Report on the work of the

Egyptian-German Mission at Matariya / Heliopolis in Autumn 2012[1*]

by

AIMEN ASHMAWY, DIETRICH RAUE, MORGAN DE DAPPER and TOMASZ HERBICH

The autumn season of the joint mission of the Ministry of State of Antiquities with the University of Leipzig at Matariya / Heliopolis was carried out from September 29th 2012 till October 24th 2012.[2] The excavation work focussed on the southern enclosure wall of the temple and with Site 200 within the north-western part of the main temple precinct, the area north of the shopping mall "Suq el-Khamis".[3] Modern illicit construction work afforded the opportunity for salvage excavations west of the shopping mall (area 202). In addition, resistivity measurements were taken in the area of the main temple around the obelisk, known as Misraa es-Segun. Furthermore, a geomorphological survey was carried out by drill corings in Misraa es-Segun.

The temple area is heavily threatened by modern garbage dumps and other usage including house construction **(Fig. 1)**.

Excavations in Site 200 – Suq el-Khamis*:* A group of interesting carved fragments as further evidence for the activity of Akhenaten in Heliopolis was discovered. The *talatat*-fragments were found in debris layers of the medieval era in the squares M24/N24 **(Fig. 2)**.

---

[*] Participants were AIMEN ASHMAWY, WAGIDA ABD EL-AZIZ MOHAMMED, HOSNI BADIA HOSNI, AMR ISMAIL AHMED, EZZAD EL-MAGHURI MOHAMMED, HEBA ALI OSMAN, MONA AHMED HUSSEIN, TAMER AHMED MOHAMMED, SABAH ABD EL-HALIM AHMED, NADJA GOUDA ANANY and the restorers HEBA MOHAMMED AHMED, NOHA ABD EL-RAHMAN MOHAMMED, AHMED MOHAMMED IBRAHIM, SAHAR RAMADAN MOHAMMED; on behalf of the University of Leipzig: DIETRICH RAUE, CHRISTOPHER BRENINEK, PIETER JOHANNES COLLET, MORGAN DE DAPPER, DIETER FRITSCH, TOMASZ HERBICH, WASSIM MOUSSA, ASJA MÜLLER, JAKUB ORDUTOWSKI, MOHAMMED ABD EL-WAHAB OTHMAN and MARIE-KRISTIN SCHRÖDER. Parallel to the current excavation work, a training course for archaeological and epigraphical methods and techniques was attended by members of the Inspectorate of Antiquities/Matariya.
The Supreme Council of Antiquities was represented by the inspector SAMHAN MOHAMMED ABD EL-SALAM. To him, to the director of antiquities at Matariya, MOHAMMED FARID, as well as to the Chief Inspectors SAMIR ABD EL-RAOUF and KHALID ABU ELA, we would like to express our sincere thanks for their kind support and cooperation.

[2] As in every season, the first part was devoted to cleaning work in 26 squares of 10x10m each from garbage disposal and dense vegetation.

[3] For earlier publications of the Egyptian-German joint expedition, see M. ABD EL-GELIL - R. SULEIMAN - G. FARIS - D. RAUE, The joint Egyptian-German Excavations in Heliopolis in Autumn 2005, in: *MDAIK* 64, 2008, 1-9; for the work carried out in spring 2012, see A. ASHMAWY – D. RAUE, Report on the work of the Egyptian-German Mission at Matariya/Heliopolis in Autumn 2012, *ASAE* (forthcoming). Previous excavation work of the Supreme Council of Antiquities in the area of the shopping mall Suq el-Khamis (area 201) was carried out in 2001-2003; for objects discovered in these seasons, see Y. HAMID KHALIFA and D. RAUE, Excavations of the Supreme Council of Antiquities in Matariya: 2001-2003, in: *GM* 218, 2008, 49-56.

Some of these added to the knowledge about the schema of decoration, example a block that proved to be part of a depiction of a seated royal figure and a small standing figure **(Fig. 3)**. As it was the case in the spring season, several fragments were attributed to limestone papyrus-bundle stem columns built of *talatat*-fragments. Additionally, several blocks found by the SCA missions from 2006-2010 were drawn in the storerooms of Tell Hisn. These finds have provided a significant amount of fresh evidence for the building projects of the Amarna Period in Heliopolis[4].

