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GEBEL MOYA (SITE 100)

جبل مويه (موقع 100)

Isabelle Vella Gregory

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GEBEL MOYA (SITE 100)

جبل مويه (موقع 100)

Isabelle Vella Gregory

Gebel Moya (Stätte 100)

Gebel Moya (Site 100)

Gebel Moya, officially known as Site 100 in Sudan, is a large agricultural-pastoral site located below the Nile's Sixth Cataract. It lies between the Blue Nile and White Nile in what is now a semi-desert environment. It was first excavated by Henry Wellcome in the early twentieth century and was known as a cemetery until 2017, when fieldwork was renewed by a joint international mission. Current excavations show that, in addition to being a major cemetery, the site bears traces of Mesolithic habitation. Over a period of 5,000 years the area witnessed rapid climate change, and ongoing work is focused on reconstructing the ancient flora and fauna. It is now clear that Site 100, long considered insignificant by scholars, was home to dynamic communities across the millennia.

جبل مويه، المعروف رسمياً باسم الموقع 100، هو موقع زراعي ورعوي كبير يقع أسفل الشلال السادس لنهر النيل. يقع بين النيل الأزرق والنيل الأبيض فيما أصبح الآن بيئة شبه صحراوية. تم التنقيب في الموقع لأول مرة على يد هنري ويلكوم في أوائل القرن العشرين، وكان يُعرف كمقبرة حتى عام 2017، عندما تم استئناف أعمال الحفائر به من قبل بعثة دولية مشتركة. تظهر الحفائر الحالية أن الموقع، بالإضافة إلى كونه مقبرة رئيسية، يحمل آثاراً لسكن من العصر الحجري الوسيط. على مدار 5000 عام، شهدت المنطقة تغيراً مناخياً سريعاً، ويركز العمل المستمر بالموقع على التعرف على النباتات والحيوانات القديمة. أصبح من الواضح الآن أن موقع جبل مويه، الذي اعتبره العلماء لفترة طويلة غير مهم، كان موطناً لمجتمعات ديناميكية متفاعلة عبر آلاف السنين.



Gebel Moya is a large agro-pastoral site located below the Nile's Sixth Cataract. It lies c. 240 km south of Khartoum (fig. 1). The name Gebel Moya means, in Arabic, "Mountain of Water" and refers to the nearby village and mountain valley, which are located between the Blue and White Niles in an area that is now arid. Archaeological remains are present in the valley above the village. Officially, these are known as Site 100, although the locals simply refer to the area as Gebel Moya. The nearest large town is Sennar, the erstwhile capital of the

Funj kingdom. The present village comprises a combination of mudbrick and stone houses and is home to approximately 13,000 people (2017 census). The herding of sheep, goats, and cattle remains an important part of the present economy. The mountain valley continues to be a much-traversed path for herding and the collection of wood and grasses for fuel. The population remains mobile, following seasonal herding practices; members of the younger generations study and work in nearby Sennar and further afield.

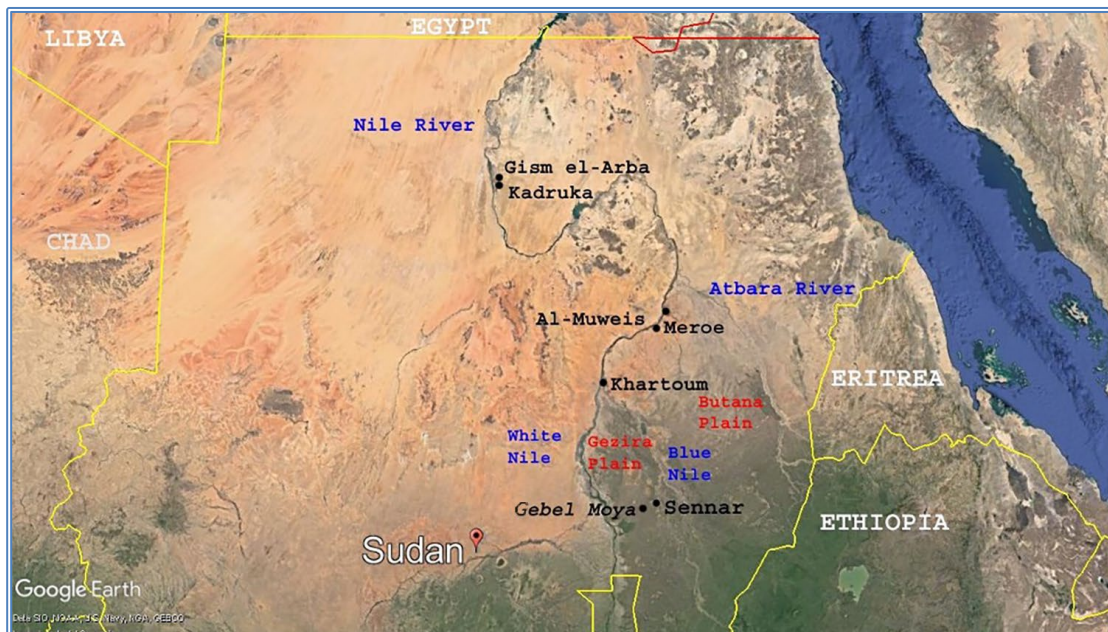


Figure 1. Location of Gebel Moya



Figure 2. Panoramic view of the site.

