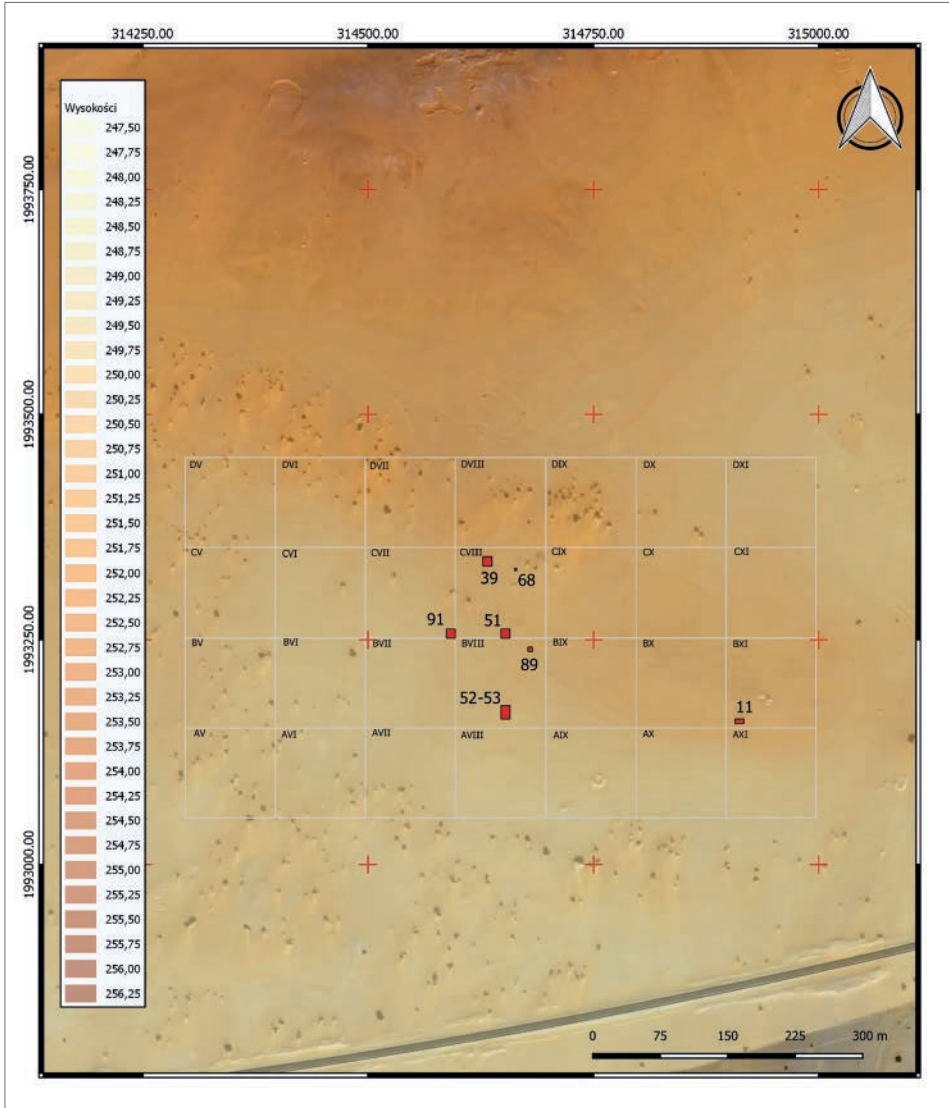


Fig. 6. General plan of the Affad 69 site marking the location of the 2018 excavation trenches (PalaeoAffad Project | topographic survey and drawing P. Wiktorowicz)





Fig. 7. Mesolithic storage pit at Affad 69, section view (PalaeoAffad Project | photo P. Osypiński)

