

2023 Season Report for the Society for Libyan Studies
UCL – UoK – NCAM Expedition to the Southern Gezira (Sudan): Mobility, identity
and interaction of pastoral peoples with the Nile Valley

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The Project

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1. Introduction

The valley of Jebel Moya is bordered by granite mountains. The modern settlement lies at the foot of the mountain and numerous smaller settlements are located in the surrounding area. Known as site 100, the valley stretches across 10.4 ha and originally came to the attention of Henry Wellcome. Between 1911-1914 he excavated parts of the valley in search for the origins of a civilization, in the process removing nearly 3000 skeletons. Wellcome's camp was located in the purpose built House of Boulders in the valley and remained semi-active until 1938, two years after his death. The Wellcome expedition involved thousands of labourers. The new expedition resumed work in 2017. At the outset, it was designed as a joint Anglo-Sudanese mission. Following the first season, a separate project was undertaken by Dr Vella Gregory to re-examine all archival material relating to the Wellcome expedition. This is not funded by this grant but has nevertheless been instrumental in shaping the project (see Sections 3 and 4).

Since 2017, this expedition has focused on targeted excavations and sampling across the site. As of 2023, this work has resulted in establishing a much longer site chronology and history of use, broadening the knowledge of the palaeobotanical landscape, significantly expanded knowledge on the palaeoclimate and climate change and made inroads in redressing the early 20th century colonial legacy. At present, this expedition is providing new and essential data for a part of Sudan that is historically marginalized and under-represented.

2. Aims and Methods

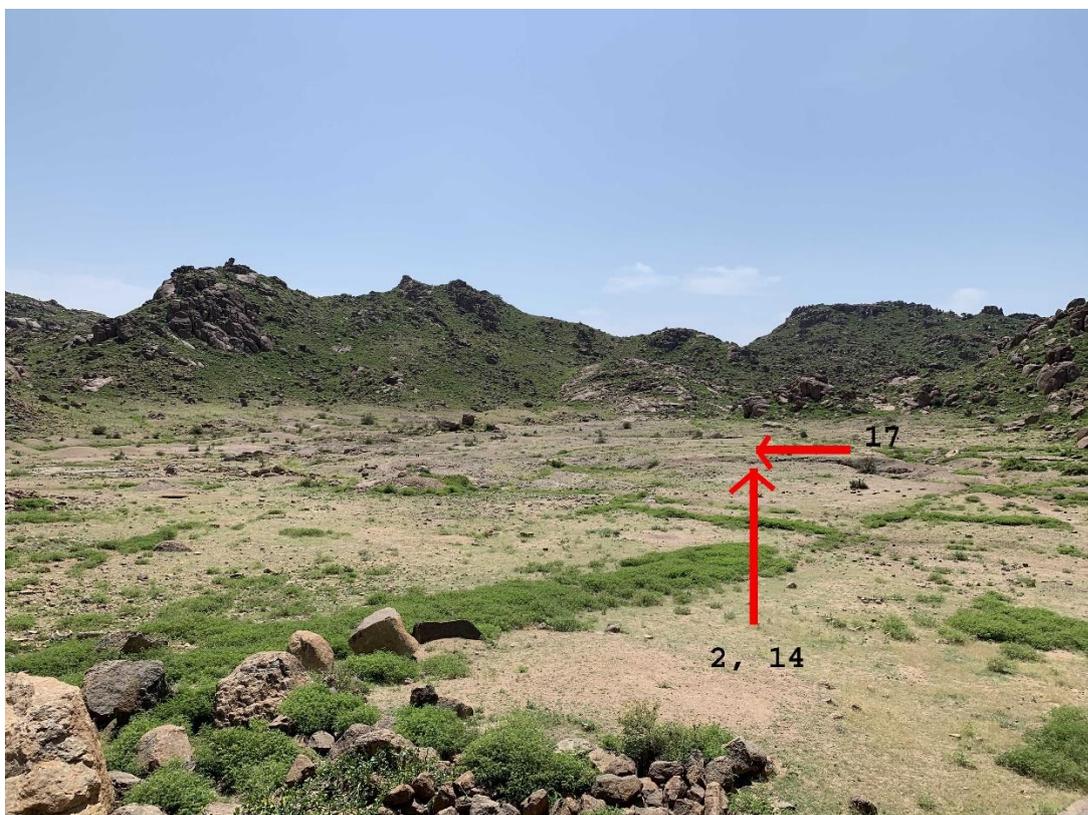
2.1 Aims

The present expedition is focused on targeted excavations and sampling across the site. It is both a research and training excavation. The broader aims of the excavation are:

- a. Exploring the valley beyond the Wellcome expedition
- b. Understanding the biography of the valley across time
- c. Identifying, documenting and conserving heritage at risk from erosion and erratic weather patterns
- d. Building a deeper understanding of the ancient floral and faunal landscapes and the implications for population health and movement
- e. Providing training for Sudanese undergraduates and leadership training for graduates
- f. Run an ongoing and extensive outreach programme that benefits the modern inhabitants of the village

The specific aims for the 2023 season were:

1. Assess the condition of the site
2. Continue excavating trenches 2 and 14 from the previous season
3. Retrieve skeletal remains identified last season
4. Extend Trench 2
5. Provide beginner and advanced training
6. Extend the outreach programme



The locations of trenches 2, 14 and 17. Photo: Mike Brass

2.2 Methods

The excavation methodology remains unchanged and is dictated by the geology. The site's stratigraphy is based on four main geological strata (A-D, in descending order) and it is only now in this latest season that it became possible in select trenches to discern micro-stratigraphy. These strata represent a continuous period of occupation from the late 6th millennium BC down to 2000 years ago. Given the lack of continuous and readily discernible micro-stratigraphy, excavation proceeded using the spit method. This involves carefully excavating 10 cm at a time. Each 10 cm spit is numbered and recorded in a separate context sheet. This ensures a fine control of chronological sequences and enables the reconstruction of the sequence post excavation. Environmental samples for flotation were taken from each spit. When a spit is noted to be particularly rich in fine material, this was sieved to enable the retrieval of small animal bones and microlithics. An ongoing account of each trench was written in field notebooks. Technical drawings and plans were made when deemed necessary. Each step was appropriately photographed using standard conventions. Finally, the GPS co-ordinates of each trench were recorded.

Each season we invite different undergraduates to join our excavations. The spit method of excavation is not commonly employed in sites across northern Sudan, where most fieldwork is focused. While relatively straightforward, the entire process requires practice and supervision. To this end, training begins towards the end of the previous season's backfill. Team members are also trained on recording methods, including how to use and read context sheets, setting up a trench square and taking level readings, photography and writing field notebooks. Graduate students were trained in supervising proceedings and guiding undergraduates. Everyone was also trained in how to excavate and record skeletal remains. This strategy ensures that everyone's abilities are maximised while remaining fully involved with the project. We acknowledge that these are our colleagues, not hired labourers, and this training will help them develop their own field projects in the near future. Participants were also trained in post-excavation methods, including inventorying, pottery analysis and flotation. Regular team meetings ensured that everyone had the opportunity to contribute to the project.

3. The excavations

Photographic image of the Jebel Moya valley taken by Brass facing south from the House of Boulders. The location of the 2023 trenches are marked.

3.1 West of the Valley

Trench 2 was first opened in Season 1 and Late Mesolithic levels were reached in Season 2, while bedrock was reached in Season 3. This trench remains the richest in archaeological, archaeobotanical and faunal remains. The former includes some of the earliest examples of domesticated sorghum in the world (see Brass *et al.* (2019) and the article being submitted in March 2023 to *Libyan Studies* encompassing the results from the first three field seasons). More importantly, it offers the first entire archaeological sequence in Sudan south of Al Khiday. It was previously believed that the dried mud wall was situated on the base of Spit 19 at the end of the Late Mesolithic, but careful re-examination has revealed it extends to bedrock of disintegrating granite; in other words, it was constructed during the earliest surviving

occupational layer in the late 6th millennium BC. In this, the fourth, season, the surviving extent of the wall was uncovered in the adjoining Trench 14.



*The Late Mesolithic dried mud wall fully uncovered from Trench 2 extending into Trench 14.
Photo: Mike Brass*

Trench 2 was extended eastwards into Trench 14, in which all four geological strata are present. The decision was made to (1) continue excavating the remaining (north) half of last season's Trench 14 and to extend the trench eastwards to attempt to reach the two skeletons observed in section during the previous season. To differentiate, the former was termed Trench 14 North and the latter Trench 14 East. Flotation samples were taken. Animal bones inclusive of bovine and sheep/goat were found throughout the Neolithic layers. A cattle jaw bone with excellently preserved teeth was uncovered in Spit 15, which is stratigraphically earlier than the previously earliest identified cattle remains from the adjoining Trench 2 Spit 14. The teeth are a prime candidate for future AMS dating and would help inform on the timing of the arrival of domesticated animals in the southern Gezira.

