

# Saqqara: season 2017

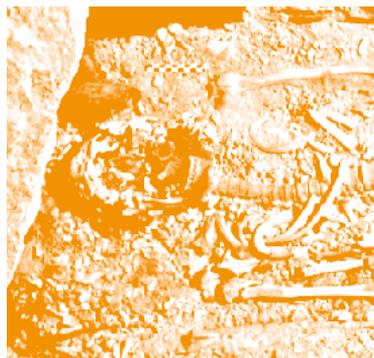
**Abstract:** The western bank of the Dry Moat continued to be the main target of investigations in the 2017 field season, uncovering another section of the Upper Necropolis in front of Chapel 13 and exploring the burial chamber of Chapel 32 situated below that of Ikhi/Mery. The latter work resulted in the discovery of an intact burial of an anonymous Fifth Dynasty official. Conservation work remained an important part of the program.

**Keywords:** West Saqqara, Old Kingdom, Upper Necropolis, Dry Moat, Step Pyramid, Ikhi/Mery, rock-hewn tombs, burial shafts, Fifth Dynasty

The scientific program of the 2017 season was a continuation of earlier research (Myśliwiec 2015), focused on the western channel of the Dry Moat. It was constrained, in terms of scope of work and number of team members, by unexpected delays in opening the fieldwork. However, the results were significant in confirming that the space within the Dry Moat itself was used for funerary purposes already during the Fifth Dynasty and indicated directions for future research.

## ARCHAEOLOGICAL WORK

The excavation was concentrated on the area at the western bank of the Dry Moat, in grid squares 1714 and 1814 [Fig. 1]. The aim of this work was to study the sequence of strata in the fill of the Dry Moat as part of a multidisciplinary investigation aiming to establish a diachronic view of Saqqara's development over the millennia. Another goal was to prepare for future research. Work also continued on the exploration of the deeper parts of an anonymous rock-cut tomb (Chapel 32) that had started to be investigated in the previous campaign (Myśliwiec 2015: 217–224; Kuraszkiewicz 2014; 2016).



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**Appendix**

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**Team**

*Dates of work:* 23 April–18 May 2017

*Director:* Dr. Kamil O. Kuraszkiewicz (Department of Egyptology, Faculty of Oriental Studies, University of Warsaw)

*SCA representative:* Tamer Ragab Abdallah Abd El-Motaleb

*Archaeologists:* Prof. Dr. Karol Myśliwiec, Małgorzata Radomska, Dr. Teodozja Rzeuska, ceramologist (all Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences), Agnieszka Kowalska (independent), Dr. Iwona Kozieradzka-Ogunmakin, bioarchaeologist (University of Manchester)

*Architect:* Beata Błaszczuk (freelance)

*Conservators/restorers:* Iwona Ciszewska-Woźniak (freelance), Ahmad Abd al-Azim Ahmad (Ministry of Antiquities, Saqqara)

*Photographer:* Jarosław Dąbrowski (freelance)

*SCA inspector trainees:* Amira Hamdi Mortaga and Galal Fathi

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The program was successfully implemented thanks to the good will and wise decisions of the Direction of the Inspectorate of Antiquities at Saqqara. Our gratitude goes in particular to Mr. Sabri Farag, General Director of Saqqara, as well as Mr. Mohammed Youssef, Director of Saqqara, and Chief Inspectors Mr. Mohammed Hussein Mohamed Hendawi and Mr. Hamdi Amin.

The Chief *Rais* of the mission, Mr. Said Kereti, extremely helpful as usual, was accompanied by a *rais* in charge, Mr. Imad Guburi.

**UPPER NECROPOLIS**

Exploration of the fill of the Dry Moat in square 1714, that is, in front of Chapel 13, resulted in the discovery of an extension of the Upper Necropolis as expected (Ra-

domska et al. 2008; Myśliwiec 2017). The 2-m-thick layer of sand reaching down from the present ground surface yielded 13 burials (Nos 689–701) belonging to the Upper Necropolis phase [Fig. 1]. All the