Site 100 is accessed via a short climb from the edge of the village, which leads to a valley bounded by dark grey granite boulders (fig. 2). At present, the first glimpse of the site is dominated by the House of Boulders, the headquarters built by American pharmaceutical entrepreneur and archaeologist Henry Wellcome (1853 - 1936). The southern part of the valley is a gentle slope, but the hills rise steeply to the east and west, and to the north there is an extensive view of the Gezira Plain below. Various breaks in the rock show a network of paths that are still traversed today by herders. Existing structures are the rooms and incinerators built by Henry Wellcome. During Wellcome’s expedition days in the early twentieth century, however, the landscape was

substantially different, having been turned into an “ordered camp” (fig. 3). The valley is c. 104,000 square meters (26 acres) in size. Wellcome’s expedition covered at least two-fifths of the area, removing approximately 2.5 meters of deposits across the site (albeit not uniformly). Although initially attracting interest from Egyptologists, including George Reisner, the project was eventually considered to be of little significance by the western archaeological community. In 2017 fieldwork was renewed through a joint international expedition between University College London, the University of Khartoum, and the National Corporation for Antiquities and Museums, Sudan (NCAM): the [Jebel Moya Project](#).

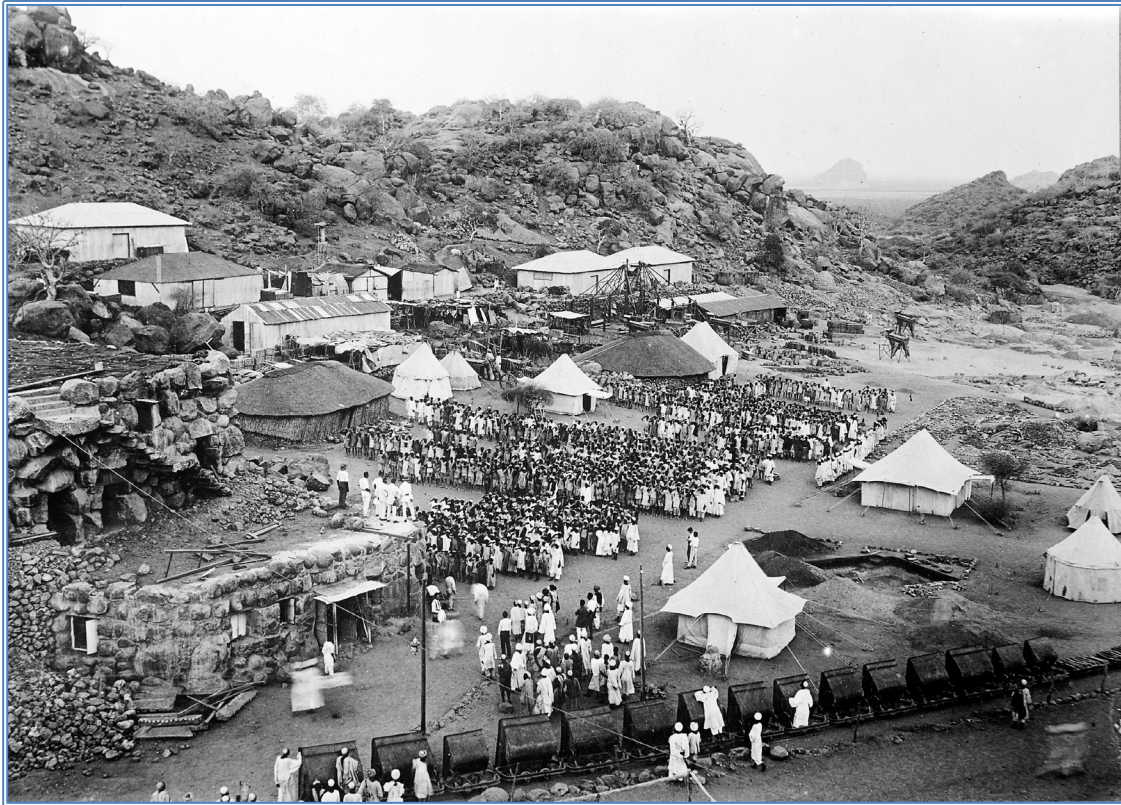


Figure 3. General view of Wellcome’s camp.

The ongoing work of the current mission, directed by Ahmed Adam and Michael Brass, and deputy-directed by the present author, has confirmed the site to be a major agro-pastoral cemetery stretching over 5,000 years, and with firm traces of Mesolithic habitation (Table 1). Thus far, the site has yielded evidence of rapid historic climate change and the second oldest domesticated sorghum in the world.

Phase	Dates
1	6 th millennium BCE
2	3 rd millennium BCE
3	c. 1500 BCE
4	1 st millennium BCE – early 1 st millennium CE

Table 1. The chronology of Gebel Moya.

Excavation and Research History

Unlike other early twentieth-century expeditions in Egypt and Nubia, Henry Wellcome framed his endeavor as primarily philanthropic through employment of local residents as workers on the project. Born in Almond, Wisconsin, in 1853, Wellcome found his greatest success in England. In 1880 he established Burroughs Wellcome & Company pharmaceuticals in London with fellow American Silas Mainville Burroughs. Wellcome became wealthy and successful, and by 1910 he was a British subject. He professed an early interest in archaeology and in London he was close friends with the explorers of the time, including Henry Stanley. He provided the latter with the company’s famous medicine chests—sturdy, portable chests containing a variety of pills and medicines manufactured by the company (Adeel 2013; James 1994). He was also an obsessive collector, with the aim of

owning and displaying a virtual history of humanity (Larson 2009). Aside from his business ventures, Wellcome saw himself as a great innovator and philanthropist and dedicated much effort to fostering relationships with leading figures in English politics (James 1994). As a result, Herbert Kitchener, then celebrated by the British Empire as the victor of the 1898 Battle of Omdurman, invited Wellcome to Sudan, with the view of soliciting his investment in much needed facilities there. In response, Wellcome set up the Tropical Research Laboratories (Kirk 1956), an endeavor that was in line with his interest in the African continent as a land of medical possibilities. Though he appears to have visited some archaeological sites around Khartoum, his archaeological work began at Gebel Moya in 1911. There were a total of four excavation seasons (Jan – Apr 1911; Dec 1911 – Apr 1912; Nov 1912 – Apr 1913; and Nov 1913 – Apr 1914), but the extensive camp he established was only shut down in 1938. Wellcome died in 1936.

