

**Report on the work of the  
Egyptian-German Mission at Matariya / Heliopolis in spring 2015\***

by

AIMEN ASHMAWY, DIETRICH RAUE AND MAX BEIERSDORF

The spring season of the joint mission of the Ministry of State of Antiquities and the University of Leipzig at Matariya / Heliopolis was carried out from February 16<sup>th</sup> 2015 till April 2<sup>nd</sup> 2015. The excavation work focussed on the area of the main temple west of the obelisk, known as Misraa es-Segun. Minor investigations were carried out at the southern enclosure wall of the temple (**Fig. 1**). The geomorphological survey, conducted by Morgan de Dapper from the University of Gent/Belgium was continued in various areas of the temple.<sup>1</sup>

*Excavation – Area 210:* The walls in area 210 were studied and several trenches were excavated to reveal the stratigraphic relation and to collect pottery finds from the mud brick. It seems that both enclosures contain only pottery from the New Kingdom (**Fig. 2**). The outer

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The Supreme Council of Antiquities was represented by the inspectors, GHADA SAMY IBRAHIM, HANY FEKRI ISHAQ and WALAA ALI MOHAMMED. To them we would like to express our sincere thanks for their kind support and cooperation. As in the past season, the mission was considerably supported by the German Archaeological Institute. We are grateful for this indispensable help to Prof. Dr. STEPHAN J. SEIDLMEYER and SEBASTIAN HELLER.

<sup>1</sup> The results will be presented in the next reports after processing the For earlier publications of the Egyptian-German joint expedition, see A. ASHMAWY – D. RAUE, The Temple of Heliopolis: excavations 2012 – 2014, in: Egyptian Archaeology EES-Bulletin 46, spring 2015, 8-11; M. DE DAPPER – T. HERBICH, Geomorphological and geophysical survey, in: Egyptian Archaeology EES-Bulletin 46, spring 2015, 12 – 13; A. ASHMAWY – D. RAUE – M. BEIERSDORF – M. DE DAPPER – T. HERBICH, Report on the work of the Egyptian-German Mission at Matariya/Heliopolis in spring 2014, *ASAE* (forthcoming), A. ASHMAWY – D. RAUE – M. DE DAPPER – T. HERBICH, Report on the work of the Egyptian-German Mission at Matariya/Heliopolis in Autumn 2012, *ASAE* (forthcoming) and 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.

wall is slightly larger in width (9.6 m) than the inner wall (8.25 m). Both walls had buttresses that protruded 3.2 m (outer wall) resp. 4.05 m (inner wall).<sup>2</sup>