Trench 14 North. The backfill was cleared from the previous season. The aim was to continue down into the Late Mesolithic deposits and reach bedrock in order to expose the extent of the dried mud wall and determine if there were any other features present or associated material remains. The first 5cm from Spit 11 were discarded to mitigate potential contamination from the backfill. The latter part of Spit 11 and subsequent spits are Stratum C (Neolithic). Finds include a large piece of unworked non-local schist in Spit 12, beads, lip and ear plugs, shell, lithics (ranging from microliths to pounders) and pottery. Neolithic layers contained a range of animal bones, include bovines and ovicaprids.

The extent of the first dried mud wall was identified in the west end of the trench 1cm before the start of Spit 17. An animal bone, currently awaiting analysis, was found directly on top of the wall. A similar bone placement had been found on top of the same wall in Trench 2. Another highly friable bone was embedded into the north-east top side of the wall. Two friable white deposits were identified in the north-east corner of the trench c. 5cm down into Spit 17. These are unidentified pending further analysis (subject to export permits). They are unlikely to be disintegrated limestone and in texture and appearance recall similar phytolith deposits at sites like R12 and Ghaba (Out *et al.* 2016).

Immediately to the south and north along the western portion of the square in Spit 17 are two small instances of Stratum D. They are not the start of Stratum D but remnants of an original Stratum D surface prior to weathering. Stratum D starts towards the end of Spit 17 and from spit 18 onwards the finds of animal bones and Late Mesolithic pottery decreased, in line with what was seen in Trench 2.

A second mud wall was found halfway down Spit 17. This was a very thin wall, running north to south. To the south it was cut by the burial pit excavated in the previous season. Subsequently, efforts in this trench focused on excavating the western half of the trench between the thin dried mud wall and the first dried wall in order to determine the origins of the second wall, reveal the extent of the first wall and to reach bedrock. The base of the second wall was located in Spit 18. Bedrock was reached in Spit 21.

Trench 14 east. It was a 1.5 x 1.5m extension. The first 5 spits were gravel spoil from Wellcome's excavations and contained very few pottery sherds and animal bones. These proved to be ideal for training purposes. The first signs of in-situ deposit (Stratum B) were identified towards the end of Spit 5. Spit 8 contained ochre and a stone celt and Spit 9 contained a microlithic arrowhead. A change to a harder soil texture was identified in Spit 10 and Spit 11 consisted entirely of Stratum C. The pottery is aligned with the stratigraphy, with Assemblage C giving way to Assemblage 2 at the start of Stratum C. A similar pattern had been observed in previous seasons.

A calcium carbonate layer was encountered c. 5cm into Spit 13. Part of the formation process for the calcium carbonate resulted in soil hardened around a now perished round object made from organic matter. The diameter of the object was 7cm, with an inside depth of 2.25cm. The original object would not have been made of stone or ceramic, materials which survive very well in this environment. Its size and shape rule out a natural (unworked) object. The object was bulk lifted and is now under curation at NCAM (Khartoum). There was heavily burnt soil next to it, indicating a deliberate controlled fire that resulted in the perishing of the original object. The resulting burnt soil was sampled and bagged and will be exported to the UK for analysis.

A human skeleton was located 6cm into Spit 13 and cut down into Spit 14. The femur head was against the west side of the perished object. There was no cranium, likely as a result of natural processes. Associated burial goods included shell and a bead and three microliths around the neck area. The remains are under curation at NCAM (Khartoum) awaiting examination by our bioarchaeologist. A very large animal bone at the end of Spit 15 has been identified by Prof. Kevin MacDonald via a photograph as a large bovine – further analysis will be carried out once export permits are obtained. The bone was found with three large animal

teeth in the immediate vicinity. More broadly, animal bones, lithics and shell were found throughout the Neolithic and latter spits.

Trench 17. Spit 1 was removed to mitigate for potential contamination. From Spit 2 onwards it was noted that the soil is dark brown and rich in decayed plant matter. Pottery was numerous from Spit 3 onwards and analysis shows it to be Assemblage 3. A large upper grinding stone was found in spit 4 and animal bones, lithics and shell were recovered from the spits. The bottom part of a large undecorated pottery vessel was found in Spit 7. A human bone was identified in the eastern wall of the trench at a depth of 50cm. This will be removed in a later season, following a more in-depth investigation and extending the trench.