Wellcome prepared extensively for his Gebel Moya expedition, as evidenced by his detailed lists of instructions and inventories and detailed job advertisements (see Vella Gregory 2020). While Egyptology was well established by 1911, western explorations in Sudan began after the Battle of Omdurman, although prior to this there are a few traveler accounts. The first archaeological expeditions to Sudan focused on large standing structures, such as those found at Meroe and Kerma (Edwards 2004). In Wellcome's first season, he excavated five areas, uncovering an unrecorded number of graves and skeletons. Wellcome consulted with George Reisner, who offered advice on personnel and excavation methods. Reisner only excavated at Gebel Moya for a few weeks during the fourth season. The excavations saw a changing number of field directors and personnel (for a full list see Brass 2016, 3-7). The camp was overseen by Julian Sergio Uribe, a former military man from Ecuador. The construction of the House of Boulders headquarters started in the second season. Wellcome wanted to combine archaeology with labor and philanthropy, something he was keen to mention every occasion (Percy 1921).

The photographic archive curated by the Wellcome Collection in London shows the sheer scale of labor at the camp, together with Wellcome's attempts at creating order over the landscape (see fig. 3). Wellcome achieved this by dividing the valley into several areas, building a large wall around the camp, constructing a number of workshops and stores, and demarcating pathways with small stones. The photographs also reveal the large scale of excavation: a total of 709 graves were excavated in the second season, with a further 310 and 1772 in the third and fourth seasons, respectively. The surviving records are incomplete, but it is apparent that the project lacked a clear methodology. For example, prior to the first season Wellcome received instructions on the removal of skeletal remains from Peter Drummond, the Acting Conservator of Antiquities (Wellcome Collection Archive: WA/HSW/Ar/Jeb/30). However, most of the guidelines were ignored. For example, work was meant to cease once a skeleton was found, but this was only done once. The relationship between burials and objects was poorly recorded, and published drawings lacked a scale, instead giving only a ratio.

A number of excavation records and objects were lost before they could be published. They had been moved around to a number of warehouses in London where Wellcome housed his extremely large collection of artifacts acquired from auctions and sales, from his travels (Larson 2009), and from the Gebel Moya site. Wellcome had insisted on keeping every single artifact, no matter how small. The contents of the various warehouses sustained damage over time as a result of flooding and two world wars. While staff hired by Wellcome examined a number of the Gebel Moya remains, it was only after his death in 1936 that the Trustees appointed Frank Addison, upon the recommendation of George Reisner, to analyze and publish materials, with the assistance of Archibald Laurence Kirwan. Once again, materials were moved to various warehouses. Addison was a teacher of mathematics who later became Inspector of Schools in Sudan, eventually rising to the post of Conservator of Antiquities and, upon

leaving Sudan, to an appointment at the Institute of Archaeology, University College London. By contrast, Kirwan was an experienced and trained archaeologist who had held the post of Assistant Director of the Archaeological Survey of Nubia (1929 – 1934). Their work was disrupted by the Second World War and publication of Gebel Moya project materials only saw the light of day in 1949 (Addison 1949). Kirwan’s opinions on the project remain unclear. The resulting publication only bears Addison’s name, with a chapter by Armand Lacaille. Addison acknowledges Kirwan’s contribution in the preface and in select pages, noting that he used Kirwan’s formulation and attribution for grave types and burials (Addison 1949). The human remains were only published much later (Mukherjee, Rao, and Trevor 1955), although Addison used a distribution method of skeletal remains to devise a chronology.

Today, the fieldwork of the joint expedition between University College London, the University of Khartoum, and NCAM is ongoing.

Chronology

The chronology of Gebel Moya is complex (see Table 1). In his report, Addison (1949: 249-260) placed Gebel Moya in a time-frame from 1000 to 400 BCE. This parallels the then-recognized chronology of the Napatan Period of Upper Nubia. Addison based his conclusions on what he identified as Napatan amulets, beads, faience, and metal objects from select graves. He dated all burials to a single Napatan phase, c. 750 – 350 BCE. He also argued that there were remains of habitation (as noted by Brass 2016: 72-74, however, these were not habitation floors but clay hardened by calcium carbonate). His findings were greatly disputed by A. J. Arkell, who had extensive archaeological experience in Sudan. Arkell furthermore noted that Addison did not adequately account for erosion activities, presenting instead a uniform picture of a complex process (Arkell 1955). In response, Addison (1956) revised his chronology and argued that the entire occupation dated to the Meroitic Period (350 BCE – 350 CE). The

reasons for his changes are unclear, as he mostly focused on critiquing Arkell’s critique of his report. However, he noted that now his position was that the occupation of Gebel Moya covered the whole of the Meroitic Period. He further argued that the large quantity of potsherds comprised clear evidence of occupation debris and that if the remains were Napatan, then the pottery must also be Napatan, but added: “Dr. Arkell has pronounced some of the selected sherds of this pottery to be Meroitic and I think he is right; but, if so, they must indicate an occupation in Meroitic times” (Addison 1956: 16). Interestingly, he went on to argue that he may or may not be correct, concluding with: “No reference to other sites is necessary and no archaeological expertise is required other than the knowledge of the meaning of the terms Napatan and Meroitic” (Addison 1956:18). The end result is that Gebel Moya was considered an unsolvable puzzle. This was not helped by Addison’s circular reasoning and his assertion contra Arkell that further excavation would be unhelpful (Addison 1956: 17).