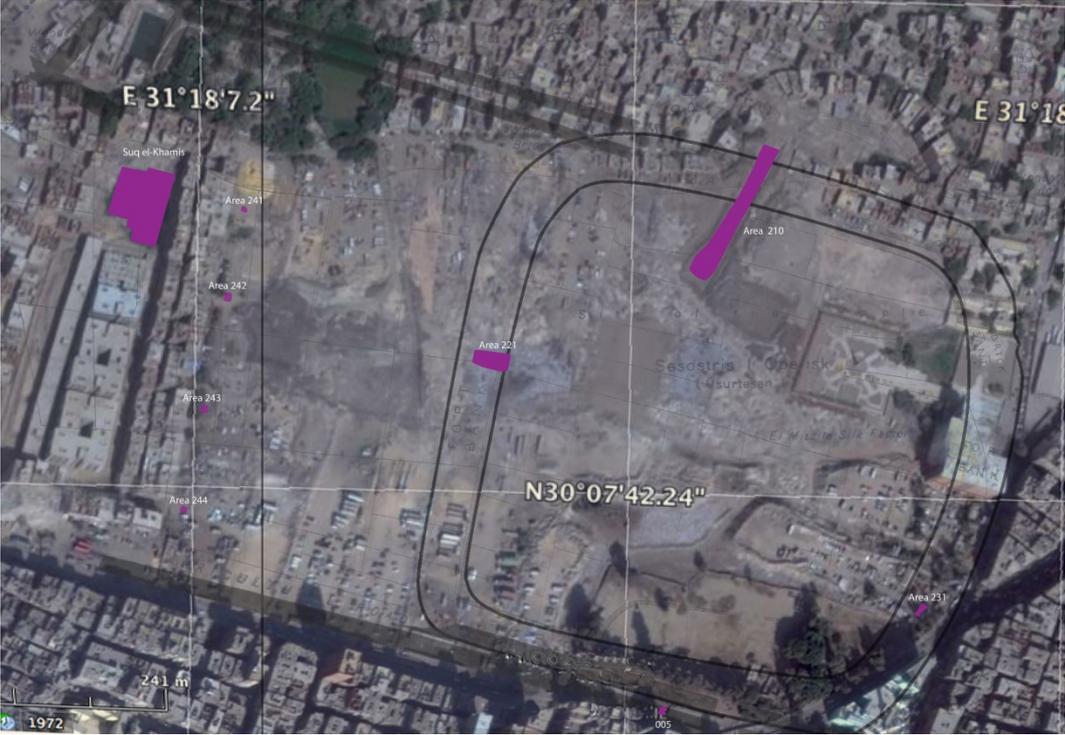


Fig. 1: Investigation areas in the main temple of Heliopolis



Fig. 2: Area 210: Northern enclosure of the main temple of Heliopolis

<sup>2</sup> For similar buttresses at the inner wall of the outermost enclosure in Arab el-Hisn, see A. Tawfiq – H. Al-Azam – D. Raue, Two Excavations at Arab el-Hisn, BSEG 19, 1995, 41-43 with Fig. 2-3.

Finds of the 30<sup>th</sup> Dynastie are restricted to the fill of the gap between the two walls. Identical assemblages of pottery were found in the construction layers of the outer southern enclosures (Area 5) that can be dated to the 4<sup>th</sup> century BC.<sup>3</sup> The northern wall seems to correspond with the mud brick enclosure that meets the place of the column of Merenptah some hundred metres further west.<sup>4</sup> Subsequent excavations revealed the debris of limestone blocks and can be dated to the 14<sup>th</sup> century BC on the base of the latest pottery and a coin of the mameluke aera.

*Excavation – Area 231:* The Cairo Governorate seeks to improve the crowded traffic situation in places like the Midan Misalla. That road construction allowed for a small scale excavation in March 2015 (**Fig. 3**). It aimed at the eastern section of the so-called “fort bank of the Hyksos Period” as it was described by W.M.F. Petrie<sup>5</sup> while others identified it as a framed platform of a sanctuary, the “High Sand of Heliopolis”.<sup>6</sup> The wall was reached more than half a meter above water table. Its top layers were damaged by pits filled with pottery



Fig. 3: Area 231, Excavation at Midan Misalla

of the 4<sup>th</sup> century BC. The mud bricks contained on the other hand pottery of the later Middle Kingdom, the Second Intermediate Period and a small number of sherds from the Early New Kingdom. According to Petries plan, the “fort bank” measured up to a width of about 40 m and is rather comparable with an embankment than a wall. A section in the brickwork presented evidence for an artificial sand accumulation that contained almost exclusively pottery of the Old Kingdom and mudbrick debris. The construction of the embankment was probably accompanied by the demolition of large parts of the necropolis of the Old Kingdom.<sup>7</sup> Earlier excavations of the Egyptian

Antiquities Organisation about 200 m further north proved for reused mastaba blocks of

<sup>3</sup> A. ASHMAWY – D. RAUE – M. DE DAPPER – T. HERBICH, Report on the work of the Egyptian-German Mission at Matariya/Heliopolis in Autumn 2012, *ASAE* (forthcoming).

<sup>4</sup> A. Tawfiq – H. Al-Azam – D. Raue, Two Excavations at Arab el-Hisn, *BSEG* 19, 1995, 44-46.

<sup>5</sup> W.M.F. PETRIE – E. MACKAY, *Heliopolis, Kafr Ammar and Shurafa*, *B.S.A.E.* 24, London 1915, 3-4, Pl. I.

