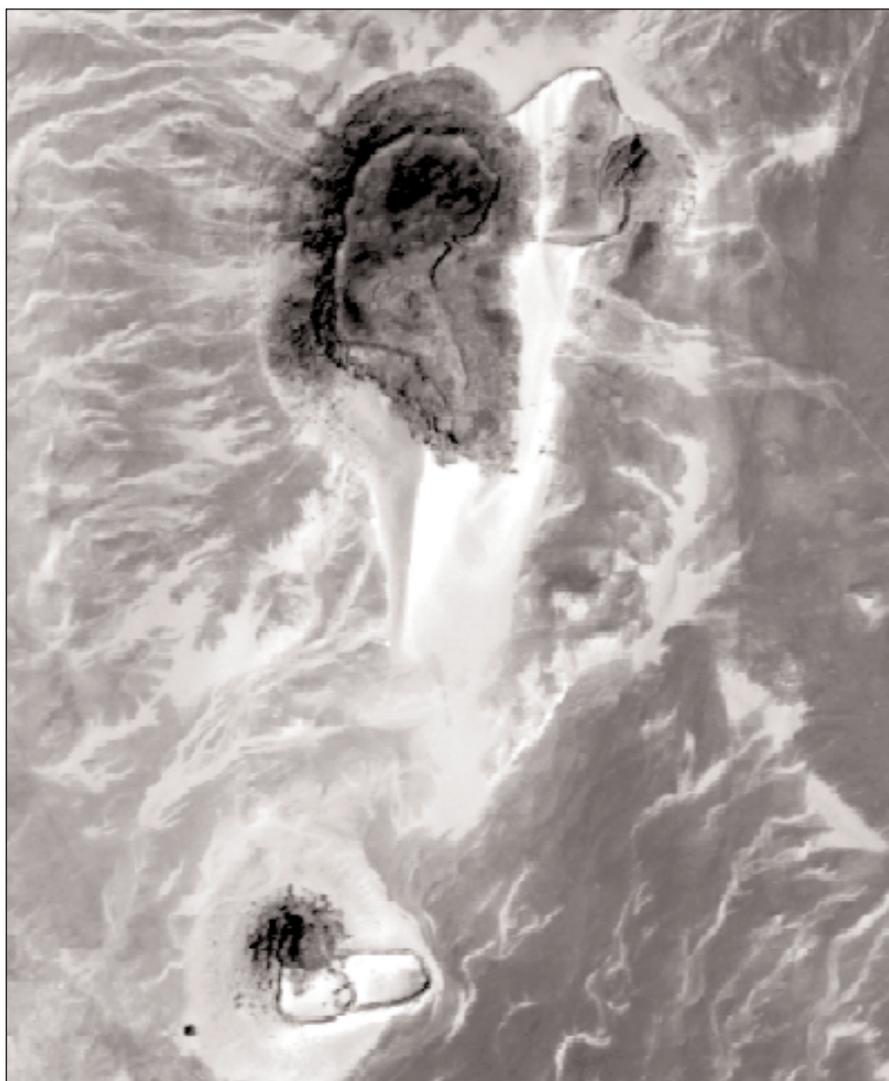


Discovery of an ancient fortification in Northern Sudan

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This short note is to report and illustrate the discovery of an ancient fortress during a geological survey in Northern Sudan in March 2006.

The QuickBird satellite image clearly shows the position and extent of the installations which were erected at three hills (Fig. 1). The site is not mentioned in the pertinent literature (e.g. Crawford, 1961; Hinkel, 1979; Welsby, 2005) and may therefore be considered as scientifically unknown. In lack of a local name and to compliment our Sudanese colleague, geologist Dr. M. Abdel Rahman El Sheikh of the Geological Research Authority of Sudan (GRAS), and his pioneering work in the central Wadi Howar region, the fortress has been labelled «Gala El Sheikh».

No geographical coordinates are given here in an attempt to

Fig. 1. QuickBird satellite image of newly discovered fortification («Gala El Sheikh») between Dongola and Lower Wadi Howar. Extent 380 x 270 m.

Fig. 2. Panorama of the main fort's western wall. The top of the tabular hill provides a commanding view. Person at left for scale.