J. Desmond Clark conducted very limited excavations at Gebel Moya in 1973 (Clark 1973; Clark and Stemler 1975). These consisted of two test trenches, which were not published in full. His limited published data drew upon Addison’s report. Clark additionally conducted ad hoc excavations in a number of locations around Site 100. This activity is not recorded in his notebooks; however, it is supported by social memory throughout the village, including the recollections of a number of people who assisted him as guides. Randi Haaland (1984, 1987) included mention of Gebel Moya in her analysis of her excavations at Rabak, but she too relied upon Addison’s report. Isabella Caneva (1991) recognized Mesolithic pottery from Gebel Moya in the assemblage curated at the British Museum, some of which was briefly examined by Andrea Manzo (1995). The chronology was analyzed by Rudolf Gerharz (1994), who relied on Addison and Clark but did not examine any primary sources. The next major study, by Michael Brass (2016), was based on an analysis of all existing burial documentation, expedition records, and pottery from Gebel Moya curated

at the British Museum and Petrie Museum. Brass's pottery analysis indicated three phases of occupation. Archival research indicated that the burials belonged to the latest occupation phase. It was also noted that large portions of the site were still unexcavated and that the chronology could only be clarified via an

Accelerator Mass Spectrometry (AMS) dating program (Table 2). To this end, the current joint expedition was launched in 2017. The project's results have changed everything we had known about Gebel Moya (see Tables 1 and 2).

Material	Context	Lab number	Age ¹⁴ C (bp)	Calibrated age	δ ¹³ C ‰ VPDB
Sorghum grain	Trench 1, Spit 2	Beta-501555	3930 ± 30	2558 – 2300 BCE	-14.7
Capra/Ovis maxillary molar	Trench 2, Spit 5	OxA-X-3000-40	2473 ± 21	766 – 509 BCE	-5.31 (carbonate)
Bos maxillary premolar	Trench 2, Spit 12	OxA-X-3000-39	3269 ± 22	1613 – 1502 BCE	-0.25 (carbonate)
Sorghum husks	Trench 2, Spit 14	Beta-501557	3970 ± 30	2575 – 2350 BCE	-9.8
Ziziphus endocarp	Trench 2, Spit 14	Beta-501556	4120 ± 30	2866 – 2579 BCE	-20.9
Sorghum husks	Trench 4, Spit 9	Beta-501554	3870 ± 30	2465 – 2211 BCE	-9.6
Molar dental enamel	Trench 3	GdA-5760	3880 ± 40	2470 – 2210 BCE	-5.04
Molar dental enamel	Trench 8 SK1	OxA-41561	2901 ± 17	1192 – 1013 BCE	-7.01
Molar dental enamel	Trench 8 SK2	OxA-41562	2039 ± 17	96 cal BC – 95.4 CE	-6.89

Table 2. AMS dates for botanical and faunal remains from the current mission at Jebel Moya, trenches 1, 2 and 4, and for the human skeletons from trenches 3 and 8. Calibration: OxCal 4.3.2, Intcal13, Sigma 2 (95.4%).

Description of the Site

Although ancient activity encompassed nearly the entirety of the valley, there are today no extant architectural features. Still present are historic features from Wellcome’s excavations, namely the House of Boulders, two (now disused) incinerators, and some foundations from his workshops. The description of the site is thus based on the cardinal points, providing continuity with Addison’s (1949) approach but not reflective of patterns of ancient use that are still under investigation. Originally, American archaeologist Oric Bates divided the site into 10-meter squares, although this was modified by subsequent excavators (Addison 1949). A notable topographic feature of the site is a series of gullies. One main gully runs across the site. It is shallow and broad and flows from the western slopes across the valley and out through a break in the eastern slopes. There are thinner but deeper gullies traversing from the north and northwest that meet the main gully before it exits the valley.

Str.	Layer type	Color	Phase
A	Top soil	Dark brown	1 st mill. BCE to 1 st mill. CE; contamination present
B	Upper layer	Grey	1 st mill. BCE
C	Black gravel	Light brown to dark grey	Early/mid- to late 3 rd mill. BCE
D	Black <i>gebel</i> (disintegrated granite)	Medium to dark grey	Late 6 th mill. BCE

Table 3. Geological strata.

The site has four primary geological strata: A - D, in descending order (Table 3). These strata represent a continuous period of occupation from the late 6th millennium BCE to the 1st millennium CE, roughly 2,000 years ago. Given the lack of continuous and readily discernible micro-stratigraphy, our excavation has proceeded using the spit method. This involves

carefully excavating ten centimeters at a time, numbering each spit and recording it individually, with environmental samples for flotation taken from each spit.

Addison (1949) and the excavators argued that remains of habitation levels and floors were evident in the third and fourth Wellcome seasons. However, their first two seasons of excavation involved the removal of surface layers without notation of level-depth, making it difficult for subsequent excavators to measure the depth below the ground surface of claimed floors. Addison attempted to solve this problem by using available information from maps and stratigraphic sequences, resulting in a number of claimed floors that were cut by a number of graves. These floors were described as hard white paving. However, as noted in Brass (2016: 72), and mentioned above, this was merely clay impregnated with calcium carbonate—a phenomenon that is also present in the current excavations. Other floors identified by Addison cannot be matched with existing records, and at least one red clay floor (Addison 1949: 99) is a hearth. Other claimed floors were based on photographs seen by Addison, and while a large photographic archive still exists, no photograph shows clear traces of flooring. The excavators also recorded a number of fire pits (for pottery firing), which Addison (1949: 102) re-interpreted as food ovens. Nineteen such pits were found. They contained an unspecified amount (and type) of animal bones, large stones, and potsherds. The lack of adequate records makes it difficult for us to evaluate this particular feature. Current excavations have identified a mud wall/construction directly on bedrock. The extent and purpose of this wall remain under investigation.