<sup>6</sup> H. RICKE, Der „Hohe Sand in Heliopolis“, in: *ZÄS* 71, 1935, 109-111.

<sup>7</sup> D. RAUE, *Heliopolis und das Haus des Re. Eine Prosopographie und ein Toponym im Neuen Reich*, *ADAIK* 16, Berlin 1999, 471-472.

limestone in the foundations of the embankment. There, also blocks of the 12<sup>th</sup> dynasty were reused.<sup>8</sup> The mud brick courses of the embankment made use of this accumulated material and overbuilt subsequently that material until it was entirely covered (**Fig. 4**). This section definitely proved that the embankment cannot be connected with the building project of the Middle Kingdom and the erection of the obelisks by Sesostris I. as it was suggested before.<sup>9</sup> Also a construction date within the Late Period<sup>10</sup> seems to be unlikely.



Fig 4: Section in embankment in Area 231, mud bricks of the early New Kingdom on top of sand accumulation

*Excavation – Area 221:* This excavation aimed at the relocation of the western section of the “fort bank”. The top of the brickwork was not reached above water table. It was found after lowering this level for about 70 cm. The embankment was encountered in the western part of square 213WY (Fig. 5). Again, not just mud bricks were used to build up such a voluminous construction. Layers auf at least 30 cm thickness consisted of yellow- to mid-brown sharp-edged silicified sandstone chips as they would accumulate in a large temple building project while dressing stone elements for lintels, thresholds and architraves. The pottery from the bricks points again to a construction date in the 16<sup>th</sup> century BC.

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<sup>8</sup> M. ABD EL-GELIL – A. SAADANI – D. RAUE, Some Reliefs and Inscriptions from Matariya, in: MDAIK 52, 1996, 143-156.

<sup>9</sup> B. OOGHE, The High Sand of Heliopolis: A Revision of Raue, in: GM 204, 2005, 105-110.

<sup>10</sup> RAUE, *Heliopolis und das Haus des Re*, 81-83.



Fig. 5: Area 221: Top layers of the “fort bank” and layers of silicified sandstone (left) with basalt reliefs of Nektanebos I and royal statue (right); Drawing: Pieter J. Collet.



Fig. 5: Area 221: basalt reliefs of Nektanebos I

A group of basalt slabs was found in the eastern part of square 213VW (**Fig. 5**). It belongs to the soubassement decoration of a hitherto unknown temple of Nektanebo I (380-363 BC). It presents a geographic procession by kneeling Hapi-figurines that delivers the good and products of the Nile Valley. Three approximately complete scene are preserved. They display the scenes for the 20<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup> nome of Upper Egypt, e.g. the area of Heracleopolis in the Fayum, the region of Medum and the city of Aphroditopolis/Atfih. Behind the text for the 22<sup>nd</sup> nome, the building activity of the king for the temple in Heliopolis is mentioned. At the end of this block there is another scene with a Hapi-figure and void text columns that were left blank.<sup>11</sup> The god that is addressed in each scene is “Atum Lord of Heliopolis”, the god to whom this sanctuary is most probably dedicated. The slabs were found on top of a thicklayer of limestone chips, some of them bearing sunk remains of relief as well as stars from the ceiling decoration. They seem to be the remains of the decorated limestone walls, exploited for reuse in other, younger buildings of the Late Antiquity or the Medieval Era.

There is also evidence for the presence of Old Kingdom activity from this area of the western section of the embankment: While cleaning the surface for further excavations in autumn 2015 a large alabaster fragment of a bucket-like vessel was found (**Fig. 6**). It beared the Goldhorus-name and the throne-name of king Merenre. This votive object for the temple of Heliopolis, donated by the 3<sup>rd</sup> king of the 6<sup>th</sup> Dynasty fits well to the evidence of increased royal activity in the solar temple of Matariya.<sup>12</sup>

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<sup>11</sup> For additional districts in geographical processions, see Daniel von Recklinghausen, Die sogenannten Zusatzgaue: ein Überblick, in: A. Rickert and Bettina Ventker (eds), *Altägyptische Enzyklopädien. Die Soubassements in den Tempeln der griechisch-römischen Zeit: Soubassementstudien I*, Wiesbaden 2014, 128-130, 141-145.