Similar to previous seasons, ten litres of soil sediment were taken from each spit. Flotation was done in the village, offering a further opportunity for training. It was also incorporated into our outreach activities. Botanical samples will be analysed by Dorian Fuller. The skeletal remains will be analysed at a later date by Dr Iwona Kozieradzka-Ogunmakin, who will also select samples suitable for radiometric dating and aDNA.

4 Outreach and community work

As a result of the previous seasons, in 2023 we extended the scope of our outreach programme. At the request of NCAM, Dr Vella Gregory delivered an intensive workshop on preparing and writing site and laboratory reports. As part of her duties, Dr Vella Gregory arrives in Sudan prior to fieldwork. Aside from doing essential work regarding permits and the excavation licence, she has now been asked to deliver regular workshops. Furthermore, discussions with the University of Khartoum have revealed the need for further interaction with the department's staff and students. In the coming seasons, this will include targeted workshops on topics chosen by the different parties involved.

In terms of Jebel Moya, this season marked two important milestones. Dr Vella Gregory's extensive archival work and previous outreach has highlighted the effects of the Wellcome expedition. As noted in Vella Gregory (2020), the inhabitants were excluded from proceedings. A small number of men and young boys found employment on the site. It is worth noting that all Sudanese were employed as labourers under harsh conditions (even by the standards of the time, the matter was even debated in the House of Commons at one point, see Vella Gregory 2020). The archives remain silent on the names of Sudanese workers and it has since emerged that employees were given a number, rather than a name. As a result of outreach work, Dr Vella Gregory has been shown numerous examples of this medallion. These bear the number of an employee and, on the reverse side, the expedition logo designed and used by Wellcome.

It has been a mere 112 years since Wellcome first excavated Jebel Moya, but burdensome legacies withstand the test of time. The rural nature of Jebel Moya, compounded by limited access to water, makes for difficult living conditions. From the outset, this expedition made the conscious decision to live in the village, rather than camp in the House of Boulders, and it is increasingly clear that the project has to contribute beyond research and training, the latter mostly benefits those who can access a university education. To this end, Dr Vella Gregory wrote a book about the story of Jebel Moya. No funds were available for this part of the project. The book was written, produced and printed at personal expense. Translation into Arabic was provided free of charge by co-director Ahmed Adam. The book was based on the

community's request to communicate archaeology while helping pupils in primary and secondary schools gain English language skills. The story is based on the results of archaeological research but is communicated in a very accessible format. It was specifically designed to be read simultaneously in English and Arabic. It is important to note that language competence is very basic and the text reflects the realities.

This season, the Society provided a modest budget for outreach activities. This was used to its full effect and we established the annual Jebel Moya heritage festival. Community leaders, led by the Umda, had previously made a request for such an event. Thanks to funding, this year it was made a reality and it provided further leadership and training opportunities for Sudanese people. The final event was the result of extensive consultation and was led by Mr Hajjaj, a returning graduate student who has already benefited from leadership training. With everyone's support, he helped create a vibrant event that included the entire community, regardless of age, gender or status. The team also visited schools, distributed copies of the book and spoke about the project.

During the festival, younger members performed some of the story using puppets, masks and other props. Young adults took to the stage to recite poetry about Sudanese history and heritage. Young men and women participated equally and even recited poems specifically relating to the project. Adults from across the community took part in the event and story-telling (which is an essential part of communication in the village). Afterwards, a number of people came forward to ask further questions and interact with the team. More importantly, the provision of a budget enabled us to hire young adults. It is worth reiterating that this village is very resource-poor and as such, young adults are expected to work and earn a living. This normally involves hard labour in the fields, gathering wood or building and repairing houses. Thanks to the society's support we were able to provide paid employment that also offered training. In turn, this had the effect of increasing awareness about heritage. Collaboration with the village schools also served to encourage more young people to continue their education.