Reconstructing the burials across the site is a complex endeavor (Table 4). A re-examination of all existing records by Brass (2016) shows that according to Wellcome’s expedition there were 3,191 graves. Wellcome’s recording relied on grave cards, which were located and examined by Brass (2016), showing that there were 3,135 human burials (of which 73 cannot be assigned to a specific sector); 29 animal burials; ten pits, the contents of which cannot

be identified; 11 records noting a burial but with no further details on type of burial, contents, or location; and six records marked as burials but in fact containing an assortment of artifacts and no human remains (fig. 4 and Table 5). So far the current expedition has excavated six human burials, only three of which had grave goods (Table 6). The other three yielded a number of goods—for example, pottery—but these are likely the result of erosion down the slope on which they are located. Of the 29 animal burials listed in the Wellcome records, 18 are of cows, ten of dogs, and one contains a cow and a dog (see Table 5). Addison (1949) describes only 20 of these burials, none of which contained grave goods. It is worth noting that based on surviving documentation, it remains unclear if these are all, in fact, burials. Some may be deposits of animal bones, which continue to be found in the current excavations. Nevertheless, the burial of dogs is not an unknown phenomenon across the Sahara, as we see, for example, at Kerma (4500 – 3700 BP) (see Chaix 1988) and Chin Tafidet, Niger (see Paris 1999), although the latter example is likely a result of the disposal of remains rather than burial with associated rites. Furthermore, the remains can be broadly assigned to Canidae, but not to a specific species.

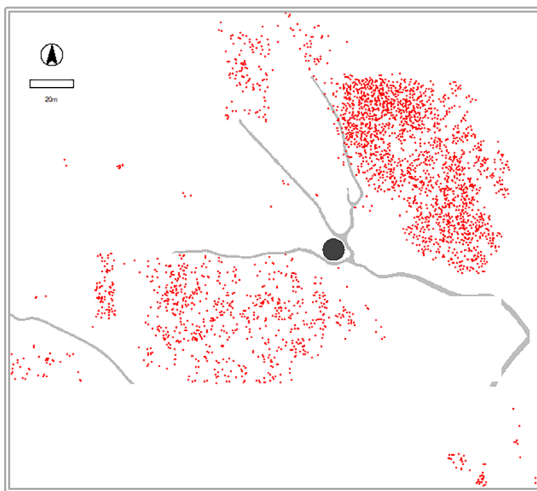


Figure 4. Location of burials excavated by Wellcome.

Cemetery area	Burials	Burials with grave goods
South	49	19
South-West	824	429
West	17	4
East	858	216
North-West	174	85
North-East	1196	339
Unallocated	73	21

Table 4. Different geographical areas of the site as determined by Addison (1949) and the number of complete burials and grave goods as determined by Brass (2016). Unallocated refers to graves mentioned in the literature but for which no record or location exists.

Animal type	Area of the site	Number
Cattle	Unallocated	1
	East	2
	South-West	9
	North-East	4
	North-West	3
Dog	Unallocated	0
	East	3
	South-West	1
	North-East	4
	North-West	2

Table 5. Animal burials.

Cemetery area:	Center	West
Complete burials	4	2
Complete burials with grave goods	2	1
Excavated fragmentary human remains	-	1

Table 6. Human burials excavated by the current mission.

Material Culture

Henry Wellcome insisted that every single sherd found on the excavation be retrieved and recorded. The current expedition has nonetheless identified a number of the Wellcome excavation spoilheaps and these clearly contain diagnostic sherds and large animal bones. Furthermore, Addison and Kirwan discarded a number of remains, including pottery, some of which would later turn up in residential gardens in Middlesex (see Biddle 1961). They did keep whole pots (very few were found) and sherds judged sufficient to reconstruct a pot. The majority of the pots were not associated with burials, although most of the complete or partially complete pots were found in burial contexts. Addison (1949: 199-200) claimed that pottery associated with burials was mostly plain, whereas decorated pottery was found on “floors” and in other non-burial contexts. Employing a method of seriation, he argued that the earliest pottery was impressed ware and then used distribution to postulate an increase of certain “impressed” motifs across the strata (*ibid.*). Aside from the difficulty of re-creating sequences from excavation records, Addison did not take into account the different motifs and tools used to decorate pottery.

Pottery groups at Gebel Moya have been historically named by assemblage, i.e., Assemblages 1 - 3. Strata A and B contain predominantly Assemblage 3 sherds; Stratum C contains predominantly Assemblage 2; and Stratum D contains Assemblage 1. The pottery phases are as follows:

Phase 1: The Late Mesolithic, dating to the late 6th millennium BCE. No mortuary activity has been detected thus far in this phase (Stratum D).

Phase 2: The 3rd and mid-2nd millennia BCE. Burial activity dates to this phase (Stratum C).

Phase 3: The 1st millennium BCE to the early 1st millennium CE, a time of heavy burial activity (Strata A and B).

The present excavations take an attribute-based approach to pottery. Coupled with consistent spit excavation, it is possible to

document changes in tools and motor actions related to decor.