<sup>12</sup> S. Voss, *Untersuchungen zu den Sonnenheiligtümern der 5. Dynastie. Bedeutung und Funktion eines singulären Tempeltyps im Alten Reich*, Dissertation Universität Hamburg, Hamburg 2004, 164–169, 183.



Fig. 6: Area 221: alabaster vessel of Merenre



Fig. 7: Area 221: Section in the western part of the "fort bank" with fragment of royal statue in square 213WY

About 20 m east, a torso of a royal statue was discovered (**Fig. 7**). The double-life-size statue depicts a kneeling king, holding a votive object in front of his chest (**Fig. 8**). A cartouche on his right shoulder shows the throne-name of king Merenptah: Baenra-Merenamun. But since this king is also known to have usurped statues of his predecessors<sup>13</sup>, this can only be taken as a terminus ante quem for the original dating of this sculpture. Nevertheless it fits to the documentation for this king in the temple of Heliopolis, where he is attested with a house of Millions of Years, medium sized obelisks, a column with inscriptions related to his victory over the Libyans in his 5<sup>th</sup> regnal year, a Mnevis-burial chamber and other objects.<sup>14</sup>

Throughout the New Kingdom and the Late Period such statues and statuettes are attested in a variety of sizes<sup>15</sup>, most often offering of the kings name, sometimes connected with the sacred tree of Heliopolis and/or Karnak.<sup>16</sup>



Fig. 8: Statue with cartouche of Merenptah, Area 221 square 213WY-1-2

<sup>13</sup> See for example the courtyard of Ramses II in the temple of Luxor with the reinscribed statues of Amenophis III and Ramesses II, H. Sourouzian, *Les Monuments du roi Merenptah*, SDAIK 22, Mainz 1989, 156

<sup>14</sup> RAUE, *Heliopolis und das Haus des Re*, 94-95, 126, 368-373; Sourouzian, *Monuments du roi Merenptah*, 55-62.

<sup>15</sup> B. LURSON, *Zwischen Kultabbildungen und Kultrealität: die Rolle der ikonographischen Dynamik*, in: H. BEINLICH (ed.), *9. Ägyptologische Tempeltagung: Kultabbildung und Kultrealität. Hamburg, 27. September - 1. Oktober 2011*. Königtum, Staat und Gesellschaft früher Hochkulturen 3 (4), Akten der ägyptologischen Tempeltagungen, Wiesbaden 2013, 229 Anm. 9.

<sup>16</sup> M. MINAS-NERPEL, *Der Gott Chepri: Untersuchungen zu Schriftzeugnissen und ikonographischen Quellen vom Alten Reich bis in griechisch-römische Zeit*. *Orientalia Lovaniensia Analecta* 154. Leuven 2006, 425-429.

*Excavation – Site 210:* The reinvestigation of the mud brick wall in the northern section of the embankment was carried out by additional sections and pottery sampling from the bricks. After two large pits of recent dated were cleared it became obvious that this wall is not part of the embankment, as it seemed possible during the excavations in spring 2014.<sup>17</sup> After careful cleaning it is obvious, that there are two courses, both with buttresses facing north (**Fig.9**). The southern wall measures 8.25 m in width, with a protrusion of the buttresses of 4.03 m; the bricks contained pottery of the 18<sup>th</sup> Dynasty as well as shapes connected with the transition to the 19<sup>th</sup> Dynasty. A layer of meet jar fragments of probably 19<sup>th</sup> Dynasty date overlaid the preserved top layer. The northern wall (width: 9.55-9.6 m; protrusion of buttress: 3,2m) contained potsherds of similar date: none of them points to a late Ramesside production.<sup>18</sup> Both walls seem to have been erected in a close temporal distance, probably during the 19<sup>th</sup> Dynasty. This would fit with the building activity of Merenptah 280 m further to the west, were the victory column was erected on a pedestal in front of a gateway.<sup>19</sup> Additional evidence for the destruction of parts of the limestone walls of the temples from Heliopolis was gained by pottery and coins from 14<sup>th</sup> century AD.