In addition, modern house construction afforded the investigation of a trench dug in the area of square G18/H18[5]. Several basalt blocks, like those found in autumn 2005 in squares I21/K21/L21, were found[6]. Amongst the recent finds, one of the blocks from G18 bears traces of a Ramesside inscription on one side **(Fig. 4)**. It seems therefore clear that the basalt blocks of I21/K21/L21 and G18 can be interpreted as pedestals (e.g. for monumental sculpture) or supports (for e.g. a gate) with visible flanks. Close by, large blocks of a gate, made of silicified sandstone were discovered. One of them proved to belong to a cavetto cornice block, reinscribed by Ramesses II **(Fig. 5)**. The original inscription poses difficulties in reading since both cartouches show the sun-disk as the first sign of the name. No name of a ruler of the Amarna Period has ever been written with two large sun-disks as the first element of both cartouche names. The only king with such a birth and throne name is Ramesses I (*Rᶜ-ms-sw / Mn-pḥtj-Rᶜ*)[7]. There is no doubt that Ramesses I followed the efforts of the kings of the late 18th Dynasty, Tutankhamen, Ay and Horemheb[8], in continuing the royal initiative in the temple of Ra. There are Heliopolitan objects that can be assigned to the short reign of this king: two small sized obelisks in Copenhagen and Avignon, made of black granite, bear inscriptions that point to Heliopolis as their place of provenance[9]. But it is the erasure of the name of Ramesses I by Ramesses II that is not attested elsewhere so far. The question has to remain open to debate. The gateway lies in the axis of the obelisk as it was

---

[4] D. RAUE, *Heliopolis und das Haus des Re*, *ADAIK* 16, 1999, pp. 309-312; M. ABD EL-GELIL - R. SULEIMAN - G. FARIS - D. RAUE, in: *MDAIK* 64, 2008, pp. 4-5.

[5] Work was started in summer 2012 by a team of the SCA: The members were HOSNI BADIA, WAGIDA ABD EL-AZIZ MOHAMMED, TAMER MAHMUD, GEHAN AWAD MAHMOUD, AHMED MOSTAFA and EMAD NASRALLAH.

[6] It was assumed, that these blocks belonged to some kind of framework) M. ABD EL-GELIL - R. SULEIMAN - G. FARIS - D. RAUE, in: *MDAIK* 64, 2008, p. 5) or even to a pavement made of basalt.

[7] J. von Beckerath, *Handbuch der Ägyptischen Königsnamen*, *MÄS* 49, Mainz 1999, pp. 148-149.

[8] RAUE, *Heliopolis*, 312-317.

[9] RAUE, *Heliopolis*, 318-319.

assumed by former reconstructions of the temenos[10]. The empty space seen in squares such as I23/I24 might be part of this axis.

Illicit digging of a large construction trench of 200m length west of the shopping mall led to the discovery of a fragment of an offering table in the summer of 2012[11]. In October, surface cleanings west of this spot revealed the missing half of this monument. It belongs to a "god´s father of the house of Ra, clean of hands, Mery-Re" **(Fig. 6)**. This person can probably be dated to the reigns of Seti I or Ramesses II because it might be the same person as the one attested on a stela in the British Museum from Abydos[12]. It is interesting to note, that the inscription and depiction do not show liquid offerings. For this reason the spout, a regular feature of offering tables, is missing. In addition, it is noteworthy that both fragments were found almost at surface level. Similarly other objects from tombs of the New Kingdom were found in the temple precinct of Heliopolis[13]. This leads one to assume that during construction work of the earlier in the 20th century, areas in the west of the temple like the quarter Ain Shams were cleaned and debris was dumped in the temple area.

The investigation of the temenos was continued in the area of the eastern part of the southern enclosure wall of the temple precinct. The investigations clarified the stratigraphical relation between the inner and outer wall that were mapped by PETRIE in 1912 (**Fig. 1**)[14]. Both wall measure about 15m width at the base, while they have been erected in 3.2m distance only. A layer of potsherd can now be identified that supersedes the inner wall, descends northwards and joins the lowest courses of the outer wall **(Fig. 7)**. It contained pottery that can probably be dated exclusively to the later part of the Late Period. As is the case with other walls from the 4th century BC onwards, the outer wall has been erected in segments with undulating courses[15]. In addition, three trenches **(Fig. 8a-b)** were dug to relocate a gateway of Thutmosis III that had been observed in the middle of the 19th century[16]. Since these portal jambs have never been brought to a museum there is a chance

---

[10] E.g. ST. QUIRKE, *The Cult of Ra. Sun-worship in Ancient Egypt*, London 2001, pp. 94-95.
[11] This fragment and another doorjamb of the Ramesside Period were collected and brought to the store-rooms of Tell el-Hisn by the SCA-team headed by HOSNI BADIA.
[12] RAUE, *Heliopolis*, 205-206.
[13] Y. HAMID KHALIFA and D. RAUE, Excavations of the Supreme Council of Antiquities in Matariya: 2001-2003, in: *GM* 218, 2008, 50-52.
[14] PETRIE, *Heliopolis*, Pl. I
[15] A. TAWFIQ – D. RAUE, Two Excavations at Arab el-Hisn, in: *BSEG* 19, 1995, 42 Anm. 7.
[16] S. SHARPE, *Egyptian Inscriptions from the British Museum and Other Sources*, *II*nd *ser. No.I-IV 1853-1855*, London 1855, Pl. 41 (top left); RAUE, *Heliopolis*, 296 XVIII.6-1.1.

that they are still in their original position. The investigation will be continued in the next season.