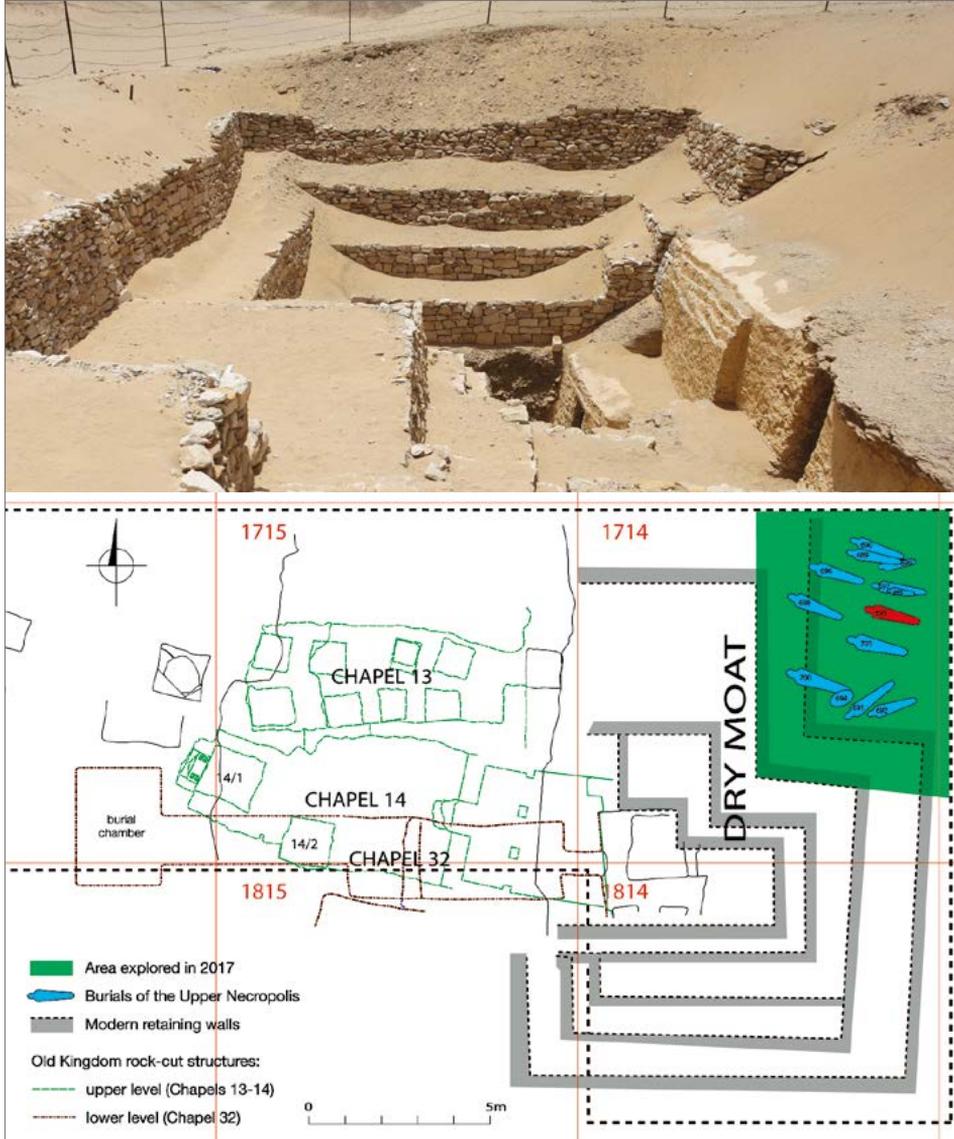


Fig. 1. Plan of the area explored in 2017; top, view of the western bank of the Dry Moat, grid squares 1714–1814, with Chapels 13, 14 and 32, looking south (PCMA UW Saqqara Project/drawing K.O. Kuraskiewicz, photo J. Dąbrowski)

