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Report

The Leiden-Turin Archaeological Expedition to Saqqara: Preliminary Results of the 2022 and 2023 Fieldwork Seasons

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Abstract

During the 2022 and 2023 seasons, the joint Leiden-Turin Expedition to Saqqara continued work in the area north of the tomb of Maya. In the previous excavation seasons, the expedition had uncovered the perimeter walls of a large New Kingdom tomb (V82.1) located in the west part of this area. The deposits that covered and filled the structure were further excavated and the inscriptions found on the wall reliefs allowed the tomb owner and his spouse to be identified. They are Panehsy, an early-Ramesside steward of (the temple of) Amun, and Baia, singer of Amun-bunakhtef. A partial excavation of the underground burial complex yielded much evidence of later use, while the excavation to the north and east of the superstructure uncovered material evidence for Late Antique occupation. The excavation east of the tomb of Panehsy added more Ramesside chapels to the cluster previously found in this area, including that of Yuyu, maker of gold foil. During the 2022 and 2023 seasons of fieldwork, selected objects of wood and textile found during earlier seasons were examined in more detail. The two seasons also saw the initiation of two more projects, namely the geophysical survey of an area south of the present excavation, and an oral history project aimed at researching the contribution of workmen to the Leiden-Turin Expedition.

ملخص

خلال موسمي 2022 و2023، واصلت البعثة الأثرية المشتركة بين لايدن وتورينو لسقارة أعمال التنقيب في المنطقة الشمالية من مقبرة مايا. في المواسم السابقة، كشفت البعثة عن الجدران المحيطة لمقبرة كبيرة من عصر الدولة الحديثة (V82.1) والتي تقع في الجزء الغربي من هذه المنطقة. تمت إزالة الرديم والطبقات التي غطت وملأت الهيكل المعماري، وسمحت النقوش الجدارية بتحديد هوية صاحب المقبرة وزوجته، وهما بانيهسي، وكيل (معبد) آمون في فترة رمسيس المبكرة، وبيا، مغنية آمون-بوناختف. أسفر التنقيب الجزئي عن المجموعة الجنائزية تحت الأرض عن أدلة على إعادة الاستخدام خلال الفترات اللاحقة، بينما كشف التنقيب في المنطقة الشمالية والشرقية من الهيكل العلوي للمقبرة عن دلائل مادية على الاستيطان في العصر المتأخر. كما أضاف التنقيب شرق مقبرة بانيهسي المزيد من المعابد الجنائزية من عصر الرعامسة إلى المجموعة التي تم العثور عليها سابقاً في هذه المنطقة، بما في ذلك معبد يويو، صانع رقائق الذهب. خلال موسمي 2022 و2023 من العمل الميداني، تم اختيار بعض القطع الأثرية من الخشب والنسيج التي تم العثور عليها خلال المواسم السابقة لفحصها بشكل مُفصّل. وشهد الموسمان أيضاً بدء مشروعين جديدين، وهما المسح الجيوفيزيائي في منطقة جنوب موقع التنقيب الحالي، ومشروع التأريخ الشفوي الذي يهدف إلى توثيق مساهمة العمال في بعثة لايدن-تورينو الأثرية.

1. Introduction

(Daniel Soliman and Lara Weiss)

After two years of travel restrictions due to the Covid-19 pandemic, the Leiden-Turin Expedition to Saqqara continued its activities at the archaeological site of Saqqara in the autumn of 2022 and spring 2023. Work was made possible thanks to the permission of Dr. Mostafa Waziri (Secretary General of the Supreme Council of Antiquities), Dr. Nashwa Gaber (Director of Foreign Missions Affairs and Permanent Committees), the Permanent Committee of the Supreme Council of Antiquities, Dr. Mohammad M. Youssef (Director General of Saqqara), Dr. Sabri Farag (Director of the Saqqara Antiquities Area), and thanks to the financial support of the Museo Egizio, the Rijksmuseum van Oudheden (RMO), the Dutch Research Council (NWO), the Friends of Saqqara Foundation, the Impact Fund of the Faculty of Humanities of Leiden University, the Amarna Research Foundation and the Barreveld Fonds. We would also like to thank Police Director Mr. Mohammed Hammuda, Chief of Police Mr. Mohammed Ferally, Head of Restoration Mr. Ashraf Fahmi, Chief Inspector of Saqqara Mr. Mohammed Hendawy, and foreman Mr. Hossam ʻAzzam.

The 2022 excavation season of the Leiden-Turin Expedition to Saqqara took place from 18 September to 27 October and was followed by the 2023 season from 20 February to 23 March. During the two seasons, 87 colleagues[1] worked together to further excavate tomb V82.1[2] in the area north of the tomb of Maya, which was later identified as the tomb of the steward of the temple of Amun, Panehsy, and to further investigate the area east of it. Since the 2023 spring season followed soon after the 2022 autumn season, this preliminary report presents the results of both seasons together.

In 2022, the activities were carried out in cooperation with inspector Ms. Rehab Ahmed Mohammed and inspector Mr. Ashraf ʻAbdel ʻAziz, in 2023 with inspector Ms. Hana Donqol and inspector Mr. Farid Ahmed Farid Sherif. During both seasons, some restoration work was carried out, including maintenance of the roof of Maya's central chapel in order to prevent leakage, and the restoration and consolidation of the reliefs in Panehsy's tomb, chapel 270, and chapel 545. This work was carried out by SCA restorers Mr. Yousef Hammadi, Ms. Basma Zaghloul and Mr. Hassan ʻAbdallah Hassan Soliman.

Two additional projects were carried out as part of the two excavation campaigns: Tomasz Herbich and Konrad Jurkowski, in collaboration with Vladimír Brůna, performed a geophysical survey in the southern part of the archaeological concession area (see Section 9), and Fatma Keshk, Ashraquet Bastawrous, Servaas Neijens, Mahmoud Ibrahim, Noha el-Hennawy, Nurhan Amin and Sarah Bahgat started a project on the history of the excavations from the workmen's perspective (see Section 10).

Barbara Aston and Lyla Pinch-Brock managed to complete all the drawings of the ceramics for the publication *Five New Kingdom Tombs at Saqqara*, by Maarten Raven.[3] The book was published in June 2024 with the financial support of the Mehen Foundation.

2. Preliminary report on the excavation

2.1 The area

(Paolo Del Vesco)

In 2022, work concentrated in eight grid squares (V79-82; W79-82), an area of about 200 m² (Fig. 1) where a new tomb entrance had been identified in 2018 and in 2019 most of its perimeter had been cleared, with the deposits in its southeast corner explored by means of a limited sondage. Work was resumed here with the aim of preparing the area before proceeding to excavate the new tomb. The modern deposits found in 2019 on the slope of a small mound in the northern part of the area did not allow correct and safe exploration of the new tomb; the excavation area was therefore expanded, mainly towards the north and west.

At the northwest and southwest corners of the area, two very large pits were found. The southwestern one (context 385) appeared to have been cut from at least elevation 58.70 m down to below the level of the new tomb floor, and to have destroyed the corner walls of the tomb. It was filled with a deposit of very fine and clear wind-blown sand (context 384) resulting in a vertical sequence of layers of loose sand divided by slightly more compact sand crusts, formed whenever the surface of the sand deposit remained exposed to the air for some time. Very similar pits had already been found in other sectors of the excavation area, both inside and out-

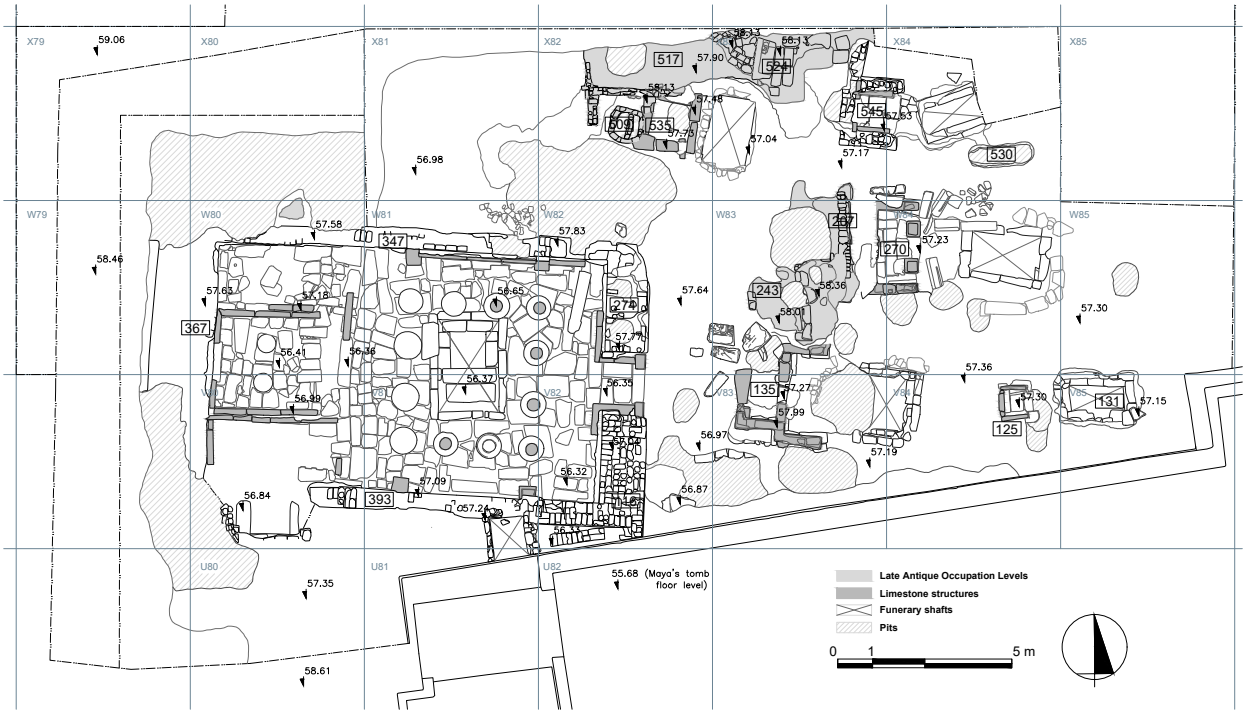

Fig. 1 General plan of the excavation area at the end of the 2023 season. Drawing by Paolo Del Vesco based on orthophotos by the Politecnico di Milano/Leiden-Turin Expedition to Saqqara.

side the new tomb, since 2018. They are probably a result of the activity of nineteenth- to early-twentieth-century seekers of antiquities. In square W79, to the west of tomb wall 367, the remains of two other features, cut by the above-mentioned pits, were uncovered: a compact layer made of *tafla* and mud-brick rubble (context 388), about 90-114 cm wide, and a mud-brick wall (context 389) running parallel to the west wall of the tomb along a north-south axis for 4.24 m (Fig. 2). The function of these features and their relationship with the tomb are not yet clear. The two parallel walls appear to have been razed at an elevation of about 57.63 m and were connected to context 388, maybe to create a sort of outer walking surface that remained exposed to air and atmospheric weathering, as the diffuse presence of small concretions seems to suggest.

In square V80, to the south of the missing section of the southern wall of the tomb of Panehsy and near its southwest corner, the remains of three walls of well-laid mud bricks faced with thick white mortar (contexts 391 and 392) were found resting on walls made of limestone shards. These may have been part of a Late Period funerary shaft that originally abutted the exterior of the tomb wall. A loose light-brown sand deposit found in this spot (context 394) most likely originated from the destruction and plundering of this burial shaft and contained abundant wooden fragments and bones.

Two other brown deposits (contexts 424 and 425), found inside the central and southern chapels of the tomb, can be dated to a time-span ranging between the late New Kingdom and the Late Period (see Section 7.1 for the finds) and testify to an initial abandonment phase of the tomb, to its reuse for later burials, and to the ancient plundering of these later burials as well, before the area of the tomb was ultimately deserted and covered by wind-blown sand deposits. A thick medium-compact yellowish deposit (context 303), covering the paved floor of the tomb and recognizable as the same compact *tafla* surface over which the later Ramesside chapels found in the surrounding area were built, might be evidence of the first phase of abandonment of Panehsy's tomb. During this phase, the tomb might already have been stripped of many limestone slabs, which might have been used to build some of the small funerary chapels found to the east of the tomb.

In W81, inside the tomb, another large robbery pit was identified (context 407), within which a carefully laid retaining wall made of limestone shards and mud-brick pieces (context 405) had been built by the diggers in order to safely reach the opening of the funerary shaft of the tomb (Fig. 3) and from there proceed to the underground chambers.[4]

Fig. 2 Compact layer made of *tafla* and mud-brick rubble (context 388) and a mud-brick wall (context 389) running parallel to the west wall of tomb V82.1. Photo by Paolo Del Vesco/Leiden-Turin Expedition to Saqqara.

Fig. 3 Large robbery pit (context 407) built around the opening of the funerary shaft of tomb V82.1. Photo by Paolo Del Vesco/Leiden-Turin Expedition to Saqqara.

Fig. 4 Installation (context 211) consisting of a half-buried pottery container in square W83, view from the west. Photo by Paolo Del Vesco/Leiden-Turin Expedition to Saqqara.

In 2023, the excavation work concentrated in the area immediately outside the northeast corner of the tomb of Panehsy, with the aim of better understanding the relationship between the tomb and the spaces contiguous to it, where during previous seasons an interesting stratigraphy of occupation layers dating from the late Ramesside period to Late Antiquity had been found. Close to the northern edge of squares X82–83, new structures were found pertaining to Late Antique occupation layers, which most likely were originally connected to very similar structures and deposits already unearthed in W82–83 during the 2017 and 2018 seasons. Some structures were built directly on top of the remains of the aforementioned Ramesside funerary chapels, while others were lying on a wind-blown deposit of clean sand that had covered the abandoned and ruined Ramesside chapels. The remains of Late Antique layers include mud-brick walls on stone foundations (context 207), mudbrick (contexts 243 and 517) and stone-paved floors (context 524), and various installations. The present state of preservation of these sparse remains, which were badly damaged by digging activity of nineteenth-century antiquities seekers,[5] prevents us from fully understanding the original layout and function of these structures. Some of the installations are particularly interesting and deserve at least a short mention. A circular pottery basin (context 211), for instance, appears to have been installed during a later phase of these Late Antique occupation layers, half-buried in the floor and cutting a small round pit in the stone foundation of an earlier wall. Initially used for storage and subsequently as a trash bin, it was eventually filled and sealed with a layer of white plaster, the basin's rim still protruding from the plaster. This indicates it was repurposed as a working surface, perhaps an installation for processing food or other materials (Fig. 4).