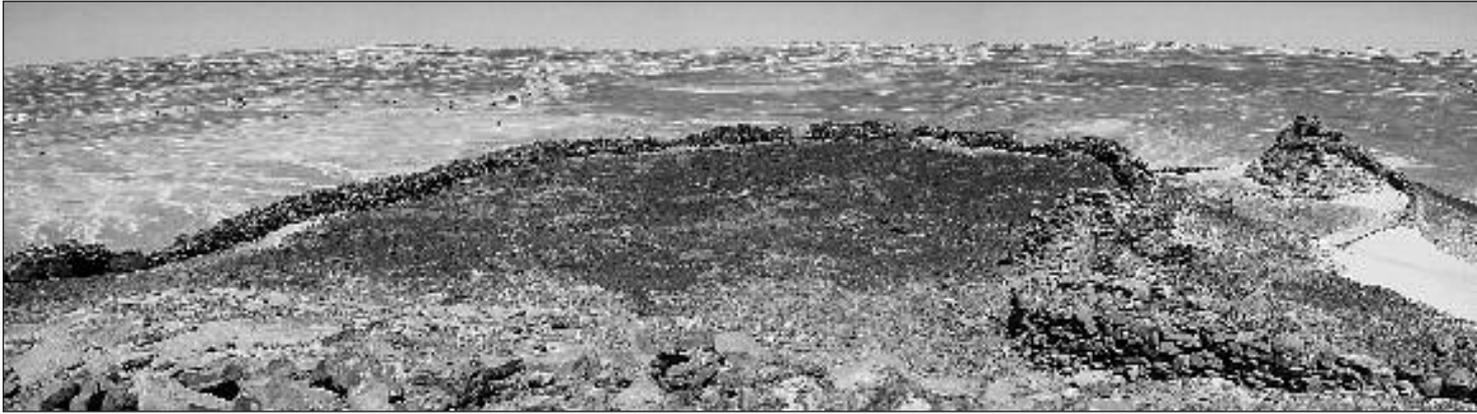


Fig. 3. Panorama of northern part of the walls of Gala El Sheikh and northeast enclosure. Person at gate for scale.

preserve this extraordinary site. In spite of the good intentions of most visitors, since the availability of satellite positioning devices (GPS) off-road tourism is causing increasing damage to the cultural and natural heritage of desert landscapes. Recent examples in Egypt's Western Desert include the looting at Khufu hill, the degradations at the new rock art site near Wadi Sura in the Gifl Kebir, and the devastation of the hieroglyphic inscriptions at Meri's Rock early this year. Possibly, Gala El Sheikh may one day be annexed to the «Wadi Howar National Park» — in theory the second largest protected area on earth — that has been officially declared in 2001 but still only exists on paper (Kröpelin, 1993a; Kuper & Kröpelin, 2003). It is hoped that detailed archaeological investigations will be carried out in good time.

The major fortification was built on the flat-topped northern hill which towers about 30 m above the surroundings (Fig. 2). The wall has an overall length of 260 m and accurately traces the hill's edge above its steep slopes and cliffs (Fig. 3). The hilltop in the centre of the natural platform provides an excellent 360° view over long distances.

The north-south extension of the enclosure is 84 m, the maximum west-east extension is 42 m. The walled-in area comprises about 2500 m². The walls are about 100 cm wide and up to 2 m high (Fig. 4). They are built in dry-stone masonry of horizontally laid sandstone blocks and slabs at the faces. At some places, more than 1.5 m large rocks and vertically put slabs have been incorporated into the construction. The rubble-filled cores apparently

provided a wall-walk but may also have supported a super-structure of wood or mud-brick. At some positions, there are roughly square bastion-like constructions, which are twice as wide and high as the adjacent walls. Only minor parts of the wall have collapsed. Minor walls and other structures of sandstone blocks at the slope might represent covers and graves.

There is only one gateway to the inner court on the east side. It opens to the southeast and measures 280 cm in height and 200 cm in width (Fig. 5). An opening in the gate passage made of vertical stone-slabs may have been used as a bolt hole. A rectangular walled porch at the outside is partly collapsed.

Apart from a linear structure in front of the hilltop that subdivides the northern from the

Fig. 4. Close-up of wall showing sandstone masonry and rubble-filled core. Width c. 1 m.