A. Ashmawy - D. Raue

Geomorphological survey: A survey of the geology of the surface materials in order to understand the geomorphological and geoarchaeological context of the site was conducted from the 1th to the 12th of October 2012 **(Fig. 9)**. At five observation points shallow drillings were carried out by Eijkelkamp hand auger equipment **(Fig. 10)**[17].

MAHE/12/001 was placed within the circular ring structure, known as the "High Sand" or the so-called Hyksos camp, while MAHE/12/002 aimed at the ring structure itself:

Altitude: meter above sea-level	**Sediments and archaeological finds**	**Geomorphological setting**	**Approximate archaeological age**
	MAHE/12/001		
14.37 – 13.87	Silty fine sand; 10YR 4/3 Heterogeneous	Nile fluvial sediment with anthropic reworking	
13.87 – 11.57	Slightly fine sandy, clayey silt to silty clay; 10YR 3/2 Homogeneous	Nile flood silt	
11.57 – 10.97	Fine sandy, clayey silt; 10YR 4/2 Homogeneous Few angular pieces of granite (up to 3 cm diameter)	Nile flood silt	(Old Kingdom?)
10.97 – 7.87	Slightly silty fine to medium sand; 10 YR 2/2 Very heterogeneous Abundant pieces of ceramics, artefacts (a.o. flint knife), gravel	Reworked gezira sediment with anthropic occupation	Naqada IIID (-early Old Kingdom?)
7.87 – 7.67	Fine sandy clayey silt; 7.5YR 4/1 Very homogeneous	Nile flood silt on top of Late Pleistocene gezira	

[17] According to the type of sediment Edelman-, riverside- and stony soil augers with a diameter of 7 cm were used. The depth of the groundwater table was measured with a tape; it varied between 1.8 m and 2.85 m below the surface. Colours of the sediments were determined at field capacity humidity using the Japanese Standard Revised Soil Color Charts.
The X- and Y- position of each observation point was measured by a hand-held GPS navigator (Garmin GPS 12XL) in UTM-coordinates on the 'WGS 84' map datum. The estimated accuracy of the averaged position (FOM = Figure of Merit) ranged between 2.9 and 4.0 m. The X- and Y-coordinates and the altitude Z of the observation points were also measured more accurately by means of a total station Leica TS02. The Z-measurements refer to a marked elevation point of + 16.7 m (Shara El Saada, X = 3.336.085, Y = 3.334.103) indicated on the 1978 cadastral map "LE CAIRE K11" at scale 1/5,000; this map is based on the geodetic control network of the Survey of Egypt which uses the official Egyptian land-datum.

MAHE/12/002			
14.72 – 13.92	Very slightly fine sandy, clayey silt; 10YR 3/2 Homogeneous	Nile flood silt	
13.92 – 12.42	Very slightly fine sandy, clayey silt to silty clay; 10YR 3/3 Very homogeneous	Nile flood silt	
12.42 – 10.72	Silty medium sand to medium sandy silt; 10YR 5/2 Abundant angular to subangular pieces of limestone (few mm up to 4 cm diameter) Few subangular pieces of silicified sandstone (up to 1.5 cm diameter) No ceramics.	Nile fluvial sediment with anthropic input	
10.72 – 9.48	Slightly fine sandy, clayey silt; 10YR 3/3 Abundant large angular pieces of limestone (up to 8.5 cm diameter) Few angular pieces of silicified sandstone (up to 6 cm diameter) No ceramics	Anthropic construction layer	
9,48	Very hard surface Further drilling prevented	Anthropic construction	

MAHE/12/003 brought the best dated sequence to light. Outside of the circular ring structure, a dense stratigraphy of the Old Kingdom down to the prehistoric levels of Heliopolis was discovered. The level of these strata of the Old Kingdom was found again in MAHE/12/004.