Another interesting feature is a subcircular mud-brick structure (context 509) found in square X82, which might have been used for storage during a first phase and as a garbage pit during a second phase.[6] Its internal diameter is around 68 cm and its depth 126 cm. At some point it was divided into two sectors (the smaller being 26 cm wide) by the construction of a mud-brick partition wall (Fig. 5). This installation was found filled with lots of different discarded materials: shells, fruit stones, several frag-

ments of glass cups, fragments of faience shabtis, wooden combs, wooden piercing and weaving tools, tiny faience beads, fourteen coins and a bronze ring (see Section 7.2). A third installation that deserves to be mentioned is a drainage system made of the reused necks of Roman amphoras (context 571), inserted one into the other and probably connected to a drainage hole found in a sort of stone basin reused in stone-paved floor 524 (Fig. 6; see Gasperini's article in this issue of *RiME*).

An approximate date for these structures and deposits is suggested by a first analysis of the pottery fragments, which can be dated to between the seventh and mid-eighth century CE (see Section 5.2.3). For this time frame, at least two phases of occupation can be distinguished on the basis of stratified floor levels and interventions on the structures. Besides those already mentioned, the finds from these structures also included reused inscribed limestone blocks originating from the plundering of Pharaonic monuments.

Several embalmers' caches dating from the Late Period onward were also found, very similar to those unearthed during the 2018 season and mainly dating to the fifth century BCE. In most of the excavated area (W82–83 and X83–84), the Ramesside *tafla* surface (context 303) was reached. Square X84 yielded a burial in a wooden coffin (context 562) that had been placed in a pit (context 530) cut into this surface. Straddling the border between squares X83 and X84, the remains of a new Ramesside chapel (context 545) with its funerary shaft were uncovered (see Section 2.3).

2.2 The tomb of Panehsy (V82.1)

(Nico Staring and Lara Weiss)

The 2022 and 2023 fieldwork seasons largely focused on the excavation of tomb V82.1 and its immediate environs in order to understand its relation to the surrounding structures. The tomb's walls had first surfaced in 2017, but it was not until the 2019 field season that most of its perimeter walls were cleared from the sand and the floor level was reached in a sondage made in the southeast quadrant of the courtyard.[7] The deposits that filled the tomb's superstructure were carefully excavated in 2022 and much of the subterranean burial complex was excavated during the 2022 and 2023 seasons (see Figs. 26, 27 and Fig. 32, below). Inscriptions unearthed during the 2022 season allowed us to identify the tomb's owners as the steward of (the temple of) Amun, Panehsy, and his spouse Baia, singer of Amun-bunakhtef.[8] Judging from its construction technique (mud-brick walls faced with limestone blocks),[9] stratigraphic position (the floor blocks of Panehsy's courtyard lie c. 60 cm higher than those of Maya's), and location (it is built against the exterior north wall of Maya), the tomb of Panehsy was provisionally dated to the early Ramesside period.[10] The date conforms to the general northward expansion of the cemetery over time.[11] The tomb of Panehsy thus bridges a chronological gap in the Unas South Cemetery between the Leiden-Turin concession area and that of Cairo University to the north.[12] Additional archaeological and iconographical evidence acquired during the 2022 and 2023 field seasons further corroborate the hypothesis that the tomb should be placed in the early Ramesside period. A preliminary analysis of its wall relief decoration suggests a date between the end of the reign of Horemheb and the second decade of Ramesses II (see Section 2.2.3–4). A study of the ceramics demonstrates that 95% of the material recovered from the tomb's subterranean complex is Ramesside, and that material found in certain closed contexts in the superstructure points to a first usage of the tomb in the early Nineteenth Dynasty (see Section 5.2.1).

2.2.1 The tomb owner Panehsy, his spouse Baia, and their neighbour Maya

The tomb owner's name, Panehsy, was not uncommon during the New Kingdom and there are a few recorded examples from Memphis.[13] The individual in question, however, is not known from other sources. As "steward of Amun", Panehsy was responsible for the day-to-day administration of the god's temple at Memphis, its buildings, and its domains.[14] Not much is known about the Memphite temple of Amun (the temple building has not yet been found)[15] and its personnel. The newly discovered tomb of Panehsy therefore adds valuable prosopographic data to this field of study.[16]

The spouse of Panehsy was named Baia. She bore the title of "singer of Amun-bunakhtef".[17] The epi-

Fig. 5 Circular mud-brick storage facility (context 509) in square X82. Photo by Paolo Del Vesco/Leiden-Turin Expedition to Saqqara.

Fig. 6 Drainage system made of reused amphoras (context 571) in square X83. Photo by Paolo Del Vesco/Leiden-Turin Expedition to Saqqara.

thet "bunakhtef" should probably be interpreted as a special form of Amun not hitherto attested.[18] It translates as "Amun-he-who-cannot-be-defeated".[19]

The stela in the tomb's southwest chapel depicts one additional individual named Piay, hitherto unattested in other sources.[20] He held office as "scribe of the offering table and lector priest of the steward of Amun Panehsy". The titles suggest that Piay was commissioned to take care of Panehsy's funerary rituals and perform the (daily) mortuary offering cult.[21] It is not unlikely that Piay worked in the Memphite temple of Amun – an institution managed by Panehsy.

The choice of location of Panehsy's tomb suggests that he may have wished to forge a link with his famous necropolis neighbour to the south – a case of association by proximity. The tomb structure of Panehsy abuts that of Maya and certain iconographic and palaeographic details point to the latter monument as a source of inspiration (see Section 2.2.3–4). Moreover, the underground burial chamber of Panehsy is not located under the chapel area of his own tomb, but under the northwest chapel of Maya (see Section 2.2.5). Perhaps Panehsy wished to associate himself with Maya because of the latter's accomplishments during the reigns of Tutankhamun and Horemheb. Following the Amarna period, Maya had been responsible for the restoration of temples throughout the kingdom and the production of new cult images of the gods, foremost of whom was Amun.[22] Maya may thus have been personally involved in restoring the Memphite cult(s) of Amun. Such works would have been carried out in close cooperation with the temple's steward, who managed its (metal) workshops. Panehsy may have been the temple steward in charge at that time, although this is difficult to ascertain on present evidence (we simply lack biographical evidence). We do know that Maya's involvement in the temple extended beyond the restoration campaign. One of many titles he held includes "festival conductor of Amun", which points to the leading role he played in the temple festivals celebrated for the god – presumably also at Memphis.[24]

2.2.2 Superstructure

The tomb's superstructure is built on an east-west axis. It is 13.4 m long and 8.2 m wide (Figs. 7, 8). It features an entrance pylon, an open columned courtyard with access to the burial shaft in the centre, and three chapels in the west. Two columns supported the roof blocks of the central chapel. The perimeter walls were built of mud bricks. On the interior, these walls were faced with limestone slabs, a small number of which have remained in situ. The revetment of the north and south wall of the courtyard still included square bases upon which pilasters once stood. Two broken yet joining fragments of one pilaster, recovered during excavation, were physically joined and re-erected upon the north-east base. The rejoined fragments allow us to estimate the pilaster's original height at 1.85 m (pilaster + base). The peristyle courtyard contained a total of 12 columns, none of them fully preserved. All column bases are extant and half of them still support the remains of column drums. The two columns on the east side, opposite the entrance doorway, are the best preserved, still standing to a height of c. 1.5 m. Another near-complete specimen (1.84 m high), still retaining part of its capital, was found lying in a sand deposit in the north-east corner of the tomb. This column may have stood on one of the column bases forming the north row, which is where it was restored at the end of the 2023 season. The information gleaned from the reconstructed column and pilaster suggests that the tomb's mud-brick walls were originally just under two metres in height. The floor of Panehsy's tomb features a well-preserved limestone paving throughout, with some sections in the chapel areas no longer present, likely removed at some point (see Fig. 10, below). The interior walls marking the chapel area were constructed as hollow skin walls of limestone with a stone and mud-brick rubble fill.

The three chapels on the west end of the tomb's superstructure were heavily damaged by digging activities. The earliest such activities may date between the Pharaonic and the Late Antique period, when various pavement stones and undecorated wall revetment blocks were removed and perhaps reused as building material elsewhere. The southwest chapel had been damaged to the greatest extent, its paving stones and part of the mud-brick south wall being now missing. Continued excavation in this area may uncover the lower courses of the wall's mud-brick foundation below pavement level.

Fig. 7 Tomb of Panehsy (tomb V.82.1) at the end of the 2022 season, view towards the west. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 8 Tomb of Panehsy (tomb V.82.1) at the end of the 2022 season, view towards the southeast. Photo by Nico Staring/ Leiden-Turin Expedition to Saqqara.

2.2.3 The stela in the southwest chapel

The side chapels at the west end of the tomb superstructure each held a stela placed against the west wall. The stela of the southwest chapel was found lying face down in the sand. It is cut from a single block of limestone and its back side is roughly dressed. The back's uneven surface was meant to maximise adhesion to the mud-brick wall, where a mixture of limestone flakes, pieces of mud brick and plaster served as an adhesive that filled the space between the wall and the stela. A pinkish lime mortar was applied at the joint between the base of the stela and the surrounding floor blocks, remnants of which remain as setting lines on the paving stones and mark the stela's original placement.

In its present state, the near-complete stela is 110 cm high, 95 cm wide and 12 cm thick (Fig. 9). It is estimated that only its upper edge is broken off. The rectangular stela[24] sits on a low base and is enclosed by a narrow, raised frame slightly tapering towards the top. The recessed central area of the stela is divided into two superimposed registers with scenes carved in shallow sunk relief.

The scene in the upper register depicts a male individual standing, facing right, raising both hands in a gesture of adoration before the goddess Hathor, who is depicted as a cow standing on a raised dais crowned with a cavetto cornice and set in a shrine, facing left. Six framed columns of hieroglyphic text incised in the space between the cow's back and the shrine's roof identify Hathor and list various of her epithets. The inscription set in four framed columns above the male individual, Panehsy, is largely lost. A high offering stand supporting a nemset jar separates Panehsy and Hathor.

In the lower register, Panehsy and his wife Baia sit on low-backed, lion-legged chairs in front of an offering table.[25] In front of them, to the right, an officiant named Piay pours a libation of water from a *hes* vase. The three individuals are identified by framed texts arranged in columns.

The texts carved on the stela contain no date. Still, it is possible to propose a date on stylistic grounds. The proportions of the human body conform to those typically employed in the Nineteenth Dynasty. These are markedly different from those attested in late Eighteenth Dynasty tombs such as

Fig. 9 Stela repositioned in the southwest chapel of Panehsy. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

that of Panehsy's neighbour, Maya,[26] who built his tomb during a period spanning from the reign of Tutankhamun to Year 9 of Horemheb.[27] The proportions of Panehsy compare much better to those of Tia,[28] who probably started building his tomb near the end of the second decade of Ramesses II, between Years 16 and 24.[29] Still, Tia features the elongated legs characteristic of the Ramesside period, half a square longer than Panehsy's. A preliminary comparison with Tia's tomb thus suggests that Panehsy's reliefs should be dated before Tia's, i.e. before the second decade of Ramesses II. This date is consistent with that suggested for the architecture, tomb placement, and ceramics (as outlined in Section 2.2.1, above), and suggests the tomb was built and decorated between Year 9 of Horemheb (the year Maya died offers a *terminus a quo*) and Year 16 of Ramesses II (the making of Tia's tomb offers a *terminus ad quem*).

2.2.4 The wall reliefs of the central chapel

(Nico Staring)

The central chapel in the west end of the tomb's superstructure consists of a single room (Fig. 10). The mud-brick wall that forms the western perimeter of the tomb is preserved to a maximum height of 120 cm. Only the lowermost courses of limestone revetment blocks bearing relief decoration are preserved, while the stela set in the west wall is now missing. A fragment (R93) of its lower-right corner was recovered during excavation (Fig. 11) and was restored to its original position at the end of the 2022 season. The fragment preserves a raised jamb with the lower part of two framed columns of text ending with the name Panehsy, as well as part of the recessed central area of the stela depicting two feet of a standing individual carved in sunk relief. The reliefs abutting the stela on both sides of the west wall preserve the feet of the elite male tomb owner, carved in raised relief (Fig. 12). The man wears a long, elaborately pleated garment and sandals, and holds a combination of the so-called *was* sceptre and the *medu* or staff-of-office.

The north and south walls of the chapel contain one scene each. Both are executed in raised relief and depict the male tomb owner sitting on a lion-legged chair before an offering table, while various individuals bring offerings. The scene on the north wall depicts two offering bearers leading a fat bull (see Fig. 28b, below).

A preliminary study of the reliefs has identified a number of ancient alterations to the composition of the scenes. One example is observed on the south wall, to the right of the seated tomb owner (Fig. 13). The scene presently depicts four individuals standing before two offering stands. Close scrutiny of the carvings reveals that the man standing closest to the chair's hind leg was added subsequent to the initial carving. This figure is represented on a smaller scale than the others and wears a distinctly different garment. The technique used to carve the figure also differs from that used for the others, which are sculpted in thick raised relief, a technique whereby the background of the figures is lowered. By contrast, the individual on the left was made by deeply incising the contours of the figure (sinking the figure into the already-lowered stone surface). The internal details were then modelled to give it the visual appearance of raised relief.

Relief decoration outside the western chapels is limited to the west wall of the pillared courtyard, where the section between the central and northwest chapel preserves decoration carved in raised relief. The scene framed by a block frieze depicts two groups of men, each engaged in the slaughtering of a bull. The south doorjamb of the entrance to the northwest chapel was inscribed with three framed columns of hieroglyphic text carved in raised relief (Fig. 14). Each text column ends with the name of Panehsy.

2.2.5 Substructure and burial chambers

(Nico Staring)

The shaft of Panehsy's tomb (context 459) is situated in the peristyle courtyard of the tomb. The mouth of the shaft is positioned slightly off-centre relative to the central axis, and features a sunken ledge (c. 30 cm) upon which the limestone cover slabs rested (Fig. 15). The two slabs that were found in situ covered the south part of the shaft. These needed to be removed in order to safely excavate the shaft. The burial shaft is rectangular and measures 165 cm from north to south and 98 cm from east to west. Its upper part consists of seven courses of limestone masonry, 1.7 m deep. Remarkably, the shaft descends to a depth of 10.20 m, making it one of the deepest New Kingdom burial shafts in the Leiden-Turin concession area (see Fig. 32, below).[30]

Two subterranean chambers branch off from the shaft's southern wall. Chamber A (context 471), the uppermost one, lies at a depth of 5.9 m. It consists of a square room measuring about 4 m from north to south and 2.5 m from east to west.[31] The doorway to this room is 2.07 m high. The room was almost completely filled with sand. A later shaft had broken into the chamber's southeast corner (see Section 2.2.6).