Fig. 5. Gate passage on the east side of main fort with partly collapsed structure at entrance and possible bolt hole. Height 2.8 m, width c. 2.0 m.



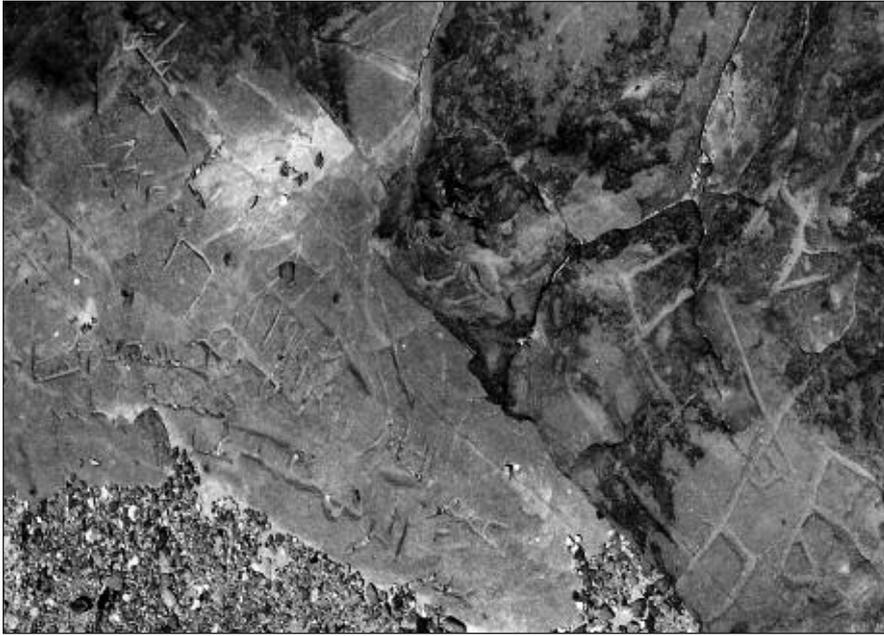


Fig. 6. Petroglyphs on Gala El Sheikh hilltop including various symbols, count marks and ancient Arabic writing.

southern half, and a circular construction of large sandstone blocks, there are no other obvious traces of dwellings or buildings within the enceinte. A quick survey of the denuded surface of the walled-in platform provided some grinding hollows and an array of small picked cavities in the sandstone, but no archaeological finds such as pottery or bone remains. Obviously, all useful artefacts and materials left have been removed in later times, or eroded by wind.

On the much worn surface of the hilltop, however, numerous petroglyphs were found. Besides numerous sharpening marks, they include various symbols such as open squares and rectangles, but also count marks and enigmatic engravings (Fig. 6). Other depictions include a stylized human figure with seven oversized fingers. Some of them obviously predate or postdate the construction and occupation of the fortress according to varying degrees of rock varnish.



Fig. 7. Examples of Demotic and ancient Arabic writings in Gala El Sheikh.

Most notably, the engravings also include Demotic writing (Fig. 7). Possibly these were connected with associated count marks and served accounts or administrative purposes. Early Demotic is generally dated between 650 and 400 BCE while Middle Demotic is the script used during the Ptolemaic Period (circa 400 - 30 BCE). Ancient and more recent Arabic writings and numbers are also present. Latin inscriptions have not been observed, as little as graffiti of modern foreign visitors. Hopefully, a full documentation of the site by archaeologists, Egyptologists and Arabists will reveal the meaning of the inscriptions.

Linking the northeast foot of the main hill and an adjacent minor hill, there is another almost 100 m long enclosure which encircles an area of about 1200 m² (cf. Fig. 1). This annex has a north-south diameter of 52 m and a maximum west-east width of 36 m. Perhaps it has been used as additional quarters or for keeping domestic animals such as donkeys



Fig. 8. Eastern part of southern annex. Dimension c. 20 x 30 m.



Fig. 9. Grinding devices in the Jebel Nagashush area south of Lower Wadi Howar, possibly used for processing gold or other precious metals. Scale 10 cm.



Fig. 10. Example of grinding device, weighing more than 500 kg. Scale 10 cm.

or horses. Future excavations below the wind-blown sand at the leeward sides of the enclosures may yield more detailed evidence. Most surprising finds in an adjacent rock shelter will be the subject of another publication.