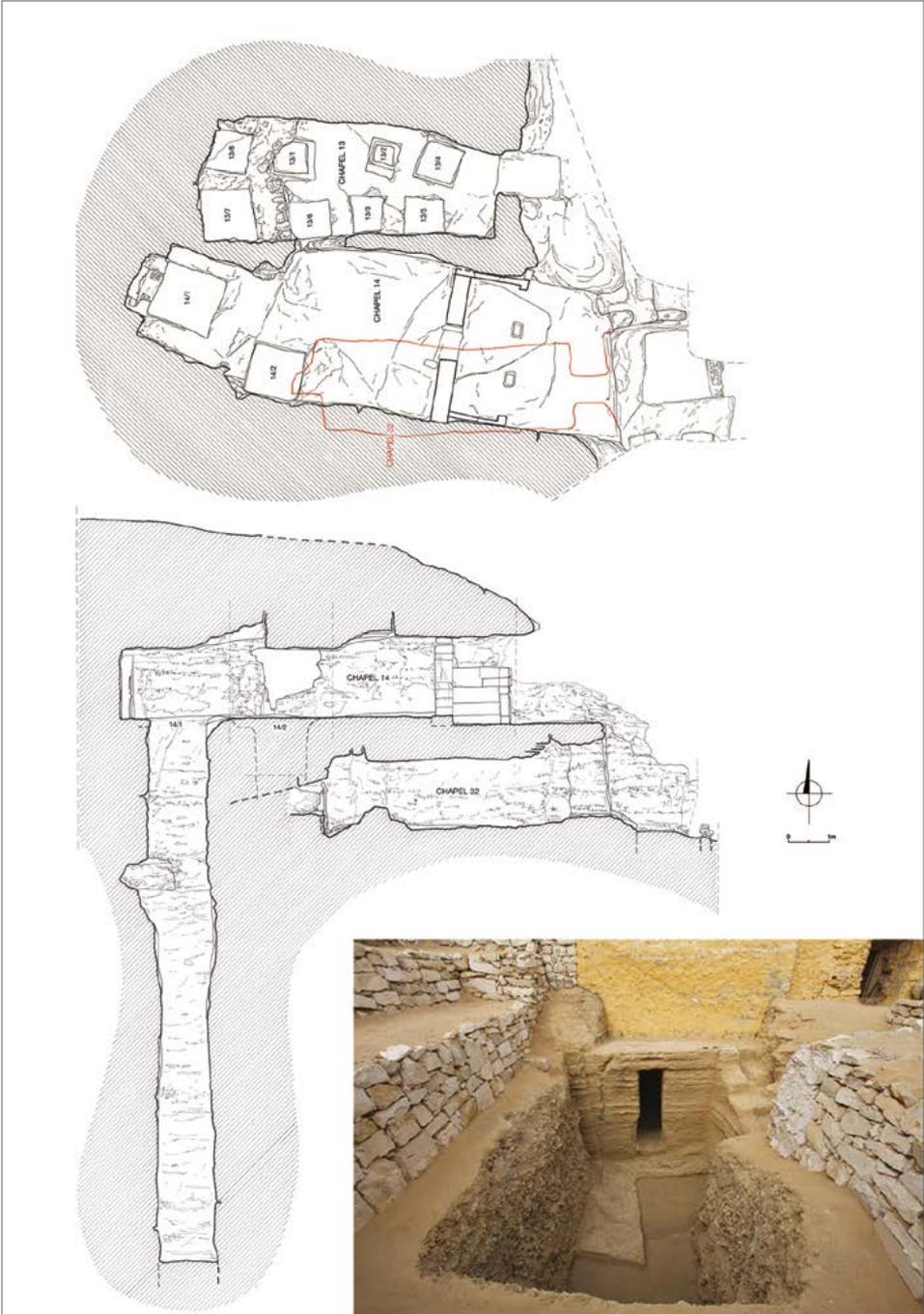
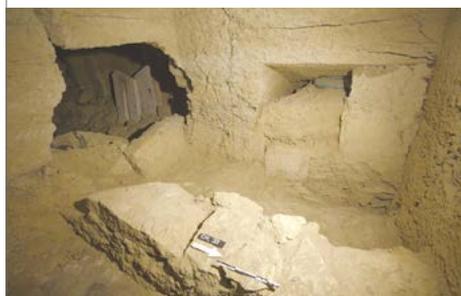
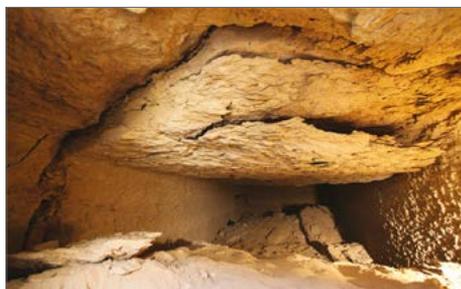


Fig. 2. Chapels 13 and 14, plan with position of Chapel 32 marked in red; east–west section through chapels 14 and 32; inset, façade of Chapel 32 (PCMA UW Saqqara Project/drawing B. Błaszczuk, photo J. Dąbrowski)

burials were rather modest, poorly preserved and without any funerary equipment. Scant remains of plaster found on



one burial (No. 693) indicate that it was originally buried with a cartonnage cover or plaques (almost completely destroyed in antiquity) and in a container, most probably formed of mortar, traces of which were visible around the body. All the burials were explored and fully documented in drawings, photographs and descriptions, and an anthropological examination of the skeletons was carried out.

