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Middle Palaeolithic Research in the Middle Nile Valley – 2013 Field Season in Affad, Northern Sudan

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Introduction

Late Pleistocene sites in the vicinity of the village of Affad (Sudan, Northern Province) have previously been recognised mostly in the course of surface surveys. Small test excavations also suggested the occurrence of Palaeolithic artefacts in the original alluvial sediments (Żurawski 2003; Osypiński *et al.* 2011). In addition to undisturbed concentrations of lithic artefacts and bones, the remains of hearths and small features interpreted as relics of light wooden constructions have also been recorded (Osypińska and Osypiński 2012). The finds from Affad provide data for the determination of the technological lithic tradition of Palaeolithic groups, hunting techniques, reconstruction of paleoenvironment and organisation of occupied space. The research also demonstrates the enormous potential of Palaeolithic sites in the Middle Nile Valley for the recognition of the key stages of the spread of *Homo sapiens*.

The programme of the second season of the research project 'Levallois Tradition Epigones in the Middle Nile Valley' focused on geomorphological surveys, identification of the stratigraphy of the sediments containing the clusters of artefacts in intact spatial relations, and absolute dating of the settlement using the OSL technique. Fieldwork was centred around the site of Affad 23.

First Steps in the Geoarchaeology of the Affad Basin

The work within the geoarchaeological part of the project is conducted by the team supervised by Dr. M. Morley (Human Origins & Palaeo-Environments Research Group, Oxford Brookes University). Their aim in the field was to collect samples from sediments recorded at archaeological sites and to record the current state of preservation of landscape elements and geomorphological forms. Such data will be used to create the image of the history of this part of the Middle Nile Valley during the Palaeolithic settlement and later, with reference to essential natural processes affecting the condition of the sites. Both at the site of Affad 23 and in a radius of 1km around the site we collected samples from exposures reaching down 3m below the present-day surface. They point out a different course for the shoreline of the Nile in relation to the present-day, in the vicinity of which the Late Pleistocene settlement functioned. The previous research on the history of formation of the river valley in the region of Dongola Reach covered primarily the last 10000 years and indicated dramatic changes in its form (Woodward *et al.* 2007). The results of research at Affad are going to complement the current knowledge with the data on the Late Pleistocene stage of the valley formation, previously barely available (e.g., Williams *et al.* 2010), or based on analogies from the region of Nubia (de Heinzelin 1968). Laboratory analyses of soil samples are currently in progress.

Excavations and Stratigraphy at Site Affad 23

The stratigraphy of sediments at site Affad 23 has been much better recognised. Hitherto conducted research on this issue barely signalled the presence of subsurface levels of sediments containing Palaeolithic artefacts in their original context (Osypiński and Osypińska 2003; Osypiński *et al.* 2011). At the same time clusters of lithics and bone assemblages (in excavation unit 2012/B) in undisturbed spatial relations were recorded on the surface. These observations suggested the presence of several (at least two) distinct levels of the Middle Palaeolithic settlement.

Designed, *inter alia*, to provide information on the relationship and nature of sediments in which artefacts were deposited, new excavation trenches were set up in four locations (Figure 1).

Three new excavation units (2013/D, 2013/J, 2013/K) were set up around trench 2012/B, which was explored in the previous year. These excavations were to determine the range of artefacts and distribution of features. Only at the north edge of the cluster examined in 2012 (trench 2013/D) more bones of antelope (*Kobus kob*) were registered, preserved in the same way. These occurred, similarly to those from excavation unit 2012/B, in the surface layer of heavily eroded and sanded silt to a depth of