5. Results

In terms of excavation, this season saw the excavation of a larger area down to the Late Mesolithic bedrock, exposing more of the complete sequence from at least the start of the Neolithic onwards. New trenches in the western part of the valley are proving to be very productive in terms of archaeological material. This is especially so in terms of flora and fauna remains, which will help us further elucidate past climate events and adaptation. The mud walls identified in Trenches 2 and 14 are the first known surviving Late Mesolithic dried mud walls south of Khartoum and, arguably, elsewhere in Sudan. The outline of the larger wall shows it was slightly raised on solid dried mud (as opposed to hardened deposit) c. 4cm above bedrock. The function of the wall is unknown. It does not resemble known ethnographic examples of granaries from the western Sahel (see for example McIntosh 1974 and contrast with Ali & Szalay 2019 and Blackman 1937). Until very recently, the inhabitants of Jebel Moya built walls for dwellings in the same manner and consistency of mud (PICTURE). Such walls require regular maintenance and rebuilding, making the survival of this wall all the more remarkable. The second mud wall is stratigraphically slightly later, but still Mesolithic. Careful excavation excludes this feature as a result of natural formation processes, e.g. water activity, and confirms it is a thin dried mud wall. This wall was cut by the later Neolithic burial pit and its function remains unclear. In terms of outreach, this

season marked a significant milestone. A much broader section of the local community is now actively involved in the project. Plans for the near future include establishing a community museum (see for example Humphris & Bradshaw 2017; Mohamed and Emberling 2021; Adam & Taha 2022). This year's festival and book launch marked the official beginning of this endeavour.

6. Conclusion

The project is at a critical juncture. There is a strong potential of elucidating more of the history of the domestication of sorghum and the arrival of domesticated animals. For the latter in particular, the location of Jebel Moya is within the pathways which could have been used coming from the west and the north down into the Ethiopian highlands and East Africa. Therefore, being able to better discern how and when domesticates appear at Jebel Moya has much wider regional implications. Furthermore, the regions of southern Sudan and South Sudan are largely unexplored in terms of archaeology and anthropology. Both the location and the results thus far indicate that Jebel Moya played an important role within this region.

Site 100 is much more than a vast cemetery site. Our excavations have clearly shown that the area was selected for habitation from at least the late 6th millennium BCE. Thus far, we have recovered structures and traces of habitation which offer the first conclusive and dated evidence for late Mesolithic habitation in the central and southern Gezira. In large part, these findings are due to a rigorous method of excavation. It is clear that the project requires investment for a number of scientific techniques, including geochemical analyses. These will offer vital information not just in terms of absolute dating, but also for the site's geological history. In turn, this will shed light on land use, shifts in climate patterns and aid conservation efforts. Beyond research, this project has trained a number of Sudanese archaeologists and there is constant demand from university scholars and students to join our project. NCAM has directly requested us to train more inspectors – this is a request which NCAM does not regularly make of other projects and is a testament to how we organise, train, conduct and collaborate with a wide variety of stakeholders. We are committed to honouring these requests, subject to an increase in funding to cover running costs.

In the next season, efforts will focus on continuing the excavation of Trench 17 in the west of the valley and we will re-open the productive Trench 4 from the eastern slope. Trench 4 had yielded valuable faunal and archaeobotanical remains inclusive of early domesticates. A third trench will also be opened in the west of the valley, while a survey will be done for any visible human burials. The ability to have a larger team and extended season will enable us to focus on these goals while also continuing our community programme. As noted in Section 4, this project also directly contributes to the village not just via paid employment but more broadly in terms of education and training.

The continued effects of erosion continue to present ongoing concerns which requires intensification of archaeological research in the future, with longer seasons and a larger team. It is clear which areas of the valley contain viable archaeological deposits and which strata survive intact in which locality. Because of these important considerations, and because we need to ensure site protection and the ongoing monitoring of erosion and modern climate change, we will be applying for annual funding from BILNAS. We also will apply to NERC for post-excavation funding, in particular to AMS-date up to 25 samples which will greatly assist in further elucidating the chronology of the site and remains.

Further notes

1. A report combining the results from the first three field seasons (up to and including 2022) is being submitted in March 2023 to *Libyan Studies* with the approval on the timeframe of the editor. These results are inclusive of updated faunal and botanical data, and have the latest AMS dates.
2. The botanical and animal samples are being exported by Prof. Adam from Sudan to the UK in March. They will be provided to Professor Dorian Fuller's team and Professor Kevin MacDonald for the respective analyses.
3. Also, discussions are taking place about how best to obtain funding to date potentially earlier sorghum remains. The earliest domesticated sorghum from Jebel Moya dates to the middle of the 3rd millennium BCE. The earliest domesticated sorghum in the world originates from KG23 in Eastern Sudan and dates to the mid-4th millennium BCE. The sorghum from earlier levels at Jebel Moya has the potential to therefore shed new light on the domestication pathway, timing and distribution of sorghum in the eastern Sahel belt.

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