Fig.9: Area 210 – Pair of enclosure walls in the northern part of the main temenos of Heliopolis

<sup>17</sup> A. ASHMAWY – D. RAUE – M. BEIERSDORF – M. DE DAPPER – T. HERBICH, Report on the work of the Egyptian-German Mission at Matariya/Heliopolis in spring 2014, *ASAE* (forthcoming),

<sup>18</sup> We are very grateful to Pamela Rose for her expertise.

<sup>19</sup> A. Tawfiq – H. al-Hazam – D. Raue, Two excavations at Arab el-Hisn. *Bulletin de la Société d'Égyptologie de Genève* 19, 1995, 44-46.

*Excavation – Site 005:* The southeastern part of the enclosure of the temple of Heliopolis was investigated and documented. This year, also the northern enclosure wall was studied. It turned out to be built on a massive layer of mudbrick debris of about one metre. Especially in the western part, the wall display sloping layers that might be connected with underlying construction.

Aiman Ashmawy and Dietrich Raue

*Area 005: The Undulating mud brick wall of Heliopolis:* The investigations at the outer temenos wall of Heliopolis in Spring 2015 aimed to bring to light the inner construction and the building in segments in more detail. The study focussed on the technical background of the suspicious undulating courses, that gave path to a number of speculations in the past.<sup>20</sup>

A section was placed transversely to the wall at the junction of two segments. The planum shows that the internal masonry basically consists of headers, however the brickwork consists also of stretchers at the outer facade and the transversal section. The joint is clearly visible, but reaches only about 4 meters into the wall. After a distance of more than four meters, the joint does not follow a straight line. Whether it was intended to connect the two segments or if it is the result of a reduction process within the masonry, remains unclear. The first assumption is supported by the fact that the joint was not visible at the southern profile of in a depth of the wall of six meters. The investigation showed that there is an absence in the use of any binding agent in the internal brickwork. Only the segment transition and the outer facade of the wall were strengthened by the use of mortar.

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<sup>20</sup> For the assumption of a visualisation of the primordial nun-ocean, see P. Barguet, *Le temple d'Amon-Re à Karnak. Essai d'exégèse, Recherches d'archéologie, de philologie et d'histoire* 2, Le Caire 1962, 31-32 ; for a critical review of this hypothesis, see H. Chevrier, *Technique de la construction dans l'ancienne égypte. Murs en brique crues*, RdE 16, 1964, 11–17.