In terms of surface treatments, there is infrequent burnishing and slipping on Assemblage 1 (Late Mesolithic) sherds. The paste is sand, usually augmented with bone or mica. The rims are straight and thin, straight and thick, or slightly everted. The tools used to produce the decor were only comb and stylus. There are stamped dotted lines, alternately pivoting stamp (APS), paired line fans, and incised chevrons. Designs and techniques could be combined, and this is more commonly found on decorated body sherds. The latter include APS (strata C and D), and curved lines, paired fan lines, smocking, and double-pronged wavy lines in Stratum C. Decor present in Stratum D includes flipped cord, fingertip impressions, dragged comb lines, indeterminate cord roulette, stamped dots, angular banded stamped lines, dotted stamped lines, and other comb varieties (for a full discussion see Brass and Vella Gregory 2021).

Assemblage 2 has a wide variety of rims, with thick and thin straight dominating the assemblage. There are also thick (rolled) everted rims, which appear particularly in the later part of Stratum C. The paste consists of coarse grit and sand, with mica sometimes present. Almost all examples are burnished and slipped. The rims were decorated using stylus-incised lines, dragged angular comb lines, packed zigzag dots, rocker stamped comb incised banded lines, dotted stamped triangles, dragged comb angular lines meeting to form chevron impressions, banded incised lines, and incised lines with curvature (*ibid.*).

Burnishing and slipping are present on all decorated sherds from Assemblage 3. There is variation in the lowermost spits of Stratum B, where a large minority of sherds are not burnished and a minority are not slipped. The paste is granitic sand with mica sometimes present. The rims are mainly thin and straight, though there are some thin everted rims, particularly in Stratum B. The overwhelming decor on the rims comprised incised lines, with comb-stamping present in smaller quantities (*ibid.*).

A limited number of artifacts were claimed by Addison (1949) to be Egyptian in origin. From graves, there were a bronze statuette of the Egyptian god Shu (burials 263, 524), and a scarab (burial 1577) with the ram of Amen inscribed on the back and the name Men-Ka-Ra on the base. Addison (1949: 177) states that the name refers to Men-Kheper-Ra (Piye), the first Napatan ruler of the 25th Dynasty (750 – 712 BCE).

Addison (1949: 117) also described the presence of surface finds of plaques and scarabs. He consulted with Egyptologists from the British Museum and the Griffiths Institute (Oxford) for their identification and possible dates. These finds are described in Brass (2016: Table 3.12). They comprise 12 scarabs, two plaques, and a fragment of a sandstone plaque-shaped bead. The dates assigned by the Egyptologists range from the New Kingdom (1550 – 1069 BCE) to the Late Period (664 – 332 BCE), with the exception of six artifacts to which a period could not be assigned (Brass 2016: Table 3.12).

The scarabs require further consideration. All the examples—from both the burial and the surface finds—bore the inscribed name of Men-Ka-Ra (“Stable is the ka of Ra”), the first or second pharaoh of the 8th Dynasty. Addison (1949: 177) had erroneously identified the name as Men-Kheper-Ra, the Napatan king. In reconciling this disparity in the dating of the scarabs, it is important to consider that they are not rendered in typical Egyptian style and furthermore appear to derive from a much later period than the 8th Dynasty. Scaraboids bearing the name were manufactured in Sudan as late as 700 – 500 BCE (see Lohwasser 2010 for comparable examples from Sanam, opposite Gebel Barkal; Masson 2015: 22-23, 29; and Sarr 2001 for a broader discussion). More broadly, as noted by Bács (2020), copying, imitating, and referencing art from previous periods served many purposes in ancient Egypt and, as argued by Török (2002: 29), the practice was in effect a cultural behavior. It is worth noting that at this time Egypt was re-engaging with older dynasties and histories as part of its identity, and small portable objects, such as scarabs, were perfect for this purpose.

Ultimately, the use of scarabs as apotropaic objects extended their life cycle.

It is equally difficult to assign specific dates to other objects described in Addison (1949), including a number of lip plugs, beads of various stones, and ostrich-eggshell beads. Similar objects have been found in the current excavations, where it is noted that lip plugs/labrets occur in a wide variety of shapes, sizes, and materials (fig. 5). These derive from all periods except the Mesolithic and appear to be especially numerous during the Neolithic, where they often occur in conjunction with flat ostrich-eggshell beads.



Figure 5. A selection of lip plugs from the current excavations.