MAHE/12/003			
15.42 – 14.42	Fine sandy silt to silty fine sand; 10YR 3/2 Heterogeneous	Nile fluvial sediment with anthropic reworking	
14.42 – 13.67	Slightly fine sandy, clayey silt to silty clay; 10YR 3/3 Homogeneous	Nile flood silt	
13.67 – 13.42	Fine sandy silt to silty fine sand; 10YR 5/3 Many angular pieces of limestone (up to 4 cm diameter) No ceramics	Anthropic construction layer	
13.42 – 5.92	Silty fine to medium sand to fine to medium sandy silt; at 13.42: 10YR 4/3, at 11.42: 10YR 2/3, at 5.92: 10YR 1.7/1 Very heterogeneous Abundant pieces of ceramics & artefacts (a.o. flint knife at 7.42-5.92)	Marshy environment, close to important source of sandy sediments (most probably gezira), with anthropic occupation	12.42: 5th-6th Dynasty 11.92-10.92:Old Kingdom 10.92-7.42: Naqada IIID (-early OK) 7,42-5,92: Naqada III
5.92 – 5.42	Silty fine to medium sand; 10 YR 1.7/1 Very heterogeneous Pieces of wood at 5.92.	Reworked gezira sediment with anthropic occupation	Buto-Maadi(?)

5.42- 4.92	Slightly silty medium sand; 10 YR 1.7/1 Homogeneous No ceramics.	Top of Late Pleistocene gezira	

MAHE/12/004			
16,89 – 16,39	Silty fine sand to fine sandy silt; 10YR 3/3 to 2/3 Heterogeneous	Nile fluvial sediment with anthropic reworking	
16.39 – 15.39	Slightly fine sandy, clayey silt; 10YR 2/3 Very homogeneous	Nile flood silt	
15,39 – 13.39	Fine sandy, clayey silt; 10YR 3/3 Very homogeneous Few small pieces of ceramics Charcoal at 13.89	Nile flood silt	
13.39 – 13.29	Silty medium sand; 10YR 3/3 Abundant angular pieces of limestone (up to 3.5 cm diameter)	Anthropic construction layer	
13.29 – 10.09	Silty fine to medium sand; 10YR 3/3 to 2/3 Very heterogeneous Many pieces of ceramics Few gravel	Reworked gezira sediment with anthropic occupation	11.39-10.39: Old Kingdom
10.09 – 9.39	Silty medium to coarse sand; 10YR 3/3 Homogeneous Few fine gravel No ceramics	Top of Late Pleistocene gezira	

MAHE/12/005 hit a so far unknown structure or foundation made of more than three meters thickness. Due to technical problems, the lower border of this massive stratum of sand mixed with limestone debris and few pieces of pottery was not reached.

MAHE/12/005			
15.29 – 14.89	Modern debris	Anthropic layer	
14.89 – 13.89	Sligtly fine sandy silt; 10YR 3/2 Heterogeneous	Nile fluvial sediment with anthropic reworking	
13.89 – 12.39	Very slightly fine sandy, clayey silt to silty clay; 10YR 2/3 Homogeneous Few angular pieces of limestone (up to 2.5 cm diameter) Few pieces of bricks and ceramics (few mm diameter)	Nile flood silt	
12.39 – 8.79	at 11.79: Very slightly silty fine to medium sand; 10YR 5/3 Many angular pieces of limestone (few mm diameter) at 10.29: Medium to coarse sand; 10YR 5/3 Many angular pieces of limestone (few	Anthropic construction layer	10.29-8.79: New Kingdom?

	mm to 4 cm diameter) at 9.89: Medium to coarse sand; 10YR 5/3 Few fine gravel Many angular pieces of limestone (few mm to 2.5 cm diameter) At 9.29: Medium to coarse sand; 10YR 5/3 Few fine gravel Few angular pieces of limestone (5 mm to 4.5 cm diameter)		

Shallow drillings with Eijkelkamp hand auger equipment proved to be a quick and low-cost tool to survey the surficial geology and geoarchaeology of the site at Matariya / Heliopolis. In some cases the high water table prevented deeper drilling in sandy sediments, due to the collapse of the drilling hole. Therefore, in further campaigns, casing of the drilling hole with plastic tubes will be necessary. Also, in order to recuperate more archaeological material the use of auger heads with a larger diameter is recommended. A more efficient targeting of the drillings could be obtained if directly combined with the geophysical survey.

M. De Dapper

Geophysical survey: The magnetic method has proved to be useless in tracing archaeological structures in the area on the western side of the obelisk of Senusert I[18]. Therefore the resistivity method was used instead, with the hope for a positive result based on an assumption that stone features, gravel and sand structures would be characterized by resistivity different from that of the mud surrounding. The study had two objectives: to check whether the resistivity measurements would confirm the presence of structural remains called 'fort bank' on Petrie's map[19] and whether the method would be useful in tracing the remains of temple buildings below a layer of alluvium at least 2 m thick.