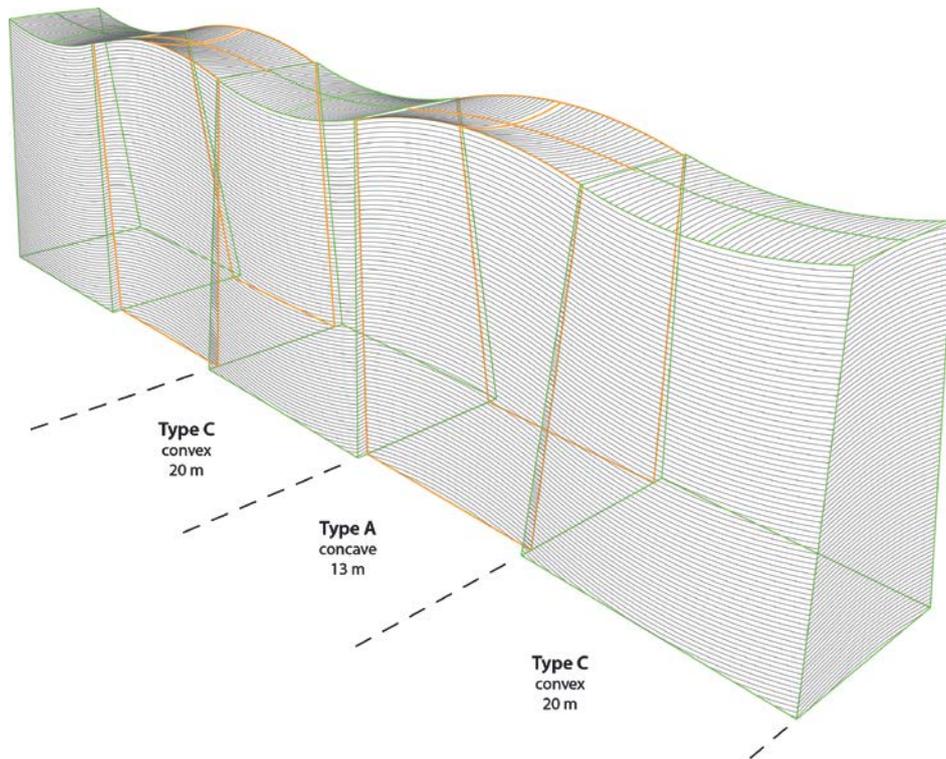


Fig. 10: Isometric view of the reconstruction of the outer enclosure wall of the Late Period



Fig. 11: row of holes in Late Period enclosure wall

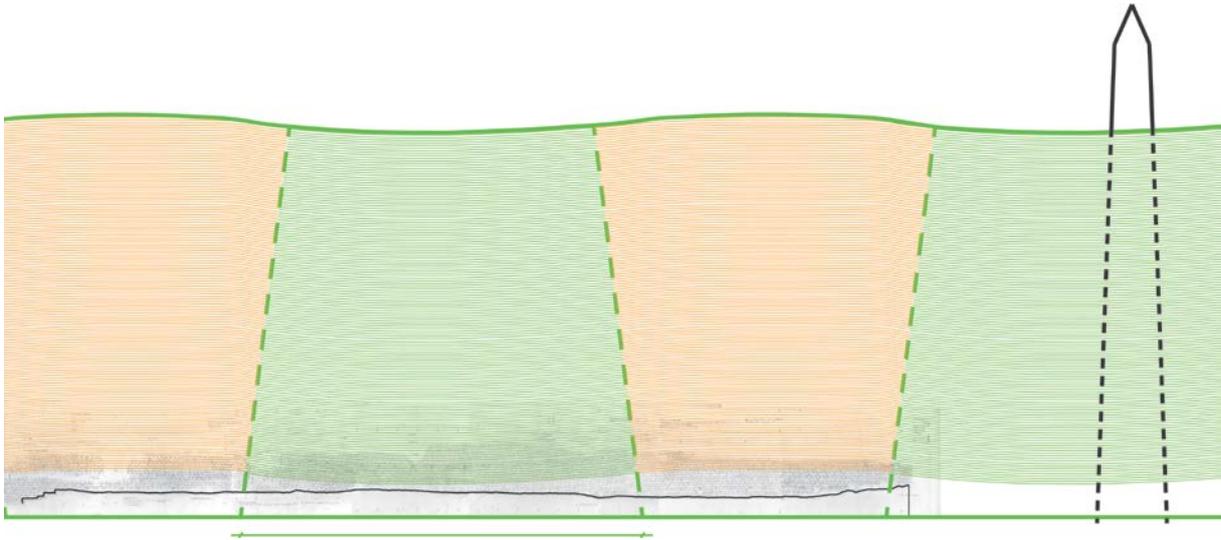


Fig. 12: reconstruction an estimated wall height of less than 20m

In order to clarify the meaning of the regular arranged wholes (**Fig. 11-12**) in the outer facade of the wall, a further section was dug in transverse direction. It showed that the holes originally reached about 1.00 - 1.30m into the masonry. There were no pieces of wood found in any of these holes. Unlike the enclosure walls of the temples of Amun-Re and Month at Karnak, where about 4m long wooden beams were moved in transverse direction into the wall, in the case of Heliopolis the holes are probably remains of scaffolding used to finish the outer shape of the wall. The distance between the holes is in vertical direction about 14 layers, which is about 1.8 meter, which provides enough height for the workers. The horizontal distance is about four headers that mean approximately 87 cm. This distance could have been easily bridged by simple planks that could have served as work platforms. The last hole at the end of the concave segment does not extend perpendicular to the outer wall, but at about 45 degrees rotated. Following the assumption of a scaffolding, this archaeological record would suggest that the convex segments were built earlier in time and stood partially solitary. In summary, the following preliminary hypothesis for the construction process can be set up:

- 1) In a first step the construction field was divided into regular sections, corresponding to the concave and convex segments.
- 2) The construction of the wall begins with the concave segments (**Fig. 10, type 1**). In order to limit the segment in its dimensions and to establish the necessary curvature, the corners will first be build first by supported using mortar to strengthen the construction.

This step can be theoretically carried out simultaneously on several sections at the same time.

- 3) Once corners have reached an appropriate level, the bricks can be laid in a rising outward curve. Due to the lateral slope of the entire segment and the concave brick layers, a high degree of stability is guaranteed, despite the absence of mortar in the inner masonry.
- 4) In the transverse direction the bricks are laid in a slightly convex curve. This generates the effect of a shell and has a positive impact, from static point of view.
- 5) Once the concave segment (**Fig. 10, type 1**) has risen up to a couple of layers, the construction of the adjacent convex segments started. This is made of a convex shape of bricklayers in the longitudinal direction and opposite transversely concave brick layers. The lateral dimensions are fixed by the neighbouring segments of type 1. The outer facade of segment type 2 steps back about one header, so that the segments would have been clearly separated.
- 6) Because it makes more sense from a practical perspective, the adjacent segments were built in a masonry bond from a wall depth of about four meters. A persistent construction joint is not absolutely necessary for reasons of statics. In this way, the 17 meters thick and probably about 20 meters high wall, might have raised step by step without the use of cranes, winches or external ramps. The wall under construction acted accordingly as a ramp to set up their own.

Max Beiersdorf

*Survey – Geomorphological Investigations in the Misraa el-Segun:* Nine core drillings were conducted by Prof. Dr. Morgan De Dapper in area 5, 221, 231, 240 and close to 241 and 242 (**Fig. 1**). The drillings added to the knowledge about the natural late-pleistocene geza<sup>21</sup> that is underlying the area. Several occupation levels of the late Prehistory, the Early dynastic Period and the Old Kingdom were identified again. The lowest part of the geza was identified so far in the area of the shopping mall Suq el-Khamis (area 203) while the highest point is the eastern section in area 231 with 11.58m. The obelisk of Senusret I seems to be placed on the top of this sand. Especially the settlement of the later 4<sup>th</sup> millennium BC can be traced on about 250 m extension. In the northern part of the temenos (Area 240), a continuous stratigraphy from the 6<sup>th</sup> to the 13<sup>th</sup> dynasty pointed to a dense habitation with remarkable amount of archaeological material in the drillings.<sup>22</sup>

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<sup>21</sup> M. DE DAPPER – T. HERBICH, Geomorphological and geophysical survey, in: Egyptian Archaeology EES-Bulletin 46, spring 2015, 12 – 13;

<sup>22</sup> The detailed presentation will follow in the forthcoming report after processing of the pottery finds is finished.

## Abstract

The joint Egyptian-German Mission at Matariya continued work in the temple of Heliopolis, a site that is greatly threatened by modern construction and garbage dumps. Excavations in the Main Temple Area rediscovered portions of the embankment, known as “Hyksos Fort” or “High Sand” of Heliopolis. A construction date in the 16<sup>th</sup> century was established on the basis of potsherd from mud bricks and later destruction pits of the Late Period. The embankment was used as building ground for a hitherto unknown temple of Nektanebos I (380 – 363 BC): a group of basalt slabs carries depictions of a geographical procession. Furthermore, a torso of a prostrating king of the New Kingdom was discovered. The geomorphological survey confirmed the assumption of a gezira in the area of the later embankment as well as the remarkable extension of a first predynastic settlement in the later 4<sup>th</sup> millennium.