About 93 cm below the floor of the upper chamber, another doorway opens into a lower room, Chamber B (context 475). The floor level of Chamber B lies flush with the bottom of the burial shaft at a depth of 10.20 m,[32] measures about 3.54 m from north to south and 3.33 m from east to west, and reaches a maximum ceiling height of 1.55 m. A second shaft (context 476) descends from the floor in its southeast corner (Fig. 16).

Fig. 10 Central chapel in the west end of the tomb of Panehsy, end of the 2022 season, view towards the west. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

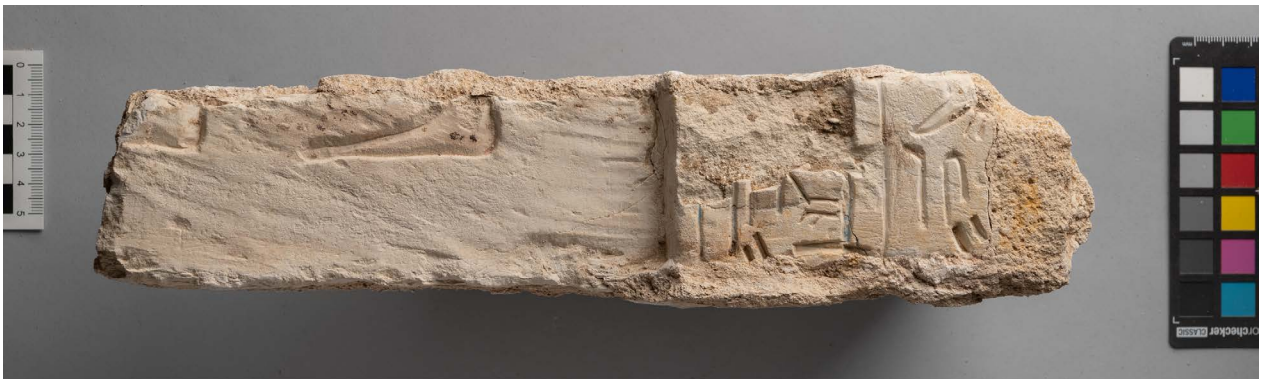

Fig. 11 Relief fragment R93, which formed the lower right-hand corner of the stela that stood on the west wall of Pahensy's central chapel. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 12 Tomb of Panehsy, central chapel, relief decoration on the west wall, north end. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

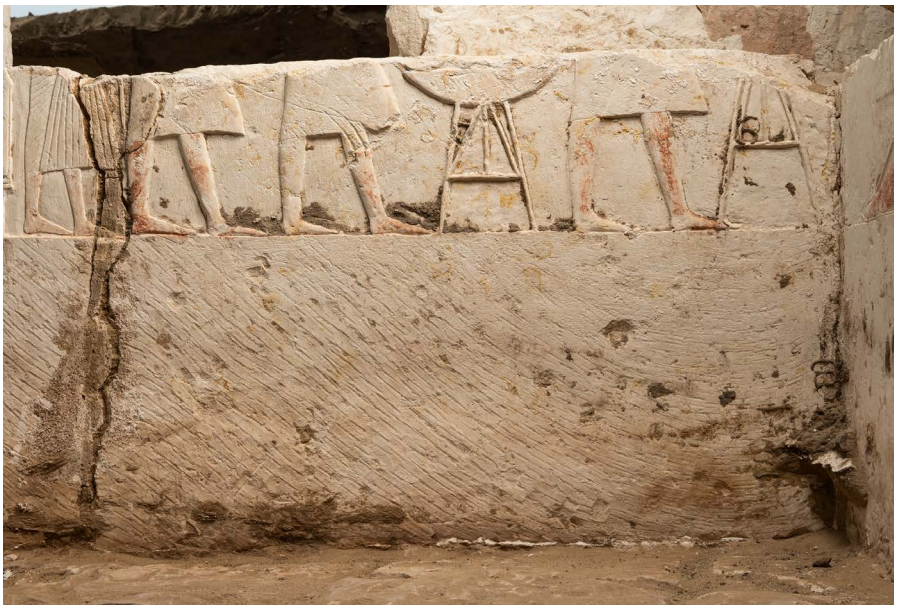

Fig. 13 Tomb of Panehsy, central chapel, relief decoration on the south wall, west end. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 14 Tomb of Panehsy, relief decoration on the west wall of the peristyle courtyard. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 15 Tomb of Panehsy, opening of the tomb shaft in the middle of the peristyle courtyard. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 16 Tomb of Panehsy, first glimpse into Chamber B of the underground complex. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 17 Joining fragments of a limestone slab (R134) that was used to cover the opening of shaft 476, with remains of Old Kingdom relief decoration on its long side. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

A low drystone wall made of limestone blocks stood on the north and west side of the mouth of the shaft (context 478). It was presumably built by previous excavators of the underground complex, who emptied the second shaft (context 476) and deposited all the sand and rubble (context 479) in Chamber B. The wall prevented the accumulation of loose sand and rubble from sliding back into the shaft while it was being emptied. Three blocks used in its construction were fragments of the second shaft's original cover slabs. The sand deposited behind the drystone wall yielded four fragments of a calcite jar (F744A–D), one of which bore the incised hieroglyphic inscription "high priest".

One of the cover slabs (126 × 28 × 8 cm) of shaft 476 was found in situ, lying across the mouth. It must have been left there intentionally by those who emptied the shaft. It would have eased access to the burial chamber and the hauling of material from below. We decided to remove the slab for safety reasons and replace it with a sturdier wooden beam to facilitate work in the 5.40 m deep shaft.

One more room, Chamber C (context 483), was accessed from the south wall of shaft 476. Its doorway is 95 cm high and 87 cm wide. The room measures 2.90 m from north to south and 2.5 m from east to west, and its maximum height is about 1.2 m. The location of this burial chamber is noteworthy, because it does not lie below the central chapel of the tomb of Panehsy, as one would expect, but exactly below the northwest chapel of the neighbouring tomb of Maya. When found, the burial chamber was largely filled with sand and rubble, leaving a space of no more than 40 cm to the ceiling. The deposits were covered by chunks of rock that had broken off from the ceiling. The southern part of the room contained irregularly shaped limestone blocks (context 485). Three stone fragments joined and were identified as a cover slab of shaft 476. This slab (R134) had been sawn off a larger block that was previously used in a structure of Old Kingdom date. One of the slab's long sides bears traces of raised relief (Fig. 17). The stones in the south part of Chamber C were mixed with quantities of potsherds and skeletal material.

A deposit of clean and loose yellowish sand (context 484) in the northeast part of Chamber C, closest to the entrance, had slid into the chamber from the shaft, and lay on top of a greyish-brown sand deposit (context 482) that covered the rock floor of the chamber. Context 482 held two calcite jar fragments. One (F751) bears a column of hieroglyphic text giving the name of one of the Sons of Horus, Imsety, and a line of text with the title "high priest of Hathor, lady of the sycamore". Organic material such as wood has barely been preserved in the damp conditions and high temperatures at this depth. Only one small fragment of a wooden object (the foot and shaft of a standard?) could be recovered (F752). The deposit also yielded beads, pottery sherds and skeletal remains. A first assessment of Chamber C suggests that its builders had left it unfinished. This interpretation is mainly based on the fact that the levelling of the chamber's floor was clearly halted at one point in time (Fig. 18).[33] Despite its unfinished state, the archaeological evidence strongly suggests that this chamber received at least one or perhaps more burials in the Ramesside period, as the ceramic evidence is rather homogenously datable to that time (see Section 5.2.1).

The uppermost room, Chamber A (context 471), of Panehsy's underground complex was excavated during the 2023 season. When found, the space was almost completely filled with sand that had entered from the main shaft. Another sand cone had formed in the chamber in the opposite southeast corner, where a later shaft (dating to sometime after the New Kingdom) had broken into its ceiling and south wall (see Section 2.2.6). Those who had excavated the underground structure of Panehsy before the present expedition (probably in the nineteenth century CE) had deposited large blocks of limestone (context 612) on the threshold of the entrance to Chamber A, preventing sand from shifting into the main shaft (context 459). One of the blocks used as part of the threshold construction could be identified as a papyrus column fragment, which most likely came from the columned courtyard of Panehsy's tomb superstructure. The deposit of clean sand (context 610) that had entered Chamber A from the main shaft covered another c. 40 cm thick sand deposit that sat on the chamber's rock floor. The

Fig. 18 Tomb of Panehsy, underground complex, Chamber C, at the end of the 2022 season. Photo by Nico Staring/ Leiden-Turin Expedition to Saqqara.

southern half of the chamber yielded a more complex stratigraphy. There, the fill of sand that had entered the space from the breakthrough caused by shaft 146 (context 608) covered a layer of red and yellow coloured *tafla* chunks that had broken off from the ceiling of Chamber A. The *tafla* layer covered a dark-brown deposit of decomposed organic material filled with *tafla* chips and large quantities of human bone material, large numbers of rodent bones, and a few ceramics (context 623). The deposit yielded assorted funerary objects such as wooden pegs (probably used in coffins), the limestone lid of a canopic jar and fragments of calcite canopic jars. Despite the large quantities of human bone, it was impossible to distinguish individual burials, because it was thoroughly mixed. This raises the question of whether the burials had originally been in Chamber A or the material had been brought from elsewhere (perhaps from further down in the underground complex of Panehsy, or from the adjoining communal burial space entered from the later shaft 146) and thrown into this chamber. Further study of the excavated material and continued excavation of the adjoining communal burial space is required to offer a more definite answer.

At present, the calcite jar fragments found in Chamber A (context 623: F1009, F1010, F1013) could be singled out, as they formed part of one burial as-

semblage together with fragments found in Chambers B (F744A–D, F745, F746) and C (F744E, F750, F751). The fragments formed part of three jars representing Imsety (F751), Hapy (F1009) and Qebehsenuef (F1013). Specimen F1009 also records the full title fragmentarily preserved on F744B and F751, and gives the name of the owner: "high priest of Hathor, Lady of the [Southern] Sycamore, Paynedjem".[34] This individual has not been previously identified in other sources, and the title remains unattested in Memphis during the New Kingdom.[35] The burial equipment points to continued use of the underground spaces of Panehsy's tomb during the later Ramesside period. However, due to the dispersed nature of the fragments, at present it is unclear where Paynedjem's vessels were originally deposited.

2.2.6 Breakthrough to a communal burial complex, post-New Kingdom

(Nico Staring)

A later burial shaft (context 146) that had broken into the southeast corner of Panehsy's underground Chamber A led the expedition to another burial space. The mouth of shaft 146 had already been documented in 2017. It was situated aboveground in the space between the north wall of the northwest chapel of Maya and the south wall of Panehsy.[36] The preexisting tomb walls served as the south and north wall of the new shaft, while its east and west walls were constructed of a single row of mud bricks. The shaft measures 120 × 100 cm and its mouth is situated c. 80 cm above the floor level of Panehsy's columned courtyard. The uppermost 3 m consist of mud-brick masonry that bridges the distance to the bedrock (see Fig. 32, below).[37] The shaft was filled with loose sand containing small quantities of pottery sherds of mixed date (New Kingdom to Late Antique period) and small numbers of bone fragments. At a depth of 6.60 m, the north wall of shaft 146 breaks into the ceiling and south wall of Panehsy's Chamber A, creating a doorway c. 2 m high and 1 m wide (Fig. 19).

At the same level as the breakthrough, the east wall of shaft 146 gives access to a communal burial complex of Late Period or Ptolemaic date (context 613) (Fig. 20).[38] This complex consists of a rectangular room measuring c. 4.3 m (east–west) × 2.8 m (north–south). The room's long sides provide access to a total of four niches: two on the north side (context 614–615) and two on the south side (context 616–617). Each niche is c. 70 cm high, 1.4 m wide, and 2.2 m deep. The burial complex was surveyed and photographically documented at the close of the 2023 season. Further archaeological investigation has been postponed until the next field season.

Fig. 19 Tomb of Panehsy, Chamber A, with a breakthrough to shaft 146 in the south end. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 20 First glimpse into the communal burial complex (context 613) accessed from shaft 146. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

2.3 The tomb chapel of Yuyu (context 545)

(Nico Staring and Lara Weiss)

In squares X83–84, east of the Late Antique structures described in Section 2.1, were found the remains of a small tomb chapel of New Kingdom date (context 545). The inscriptions of the wall reliefs identify its erstwhile owner as the "maker of gold foil, Yuyu", who probably lived and died during the reign of Ramesses II.

2.3.1 Archaeological report

(Nico Staring)

At the start of the 2023 field season, the deposits covering the chapel of Yuyu were c. 2 m thick (Fig. 21).[39] Since the area to the south had already been excavated during previous field seasons, the standing south section of square X84 offered a clear stratigraphic image. It allowed for a provisional reconstruction of the site's formation processes following the chapel's building and initial use. The upper sand layer (context 486) was created in quite recent times, most likely in the 1980s, when material excavated from the tomb of Maya was deposited in this area. It covered a thick layer of clean windblown sand that displayed a clear stratification of alternating fine and coarser sand layers (contexts 589, 591, 593). At a distance of c. 1 m east of the chapel, the clean sand deposit covered the previously described compact Ramesside layer (context 303) composed of a matrix of *tafla* densely filled with pottery sherds (see Section 2.1, above). The thick, homogeneous sand deposit attests to a prolonged period of inactivity in this area. The deepest layers of windblown sand (context 593) formed a concavity, indicating that sand had filled a depression east of chapel 545. Mud lenses (context 591) observed in the depression indicate that water accumulated there following periods of rain (Fig. 22). The depression was created when the chapel's burial shaft (context 607) was last emptied – possibly during the nineteenth century CE – prior to the current excavation. The material excavated from the shaft was deposited all around the shaft: inside the chapel (context 594) as well as outside it to the east and north (context 604). The absence of a drystone wall around the shaft is remarkable, because such walls are a common feature in the Leiden-Turin concession area. These were built by past excavators to keep loose sand from sliding into the emptied shaft (compare Fig. 3, above). The fact that the previous excavators felt no need to build such a structure suggests that at the time the rim of the shaft was situated close to the desert surface.