The search for the fort bank remains was carried out using vertical electrical sounding method (VES). Four lines of soundings were made. Lines 1-3 intersected northern section of the fort bank, line 4 was located in the area of the western section of the structure **(Fig. 11)**. Northern lines (lines 1 and 2 of length 80m, line 3 45 m long) intersected the structure; due to surface configuration (heaps of garbage) line 4 did not intersect the bank but only approached its inner edge. Soundings were made every 5 or 10 m along the line. The minimum distance between current electrodes AB was 1.60 m, maximum spacing was 40 m. Such probe spacing made it possible to observe resistivity changes up to a depth of about 15 - 20 m. Measurements across the northern section of the fort bank did not distinctly confirm the presence of the structure, however the resistivity cross-sections clearly show a section of disturbances in layer

[18] See report of the Egyptian-German Mission in Matariya spring 2012.
[19] PETRIE, *Heliopolis*, Pl. I.

arrangement, 20 m wide (in line 2 between VES points 40 and 60, **Fig. 12**). The disturbances coincide with the northern part of the fort bank, and thus they might be indications of the bank remains.

A test recording the temple remains in the area to the west side of the Senusert I obelisk was carried out by applying the method of resistivity profiling (**Fig. 11**). Measurements were taken along traverses 1 m apart, every 1 m along the traverse. Hard and dry surface required making holes in the ground (where the electrodes were to be driven) and filling them with water to improve contact between the ground and the electrodes **(Fig. 13)**. In the first stage of the survey a twin-probe array was applied with spacing of traversing electrodes AM equal to 3 m (the array theoretically should record resistivity changes up to a depth of about 4 m). Measurements registered an area of slightly increased resistivity values, located in the north-eastern part of the surveyed area; the remaining part of the area is characterized by uniform resistivity values. A lack of differentiation of values seems to indicate the fact that the vertical range of measurements do not go below the layer of alluvium that covers the expected remains of the temple. In the second stage, the measurements were carried out using a Schlumberger unsymmetrical array, with potential electrodes MN spacing of 2 m and traversing current electrode A at a distance of 7 m from the potential electrode. The sampling grid was the same as in the case of the twin-probe system. Measurements covered the eastern part of the area surveyed with a twin-probe array **(Fig. 14)**. As can be seen on the resistivity map, the values are much more differentiated than in the case of the twin-probe survey. A series of elongated anomalies of increased values, running along the SSW-NNE, perpendicular to the temple axis, were registered. Such an arrangement of anomalies indicates that they may correspond to architectural remains. Differentiation of resistivity values indicates that the measurements reach the archaeological layers, below the floor of the alluvium of homogenous resistivity values.

T. Herbich

Report on the work of the

Egyptian-German Mission at Matariya / Heliopolis in Autumn 2012

by

Aimen Ashmawy, Dietrich Raue, Morgan De Dapper and Tomasz Herbich

Text for figures:

Fig. 1:

Temple area, west of the shopping mall "Suq el-Khamis", September 29th, 2012

Fig. 2:

Temple Site 200, after excavations 2001-2012 (drawing by P. Collet).

Fig. 3:

Fragment of *talatat*-block of the Amarna Period (exc.-no. L24-14-5)

Fig. 4:

Temple Site 200, basalt block with titles of a Ramesside king (exc.-no. H18-1-4).

Fig. 5:

Temple Site 200, cornice block from portal lintel of the New Kingdom, reinscribed by Ramses II, silicified sandstone (exc.-no. H18-1-1)

Fig. 6:

Offering table of Mery-Re, 19th Dynasty (exc.-no. 202-3-9)

Fig. 7:

Southern Enclosure Wall, in area of square 241AQ: profile between inner and outer wall.

Fig. 8:

Southern Enclosure Wall, inner wall of New Kingdom, area of square 241AR/241AS

Fig. 9:

Main Temple Area (Misraa es-Segun): Location of drillings

Fig. 10:

Eijkelkamp hand auger equipment

Fig. 11: Location of vertical electrical soundings (VES) lines (1 – 4) and of resistivity profiling. Twin-probe profiling in grey (in dark grey, the area presented in fig. 3A and 3B). Black dotted line shows the area of Schlumberger profiling. Grey dotted line shows location of the fort bank after Petrie's map.

Fig. 12: VES line 2. Apparent resistivity pseudo-section (A) and resistivity cross-section (B). Disturbances registered between VES points 40 and 60 may reflect remains of the fort bank. Processing T. Herbich.