### LOWER NECROPOLIS

Chapel 32 was first located in 2012 and explored in 2015 [Fig. 2]. It is cut in the west wall of the Dry Moat, its ceiling approximately 0.50 m below the floor of the chapel of Ikhi/Mery [Figs 1–3]. The façade (2.30 m wide and 2.40 m high), with a high and narrow entrance situated approximately in its middle, is severely eroded. It had no decoration except for a 0.50-m

Fig. 3. Chapel 32: top left, state before exploration in 2015; center left, west wall with partly preserved blocking of the sloping corridor; bottom, steel and wooden supports in Chapel 32 and the sloping corridor leading to the burial chamber (PCMA UW Saqqara Project/photos J. Dąbrowski)

high lintel decorated in relief. Hardly any trace of this decoration survives due to weathering processes of the stone surface. There are some remains of the offering formula, at least two horizontal lines, spanning almost the entire width of the lintel, and two standing human figures (male and female) at the left (southern) end. However, neither the name nor titles of the owner have been preserved.

Inside the chapel, the roof had to be supported on a construction of steel and wooden beams because of the condition of the rock, which is extremely soft and brittle, with numerous deep intercrossing tectonic fractures [Fig. 3 top left]. The chapel, measuring 6.00 m (E–W) by 2.00 m (N–S), is shifted slightly (approximately 10° south of west) in relation to the tomb of Ikhi/Mery [see Fig. 2]. The walls are carefully hewn, but void of any decoration. An entrance to a sloping corridor in the west wall of the chapel leads to the burial chamber. The entrance retained remains of the original blocking made of stones, bricks and *tafl*-mortar [Fig. 3 center left]. The chapel itself was secured and documented in 2015, but the exploration of the sloping corridor and of the burial chamber required a similar supporting construction in the corridor because of the condition of the bedrock here [Fig. 3 bottom].

The fill of the sloping corridor was disturbed during the construction of the tomb of Ikhi (dating from the reign of Pepy I), as its subsidiary shaft (No. 14/2) cuts through the corridor in its frontal part, and also during subsequent robbers' intrusion. During the exploration of the sloping corridor, two large limestone anepigraphic offering tables (Inv. Nos S/17/6

and S/17/7, Fig. 4) were found in the fill, along with a small offering basin inscribed probably for a man named Seneb (Inv. No. S/17/5). These objects are evidently part of the secondary fill of the corridor.

The corridor, 5.10 m long and descending at an angle of roughly 20°, leads to a rectangular burial chamber, measuring about 3.20 m (N–S) by 2.30 m (E–W), and approximately 2.20 m high. The burial chamber was robbed in ancient times; the only item of the funerary equipment found in it was the base of a wooden statuette of a striding man (Inv. No. S/17/9). A rectangular pit was hewn in the floor approximately in the middle of the burial chamber and covered with a roughly cut limestone slab [Fig. 5]. In the north wall of the burial chamber there is a hole, explored in 2002, leading to the burial chamber of Shaft 54 (Myśliwiec 2003: 121–124, Fig. 13).

Burial 702 (Kowalska and Kurasz-kiewicz forthcoming) inside the pit was found in a rectangular coffin constructed of wooden planks [Fig. 6]. Apparently, the

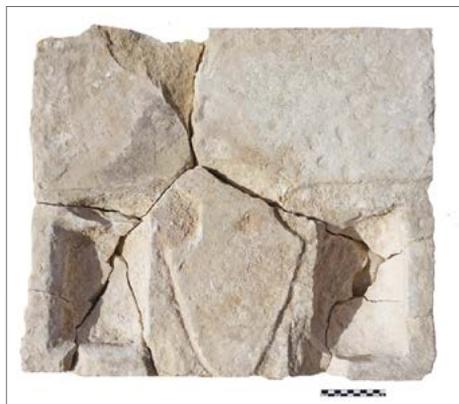


Fig. 4. Limestone offering table from the fill of the sloping corridor, Inv. No. S/17/7 (PCMA UW Saqqara Project/photo J. Dąbrowski)