The aboveground structure of Yuyu's chapel contains a minimum of two spaces (Fig. 23).[40] The southern room measures c. 1 m north–south and 1.15 m east–west. The mud-brick south wall (context 546) and west wall (context 598) are bonded, whereas the wall bearing relief decoration on its south face (595) is not bonded to the structure's west wall. The south room and the area to the east have a limestone pavement, which lies flush with the rim of the tomb shaft (1.7 m × 0.7 m). The stone pavement was found covered by the compact Ramesside *tafla* layer (context 303) that connects the various New Kingdom chapels in this part of the cemetery. The same *tafla* layer had also accumulated all around the exterior of the chapel, thereby enveloping its mud-brick walls.[41]

The chapel's floor blocks supported the wall revetment, the door jambs, and a stela on its west side. Discolouration on the floor in combination with the preserved plaster setting lines point to the former presence of the said architectural elements – the door jambs and the stela. The former have been identified in the collection of the Musée de Picardie in Amiens, France.[42] The jamb with inv. no. M.P. 88.3.4.2 (h: 97 cm) stood on the north side and inv. no. M.P. 88.3.4.1 (h: 87 cm) on the south side.

2.3.2 Wall reliefs

(Nico Staring and Lara Weiss)

2.3.2.1 North wall

The chapel's north wall is built of two limestone blocks, and the scenes are arranged in three registers, each c. 30 cm high (Fig. 24). The joint between the two blocks was concealed with a pinkish gypsum plaster, and various figures depicted in the middle register were subsequently sculpted in this same plaster.

The upper register of the north wall depicts the Ritual of Opening the Mouth. It is performed on the mummiform representation of presumably the deceased tomb owner Yuyu, held upright by an unnamed male with shaven head, positioned in front of a representation of the tomb chapel topped by

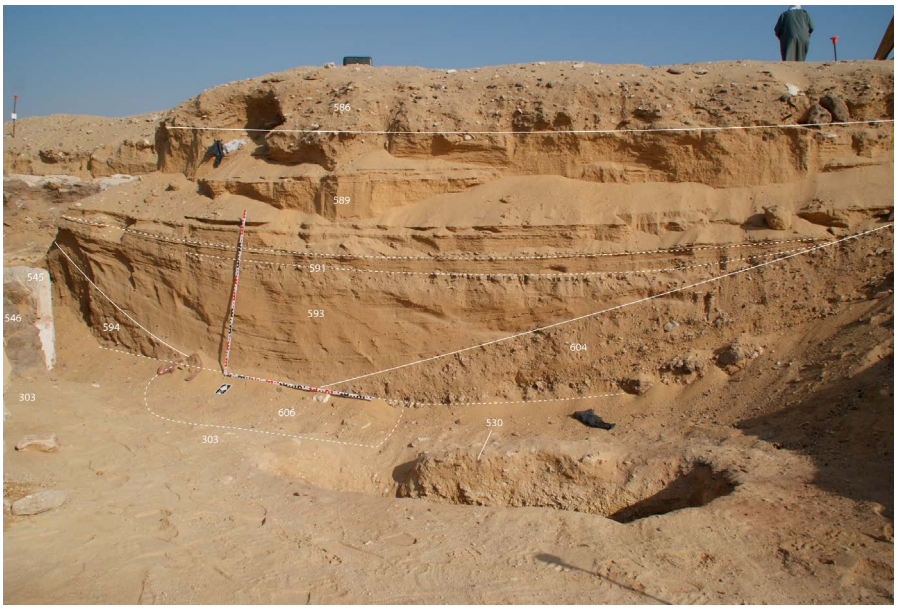

Fig. 21 Stratigraphic sequence in the south section of square X84. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 22 Mud lenses (context 591) that had formed in a depression east of the chapel of Yuyu (context 545). Photo by Nico Staring/ Leiden-Turin Expedition to Saqqara.

Fig. 23 Chapel of Yuyu at the end of the 2023 season. Photo by Nico Staring/Leiden-Turin Expedition to Saqqara.

Fig. 24 Chapel of Yuyu, relief decoration on the north wall. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

a pyramidion. The short text carved above the individual standing closest to Yuyu, performing the Ritual of Opening the Mouth, identifies him as the lector priest Ptahmay. The son of Yuyu depicted in the middle register of this north wall is also named Ptahmay. It seems likely therefore that the officiant performing the ritual should likewise be identified as Yuyu's son. Ptahmay holds a spoutless *nemset* jar from which he pours a libation of water. The space between Yuyu and Ptahmay is filled with the depictions of assorted food offerings and implements used during the Ritual. The right-hand side of the scene depicts a group of wailing female individuals in a range of different poses.

The middle register depicts a scene of the funeral procession. At the centre of the image is the processional bark upon which the enshrined mummiform body of the deceased is placed.[43] It is supported by carrying poles shouldered by four groups of shaven-headed men. The first group is composed of four overlapping individuals, the second of six individuals, and the third and fourth of four each. Thus, each pole is supported by nine men and a total of eighteen men carry the bark – an exceptionally large number for a private funeral. A male and a female are depicted walking besides the naos-shaped shrine. The female moves her hands above her head to express her grief. A hieroglyphic text carved in

front of her identifies her as Nefertari, Yuyu's mother. The male individual is identified as "his beloved son, Ptahmay".[44] The funerary bark shouldered by priests is preceded by a larger-scale male individual whose upper body is turned backwards to face the bark and burn incense in a long-armed censer. The hieroglyphic text carved above his image identifies him as "his son Ptahmay, true of voice". The funerary procession is led by a group of four long-horned bulls guided by a male individual holding a lettuce in his left hand. The hieroglyphic text carved above the bulls probably contains the words of a song or utterance befitting the occasion: "to the West, to the West, O praised one, to the West". The party walking behind the funeral bark includes a large-sized representation of a woman named Nihay, who also appears on the opposite south wall. Nihay is followed by three male individuals, all represented at a slightly smaller scale. The hieroglyphic text carved above their images reads "chief of makers of gold foil, Neferrenpet".[45] It is unclear who the individual thus identified is, though one would expect him to be the first in the line. He might be another son of Yuyu or a member of his socio-professional network.

The lower register of the north wall depicts an offering table scene. This time, Yuyu acts on behalf of his (deceased) parents. They are both seated on lion-legged chairs on the far-left side of the register. The hieroglyphic inscriptions set in framed columns identify the couple as "the Osiris, chief of goldworkers of the double treasury of the king l.p.h., Ptah-...,[46] true of voice", and "his spouse Nefertari, true of voice in the necropolis (?)".[47] A monkey is tied to Nefertari's chair. A male officiant standing in front of the offering table pours a libation of water from a spouted *hes* vase. The unframed column of text above the offering table describes the ritual as "performing incense and libation", while the officiant is identified as "the Osiris, maker of gold foil, Yuyu". The right-hand side of the scene depicts a group of four individuals bringing assorted offerings. Framed columns of hieroglyphic text identify the four as children of Yuyu. The first male is identified as "his son, maker of fine gold (?),[48] Hery, true of voice"; the second as "his son, Ptahmay, true of voice"; the first female as "his sister, Tuty", and the second female, depicted at a slightly smaller scale, as "Maya, true of voice in peace forever, repeating life".

2.3.2.2 South wall

The south wall of Yuyu's tomb chapel is made of two limestone blocks decorated with scenes covering three registers (Fig. 25). The scenes depict motifs of the tomb owner and his retinue offering to various deities.

The scene in the upper register is largely damaged. The remains in the lower part of the scene allow for a partial reconstruction. A row of seven individuals approach a deity standing upon a narrow dais shaped as the hieroglyphic sign *mꜣᶜ*. In light of the Memphite setting and considering the deities depicted in the registers below (i.e. two deities closely associated with the local Memphite necropolis), it is highly likely the scene relates to Ptah, the city god of Memphis and patron deity of artists.

The middle register depicts Yuyu and his retinue offering a gazelle (oryx) before the henu bark of the god Sokar-Osiris in the shetyt shrine.[49] The iconography of the bark is characteristic of New Kingdom depictions.[50] Various elements of Sokar's sanctuary, including the pedestal, sledge, frame and part of the shrine retain their yellow pigment. Six individuals approach the bark from the left: four females and two males. Yuyu is positioned at the head of the row of people, killing the gazelle placed upon a high table. The hieroglyphic text carved above the gazelle reads: "the other Osiris who is in the Shetyt". The female behind Yuyu is identified as "the singer of Amun, Nihay, true of voice". She is probably Yuyu's spouse. Nihay is followed by a male individual with shaven head and wearing a plain sash kilt. He is identified as "Ptahmay, true of voice", undoubtedly Yuyu's son, who is also depicted on the opposite north wall. The female behind him is "his sister, Maiay", i.e. the spouse of Ptahmay, son of Yuyu. The female next in line is designated as "his daughter Nefertari, true of voice", i.e. the daughter of Ptahmay and Maiay. The last individual in the row is a little girl with shaved head. She raises her left hand to grasp Nefertari's lower arm while she holds a flowering papyrus stalk in her right hand clutched to her chest. The framed column of hieroglyphic text incised above her reads: "Mutnofret, true of voice".

The lower register depicts an offering scene before the Hathor cow emerging from the mountains, who is described as: "Hathor, Lady of the Southern

Fig. 25 Chapel of Yuyu, relief decoration on the south wall. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Sycamore, Lady of the Desert(-necropolis)".[51] The yellow-painted Hathor cow bears the sun disk between her horns and wears a *menat* necklace with a heavy counterbalance around her neck resting on the withers. The cow stands in a papyrus thicket, with one stalk bent towards the cow's foreleg. The back part of its body is hidden from view by a black-dotted, red-coloured undulating escarpment. Yuyu censes and libates the offering table before Hathor. Five more individuals are depicted standing behind Yuyu: one male and four females. The male individual standing closest to Yuyu is named "scribe of the great (?),[52] Amenemope". It is unclear what the relationship between Yuyu and Amenemope might have been. All four females that complete the row of offering bearers are named in short, framed columns of text. Their names and affiliations are, from right to left: "Ini";[53] "Pay";[54] "his daughter Nefertari";[55] and "his daughter Meretptah". The nature of the relationship of Ini and Pay to Yuyu and Amenemope is unclear, and it is equally unknown who the parents of Nefertari and Meretptah were. Nefertari might be the same individual as the lady depicted and named in the middle register (second person to the left).

2.3.2.3 West wall

The now-missing central stela of the chapel of Yuyu had been framed by narrow slabs of limestone bearing the representations of the four Sons of Horus carved in sunk relief. All four are depicted as standing anthropoid figures holding a *was* sceptre. On the south side of the stela are the superimposed depictions of Imsety and Hapy and on the north side are Qebehsenuef and Duamutef. The deities were oriented towards the stela that would have contained a representation of the tomb owner Yuyu in adoration before Osiris.[56]

3. Brief report on the work of the survey team of the Politecnico di Milano

(Alessandro Mandelli, Andrea Pasqui and Corinna Rossi, Politecnico di Milano)

The survey activities carried out in 2022 and 2023 aimed at documenting the ongoing excavation, following the workflow established during previous seasons. In 2023, additional attention was given to producing a general three-dimensional model of most of the tomb of Panehsy, encompassing both its superstructure and substructure.

During the first week of the 2022 season, the reference grid was checked and fixed with the Topcon ES-62 total station in order to align the forthcoming data with the previous surveys. The survey of the stratigraphy began progressively during the second week, in parallel with the excavation activities. In addition to recording specific contexts, general surveys were conducted two to three times per week, at 10am during the excavation break and at 1pm at the end of the working day, to minimise interference with excavation activities. These general surveys were implemented by means of a 4 m-long photographic pole equipped with a Canon 5D SR Mark III and a 20 mm lens. In total, seventeen general surveys were conducted, covering an area of approximately 800 m^2. The first and last orthophotographs of the area under investigation illustrate the extent of the excavation carried out during the 2022 season (Figs. 26, 27).

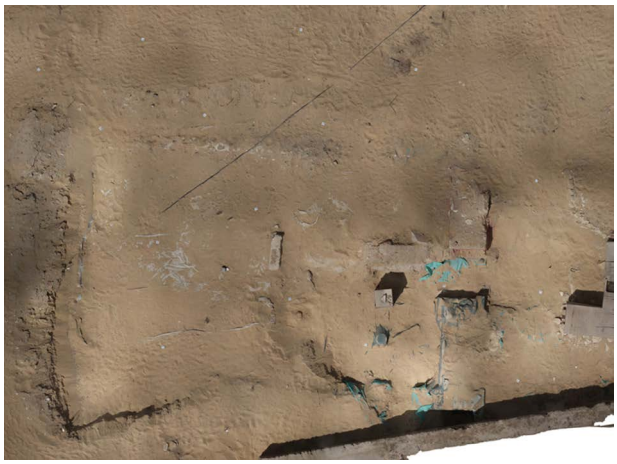

Fig. 26 First general survey, 22 September 2022. Processing by Alessandro Mandelli, 2023/Leiden-Turin Expedition to Saqqara.

Fig. 27 Last general survey, 16 October 2022. Processing by Alessandro Mandelli, 2023/Leiden-Turin Expedition to Saqqara.

During the excavation, the decorated orthostats were documented as they emerged from the sand (Fig. 28). Two detailed 3D surveys of the inscriptions in the central chapel of the tomb of Panehsy were performed using the same camera, now fitted with a 35 mm lens, which enabled a resolution of 0.1 mm. The first survey took place on 9 October 2022, when the reliefs were initially uncovered. Ten days later, a final survey was completed, when the floor of the chapel was reached. The resulting 3D models provide the basis for producing detailed, measurable orthophotos (Fig. 29).

In the fourth week, the survey of the shaft located in the courtyard of the tomb of Panehsy was initiated. The geometry of the shaft was recorded using a wheeled structure containing the camera, which was lowered by means of ropes (Fig. 30). To maintain a consistent resolution, the team opted to use the same camera and lens employed in the general survey, rather than a fisheye lens, which would have resulted in a reduced 3D resolution.

The 2023 season started with the usual alignment procedures, followed by the implementation of the established workflow: detailed surveys were carried out daily, while general surveys of the entire excavation area were performed according to the progress of the excavation. As a result, the overall model of the area under investigation captured multiple configurations of the changing terrain (Fig. 31).