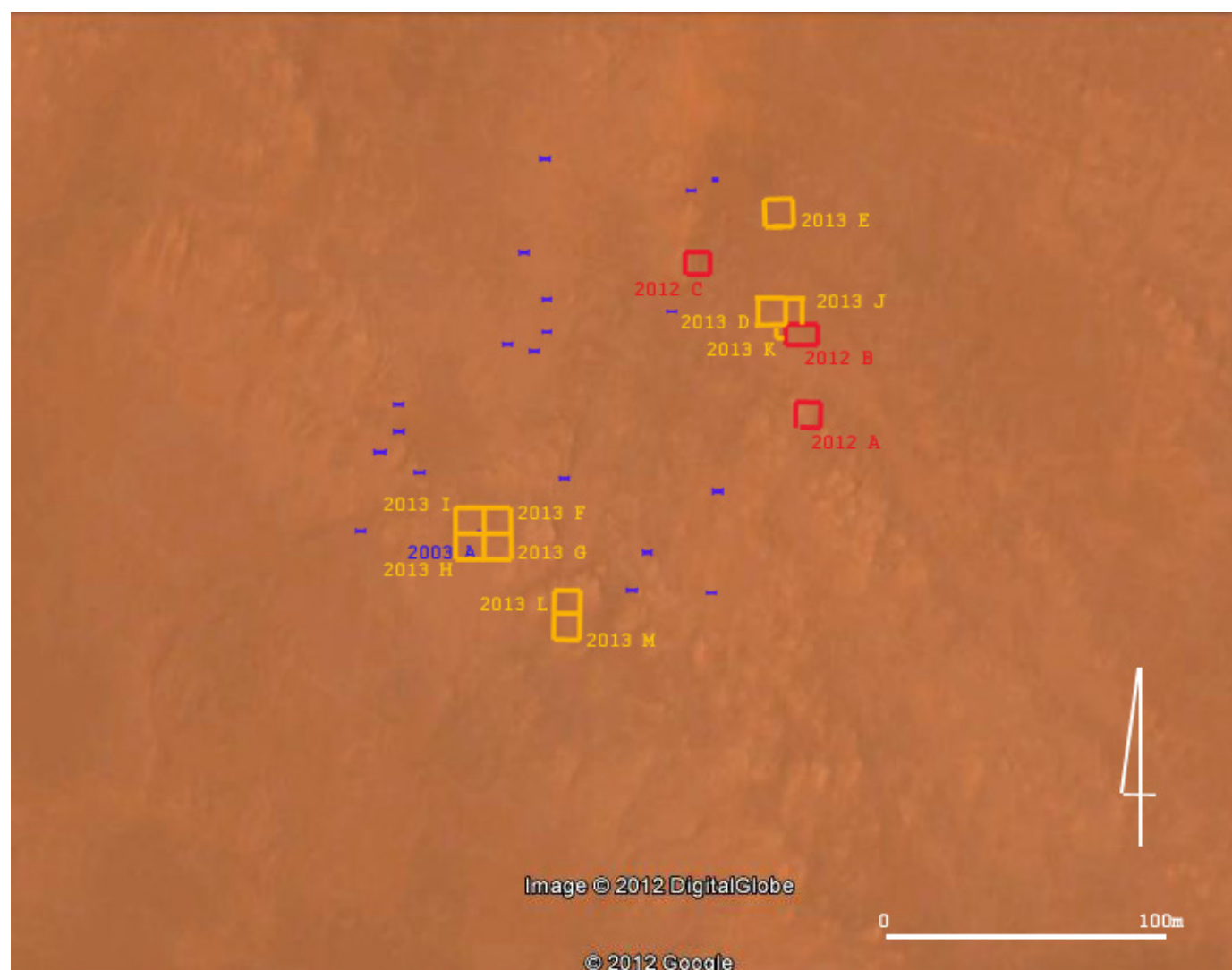


Figure 1: Location of areas excavated in the 2012 and 2013 seasons. Satellite image after Google Earth.

about 10cm. The entire cluster of remains of Palaeolithic settlement was found to have occupied an area of less than 10m in diameter and is believed to have been part of a camp site of technological function (butchery/hide working). The nearest concentration of lithic material (excavated in trench 2012/C) was registered 50m to the southeast. Single indistinctive artefacts of chert and quartz registered among animal bone remains will be analysed for microscopic use wear.