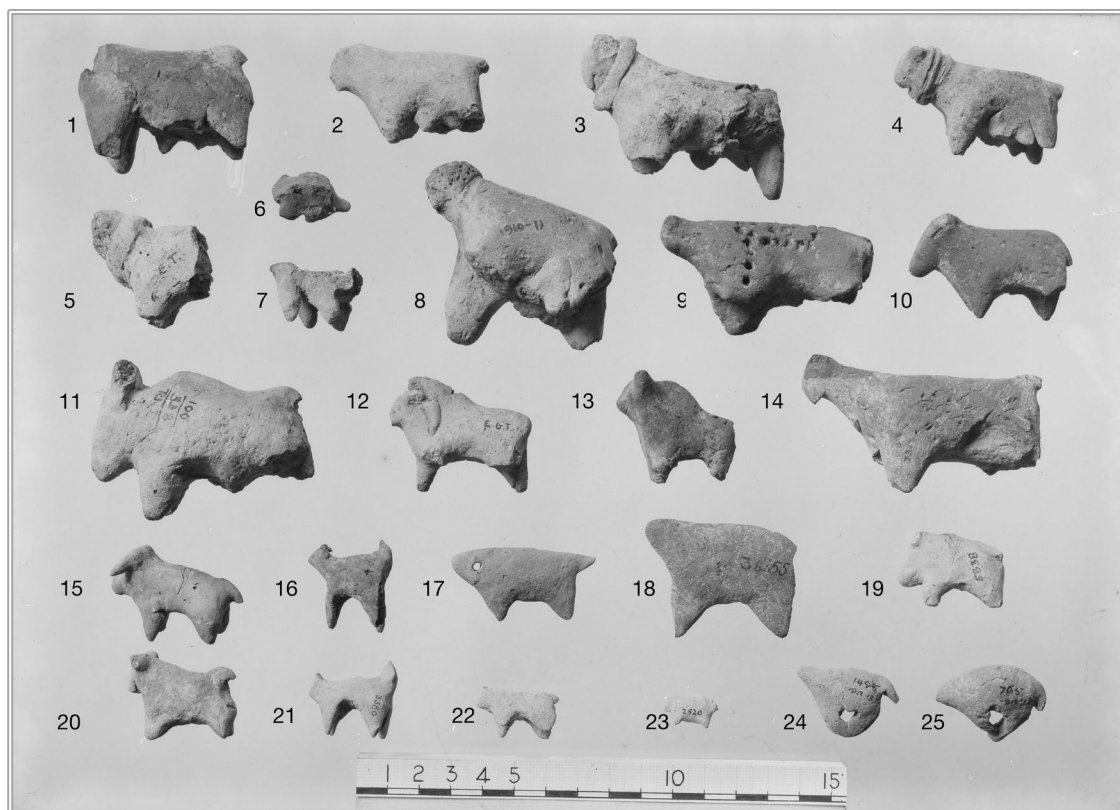


Figure 6. A selection of animal figurines from the Wellcome excavations. 1-2 cows; 3-4 yoked cows; 5 yoked bovine; 6 hyrax; 7 bovine; 8-9 cattle with modified bodies; 10-11 donkeys; 12 bovine with modified body; 13 bull; 14 sheep; 15 bovine with modified body; 16 canid; 17-18 unidentified; 19 hippopotamus; 20 steer; 21 canid; 22-23 bovids; 24-25 hedgehogs.

Slightly more promising indications for dating are offered by the figurine corpus. As reported by Addison (1949), figurines were found across the site (figs. 6 and 7). Information on their context is from grave and object cards. Addison (1949: 146-149) reported 496 human and animal figurines and largely considered them marginal to the site's biography. A study by the present author (Vella Gregory 2021) notes that figurines were found across all sectors excavated by Wellcome and can be broadly categorized as anthropomorphic, zoomorphic, or cylindrical (abbreviated). The animal figurines show a clear distinction between bovines and caprines and also include equids, Canidae, and other smaller animals. Archival work and current excavations date the majority of figurines from the Neolithic to the first millennium BCE (Vella Gregory 2021; Vella Gregory et al. 2023).



Figure 7. Figurine of a goat, found in 2017. The black line is a 5 cm. scale.

Current excavations at Gebel Moya are shedding light on the late Mesolithic, where we have found the first surviving structures from this period in the southern Gezira. These take the form of two dried mud walls. The first is on bedrock and has a slight curvature. The second, slightly to the east of the first, runs north-south and is stratigraphically from near the end of the late Mesolithic.

Humans and Environment

Initial reports from the early excavators were short on detail and focused largely on presumed racial characteristics of the human remains (Derry 1914; Ray and Buxton 1914). The analysis by Mukherjee, Rao, and Trevor (1955) was hampered by the loss of skeletal remains and/or records. Their discussion centered on the ratio between males and females and race at Gebel Moya, although they argued for a degree of heterogeneity. Still, their focus remained on a presumed “Negroid” race—a robust people, they concluded, who nonetheless could not be related to any known contemporary groups (Mukherjee, Rao, and Trevor 1955: 98-99). By contrast, more recently Rachel Hutton MacDonald (Hutton MacDonald 1999) focused on dental data in relation to ancient diet at Gebel Moya. She noted that dental caries (decay) was largely present between teeth rather than atop them and that samples lacked the level of dental disease usually associated with people who rely on cultivation for subsistence. She also observed that at Gebel Moya people retained natural wear angles and forms that indicate a longer functional age of the first molar. This is correlated with her broader analysis (Hutton MacDonald 1999) that shows similar patterns among agriculturalists and pastoralists. Gebel Moya samples also showed high levels of enamel chipping, with molars and premolars particularly damaged. This was attributed to both diet and the use of teeth as tools and was found equally across males and females. Some of this wear was also attributed to ablation, the ancient practice of removing select teeth and replacing them with labrets and/or lip plugs. Past and current excavations, as noted above, have yielded a large number of these, in a range of materials, shapes, and sizes. Based on her

data, Hutton MacDonald concluded that the population at Gebel Moya relied on a mix of pastoralism and cultivation. Subsequent work by Irish and Konigsberg (2007) correlated phenotype with genetic relatedness, concluding that the population of Gebel Moya was heterogenous (a conclusion also reached by Clark 1984). The present expedition aims to retrieve viable DNA samples, which will be used to trace population health and movement.

Hutton MacDonald’s observations regarding dental ablation were confirmed upon the discovery of a skeleton in the center of the valley (Trench 3 of the current excavations). The remains belong to a (likely) female aged 20-30. The burial was eroding from Stratum C on a gentle slope running down to a minor gully. The supine individual was facing left with hands placed below the pubis, measuring 1.09 m in length in situ. Assemblage 3 sherds were in direct association, together with backed quartz scrapers, microlithic flakes, cores, and debris, ostrich eggshell on the upper right chest, and freshwater shells. Fragmented animal bones were found to the right of the cranium c. 80 mm away and at the same level. No pathological changes were observed. Dentition was complete with lower central incisors lost ante-mortem, most likely in relation to deliberate extraction or ablation. Dental attrition was minimal, affecting mostly the molar cusps. The upper and lower incisors demonstrated advanced labial attrition and surface polishing, which could be related to the use of the teeth (Brass et al. 2018).