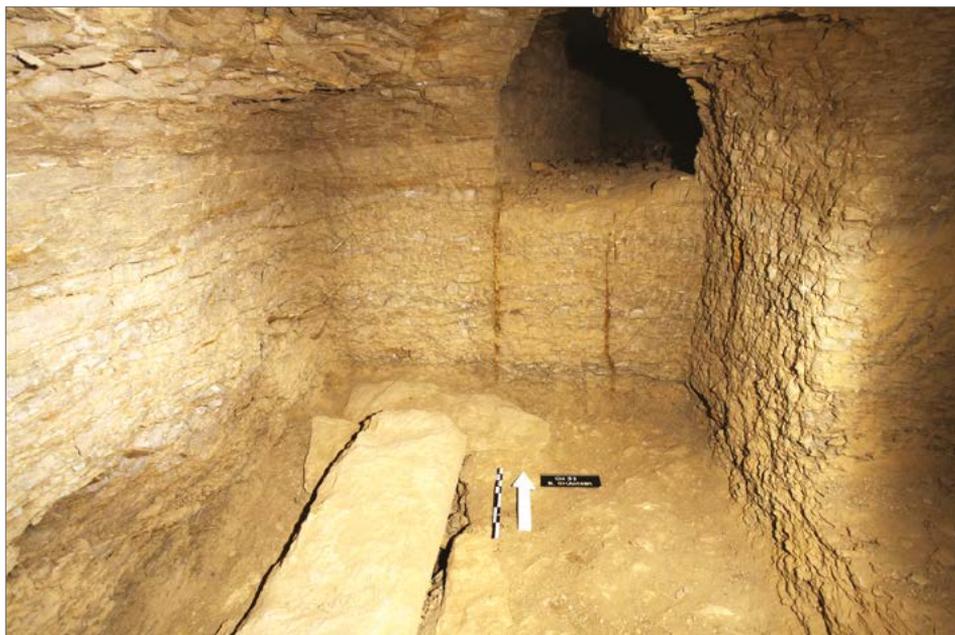


Fig. 5. Northern part of the burial chamber of Chapel 32 with the limestone slab covering the burial pit still in place; the breach in the north wall leads to the burial chamber of Shaft 54 (PCMA UW Saqqara Project/photo J. Dąbrowski)



Fig. 6. Burial 702 in a wooden coffin deposited in a pit inside the burial chamber of Chapel 32 (PCMA UW Saqqara Project/photo J. Dąbrowski)

burial has not been disturbed by robbers, but it suffered significant damage as a result of falling stones and stagnant water. The coffin contained remains of a body of a young man, about 20–30 years old at death, bearing traces of having been wrapped in numerous layers of linen, with a plaster cover on the head and upper body. The few objects found next to the body inside the coffin included a wooden headrest (Inv. No. S/17/13), a small calcite

vessel (Inv. No. S/17/11) and a carnelian bead (Inv. No. S/17/16) [Fig. 7].

The tomb can be dated to the late Fifth Dynasty and thus it represents the earliest post-Third Dynasty phase of regular use of the area west of the Step Pyramid enclosure, and of the Dry Moat in particular, as a non-royal cemetery (Myśliwiec 2012; Kuraszkiwicz 2013: 2–23, 274–276).



Fig. 7. Grave goods from Burial 702 (PCMA UW Saqqara Project/photo J. Dąbrowski)

## APPENDIX

## CONSERVATION WORK IN SAQQARA

Each season at Saqqara commences with a detailed inspection of the state of preservation of the monuments, including the funerary chapels of Merefnebef, Nyankhnefertem and Ikhi/Mery (Godziejewski 2013; Godziejewski and Dąbrowska 2015). The interval between successive conservation inspections, which should be yearly, was unexpectedly prolonged due to delays with reopening the Project's work after the 2015 season.