Not visible on the surface during 2003 research, was another large cluster of mineralized animal bones registered in the south part of the site. Its 'resurfacing' within just a decade resulted most probably from multiple transits of machines owing to the construction of Karima-Nawa road in 2009. With a view to document the cluster and to determine the state of destruction of sediments in which the bones were originally deposited, we set up the excavation unit 2013/L-M, 10x15m in size. The surface layer, which produced numerous bone fragments and single flint artefacts, consisted of loose fine-grained sand and silt. This level was mixed up to a depth of 10 to 15cm as a result of the hitherto mentioned process of road construction. The undisturbed stratigraphy of this part of the site could have been registered only at a depth of about 15cm. This level produced bottom parts of a few small features: postholes and one hearth. The thickness of the loose sand-silt sediment totalled approximately 30cm and it was deposited above a strongly rolling layer of hard, clayed silt. Remains of Palaeolithic settlement were recorded only in the sandy, loose layer. It follows that the occupation episode took place on the surface of this sediment. This level was completely destroyed and we only registered the layer where artefacts and ecofacts fell into loose soil. Unlike in the cluster investigated in and around the excavation unit 2012/B, the species composition of fauna present in trench 2013/L-M was not limited to only the Kob antelope, but included also a concentration of remains of a hippopotamus skull, a few parts of the skeleton of a large *Bovidae* (most probably buffalo *Syncerus caffer*) and numerous bone of the grivet (*Cercopithecus aethiops*) – most likely two nearly

complete skeletons. Among the animal bones there were several flakes made from chert, which are analysed for microscopic use wear. Similarly to the butchery/hide working zone from excavation unit 2012/B, this concentration was also almost 50m to the southeast away from the nearest chert workshop (trench 2013/F-I).

Surprisingly, the area subject to surface survey and test excavations in 2003 again produced numerous lithic artefacts, notwithstanding accurate collection of all artefacts deposited on the surface at the time of the 2003 research. Similarly to the zone of excavation units 2013/L-M, artefacts most likely 'escaped' to the surface from a slightly deeper level of loose sediment due to the repeated passage of construction machines in 2009. Nevertheless, artefacts collected from the surface in 2013 only slightly exceeded the horizontal limits of distribution of lithic artefacts from 2003. The excavation unit set up in this area, 20x20m in size, was designated as 2013/F-I.

Below the erosion surface layer, about 10cm thick, we registered sediments of different origins in undisturbed spatial relations. Hard, clayed silt with a heavily rolling surface was the oldest geological sediment registered in trench 2013/F-I. In higher parts of the area, this sediment was cut by the deepest parts of small features such as postholes and pits. In some places the silt surface had traces of burning. A distinct depression filled with subsequent strata was registered in the northwest section of the analysed area. This structure preceded an episode of Palaeolithic settlement, and afterwards fine-grained sands accumulated on the silt surface and filled depressions in the ground. Remains of Palaeolithic settlement were registered exactly in this structure (Figure 2). From the level of a series of fine-grained sands, pits and small holes were dug out and hearths kindled, which resulted in overheating of lower-lying silts. The depression of the terrain in the northwest area of the excavation unit must have been also visible during the Palaeolithic occupation. Above the series of sands this depression was filled with another silt stratum, which tes-