Fig. 13: Resistivity survey. In the foreground, the team of workers making and watering holes in the ground. In the background, the team moving the probes and taking measurements. Phot. T. Herbich.

Fig. 14: Resistivity maps. A – Twin-probe array, AM= 3m, sampling grid 1 x 1 m, row data; B – twin-probe array, AM= 3m, sampling grid 1 x 1 m, low pass filter; C – unsymmetrical Schlumberger array, AM= 7m, MN=2m, sampling grid 1 x 1 m, row data; D – unsymmetrical Schlumberger array, AM= 7m, MN=2m, sampling grid 1 x 1 m, low pass filter. Processing T. Herbich.

Fig. 1:

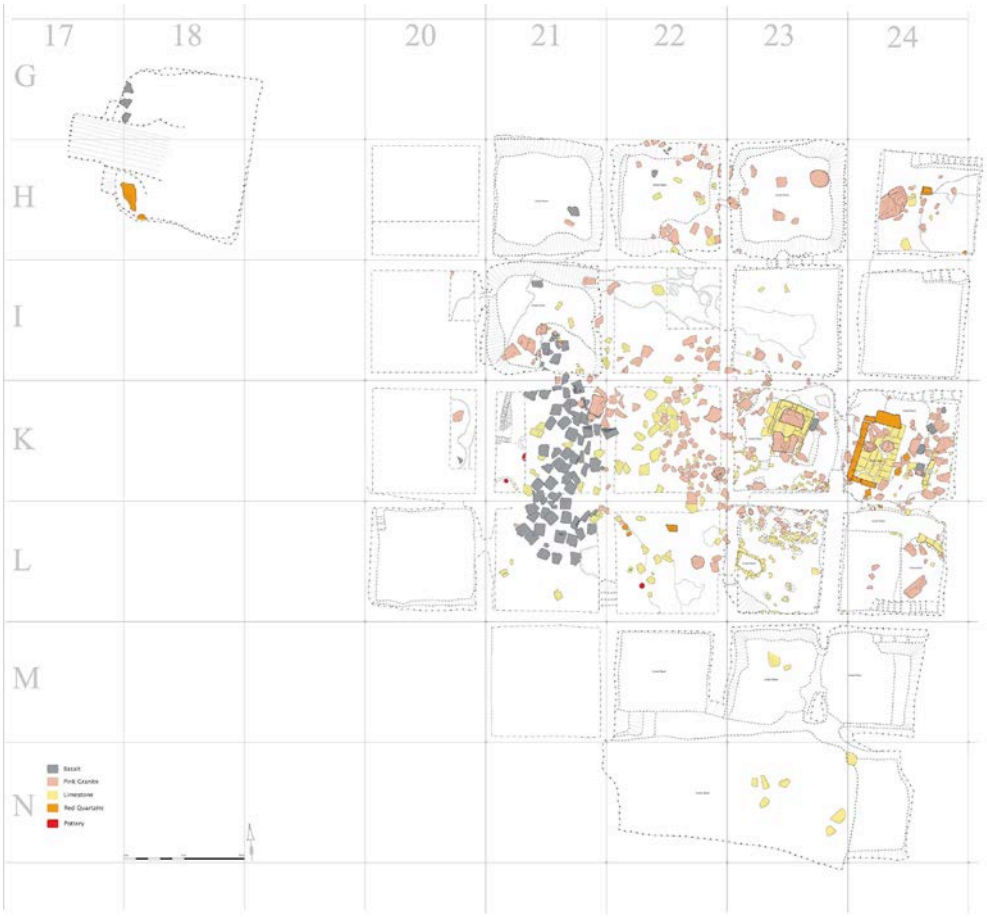

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8a

Fig. 8b


MAHE1
MAHE2
MAHE3
MAHE4
MAHE5
Site of the Temple
Senusret I Obelisk
(Usurtesen I)
El Misalla Silk Factory
FORT BANK
AGRICULTURAL ROAD
Google earth