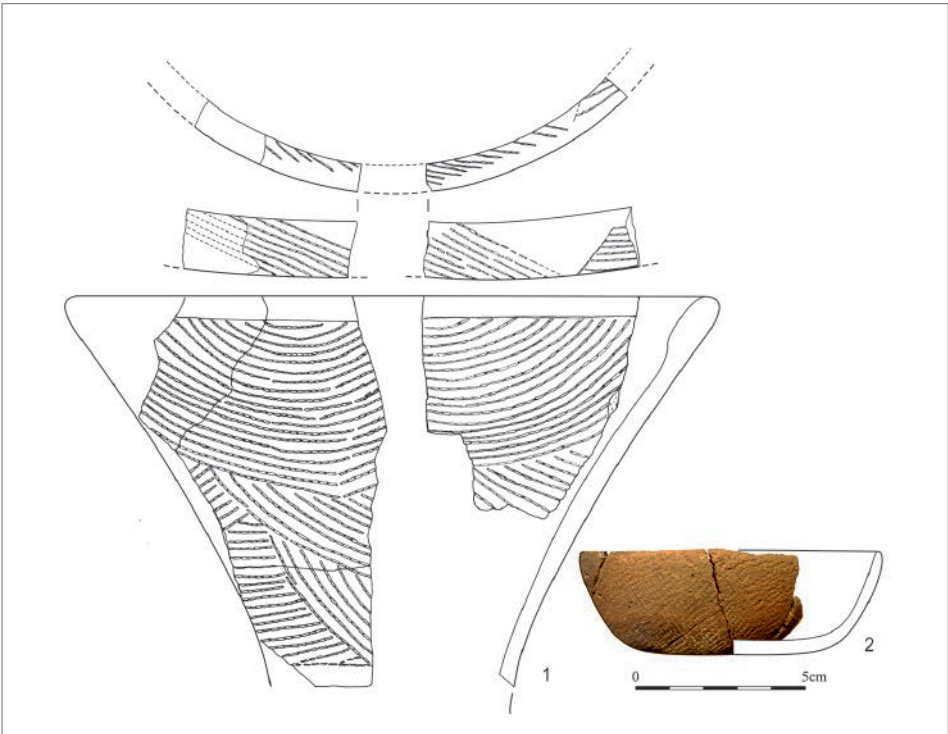


Fig. 8. Reconstructions of Neolithic vessels from Affad 69 (PalaeoAffad Project | drawings B. Bednarczyk)



features. Detailed analyses of ceramic fragments (Chodnicki forthcoming) show typical features of the so-called Karmakol horizon (Hayes 1971). The large amount of pottery with organic temper is characteristic of the area of the Wadi el-Melik outlet and as far upstream as the Fourth

Cataract. This specific feature of pottery production technology also allows effective radiocarbon dating, thanks to which the settlements from the Affad Basin have been dated provisionally to the first half of the 7th millennium BC (analyses carried out in the FUAM laboratory in Poznań).

## AFFAD 69: NEOLITHIC SETTLEMENT

Excavations focused also on numerous surface-recorded burials (B/VIII/52-53, supervised by Marek Chłodnicki). Eleven burials were examined in total. In most cases, the poor condition of the skeletons allowed only an approximate recording of the body position. Bodies were placed on their side, their legs flexed and the hands by their faces. The burials were practically all devoid of grave equipment, the sole exception being burial B/XI/11 with grave goods recorded on a hill slope, where gravel had been quarried in modern times. Large fragments of Neolithic

pottery allowed whole vessel shapes to be reconstructed [Fig. 8].

A single deposit (B/VIII/89) provided evidence of slightly later use in the Kerma horizon(?). The deposit [Fig. 9] included a copper-alloy awl, a piece of copper-alloy serpentine bent wire (jewelry?), a large bead 10 small beads cut from ostrich eggshell, a granite teardrop-shaped pendant, 12 small carnelian beads, a stone bead (amazonite?), as well as a single quartz bead. The deposit was found on the modern surface beside the remains of a human skull.



Fig. 9. Items belonging most likely to a post-Neolithic burial from Affad 69 (PalaeoAffad Project | photo M. Osypińska)

## ARCHAEOZOOLOGICAL DATA

Clusters of large fragments of bovine bone (*Bos taurus f. domestica*) were found on the surface 30 m from the remains of Mesolithic settlements. The character of these clusters, containing non-anatomical skeletal parts, suggests minor features, such as post-holes or small waste pits. The bones were sufficiently well preserved not only for taxonomic and anatomical identification, but also for comprehensive measurements. Trench C/VIII/51 (10 m by 10 m), dug in the location of the bone clusters, recorded a small number of artifacts from the topmost layers. At a depth of about 30 cm were two human burials (probably of Neolithic age), both lying on their left side, arms and legs strongly constricted. There were no grave goods. Anthropological analyses of these burials, as well as of all the human remains from sites in the Affad Basin, are in the hands of Isabelle Crevecoeur from the Université de Bordeaux.

Detailed archaeozoological analysis of the bones from this trench identified the remains as cattle of relatively small and slender long-legged build. These are morphological characteristics typical of sub-Saharan animals (Osypińska 2018).