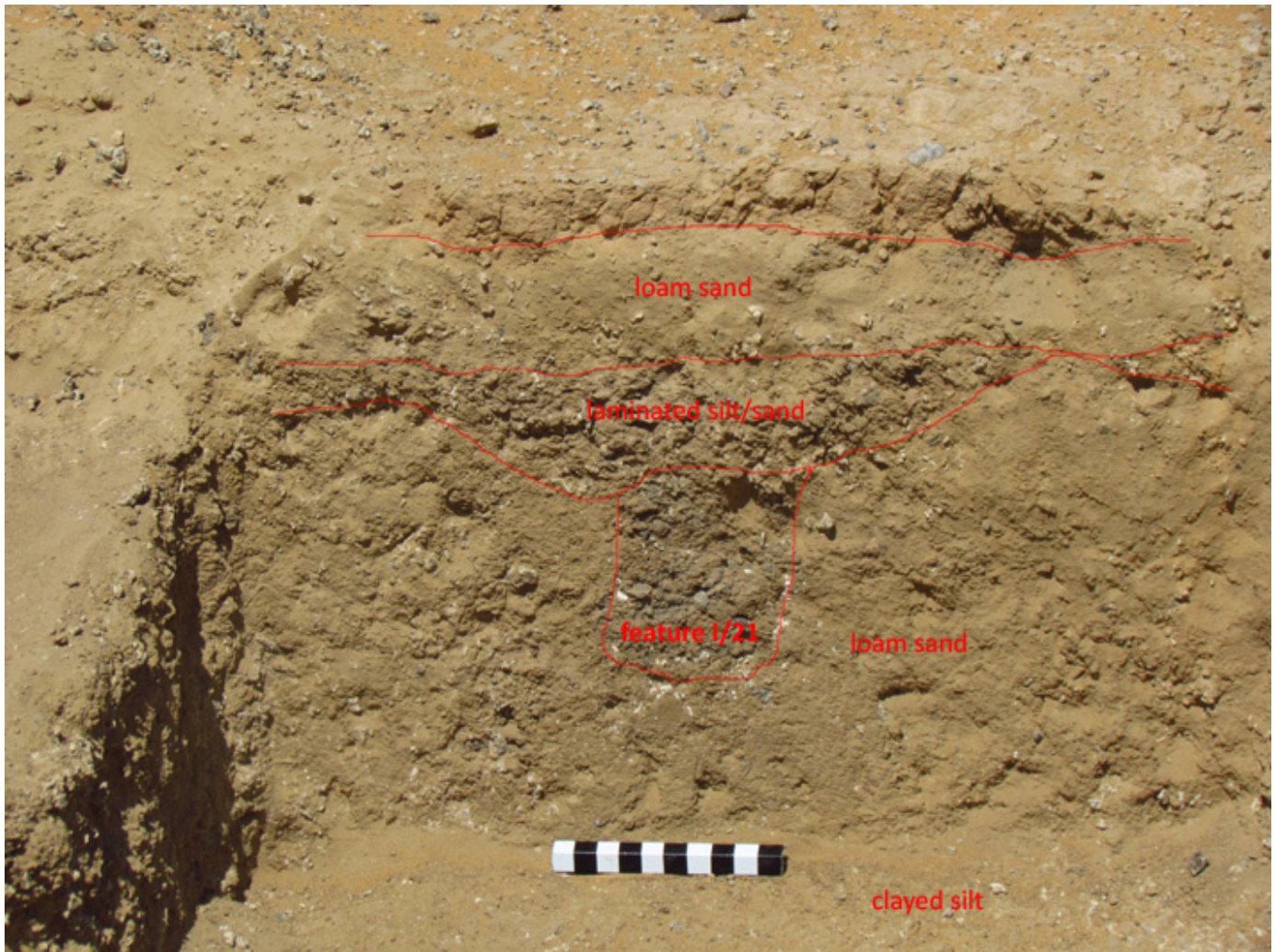


Figure 2: Section of feature I/21 in context. Postholes were dug in the sand or uppermost silt and sealed with the next series of loam sand.

tifies to a phase of much elevated level of the Nile waters. Until the dating of the sediments is ready, we are unable to determine whether it is a reflection of a local geomorphological episode or another river. This sediment yielded only a few lithic artefacts and mineralized bones, which were redeposited from older sediments. A dark-red layer of gravel, with a thickness of about 10cm registered in the northwest part of the excavation unit, is younger. Since it produced heavily eroded Palaeolithic and Holocene (microlithic) artefacts, it should be related to the Holocene phase of the formation of this area. A pink accumulation only 1 to 2cm thick was a relic of a contemporary sub-surface level, where the smallest silt elements were subject to consolidation.

A loose and mixed weathered layer was deposited above.

All remains of Palaeolithic settlement from trench 2013/F-I were defined on the basis of the above findings regarding the stratigraphy. While analyses of lithic and bone assemblages are still in progress, much worse conditions for artefacts from contexts secondary to the Palaeolithic settlement are already evident. Mineralized animal bone remains were registered only in sandy sediments, while the list of species contained slightly fewer items than in the not too distant trench 2013/M-L. In addition to remains of antelopes (*Kobus kob*, *Ourebia ourebi*), present in other zones of the site, the northwest part of excavation unit 2013/F-I pro-

duced well-preserved skull fragments of the grivet (*Cercopithecus aetiops*) and the greater cane rat (*Thryonomys swinderianus*).