Multiple burials in one spot have been documented at Gebel Moya since the first excavations. Current excavations show that, in at least one instance, there is a considerable gap between burials placed almost directly on top of each other. From the center of the valley there are two skeletons deposited in Stratum C. Skeleton 1 is dated to 1192 – 1013 cal BC, whereas Skeleton 2 dates to between 96 cal BC and cal AD 95; the latter cut into the lower part of Skeleton 1 (Vella Gregory et al. 2022). The older skeleton’s cranium and upper sternum were deliberately placed on bedrock. This individual (likely a male aged 25-35) was found with a small lip plug by the forehead, and a

small number of pottery sherds, lithics, and faunal remains. A large projectile was found embedded in the sediment, just under the right elbow (the latter was tucked under the chest cavity). The second (younger) skeleton had tooth loss associated with dental ablation and the wearing of lip plugs, indicating that the practice was long-lived.

The skeletal remains at Gebel Moya raise questions about diet. Recent results of archaeobotanical analysis show that lower deposits had a higher quantity of charred plant remains. These deposits are associated with more intensive occupation, long periods of sedentism, and the routine processing of plant resources. A larger reliance on agriculture is present in the later third millennium BCE. The most common remains were domesticated sorghum (*Sorghum bicolor*), AMS dated to c. 2550 – 2210 BCE. Other remains include jujube (*Ziziphus* sp.) fruit stones, possible nutshell, and parenchyma tissue that could be from tubers. The latter supports the use of additional wild plant resources. Also present were several edible Panicoid grasses and weedy taxa usable for fuel (Brass et al. 2019).

Animal remains include cattle (*Bos* sp.), goat (*Capra hircus*), and probably sheep (*Ovis aries*). They also include kob (*Kobus kob*) and waterbuck (*Kobus ellipsiprymnus*), highly territorial animals that required permanent water sources, and an elephant (*Loxodonta africana*) molar. This indicates wetter conditions in grassy savanna plains and gallery forest before the first millennium BCE. The presence of dorcas gazelle (*Gazella dorcas*) suggests that by the mid-first millennium BCE conditions had led to the rise of semi-arid grasslands (Brass et al. 2019).

The Significance of Gebel Moya

The site of Gebel Moya presents a number of methodological and interpretive challenges. The Wellcome expedition uncovered a large number of burials and objects. Reconstructing a solid chronology based on these remains difficult. As the current project shows, the site requires careful excavation, conducted at a much slower pace than that employed by the Wellcome expedition. Thus far, it is apparent

that the marginality of Gebel Moya is an academic construct rather than a reflection of reality. The longevity of the site attests to its status as a persistent place. Indeed, the valley remained in use even after a shift to drier conditions. Gebel Moya was never part of the northern kingdoms or states, but its communities across millennia were very much aware of the world beyond the valley, as is attested by their material culture and the early indications from isotopic data (Brass et al. 2019). Questions remain on where people lived after the Mesolithic—it is likely they settled either below the mountain or in one of the neighboring valleys.



Figure 8. Sudanese archaeologists working at the site of Gebel Moya in 2023.

Perhaps a more pertinent question is why Gebel Moya was sidelined for so long. Its location below the Sixth Cataract is relevant (fig. 8). Because Sudanese archaeology has often been seen through the lens of Egyptology, the land below the Sixth Cataract has been overlooked as the space below the Bayuda Desert (roughly, the region of the eastern Sahara Desert occupying the bend of the Nile, in what is today Sudan). Seen very superficially, Gebel Moya “lacks” fortresses, a

sizeable town (like Kerma), a royal city (like Meroe), and a large religious center (like Napata or el-Kurru). In turn, this view of what constitutes an archaeologically interesting landscape is deeply rooted in a view of Egypt as the center, with Gebel Moya far removed from the periphery. Wellcome was mildly excited by the presence of Egyptian scarabs, and Addison was merely puzzled by them. The focus was very much on these objects as being pseudo *Egyptian*. Even then, as Smith (1998) noted, the focus on the core-periphery resulted in viewing Nubian elites using Egyptian symbols as a result of acculturation, rather than due to more complex and dynamic interactions. Equally, the view that Egypt's influence did not extend beyond the Bayuda Desert ignores the dynamism seen in Middle and New Kingdom Egyptian fortresses, where Nubians and Egyptians lived within the same sphere (see Bestock 2021 and Smith 2021 for Middle Kingdom and New Kingdom fortresses, respectively). Indeed, as Smith (2021: 390) notes, the experience depended on an “intersection of colonial policy and individual choices that resulted in cultural exchange and transformations.”

Today, the visible architectural remains at Gebel Moya date to the Wellcome excavations and these too need to be considered part of the heritage landscape of this area. Indeed they remain in use by both the current excavation team and the current inhabitants. In many ways, this is one of the defining features of Site 100—a place of continuous activity from at least the mid-sixth millennium BCE. Gebel Moya is a reminder that geography matters and we can only understand it if we consciously choose to reject the visual of the African continent in the form dictated by the Scramble for Africa, the process by which the African continent was invaded, occupied, divided, and colonized by European powers. The present map of the continent is a construct of events that took place in Europe between 1881 and 1914, when the partitioning of Africa took place. If we view Egypt solely in terms of its Mediterranean borders, we reproduce this divide between Egypt and Africa, and in doing so we risk losing many other sites like Gebel Moya.

Bibliographic Notes

The only site report, such as it is, is that compiled by Addison, available in two volumes online: Volume 1 (text) (<https://archive.org/details/b20457911M001>) and Volume 2 (plates) (<https://archive.org/details/b20457911M002>). For an overview of the site see Brass (2016). To follow the latest developments of the current project see: <https://thejebelmoyaproject.wordpress.com/> and <https://www.facebook.com/JebelMoya/>.

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