The surveys encompassed both the sequentially exposed archaeological contexts, as well as the progressive excavation of the main shaft of the tomb of Panehsy and a secondary shaft located immediately

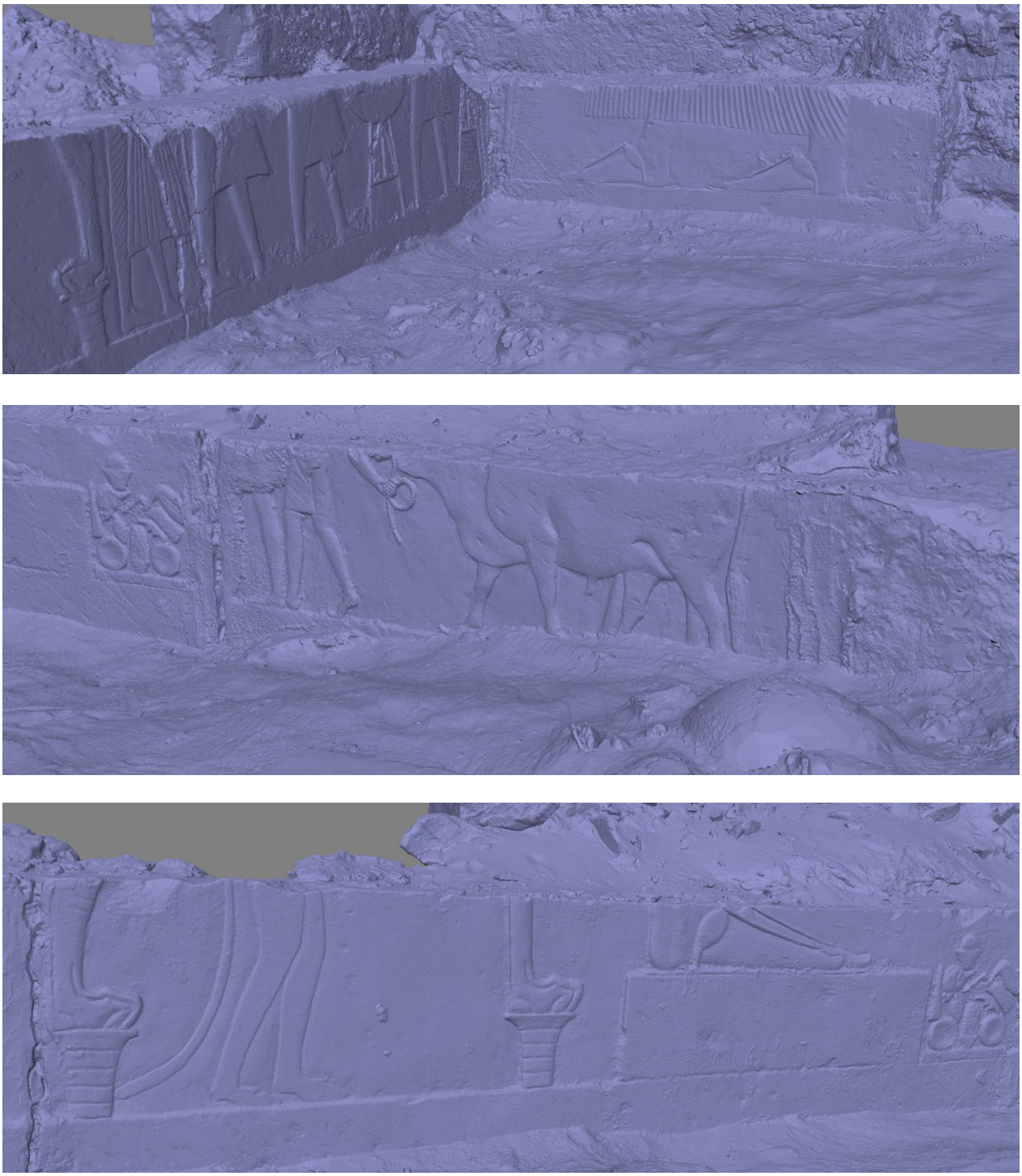

Fig. 28 Details of the high-resolution 3D model. Processing by Alessandro Mandelli, 2023/Leiden-Turin Expedition to Saqqara.

Fig. 29 Detail of the measurable high-resolution orthophoto. Processing by Alessandro Mandelli, 2023/Leiden-Turin Expedition to Saqqara.

Fig. 30 The structure and the camera lowered in the second shaft of the tomb of Panehsy. Photo by Nicola Dell'Aquila, 2022/ Leiden-Turin Expedition to Saqqara.

Fig. 31 3D model of the area north of the tomb of Maya under excavation. Processing by Alessandro Mandelli, 2023/ Leiden-Turin Expedition to Saqqara.

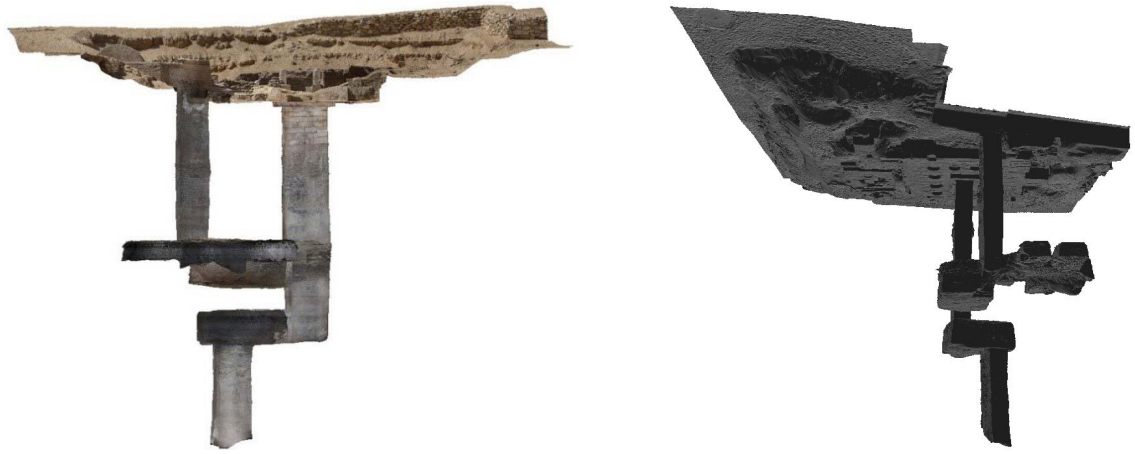

Fig. 32 Two views (lateral and prospective) of the preliminary 3D model of the tomb of Panehsy. Processing by Alessandro Mandelli, 2023/Leiden-Turin Expedition to Saqqara.

to the south, which provides access to the first set of underground chambers. The phase of post-fieldwork processing included the composition of a general 3D model of the newly discovered tomb, incorporating both the above-ground portions exposed at various times, and the underground sections, also excavated at various times (Fig. 32). Once processing is finalised, a complete reality-based 3D model of the tomb will be produced, representing the tomb in its most complete state.

4. Preliminary study of the decoration of an early-Ramesside chapel (context 270)

(Lyla Pinch-Brock)[57]

In 2018, during the excavations north of the tomb of Maya,[58] the heads of a row of small finely-carved human figures began to emerge from a layer of compacted rubble and mud (Fig. 33). When the debris was finally removed, five 35 cm tall, almost completely three-dimensional figures were revealed, wearing elaborate wigs and pleated garments, carved in the minutest detail, right down to the tiny ties on their robes. The sculptures are part of a chapel (context 270) (Fig. 1) where friends and relatives would have commemorated the deceased. It is a three-sided structure 260 cm wide by 140 cm long with a maximum height of a little over half a meter. It was attached to a now almost non-existent, much larger structure, made of mud brick clad in limestone. The floor is paved with stone slabs and the bases of two small, slender columns, centrally positioned, are still extant. Parts of the chapel's decoration were left unfinished, even though the reliefs on the south side bear traces of paint. Nowhere is the name of the owner preserved. Although the type of costume depicted is known from the Amarna Period, the chapel has now been dated to the early-Ramesside Period based on the stratigraphy of the surrounding area.

Because of the poor quality of the limestone, much of the chapel is poorly preserved. The decorative scheme now consists of the central group of figures carved in high relief, with shallow reliefs carved to the north and south of it, and a tiny cavetto cornice cut at the level of the figures' heads. Above the central group are the remains of another unfinished group perched on a lintel, probably seated deities (Fig. 35). The central group, located just above floor level, may represent a family. The carving is very sensitive: two women embrace two men and each woman clasps the hands of a child affectionately (the carving of the children is left unfinished). The adults' pleated garments are very elaborate, and details, like the fingernails and toenails, fringes on the dresses and elaborate coiffures, are carefully picked out.

The incised relief immediately to the left of the family group shows what remains of a group of men bringing offerings to the deceased to be placed on an offering stand in front of them (Fig. 36). Adjacent to this relief is a scene carved along the south wall showing a group of mourning men of high status, evident by their pleated garments, a bark bearing female goddesses seated beneath a sail and the deceased greeted by a mourning female. Beyond the bark are cattle and herders in two registers.

Fig. 33 Family group in the Ramesside chapel (context 270) emerging from the sand in 2018. Photo by Lyla Pinch-Brock/ Leiden-Turin Expedition to Saqqara.

Fig. 34 Lyla Pinch-Brock drawing the family group in the Ramesside chapel (context 270). The reliefs are to the left of the group and on the wall to the artist's left. Photo by Barbara Aston/Leiden-Turin Expedition to Saqqara.

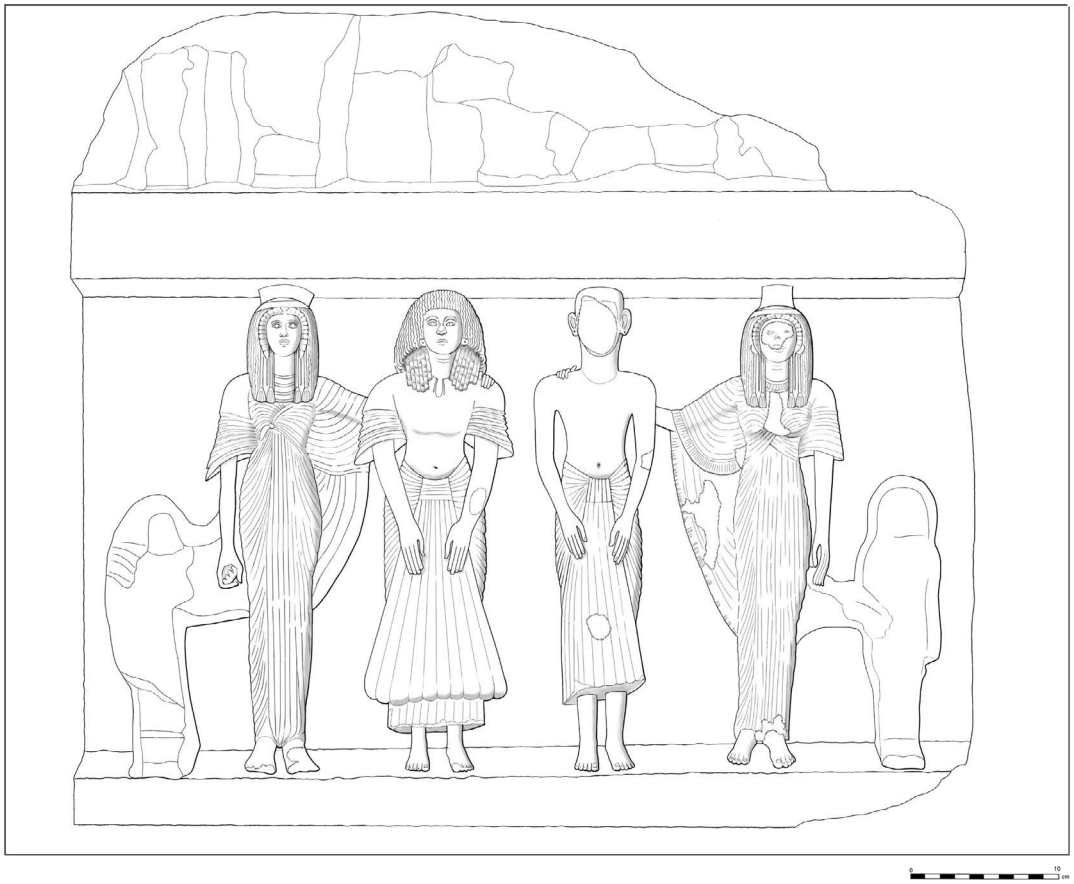

Fig. 35 Illustration of the family group on the west wall of chapel 270. Illustration by Lyla Pinch-Brock/ Leiden-Turin Expedition to Saqqara.

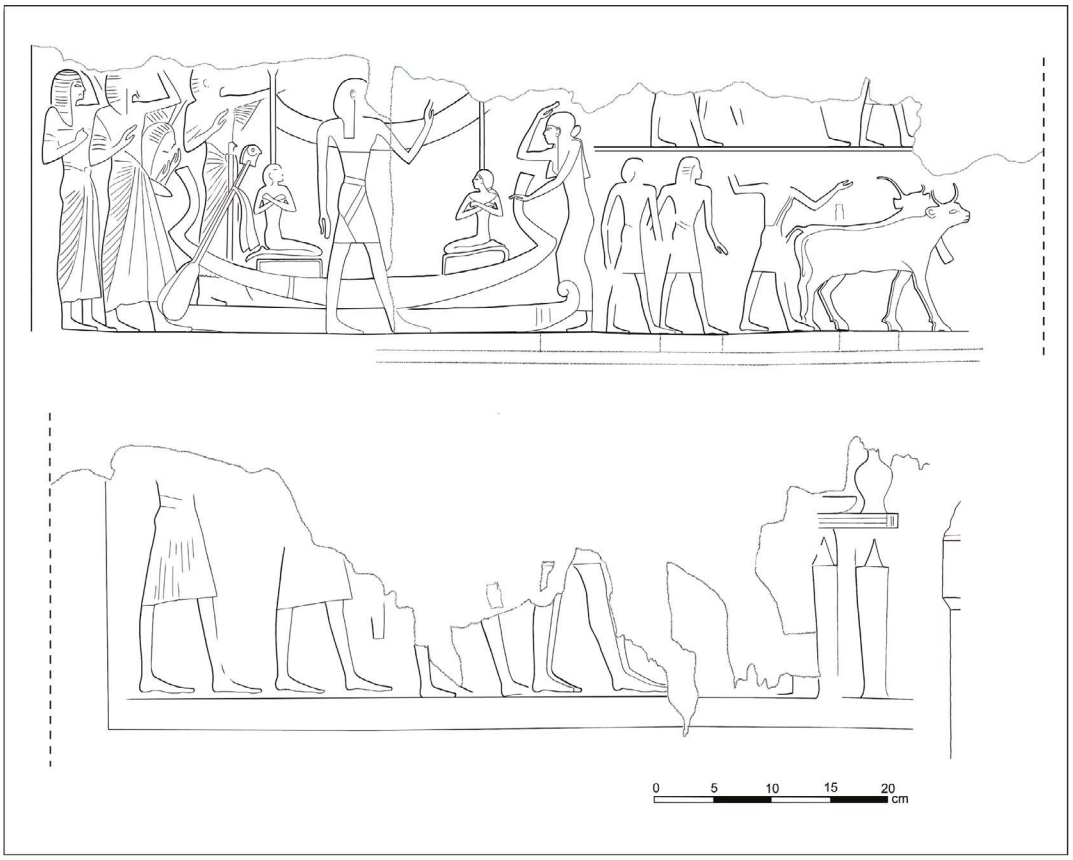

Fig. 36 Illustration of the reliefs on the west of chapel 270, to the left of the family group (upper drawing), and along the south wall (lower drawing). Illustration by Lyla Pinch-Brock/Leiden-Turin Expedition to Saqqara.