Excavation unit 2013/E was set up in the area of a concentration of features clearly visible on the surface as large pieces of burnt alluvium. The features have been identified with high probability as remains of pit furnaces, sunk into the ground to a depth of about 30cm. Filled with crushed fragments of a clay cover/dome, the entire space of a rectangular pit did not produce a single artefact that would indicate the dating of the feature. The roof part of the fill has been eroded and it is currently impossible to determine from what level the pit was dug out, albeit it certainly cut through loose sandy-silt sediment and clayed silt deposited below. The stratigraphic context of the furnaces from excavation unit 2013/E indicates that they are more recent in time than the Palaeolithic.

On the basis of currently available data we can accurately determine the nature of the contexts of lithic artefacts and bone remains registered in 2003 at the then surface. Most of the lithics that could be refitted were recorded in the area where sandy sediment was subject to surface erosion. However, very few Neolithic and Palaeolithic artefacts of much more rounded edges were deposited above the later sediments (Holocene gravels or silt that post-dates Palaeolithic occupation). Trenches excavated in the 2013 season also allowed for a re-interpretation of the data from a 2003 test excavation A/34, where the level of lithic artefacts was recorded 30cm below the silt layer. We believe currently that the test excavation showed the stratigraphy observed in the depression in the area of excavation trench 2013/I, where the level of settlement is covered by another layer of silt and even later (Holocene) deposits.

New Data on the Palaeolithic Camp Organisation

The data from 2013 research throws new light on the question of the organization of the area occupied by Late Pleistocene groups in the Middle

Nile Valley. First of all, the range of sources regarding the presence of lightweight above ground structures has been significantly expanded. In addition to a series of small features and campfires found in excavation unit 2012/B, another area with a similar function produced similar features (trench 2013/L-M). At the same time the area excavated within trench 2013/F-I, which yielded relics of chert workshops, produced numerous and diverse features such as small postholes and larger pits (Figure 3). This area was probably inhabited a number of times (seasonally?) by Palaeolithic groups, as evidenced by a large number of features and their chaotic dispersion (overlapping relics of several structures) as well as new insights from the re-analysis of refitted pieces of chert. The latter shows no relationship between the refitted lithics from the two largest material concentrations. This would testify to either an independent simultaneous working of chert nodules by two knappers or temporal separation. In addition to stone working, this area was certainly used for other functions, as reflected by the presence of animal remains with species composition and anatomical relations that refer to the butchery/hide working zones (excavation unit 2012/B and 2013/L-M). The presence of larger pit-like features and hearths suggests also that this area could have been used as living space. In this context, we should consider the possibility that some small posthole-like features could be interpreted as remains of shelter-type structures. The presence of approximately circular habitation structures so far has been suggested at several sites of early *Homo sapiens* - Arkin 8 (Chmielewski 1968: 114), site 6 (Marks 1968: 261), Toshkei 8-A-2 (Vila 1978 : 47), Jebel Kobkabba (Kobusiewicz and Kabaciński 1996: 367) and Taramsa 1 (Van Peer *et al.* 2010: 200).

An interesting spatial relation was observed also with regard to the location of the zones referred to as places of meat processing/hide working (2012/B to 2012/C and 2013/L-M to 2013/F-I). In both cases they were recovered at a distance of about 50m to the southeast of chert workshops that also marked the residential area. Similar species composition of registered remains (such as the