Well-preserved teeth were submitted for biochemical analyses aimed at ascertaining behavioural issues and the model of cattle breeding in the 5th millennium BC in the Southern Dongola Reach. The first analyses of the content of strontium isotopes in cattle and sheep teeth from the Affad 130 Neolithic site produced interesting results. They indicated a high degree of mobility of both the humans buried in the Affad Basin and the domesticated ruminants. Data on local signatures of strontium isotope contents characteristic of the pleistocene as well as holocene periods, gives some idea of the animal breeding model in the 5th millennium BC. Both signatures considered local for this region have been noted in the Affad Basin cemeteries, as well as others pointing to a northern origin (in the Third Cataract region) and, most likely, also south of Affad.

The cattle remains from the Affad 69 site will undoubtedly enrich the biochemical database under construction. This pioneering research will be a source of data for studies of early populations of breeding animals and pastoral communities in Upper Nubia.

## CONCLUSION

In conclusion, the archaeological landscape in the Affad Basin took on a new face in the winter of 2018. Affad was seen first at the beginning of the century, when the first archaeological sites were explored (Żurawski 2003). The second Affad, which is the region that we have been exploring in the past 15 years, bore many signs of modern Sudanese

culture encroaching upon the desert. In 2009, an asphalt road was constructed, and shortly thereafter, the Debba bridge and power lines from the hydroelectric power station in the Fourth Cataract were constructed. Affad 3.0 is what the site looks like today: extensive industrial-scale farms set up on terraces too far away from the river

for traditional agriculture. Unfortunately, these investments have caused irreversible destruction to the archaeological heritage.

The Cattle+ in the title refers to new data on large ruminants. Both the discovery of auroch remains and the Neolithic

cattle data are extremely important proxies for the adaptation strategies of people inhabiting the Southern Dongola Reach in prehistory.

Research in the Affad Basin will be continued.

**Assist. Prof. Marta Osypińska**

<https://orcid.org/0000-0003-4603-9245>  
Institute of Archaeology and Ethnology  
Polish Academy of Sciences, Poznań

**Dr. Piotr Osypiński**

<https://orcid.org/0000-0001-7843-224X>  
Institute of Archaeology and Ethnology  
Polish Academy of Sciences, Poznań  
Corresponding author: [piotr.osypinski@gmail.com](mailto:piotr.osypinski@gmail.com)

**Dr. Marek Chłodnicki**

<https://orcid.org/0000-0002-1728-464X>  
Archaeological Museum in Poznań

**Michał Kuc**

Independent researcher

**Paweł Wiktorowicz**

<https://orcid.org/0000-0002-3897-0948>  
Institute of Archaeology and Ethnology,  
Polish Academy of Sciences, Poznań

**Robert Ryndziejewicz**

<https://orcid.org/0000-0002-8443-8362>  
Institute of Archaeology and Ethnology,  
Polish Academy of Sciences, Warsaw

**How to cite this article:** Osypińska, M., Osypiński, P., Chłodnicki, M., Kuc, M., Wiktorowicz, P., and Ryndziejewicz, R. (2019). AFFAD 3.0/Cattle+. Field seasons 2017 and 2018 of the PalaeoAffad Project. *Polish Archaeology in the Mediterranean*, 28/2, 239–250  
<https://doi.org/10.5604/01.3001.0013.6888>

## References

- Hays, T.R. (1971). The Karmakol industry: part of the “Khartoum horizon-style.” In J.L. Shiner (ed.), *The prehistory and geology of Northern Sudan I* (pp. 84–153)
- Osypińska, M. (2018). *Krowie królestwa: zwierzęta w historii Doliny Środkowego Nilu. Studium archeozoologiczne* (Cattle kingdoms: animals in the history of the Middle Nile Valley. Archaeozoological study). Warszawa: Wydawnictwo Instytutu Archeologii i Etnologii Polskiej Akademii Nauk (in Polish)

- Osypińska, M. and Osypiński, P. (2015). Levallois Tradition epigones in the Middle Nile Valley: Results of the first phase of research. *PAM*, 24/1, 601–626
- Osypiński, P. (2003). Southern Dongola Reach in prehistory. In B. Żurawski, *Survey and excavations between Old Dongola and Ez-Zuma (=Nubia 2)* (pp. 463–467). Warsaw: Neriton
- Żurawski, B. (2003). *Survey and excavations between Old Dongola and Ez-Zuma (=Nubia 2)*. Warsaw: Neriton