Fig. 37 New protection installed around the Ramesside chapel (context 270). Photo by Servaas Neijens, 2023/ Leiden-Turin Expedition to Saqqara.

Fig. 38 Conservators Basma Zaghoul Ismail and Yousef Hammadi removing dirt and stains from the chapel (context 270). Photo by Servaas Neijens/Leiden-Turin Expedition to Saqqara.

Fig. 39 The family group of the chapel after conservation. Photo by Servaas Neijens/Leiden-Turin Expedition to Saqqara.

In the 2022 season, the scenes in the chapel were recorded thanks to a generous grant from the Amarna Foundation. Photographer Nicola Dell'Aquila took photos at different angles and in different lighting to reveal fine details, and the Politecnico di Milano produced a 3D model of the chapel, which was invaluable for measuring elements. Epigraphy was done by visually examining the reliefs and checking details with a magnifying glass, which were noted with pencil on calque tracings placed over enlarged photographs. Final drawings were scanned into the computer and inked digitally by means of a Wacom graphics tablet using established artistic conventions.

In order to protect the chapel on site, a temporary shelter made of plywood was replaced in 2022 with a more substantial structure made of sturdy limestone blocks fixed and coated with cement and fitted with apertures for ventilation and a door thanks to a grant from the Amarna Foundation (Fig. 37). Conservation of the chapel itself was accomplished by experienced conservators Basma Zaghloul Ismail and Yousef Hammadi, working with Abdel Hakim Mohammed under the direction of Dr. Ashraf Fahmi (Figs. 38, 39). They removed accumulated dirt and repaired some cracks in the reliefs, bringing out their remaining colour and beauty.

5. Preliminary analysis of ceramics

(Valentina Gasperini and Alice Salvador)

During the 2022 season, the pottery excavated from the tomb of Panehsy (V82.1) was studied with a particular focus on the materials from the subterranean complex and on the ceramics from the floor of the peristyle courtyard. Ceramics from these contexts were also analysed during the 2023 season, in addition to the study of pottery from the shaft in the south-east corner of Chamber B (context 476) and from contexts to the north-east of the tomb of Panehsy.

5.1 The 2022 season

(Valentina Gasperini)

The most significant contexts in the subterranean complex of the tomb of Panehsy are the layers excavated in Chamber C (contexts 482–485), which are richer in ceramic materials than the other substructures of the complex. 95% of materials are datable to the Ramesside Period. A small percentage of Late Period and Late Antique ceramics is also identified in these contexts: two poorly preserved body sherds belonging to Late Roman 7 amphorae shoulders were found in context 482; and five poorly preserved body sherds belonging to Late Roman 1 amphorae along with one body sherd of a Late Period torch were retrieved from context 484. These materials are evidence of secondary burials in the subterranean complex.

Several ceramic fragments point to a first usage of the tomb in the early Nineteenth Dynasty. For example, context 482 in Chamber C generated an almost complete profile (made of several joining sherds) of a Canaanite jar (C1401, Fig. 40) manufactured from a Levantine clay.[59] Canaanite jars of this type and fabric were typically commercialised in the early-Ramesside phase and are abundantly found across Egypt and in Nubia.[60] Along with this Canaanite jar (Fig. 40), a handle attached to the shoulder of a Marl D amphora (C1403, Fig. 41) was excavated from this layer, with a morphology that is very consistent with a late Eighteenth Dynasty/early Ramesside production.[61] Interestingly, this item was also reused as a scraper, probably in relation to ancient looting activities in the tomb. Six other body sherds from the same contexts were similarly reused for this purpose.

Fig. 40 Canaanite jar C1401. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 41 Amphora shoulder C1403, reused as a scraper. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

A further indication of an early Ramesside phase of the funerary complex is the presence of several small dishes characterised by a string-cut base. Some have an uncoated surface and others have a layer of red slip applied to the internal surface only (external surface uncoated), which are typical of the Nineteenth Dynasty ceramic repertoire, and must have been used as offering dishes (e.g., C1374, Fig. 42).[62] These types of dishes also occur abundantly in the layer immediately above the floor of the peristyle courtyard (context 303), in which the opening of the shaft of the tomb of Panehsy was found.

However, the preliminary analysis of the ceramics from the subterranean complex seems to show a usage spanning the whole Ramesside period, most likely with the last Ramesside interments dating to sometime in the Twentieth Dynasty. Examples of Late Ramesside ceramics from subterranean parts of the tomb are an almost complete profile of a bag-shaped amphora made from mixed clay, typical of the Twentieth Dynasty[63] (C1402; Fig. 43), and at least two globular jars also manufactured from mixed clay and dated again to the late Ramesside phase (C1404, Fig. 44).[64] Late Ramesside ceramics were also recovered from a layer directly overlying the floor of the peristyle courtyard (context 303), showing the deposition of offerings for burials well into the Twentieth Dynasty. Particularly significant is bowl C1352 (Fig. 45), characterised by a surface treatment attested only during the Twentieth Dynasty,[65] with a cream slip all over the surface and a red slip band applied to the rim only. Other Late Ramesside materials are represented by the rim of a globular jar of the aforementioned type.

Fig. 42 Small offering dish C1374. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 43 Late Ramesside amphora C1402. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

5.2 The 2023 season

(Valentina Gasperini)

5.2.1 Ramesside ceramics from the tomb of Panehsy

The most significant contexts from the tomb of Panehsy studied during the 2023 season were a layer of ash all along the north part of the east wall of the courtyard of the tomb (context 434), a deposit in the west end of the north-west chapel (context 437), and the floor level of the peristyle courtyard of the tomb (context 303).

The preliminary analysis of the diagnostic sherds from the ash layer (context 434) shows a solid Ra-

Fig. 44 Late Ramesside globular jar C1404. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 45 Late Ramesside bowl C1352. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

messide chronology, potentially with a Nineteenth Dynasty date as indicated by frequent attestations of dishes with an oblique wall and flat, slightly modelled, string-cut base, usually attributed to an earlier rather than later Ramesside horizon (e.g. C1374, Fig. 42). This observation is consistent with ceramic finds from the 2022 season, when comparable materials were identified from both the substructure (in particular from Chamber C) and the floor of the peristyle courtyard (context 303; see also Section 2.1). Many parallels for these offering dishes had been excavated at the site in previous seasons.[66] Based on the initial analysis, open forms appear to outnumber closed forms. The latter are mostly represented by beer jars, funnel-necked jars and large ovoid jars.[67]

The preliminary analysis of the deposit in the west end of the north-west chapel (context 437) shows a similar repertoire, with a prevalence of open shapes mainly represented by dishes with everted rim slightly thickened on the exterior and with an oblique wall, some of them left uncoated. This, again, would suggest an early rather than late Ramesside chronology, which is consistent with the presence of small dishes with slightly modelled string-cut bases.

The investigation of the floor level of the peristyle courtyard (context 303) was finished during this season. All diagnostic fragments from this layer are Ramesside in date, except for a diagnostic fragment of a Late Antique basin and one of a Meidum bowl rim dating to the Old Kingdom. The former must be intrusive material while the latter may have been used in connection with the preparation of mud bricks in the early Ramesside period and contemporaneous construction activities.[68] The only decorated sherd from this context is a very eroded body sherd belonging to a blue painted closed shape. Open shapes appear to dominate the repertoire, particularly dishes with an everted rim thinned on the lip and a slightly convex wall. Many of these seem to have been left uncoated, while a small percentage is either red slipped all over the interior or on the rim only. Closed shapes are mainly represented by rims originally belonging to funnel-necked jars, usually red slipped on exterior, and beer jars. However, a detailed statistical analysis on the estimated numbers of individuals and the cross-check of open against closed shapes will be the subject of further analysis.

Generally speaking, the very fragmentary Ramesside repertoire from the tomb of Panehsy contains utilitarian wares, mainly locally produced and largely represented by storage and table ware. In terms of fabrics, most of the ceramics are manufactured from Nile silt (mostly Nile B2), with a small percentage of vessels made from marl clays[69] and mixed clays. There is a remarkable paucity of imported materials. Except for the aforementioned Canaanite jar (C1401, Fig. 40), the only Levantine fabric identified (in body sherds) corresponds to Qantir IV.7.13 (see Aston, *Die Keramik*, 1998, p. 71).

The open forms are mostly small offering dishes with a string-cut base (see, for example, C1374, Fig. 42) and other typically Ramesside forms like dishes with a direct or everted rim, convex wall and rounded base, usually with a red slip band applied to the rim. In terms of closed forms, the most frequent types are beer jars and funnel-necked jars. The few other types are mainly poorly preserved fragments of bread-moulds, retrieved from context 303 and likely indicative of bread offerings.[70]

Similarly to what was observed during the 2018 and 2019 seasons,[71] blue-painted wares[72] are attested in the ceramic assemblage, albeit in limited quantities. It included a scatter of body sherds and a rim originally belonging to a funnel-necked jar with a geometric blue-painted style, consistent with a Ramesside dating.[73] A perhaps residual body sherd with a petal pattern decoration, consistent with the Amarna style, seems to point to a vessel manufactured in the Late Eighteenth Dynasty.

5.2.2 Late Period layers

The Late Period ceramics excavated during the 2023 season were comparable to assemblages recovered during the 2018 and 2019 seasons in terms of dating, types and functions.[74]

Several Late Period forms were attested in two embalmers' caches (contexts 528, 552, 581 and 583). Two caches (contexts 528 and 565) contained many ceramic materials and are particularly significant. They are preliminarily dated to c. 550–400 BCE, as suggested by very similar ceramic materials retrieved in reused New Kingdom shafts and other embalmers' caches at the site,[75] including the embalmers' caches identified and excavated in the same area in the 2018 and 2019 seasons.[76] The first of the two embalmers' caches (context 528) contained a Torpedo Jar (C1498, Fig. 51, below), undoubtedly imported from the Levant as suggested by a visual analysis of its fabric. This is consistent with a subtype of imported fabric defined as "P11 late", which is characterised by a very coarse texture with abundant inclusions of limestone. The same cache included a locally produced "goldfish" bowl, whose wall clearly shows a ritual killing hole, very likely created with a sharp object that was deliberately punched from the exterior to the interior of the vessel. Ritual killing holes are typical for "goldfish" bowls, as are the "charcoal dockets" attested on the "goldfish bowls" discovered in embalmers' caches during previous seasons.[77] Such dockets were not detected on the bowls from the newly found caches.

The second embalmers' cache (context 565) contained a large storage jar with ribbing on its body (C1554) made from coarse Nile silt, found underneath a fragmentary reed mat. The same context also yielded another very large storage container (C1550, Fig. 52, below), made from coarse Nile silt, along with a smaller jar of fine Nile silt (J1-fine), featuring pierced vertical little handles and shallow ribbing on the upper part of its globular body (C1546, Fig. 53, below). These vessels have parallels in other embalmers' caches excavated in the New Kingdom Necropolis area.[78]

5.2.3 Late Antique layers

The upper levels of the area to the north-east of the tomb of Panehsy contained Late Antique installations and layers, the most significant of which are a sub-circular mud-brick installation (context 509), a mud-brick floor surface (context 517), a mud-brick wall (context 518), and a stone-paved floor (context 524). As expected, initial analysis shows a good amount of locally produced amphorae Late Roman 7 (LR7) and imported amphorae Late Roman 1 (LR1) dating to the fifth/seventh century CE. However, a type of Late Antique amphora produced in Egypt and made from Nile silt, consistent with type AE3T-3.2 var B,[79] was identified for the first time at the site of the Leiden-Turin expedition.[80] The finds were consistent with those from contemporary upper layers.[81] Aswan ware and body sherds of other imported amphorae (mainly identified as made from "Fabric P50" characterised by a fine texture and a thick pale firing surface) were well represented in these contexts too. A small percentage of diagnostic fragments are cooking wares with the usual pronounced inner seat lid and ribbing to the exterior, in addition to utilitarian wares such as bowls and dishes. Fine wares were represented by locally produced bowls imitating the African sigillata, as suggested by their morphology, along with the thick, well burnished red slip applied on both surfaces.

Although only a small number of ceramic fragments was recovered from a very loose dark grey deposit (context 508) inside mud-brick structure 383, this nonetheless proved particularly significant for our understanding of the date of the oval construction/installation (context 509). The discovery of a rim sherd belonging to a large Nile silt bowl (C1508, Fig. 46), its exterior decorated with wavy black painted lines and covered by a motif of solid white dots, is indicative of a seventh century CE chronology[82] and constituted a *terminus post quem* for the construction of the installation. This date is consistent with the presence of body sherds of LR7 amphorae with pronounced shoulder carination. Indeed, this specific feature is typical of the last phases of production of LR7 amphorae.

Particularly interesting is the discovery of a handle of LR7 (C1504, Fig. 47) characterised by the presence of a small piece of textile still adhering to the neck and handle attachment. The textile most probably was originally part of the sealing of the amphora. The fabric was probably placed between a clay stopper and the opening of the amphora to protect its content from the dry clay of the stopper. A string was tied just underneath the rim and around the handle attachment to seal and secure the stopper. Indeed, four entwined string fragments were found still around the handle attachment and above the fabric band (see C1504, Fig. 47).