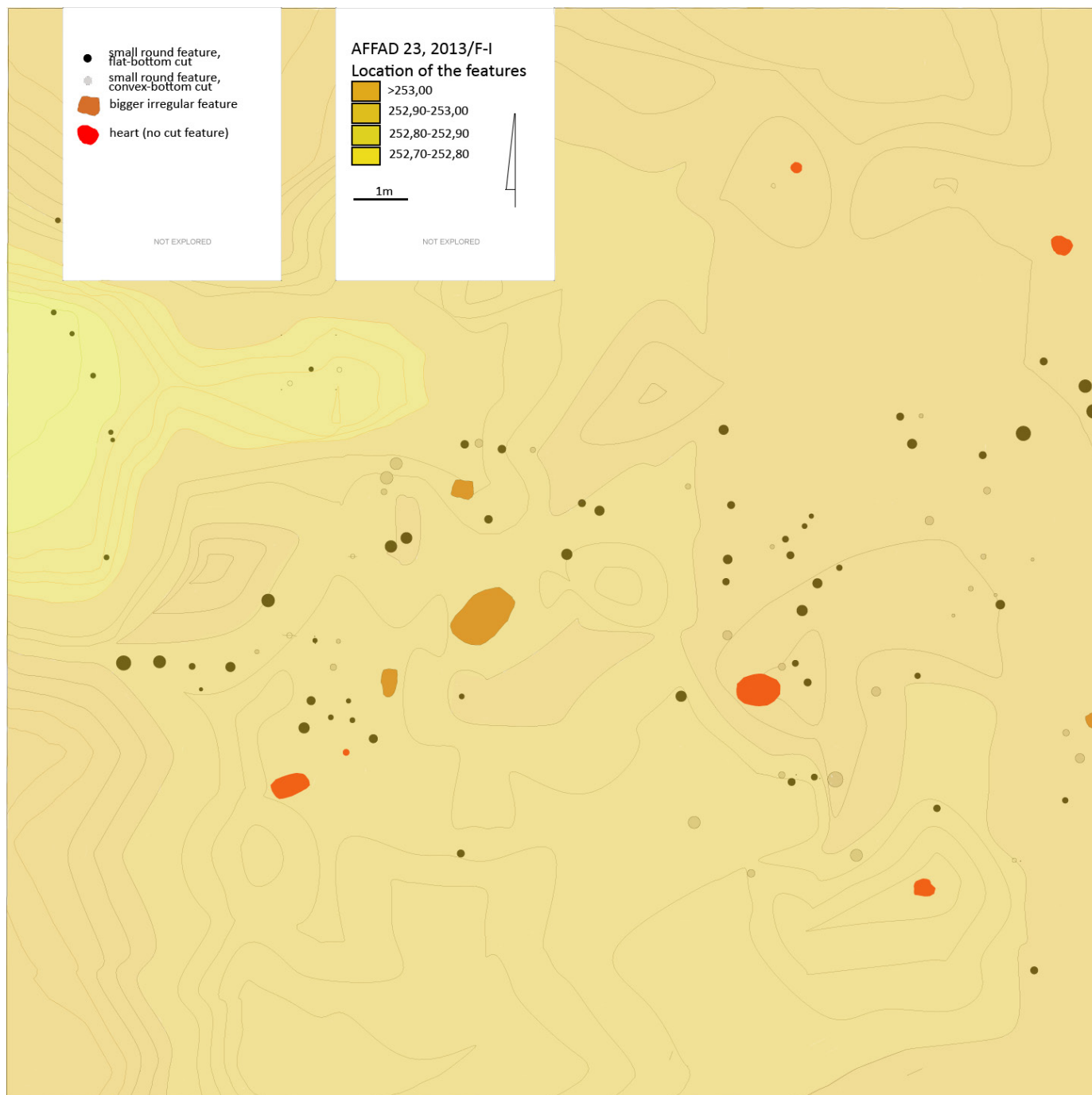


Figure 3: Cluster of features recorded at area 2013/F-I.

presence of gravets) and the presence of relics of settlement in very similar sediments provide premises for the similar dating of areas of excavation units 2013/L-M and 2013/F-I. Future research will focus on providing more data on the inter-relations of these areas.

The second season of fieldwork in Affad provided mostly data on the stratigraphy of the site and enabled the re-interpretation of the hitherto prevailing research conclusions. Owing to OSL dates we could place particular phenomena on the absolute time scale. The research results are extremely important for the comprehension of the late Pleis-

tocene phase of the history of the Nile Valley and groups of early humans who inhabited it. Uniquely preserved remains of the settlement in the form of remnants of wooden structures were previously barely mentioned in the subject literature. Archaeozoological sources also allow a much more precise recognition of the environment exploited by early humans and the ways that they did it. Investigations, funded by the Polish National Science Centre (UMO-2011/01/D/HS3/04125), are also provided for the upcoming season.

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