

**Sixth archaeological survey of the ancient greywacke  
quarries of the Wadi Hammamat**

**Institute of Archaeology, University College London  
in co-operation with SCA Ancient Quarries and Mines  
Department**

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*Gold Mining Settlement, Wadi Hammamat*

**Final Report to the  
Supreme Council of Antiquities  
*by***

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## INTRODUCTION

The objectives of this sixth and very short season of work were as follows:-

- risk assessment and monitoring of the site given threats to it, in particular from increasing mineral exploitation in the region and flash floods
- undertake a detailed survey with total station/GPS equipment of a gold mining settlement and mines dating to the New Kingdom

Due to the enhanced security situation in Egypt as a whole, that required specific letters and papers over and above what is normally required, we experienced a 4-day delay in commencing our survey. Therefore, we only had 3 days of actual fieldwork which is summarised below.

## THE SURVEY TEAM

Dr Elizabeth Bloxam (Field Director) – Institute of Archaeology, University College London

Adel Kelany (archaeologist) – SCA Dept of Quarries and Mines, Aswan

Prof Ian Shaw (archaeologist) – University of Chester, UK

## SITE MONITORING

Since the guards have moved their accommodation much closer to the main areas of inscriptions and ancient settlement, we observed no loss of inscriptions or any other archaeological material. The guard's house is expanding but there are problems with the generator (needs a mechanic to fix) and also the lack of covering over the cesspit needs immediate attention as it is dangerous to health. These matters were discussed with our Inspector Hany Abeid Badry and Emad Abdel Hamid, Director Quseir Office who assured us that these matters would be attended to. It seems however that the presence of the guards accommodation closer to the most vulnerable areas of the site has prevented any more loss of antiquities. Combined with much tighter security at both ends of the Wadi Hammamat road, and closer to foreigners, means that thefts of the inscriptions and pottery have decreased to almost zero.

There is a small amount of 'illegal' gold prospecting in the area, although this is **not** having a major impact on the antiquities. However, the threat of larger multi-national corporations such as *Centamin* (currently working at Sukari) and *SMW* (Russian mineral prospectors) coming into the region known as the 'golden triangle' now pose a much greater risk.

The other potential threat to the area that we heard about from our inspector and the SCA guard's, concerns plans to widen the current tarmac road. This would have a massive impact on the archaeological areas, specifically the areas of inscriptions and settlement, if this is not properly managed. We therefore need to be vigilant about this and therefore, when we return to the site for our survey in March/April 2016, we hope to find out more about this.

The guardians and managers of the abandoned British gold mine (dating between 1930-1950s), owned by *EMRA*, have also been extremely helpful in terms of informing us about current mineral exploitation in the area. So far they have managed to protect the British gold mine that is a remarkable relic of British colonial rule in Egypt because it is open to Egyptian geology students from all universities and visited year-round. These contacts will be key to our next survey season in 2016 when we commence our 'site management plan' for the archaeological areas.

## **THE GOLD MINES AND SETTLEMENT**

The mine workings are random, open-cut extractions, (and testing pits), into the ore-bearing granite (Fig. 1). These extractions occur across the area and have associated 'tailings' or 'spoil' in nearby work areas consisting of large amounts of crushed granite and quartz discarded during the process of separating out the gold (Fig. 2). These work areas are usually within the mining settlement and contain numerous local granite quern stones and pounders used in the final process of separating the gold from the ore-bearing rocks (Fig. 3). The quern stones are characterised by having a smooth hollowed-out surface (both oval and circular) produced from the grinding action needed to separate out the gold. These objects are the most numerous artefacts found in the settlement/work areas and come in a range of sizes often in association with a hand-held granite grinder (Fig. 4).

The area of New Kingdom mines and settlement is quite poorly preserved, given that floodwater, random diggings and also vehicles have damaged some parts (Fig. 5). The settlement remains can be defined by clusters of interconnecting low-level stone-built walls, some circular and others rectangular, that contain varying concentrations of pottery and also quern stones (as described above) (Fig. 6). These artefact associations suggest that the settlement was also an area of workshops. However, future survey needs to establish whether some of the quern stones might have been for food/grain processing?