Fig. 9

Fig. 10

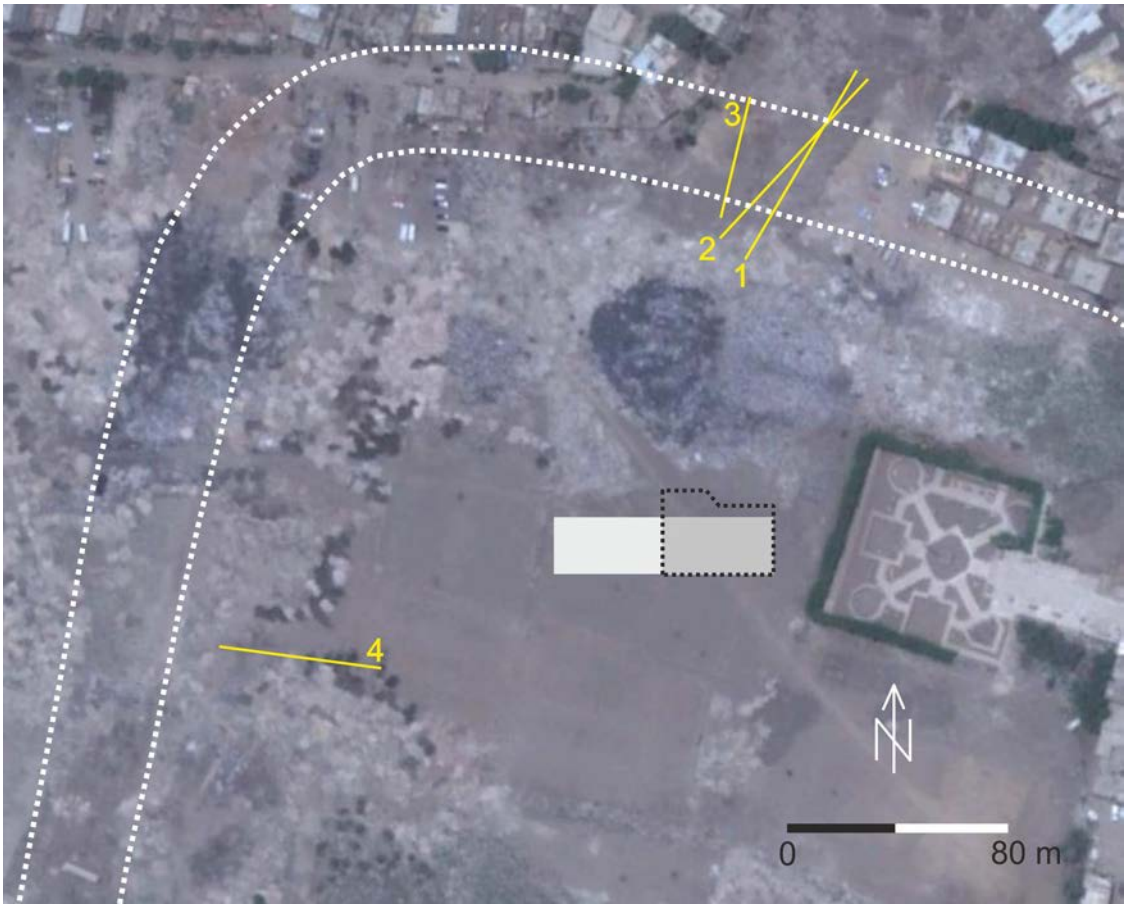
3
2
1
4
0
80 m

Fig. 11

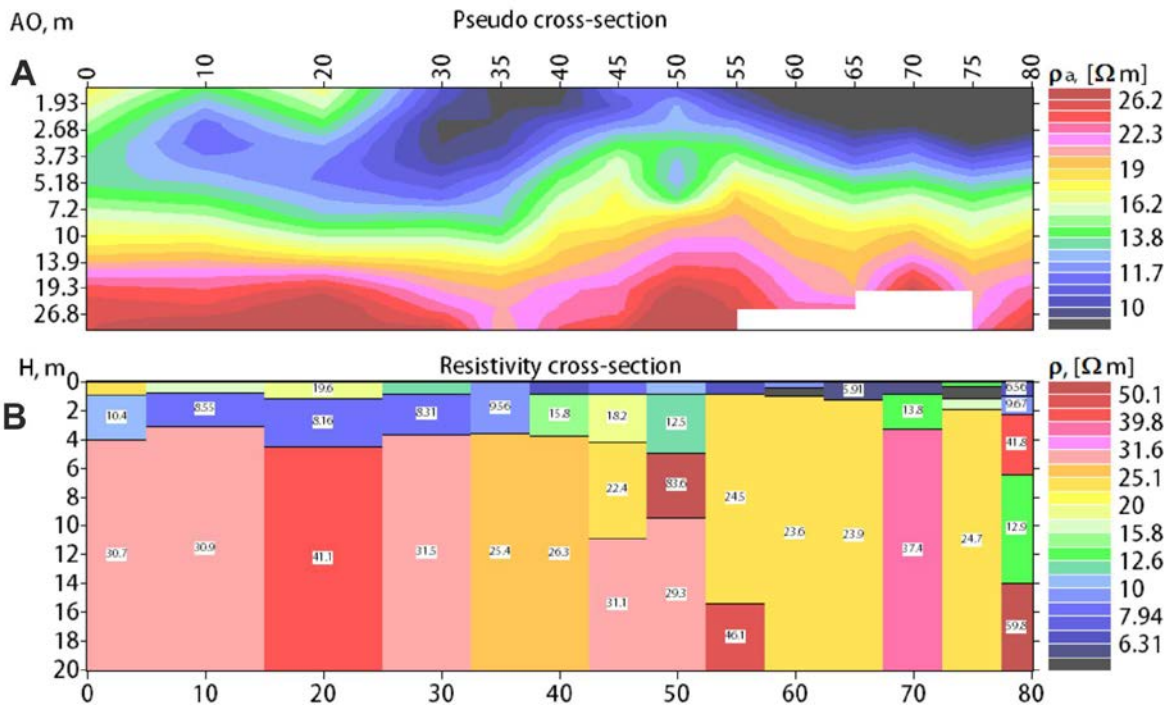
AO, m
Pseudo cross-section
A
0
10
20
30
35
40
45
50
55
60
65
70
75
80
1.93
2.68
3.73
5.18
7.2
10
13.9
19.3
26.8
ρa, [Ω m]
26.2
22.3
19
16.2
13.8
11.7
10
H, m
Resistivity cross-section
B
ρ, [Ω m]
50.1
39.8
31.6
25.1
20
15.8
12.6
10
7.94
6.31