**OLD KINGDOM FUNERARY CHAPELS**

Standard procedure calls for the conservator to inspect the interior walls of funerary chapels for damage to the rock surface, plaster and painted decoration caused by the process of salt crystallization in restricted capillary space. The pressure generated during this process blows up the rock allowing salt penetration. It is of paramount importance to clear the salt efflorescence off the walls on an annual basis, and to monitor the humidity and temperature in the funerary chapels to prevent the damaging action of soluble salts. Despite regular efforts, this remains a major conservation problem.

Salt efflorescence was observed in the funerary chapels of Merefnebef and Nyankhnefertem. In the latter chapel, the concentration of salt crystals appeared on the east wall and approximately 0.30 m down from the ceiling, with some small concentrations on the west wall and on the walls near the northeastern corner of the chapel. In the chapel of Merefnebef, salt efflorescence appeared in small, ir-

regular concentrations on the east and west walls. In both funerary chapels, the painted decoration was peeling off because of salt crystallization occurring underneath the paint; such damage is notoriously difficult to repair as the paint is almost entirely detached from the surface. All areas similarly affected were treated and cleared off salt efflorescence. Brushes of various thickness and hardness were used to remove the salt deposits without causing damage to the painting layer. Salt crystals were removed using a scalpel. The peeling painted decoration was treated and mounted using a water dispersion of Primal AC 33. A water solution of ethyl alcohol (1:1) was used to reduce the surface tension and to facilitate treatment penetration.

In the funerary chapel of Ikhi/Mery, the white limestone blocks on which the reliefs and painted decoration were made are less susceptible to salt migration but prone to damage due to the rock's fragility. Multiple rock cracks and ceiling decay damaged the blocks, which fell apart under pressure and shifted from their original places. Some of the blocks needed to be stabilized and disintegrated fragments were mounted, using an acetone solution of Mowilith 50. To monitor rock movement, gypsum seals were installed in Chapels 32 and 13 [Fig. 8].

The shelter over the funerary chapel of Merefnebef required attention and treatment. Heat had melted the roof felt isolation round the skylights, which subsequently penetrated into the shelter

interior near the entrance without causing any damage to the monument. No such technological problems with roof felt melting had been observed before. Repairs included clearing sand from the roof and removing the felt material from the small roofs over the skylights. A lime-cement mortar mixed with sand was then used to seal the holes in the roof. To minimize heat effects in the future, the small roofs were covered with aluminum foil to absorb the heat, and the roof was covered with a layer of sand. The melted felt that seeped through the holes around the skylights was cleared mechanically.

#### **CLIMATE CONDITIONS INSIDE THE FUNERARY CHAPELS**

A Rotronic device to monitor and register the temperature and humidity inside the chapels was installed in 2015. Readings in the chapels of Merefnebef and

Nyankhnefertem were registered every two hours between 26 March 2015 and 18 April 2016, in the chapel of Ikhi/Meri between 27 March 2015 and 15 February 2016 [Fig. 9]. The devices can be programmed to take the readings for approximately a year, which is sufficient to monitor the climatic conditions between two successive seasons. Delays with opening the mission led to no information being available on climate conditions between February 2016 and April 2017 when no fieldwork was conducted at the site. Despite efforts to minimize the impact of external factors on the conditions inside the funerary chapels, humidity and changing temperatures continue to take a toll.

#### **SMALL OBJECTS**

Small finds conservation in 2017 was focused on the finds from Chapel 32. These included a wooden figurine base with two



Fig. 8. Gypsum seals installed on the ceiling of the burial chamber of Chapel 32 (PCMA UW Saqqara Project/photo J. Dąbrowski)