Among the Late Antique contexts investigated in the 2023 season, an interesting feature is a drainage system (context 571), formed by a series of locally produced amphorae deliberately aligned to create a pipeline (Fig. 6).[83] At least three amphorae (C1556; C1557; C1558, Figs. 48–50) are manufactured from Nile silt and belong to type AE3T 3.2 var B, produced in Egypt between the first half of the seventh to the middle eighth century CE.[84] This date fits perfectly with what was observed in relation to the construction of the oval installation (context 509), suggesting that these two structures were probably contemporaneous.

5.2.4 Burial in context 562

The ceramic fragments associated with a burial in a wooden coffin (context 562) were very small and much eroded. No meaningful conclusions could be reached in terms of their date or type.

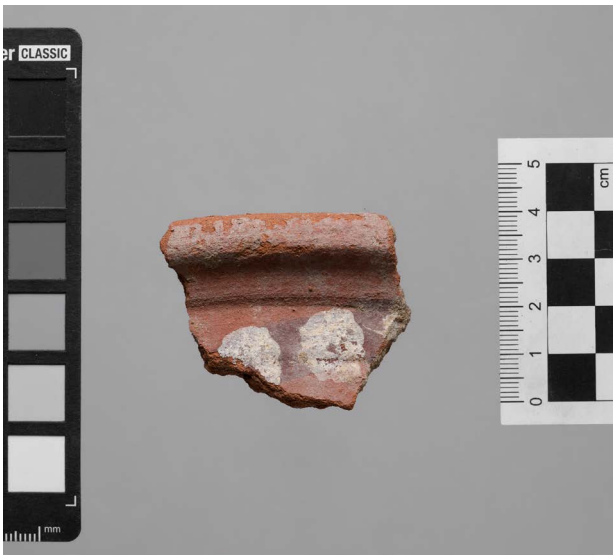

Fig. 46 Late Antique bowl C1508. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

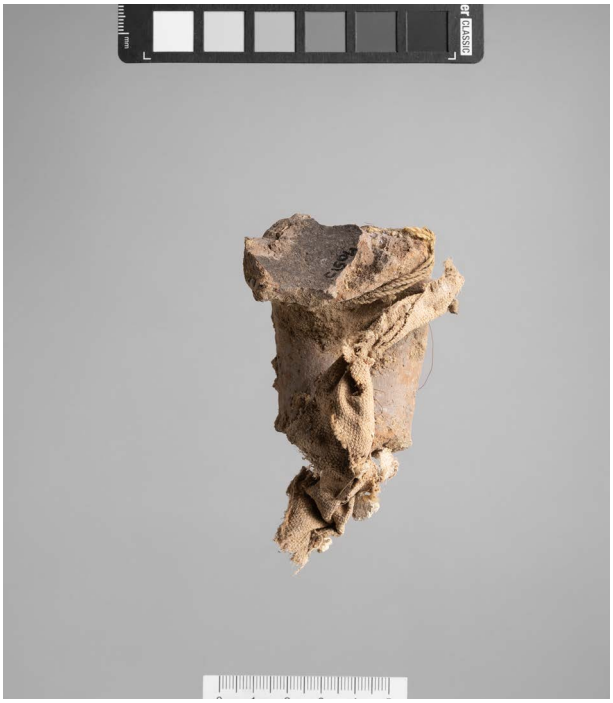

Fig. 47 LR7 handle C1504. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

5.2.5 Shaft 146

Contexts 146 and 147 refer to the west and east walls respectively of a shaft between the exterior north wall of Maya and exterior south wall of Panehsy. The preliminary analysis of the ceramic materials from this shaft showed that it contained ceramics from various periods with predominantly Late Antique and Late Period materials, along with few New Kingdom sherds. Interestingly, at least two Old Kingdom Meidum bowls were attested.

Fig. 48 Amphora AE3T 3.2 var B C1556. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 49 Amphora AE3T 3.2 var B C1557. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 50 Amphora AE3T 3.2 var B C1558. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 51 Torpedo jar C1498. Photo by Nicola Dell'Aquila/ Leiden-Turin Expedition to Saqqara.

5.3 Pottery conservation

(Alice Salvador)

Besides the analysis of the ceramic materials, the excavated pottery was thoroughly documented. This involved not only the technical archaeological drawing of the finds, but also the reconstruction of vessels, which in situ already preserved a large number of joining sherds. In the 2022 season, it was possible to reconstruct the complete profile and part of the original shape of the Canaanite jar (C1401, Fig. 40), and the nearly complete profile of a bag-shaped amphora (C1402, Fig. 43). In the 2023 season, the vessels reconstructed were: the jar with small pierced vertical handles and shallow ribbing

Fig. 52 Late Period storage jar C1550. Orthophoto by Alessandro Mandelli/Leiden-Turin Expedition to Saqqara.

Fig. 53 Late Period globular jar C1546. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 54 Some of the vessels reconstructed during the 2022 and 2023 seasons. From left to right: C1401, C1550, C1402, C1554 and C1564. Photo by Alice Salvador/Leiden-Turin Expedition to Saqqara.

on its globular body (C1546, Fig. 53); the large storage container (C1550, Fig. 52); and the large storage jar with ribbing on its body (C1554, Fig. 54). The reconstruction of these five vessels provided detailed information about their dimensions, shape, and capacity. Despite the presence of many joining sherds, it was not possible to reconstruct further than the rim and neck of the three amphorae (C1556, C1557, C1558, Figs. 48–50). The state of preservation of the ceramic was too flaky to proceed with the reconstruction without a proper consolidation of the fragments. The reconstruction of another four vessels (C1458, C1562, C1563, C1564) will be continued in the next season.

6. Preliminary analysis of human remains

(Ali Jelene Scheers and Mary van den Hoorn)

Multiple biological anthropologists participated in the Leiden-Turin expedition during the 2022 and 2023 seasons.[85] The 2022 season focused on the analysis of skeletal remains from five minor tombs excavated by the Leiden-Turin expedition between 2009 and 2017 for a publication in preparation by Maarten Raven.[86] The material originated from four individual burials (2017/1, 2017/4, 2017/5 and 2017/7) and two subterranean complexes (the shaft-complex of the tomb of Tatia, 2009/23 and the shaft-complex of the tomb of Samut, 2017/3).[87] In addition, as part of a two-week internship, two osteology students from Leiden University assisted the biological anthropologists with the analysis of the remains from the tomb of Tatia and the commingled remains from the 2019 season. During the 2023 season, human remains excavated in the area north of

the tomb of Maya were analysed as well as remains found during previous seasons. The sections below will address the human remains discovered in the 2017-2019 seasons, the human remains from the 2022 and 2023 seasons, and the inventory of skeletal materials that was excavated and processed by previous physical anthropologists.

6.1 Skeletal remains from the 2017, 2018 and 2019 seasons

Most of the loose bone material that was excavated in 2019 was studied during the same season and the preliminary report of the activities of that year[88] is based on the 3121 bones that had been processed up until then. Due to time constraints, not all material could be processed during the initial analysis. An additional 967 individual bones from the 2019 season have now been examined, and updated conclusions regarding the full collection of 4,088 loose bones recovered that season are presented here.

The skeletal remains included 75 animal bones and 4013 human bones. 419 of these human bones could not be attributed to a specific archaeological context and are therefore classified as "out of context". This leaves us with 3594 bones that can be used to calculate the MNI (minimum number of individuals). In addition to the 31 contexts with human bone material that were already mentioned in the 2019 report, there is a context that is probably an embalmer's cache (context 356) with no more than four skeletal fragments. This means that out of the 59 contexts discovered during the 2019 season, 32 contained human remains. A dump deposit from previous excavations (context 332) contained the most fragments – 899 in total, as opposed to the 417 that were mentioned in the preliminary report of 2019. The remaining skeletal remains were recounted and amount to 338 fragments in context 339, 206 fragments in context 328, 99 fragments in context 345 and 84 fragments in context 351. The calculated MNI for subadults stays the same (five, attested in five subadult femora), while the adult MNI increases from 21 to 23 due to the presence of 23 right adult calcanei. This brings the total MNI for the 2019 material to 28 individuals.

Other materials studied include the human remains excavated in the 2017, 2018 and 2019 seasons in several contexts in the area north of the tomb of Maya. These are six individual burials (contexts 148, 162, 210, 261, 267 and 324), of which three belonged to adult individuals (contexts 148, 162 and 261). The three subadult individuals were all younger than 5 years of age. The adult individual from context 148 was found in 2017 between the north wall of Maya and a retaining wall (context 116)[89] and did not represent a complete burial; besides numerous commingled remains, only 16 bones of the upper body were found in anatomical position. These were estimated to belong to a probable male adult of about 56.2 ± 8.5 years of age. The remains of the individual from context 162, found in 2017,[90] consisted solely of the lower body with fair preservation. No sex or age estimation other than "adult" could be established. In contexts 210, 261 and 267, three individuals were recovered in 2018. The individual in square W83 (context 210) was initially not recognised as a burial, and was consequently not documented as such in the field. Later analysis indicated that the bones belonged to the upper body of a perinate individual. The individual from context 261[91] was represented by a poorly preserved and fragmented lower skeleton and could therefore only be identified as an adult individual of indeterminate sex. The individual from context 267[92] and from context 324 were both subadults. The former was estimated to be between 5 and 6 years of age, based on long bone metrics. The remains were quite fragmentary, and preservation was fair. The remains of the latter individual were excavated in 2019, but not recognised as a burial until 2022, when textile restorer Valentina Turina found them wrapped inside a roll of textile (Fig. 55). The remains, nine perinate foot bones, were then recovered by biological anthropologist Ali Jelene Scheers.

6.2 Skeletal remains from the 2022 and 2023 seasons

The skeletal remains excavated during the 2022 and 2023 seasons consist of an individual burial and commingled material. The commingled material found both in and outside the tomb of Panehsy originates from 68 different contexts. These contexts yielded a total of 6922 individual bones

Fig. 55 Remains of an individual buried in context 324, as recovered during analysis of textile fragments. Photo by Valentina Turina/Leiden-Turin Expedition to Saqqara.

of which 1379 were unidentifiable fragments, 165 were not human, and 50 were found out of context. This leaves us with 5328 individual bones that establish an MNI of 65 individuals for all contexts excavated in 2022 and 2023 combined. This group contained 44 adults based on 44 proximal right femora, and 21 subadults based on 21 unfused and fusing proximal left femora. As the subterranean part of the tomb of Panehsy is a relatively closed context, we can establish an MNI for those that were likely buried there. Of the 6922 individual bones found in the 2022 and 2023 seasons, 2678 bones were found in the burial chamber and shafts of the tomb of Panehsy.[93] Of these 2678 individual bones, 559 were unidentifiable fragments, 81 were not human, and 49 were found out of context. From the 1989 remaining bones, an MNI of 31 individuals could be established, consisting of 23 adults based on 23 distal right humeri, and 8 subadults based on 8 unfused proximal left femora. It is more than likely that some of the skeletal remains found in the courtyard and chapels of the tomb also belong to individuals who were originally buried in the burial chambers. Contexts 424 and 430 from the floor of the central chapel of the tomb of Panehsy yielded a rather large concentration of commingled skeletal material, consisting of 1744 individual bones. Eight were animal bones and 303 were unrecognizable fragments, leaving 1433 individual bones to establish an MNI for context 424 and 430 of 18 individuals. This includes 10 adults based on 10 proximal left femora as well as 10 distal right femora, and 8 subadults based on 8 fusing and unfused proximal left femora. Contexts 424 and 430 contained many smaller human bones, such as carpals and phalanges. Their presence indicates that movement of the remains found in the central chapel was limited across different phases: from the disturbance of the primary burial, through the deposition of the bones in the central chapel, to the current excavation. For example, a cranium found in the north corner of the central chapel had preserved its fragile facial bones, which could be an indicator that any looting activities were limited in their intensity and frequency. As none of the human remains in the central chapel were found in their correct anatomical position, the remains must have been disturbed after decomposition of the connective soft tissues. It is likely that the two contexts are a mix of both primary burials within the central chapel as well as material from the subterranean complex of the tomb that was deposited in the chapel during looting activities. Due to the commingled nature of the material, it is not possible to distinguish between primary burials from the chapels and material from the subterranean complex. The southwestern chapel (737 individual bones from context 425) and northwestern chapel (67 individual bones from context 429 and 455) contained fewer bones than the central chapel. The deposit from the southwestern chapel was heavily disturbed. The sand deposit from the northwestern chapel contained mainly subadult bones, which could possibly pertain to a single individual given that most bones belonged to a subadult between the age of 7 and 10, as suggested by dental eruption, long bone length, and fusion. As in the central chapel, none of the remains were found articulated.

In addition to the commingled bone material, one burial was excavated in context 562 (Fig. 56), associated with a cut (context 530) and a fill (context 531) that was tentatively dated to the Late Ramesside or Third Intermediate Period. While these skeletal remains have not been analysed yet, some information regarding the burial can be presented here. The individual, a subadult, was buried in a pit of 70 cm deep inside a wooden trapezoid coffin of 180 cm long and 60 cm wide at the shoulder, which would have been large enough to fit an adult. Long bone

Fig. 56 Burial in context 562. Bones and coffin are outlined in black, patches of textile in white. Orthophoto by Alessandro Mandelli, Politecnico di Milano. Drawing by Mary van den Hoorn/Leiden-Turin Expedition to Saqqara.

Fig. 57 Burial in context 562. Detail photo of fragmentary coffin-lid decoration above right shoulder and arm. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 58 Burial in context 562. Detail photo of textile wrapping of lower legs. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

measurements of the subadult made *in situ* suggest a tentative age of c. 5-7 years.[94]

The coffin was poorly preserved but small remaining pieces of the coffin lid with black, white, and red paint indicate that the lid was decorated. One of the larger fragments was located above the right shoulder and upper arm and showed a thin red line between a possible black wig and a decorative white with red crosshatched pattern below said wig (Fig. 57). Between the underside of the coffin and the skeletal material, we encountered the remains of a reed mat placed over a piece of fabric. The individual may have been entirely wrapped in this mat. The lower legs were wrapped in red textile with darker reddish-brown bands on top of the red textile, forming a crosshatch pattern (Fig. 58). Traces of heavily disintegrated fabric were found along the right shoulder and arm.