Fig. 12

Fig. 13

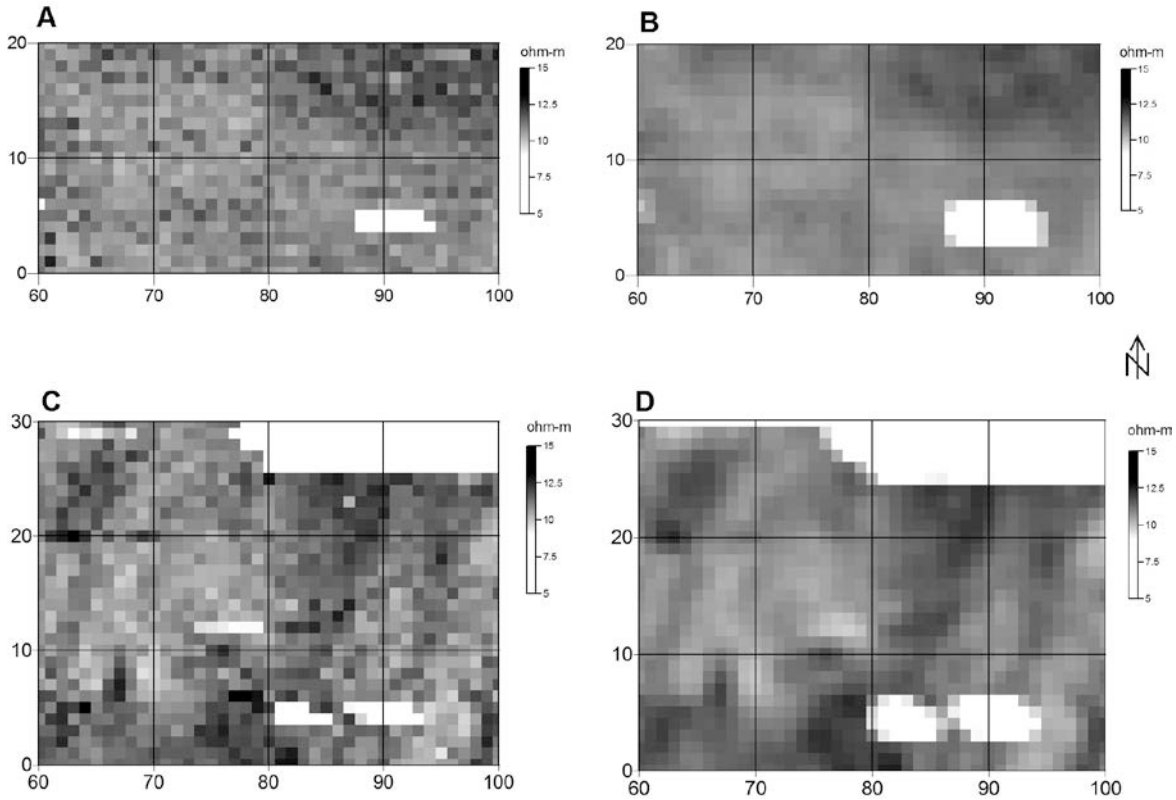

Fig. 14