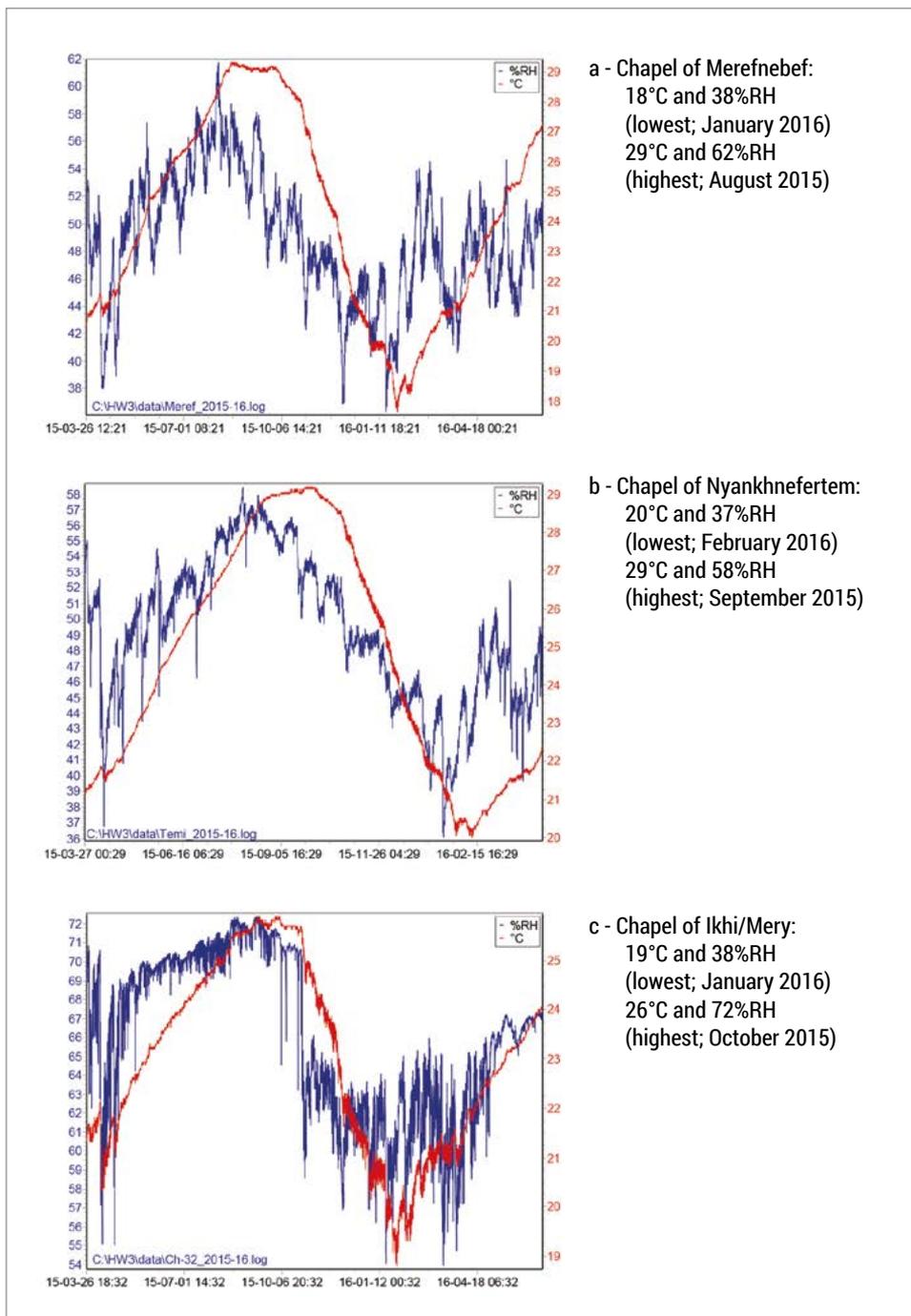


Fig. 9. Temperature (red) and humidity (blue) levels registered by thermohygrograph in the funerary chapels of, from top, Merefnebef, Nyankhnepferem, and Ikhi/Mery (Rotronic data for the period from March 2015 to April 2016)

sockets for a figure stepping forward, uncovered in the southwestern corner of the burial chamber and next to a wooden coffin. Remnants of the left foot of this figure lay next to one of the sockets. The surface of the figurine base was whitewashed, in some areas the base was covered with vegetable black and red ochre. The wood was almost entirely degraded and needed immediate treatment. Sand and debris particles were removed and the wood was treated with an acetone solution of Paraloid B-72 and a low-percentage glue. All peelings were mounted with a water dispersion of Primal AC 33. To reduce

surface tension, a solution of water and ethyl alcohol (1:1) was used. The glue applied was more effective due to deeper surface penetration, which ensured better impregnation. In some instances, where the vegetable black had penetrated deep into the cracks, as well as underneath the peeling whitewash, it proved impossible to clear it away completely.

A plaster mask that covered the skull of a skeleton uncovered in Chapel 32 (Burial 702) was found fragmented. The mask fragments were treated with an acetone solution (3–5%) of Paraloid B-72.

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