Due to our survey not being completed, we cannot make any estimates yet as to the size of the settlement or the temporal nature of its occupancy i.e., temporary or more permanent. We did however date the pottery sherds to the Rammeside 19<sup>th</sup> Dynasty, these ceramics constituting basic domestic forms such as bowls and jars (both for storage and beer) (see El-Senussi pottery report Bloxam *et al.* 2012) (Fig. 7).

## **STONE TOOLS**

Local dolerite (possibly from the Wadi Fannani region?) is the main material used for the stone tools, which come in a variety of shapes specific to their use in the gold extraction and production process. Pick-like forms for cutting into the bedrock and two other types of hand-held pounders, rounded and cylindrical, were used for crushing/pounding the quartz/granite to extract the gold (Fig. 8). In association with some quern stones, as mentioned above, smaller hand-held granite grinders used in the final processes of extracting gold were found (see Fig. 4). Unlike the copper mining area surveyed last year (see Bloxam and Shaw 2014), and also the greywacke quarries (Bloxam *et al.* 2014), we appear to have a much more limited range of stone tools used in the processing of gold. And, importantly, the materials used to make these are mostly local to the area.

## **EPIGRAPHIC EVIDENCE IN THE REGION OF THE NEW KINGDOM GOLD MINES AND SETTLEMENT**

A short survey was carried out to locate any epigraphic (rock cut inscriptional data) data the region of the New Kingdom settlement and gold mines. In the immediate area surrounding the main mining area and settlement (as described above) there are many rock faces where one would expect to find rock-cut inscriptions, however, no inscriptions were located. However, given the very short period of the survey we will need to reinvestigate here during our proposed longer survey in March/April 2016.

Approximately 800 m into the Wadi Fananni from the main gold mining settlement, the wadi splits into two branches, here we located another area of mining activity. Mines were found high in the cliffs above the wadi, in front which spoil contained pottery sherds and stone tools dating to the New Kingdom. Limited excavation will be important to undertake here next year to confirm the dating of these mines.

The second part of the survey investigated the extent of epigraphic evidence and mines along a one kilometre stretch of the tarmac road. We identified a large number of mines, and prospecting cuttings, into the cliffs spanning both sides of the modern tarmac road. These findings confirm the much larger extent of mining activity in this area as a whole. Only two inscriptions were identified on the south side of the Wadi Hammamat road. One of these is located close to a mine, it is very small and very difficult to note, only the figure of the god Min is clear. The second inscription is much clearer and located in a cliff face closer to the road. It represents a human figure carrying the *hk3* sign in his left hand, in front of this figure is a boat with cabin. It might be suggested that from the location of this inscription that it is connected with logistics and/or of a person/people travelling through the wadi, rather than to mining or quarrying? (Fig 9).

On the north side of the road no inscriptions were identified, however many cliff faces could have been places for these. On the other hand, many gold mines were identified on this side of the road. Further survey along the north-side of the tarmac road will be needed to locate inscriptions, as well as other archaeological evidence.

### **SUMMARY**

As already mentioned, the short survey time has meant that we can only report very limited preliminary findings relating to the gold mining settlement and surrounding area. However, as the above suggests, there is a great wealth of archaeological material here that needs much more detailed survey to interpret, and for which we will be applying for permission from the Permanent Committee to continue in 2016. We have established that the extent of the New Kingdom gold mining areas and settlement extend alongside the tarmac road for a further 2 kms west. Therefore, the intensity of New Kingdom gold mining in the Wadi Hammamat is much more extensive than previously realised. But, from the data surveyed already, gold mining here seems to have been relatively small-scale, local, skilled, but *ad hoc* in terms of defining any presence of larger 'state' organisation. However, we hope to get a clearer picture of the social context and organisation of New Kingdom gold mining during our next survey season in March/April 2016. Also, during the next season, we

will continue defining the limits to the archaeological areas as the foundation to preparing a 'site management plan'.

## REFERENCES

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