A secondary installation lies at the south side of a smaller hill situated 135 m south of the main hill's foot. It features a complex construction with a north-south extension of 20 m and a west-east width of 46 m. The walls have an overall length of 120 m and enclose an area of about 700 m². There are two major courtyards (Fig. 8), and several circular or rectangular compartments with diameters of a few metres only. The walls are also built in dry masonry from blocks of sandstone and have a maximum height of 2.2 m. Though much of the adjacent wall has collapsed, the slightly higher southeast corner appears to have provided a protected walkway.

Significance

The installations on the prominent hill of Gala El Sheikh suggest military defences at a strategic position that were designed to house a garrison of professional soldiers. They were probably used as strongholds that were occupied only during times of threat as proposed for the Egyptian Middle and New Kingdom fortifications along the Nile and in the Bayuda (Welsby, 2005). There is little indication of a sacral function.

Based on architectural similarities and its geographical position, there is reason to suppose that Gala El Sheikh is related to the so-called «Gala Abu Ahmed» in Lower Wadi Howar, so far the only other fortress discovered in the Eastern Sahara outside the Nile valley and the oases (Kuper, 1988; Kröpelin, 1993b; Jesse & Kuper, 2004; Kröpelin, in print). Because of Gala El Sheikh's position on the top of a hill with steep flanks of fragile sandstone which provided a natural protection, there was no need to build as large walls and bastions as in the Wadi Howar fortress that was erected in a flat open environment.

Recent finds of faience fragments suggest that the construction of Gala Abu Ahmed goes back to the Napatan period, between about 900 and 300 BCE (Jesse & Kuper, in print), while a hint to Egyptian links is provided by the nearby engraving of an Ankh sign (Kröpelin, 2004). Regrettably, little is known on military architecture and Egyptian expansion during the Napatan period.

Even if the Demotic script in Gala El Sheikh is a strong case for its Napatan origin, neither an earlier nor a later time of construction and occupation, i.e. New Kingdom or Meroitic, can be excluded until comprehensive investigations have been carried out. Future excavations may also provide more clues about possible links with Gala Abu Ahmed in Lower Wadi Howar and the mili-

tary and economic importance of both desert fortresses.

Egyptian, Early Kushite or later fortifications may have had several functions, and different times may have entailed different functions. They may have served to protect and control ancient settlements or plantations; as watch posts to prevent or hamper smuggling along «oasis-bypaths»; or to secure transport or trade routes to Kordofan and Darfur with their resources in ivory, ebony, wildlife, medical plants, ostrich feathers or gold.

In this context it is worth mentioning that several small stone cairns (Arabic *alamat*), which rather point to ancient donkey trails than to camel caravans, have been noticed south of Gala El Sheikh leading in the direction of the fortress in Lower Wadi Howar.

Another observation already made during a passing visit in February 1988 shall be pointed out here in the light of the new evidence. About 150 km beyond the fortress in Lower Wadi Howar, and about 300 km southwest of Gala El Sheikh, a concentration of more than 100 exceptionally bulky grinding devices has been found (Fig. 9). Contrary to the movable grinding plates and bowls commonly used in the Sahara since early Neolithic times that mostly consist of sandstone, the devices have been fabricated of highly resistant granite and metamorphic rocks outcropping locally. Their dimen-

sions attain 160 x 80 x 60 cm and their weights several hundreds of kilograms; some specimens may even weigh between 0.5 - 1 ton (Fig. 10). A number of big tub-like models are heavily used, sometimes to the point that their lower part is perforated.

This locality between Jebel Tageru and Jebel Nagashush lies on the junction of a fault-system in the Northern Kordofan Block associated with Mesozoic volcanics. For geological reasons, such formations are prospects for rare minerals and metals. It would therefore appear that this site may represent an ancient processing facility near a mine, possibly of gold or other precious metals. It is a generally-known fact that gold was an extremely important commodity for the Egyptians and the major reason of their occupation of Nubia (Shinnie, 1991). Future studies may reveal whether there is ground for linking this exceptional site with the two desert fortresses which are situated at regular intervals of 150 km in the direction of Upper Egypt, or not.

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