The burial had been disturbed by two distinct cuts, which were not assigned individual context numbers. These cuts are only visible in the stratigraphy of the burial and not in the upper layers, which suggests that the disturbances are contemporaneous with the burial. The first cut is located on the southern side of the pit at the height of the right hand and right upper leg. The right ulna is broken off medially post-mortem and the broken distal diaphysis, epiphysis and entire right hand are absent. The second cut is on the western side of the burial pit at the location of the skull. The skull is absent, but fragments of cranial bones and hand bones were found in the deposit overlying this cut. These bones originate from an individual of a similar age as that found in the burial and may belong to the same individual. There were commingled hand bones and

cranial fragments in the fill overlying the western cut, while the fill of the southern cut contained only sand. Therefore, we currently believe that the cut on the southern side was made prior to the cut on the western side.

6.3 Inventory

In addition to processing previously unstudied material, an inventory was compiled of boxes containing material that had previously been analysed. These remains had been separated from their original assemblages by previous researchers, either due to the presence of pathological lesions or for use as comparative material in student training. Since the provenances of these bones were no longer clear and it was uncertain to what extent these bones had been studied and published, an inventory was compiled and compared with previously published skeletal material. This research indicated that most of these skeletal remains have already been published in the volumes dedicated to the tombs of Ptahemwia[95] and Meryneith.[96] This will aid in the ongoing inventory of the human remains assemblages found by the Leiden-Turin Expedition.

7. Small finds

(Paolo Del Vesco, Christian Greco and Daniel Soliman)

7.1 The 2022 season

Three limestone blocks recovered during excavation are decorated in relief and probably date to the Old Kingdom, suggesting that the tomb of Panehsy was constructed through the reuse and/or replacement of earlier structures. One relief fragment attributed to the Old Kingdom (R89) shows a craftsman holding a tool. Another relief fragment (R116) shows the leg of an ox and the leg of a man in a procession. A slab from the burial chamber of Panehsy's tomb bears a relief (R134) from an Old Kingdom mastaba with a depiction of men handling birds in captivity (Fig. 17).

A number of finds represent very fragmentary architectural elements from a New Kingdom tomb chapel, perhaps that of Panehsy. They include part of a kheker frieze (R84), a fragment of a cavetto cornice (R90), and fragments of papyriform columns (R91; R99; R103; R104). A fragment of what may be a limestone djed-shaped column (44 × 32 × 18 cm)

Fig. 59 One side of limestone column fragment (R136) depicting a tomb owner. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

preserves carving on three sides (R136). It shows depictions of a dignitary in a long, pleated garb who probably represents a tomb owner. The fragmentary hieroglyphic inscription mentions a scribe of the treasury, perhaps in the domain of Amun, a title that is not securely attested for Panehsy (Fig. 59). Fragment R118 is a fragment of a hieroglyphic inscription in sunken relief, which contains a part of the name of Maya and must have come from his tomb.

In addition, several small fragments of finely carved limestone wall decoration carved in sunken relief were recovered, which are attributed to the New Kingdom and could be part of the decorative programme of the tomb chapel of Panehsy. One fragment (R92) depicts a man or deity seated on a throne (Fig. 60); R95 shows the feathers of the body of a falcon; R96, R105 and R106 belong to the same relief, depicting a seated Re-Horakhty with the head of a falcon, wearing a tripartite wig and broad collar; fragment R108 shows a mummiform deity seated on a throne, holding two staffs in clenched fists positioned on the chest.

Most small finds from the excavation of the tomb of Panehsy were fragmentary and date to a range of periods. The disturbed nature of the deposits is illustrated by a fragment of a mud brick with a hieroglyphic seal impression (F563) from the tomb of Maya, found in the debris to the west of the tomb

Fig. 60 New Kingdom relief fragment (R92) depicting a seated figure on a throne. Photo by Nicola Dell'Aquila/ Leiden-Turin Expedition to Saqqara.

Fig. 61 Face of a ceramic coffin (F637). Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

of Panehsy.[97] Other New Kingdom material from the deposits in the tomb are a fragment of a finely carved leg in the shape of a lion's paw for a wooden model chair (F575) and a fragment of small glass amphoriskos (F631) with banded rim and a cylindrical neck, decorated with a festoon pattern in pale blue and grey.[98] In several deposits from the superstructure of Panehsy's tomb, fragmentary shabtis were discovered. Seven fragments (F590, F669, F680, F684, F690, F691, F692) belong to wooden mummiform shabtis decorated in black paint. One shabti (F577) takes the shape of a man wearing a long kilt and was decorated with black, pink and yellow lines. In addition, two Ramesside red ceramic mummiform shabtis (F580 and F597) were recovered, one wearing a duplex wig and holding a hoe in each fist, the other wearing a tripartite wig and holding clenched fists folded across the chest. No inscriptions are preserved on any of these figurines.

Three potsherds (F695, F696, F699), found in sand deposits in the superstructure of the tomb and reused as painters' palettes for red and blue paint, are of uncertain date.

Numerous weathered fragments of one or more wooden coffins, probably from the Third Intermediate Period or the Late Period, were recovered in a very loose, light brown, sandy deposit in the superstructure of Panehsy's tomb (context 394). Three fragments (F585, F586, F587) may come from the same coffin, of which the element representing the face (F587) was recovered. It is very weathered but shows traces of a layer of a white wash, on top of which a yellow layer is painted. The hair and the lines of an eye and an eyebrow were painted in black. In two other sand deposits (contexts 419 and 424), a large number of wooden coffin fragments were found. While all fragments are very weathered and tentatively attributed to the Late Period, some showed traces of a white wash and black resin.[99] Many fragments of ceramic coffins were excavated and attributed to the late Ramesside Period and the Third Intermediate Period. Fragments F402 and F605 are decorated with a simple wavy pattern. An exceptionally well-preserved fragment of one such coffin takes the form of a face (F637) (Fig. 61). Its features, finely modelled in clay, include a chin with central indentation, lips, philtrum, nostrils, nose, eyebrows and eyes. Above the forehead and at the lateral sides of the faces are traces of the walls connecting the face to the rest of the coffin. There are traces of black pigment around the face at the upper left end and at the eyes, and the forehead has traces of a yellow pigment layer. The rest of the face shows a layer with a white wash. Above the right eyebrow

Fig. 62 Fragmentary mud jar-sealing (F582) impressed with a cross. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

is a curved line with traces of blue pigment, while a line around the face in a darker shade of red may represent a beard.[100]

A few faience amulets (F671, F672, F673), faience and stone beads (F756) and the upper part of a faience shabti (F665) were found in deposits (contexts 424 and 425) that also contained bones and wooden fragments/ These were located in the central and southern chapels of the tomb of Panehsy and might be dated to the late New Kingdom and to the Late Period. Amulet F671, in particular, is almost complete and depicts the figure of a anthropomorphic Sekhmet with a uraeus on her head and a back pillar, holding *wadjet* sceptre in her right hand and featuring a transversal passing-through hole at the height of the head.[101] This rare representation of a standing Sekhmet – rather than the more typical striding pose with the left leg advanced – has a few parallels from Giza and from Megiddo and might be connected to foreign iconography.

Various finds from the Byzantine and Late Antique periods were encountered during excavation of Panehsy's superstructure. In square X83, a very small fragment of a limestone Coptic stela was found (R83)[102] and a fragment of a mud jar sealing (F582) was found north of the north wall of Panehsy's tomb, impressed with a circular stamp of a cross (Fig. 62).[103] A very eroded coin (F682) is attributed to this timeframe, as is a fragment of a limestone lamp with a handle (F560)[104] with an incised, geometric decoration showing a flower with eight petals. Noteworthy is a group of small glass fragments (nine of them registered as F572, F596, F630, F634, F635, F640, F641, F645, F646) of what appear to be drinking cups with a round foot, a short stem and thin walls. None were found intact.

7.2 The 2023 season

The continuation of the excavations in 2023 outside the tomb of Panehsy, mainly around its northeast corner, uncovered a significant amount of material from the Byzantine and Late Antique periods, particularly in contexts 509 and 510. The subcircular mud-brick structure, tentatively interpreted as a small storage facility and later probably a garbage pit, contained no less than fourteen seemingly discarded coins. Several of these coins, made from bronze and copper, are badly eroded and cannot be identified. F824 may depict a bust wearing a diadem on one face. F822 is probably a *dodecanummium* of Constans II from the middle of the 7th century (Fig. 63). The obverse not well preserved, but the reverse shows a cross on a globe between the letters I and B.[105] Coins F869, F873, F874, F918 and F867 (context 510) are probably of the same type. The obverse of the latter preserves a depiction of a standing emperor wearing a chlamys and holding a staurogram-shaped staff and globus. Coin F911 (context 527) also belongs to this type. The three coins from context 501 appear to date from the 8th century. F766 has on one face the Arabic inscription *lā ʾilāha ʾilla-llāh*,[106] and F768 (Fig. 64) depicts on one face a six-pointed star in a crescent.[107] Much of the material from the Late Antique occupation layers seems to be related to the domestic sphere and small-scale production. They include a wooden peg (F834) that is nearly 11 cm long[108] and an object (F835) with two arms made from a single piece of wood that is probably a key.[109] The lower arm has a protrusion at the bottom and there are two dowel holes in the upper arm. A number of objects is connected to weaving and textile production. One fragmentary flax comb of wood (F787) was found in context 508 and is attributed to the Late Antique period.[110] From the same context come two fragmentary wooden combs (F947 and F948) that should date to the same period, both with a side of fine teeth and a side of coarse teeth and a centre decorated with incised lines. A very similar fragment (F810) from another context is attributed to the Late Antique period as well.[111] Three similar

spindle whorls made of wood (F819, F820, F833) were found in the deposit inside the sub-circular mud-brick structure (context 509). A fourth spindle whorl (F 784) was found nearby in a sandy deposit (context 507). They feature a slightly convex top and some are decorated with concentric lines. Their contexts suggest a date in the Late Antique period.[112] Perhaps related and from the same deposit in the mud-brick structure (context 509) are two conical ceramic shapes with a central perforation (F832 and F833), tentatively determined as loom weights.[113] Three pebbles with smoothened sides (F782, F825, F826) may have also been used as weights. Two circular wooden objects (F808 and F949), both only partly preserved and with an estimated diameter of about 6 cm, were interpreted as spools but could perhaps be wooden stamps of which the design is not discernible.[114]

Three fragments of shells (F764, F814, F827), perhaps freshwater mussel, were found in different contexts and are attributed to the Late Antique period, in parallel with another fragment that had probably been used as an ink-well and was found in a Late Antique fireplace in the inner courtyard of the tomb of Pay.[115] The shell of a sea snail with a conical spire, perhaps *Tectus dentatus* (F783),[116] is also associated with a context dating to the Late Antique period. The dating of two ceramic shards (F794 and F940) from (fragments of) vessels that were reused to hold paint (orange-reddish and blue pigment respectively) remains uncertain.

A significant number of small translucent glass fragments were recovered from deposits connected to the Late Antique period. The majority of the sherds are fragments of a very common type of wineglass made from pale blue and green glass with a tapering body of thin walls, short cylindric stem and concave circular base with impressions of criss-cross tooling on the upper surface.[117] It is attested throughout the eastern Mediterranean during the sixth century,[118] with Egyptian parallels attested in Saqqara,[119] El-Amarna,[120] Marea[121] and Kom el-Dikka.[122] The finds include fragments that preserve parts of the stem and the lower part of the rounded body of the glass (F934) (Fig. 65), the decorated foot (e.g. F839 and F879), and a body shard decorated with three horizontal lines (F770). Traces of other

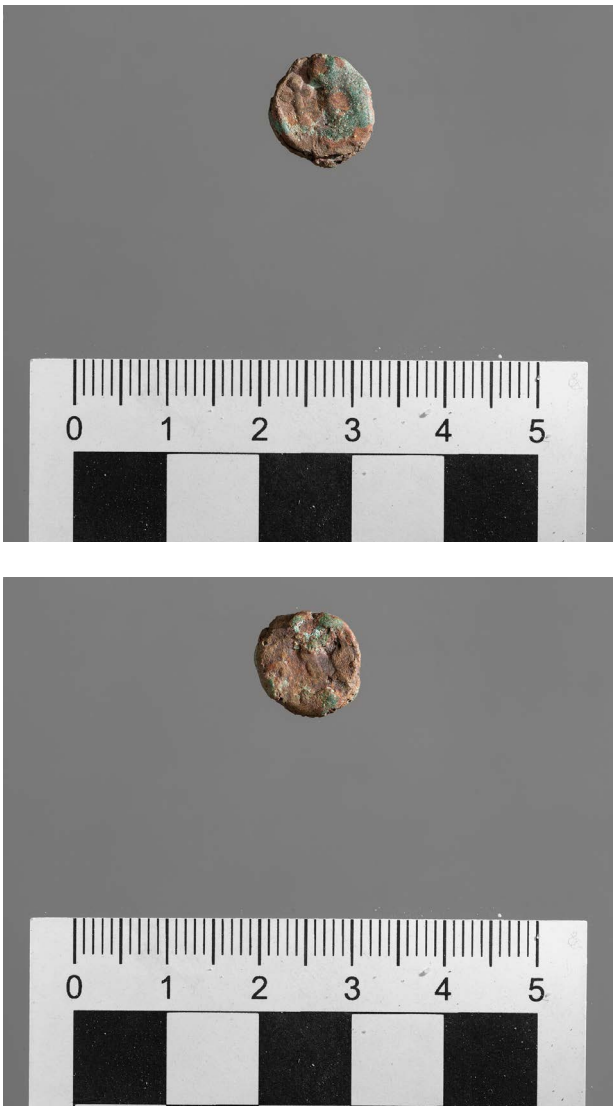

Fig. 63 Late Antique coin (F822), probably a dodecanummium of Constans II. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 64 Late Antique coin (F768) with a six-pointed star in a crescent. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 65 Fragment (F934) preserving the stem and lower part of the rounded body of a wineglass. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 66 Red ceramic shabti (F973E) from what was perhaps a limestone chapel (context 535). Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

types of glass fragments are attested in the form of fragments of flattened, hollow rims (e.g. F846), fragments with walls that were less than 0.05 mm thick and an elongated, cylindric neck (F850), and a fragment with a cylindric neck and slightly flaring rim of a glass vessel (F935).[123] A small shard (6.2 × 3.8 × 0.3 cm) of a sheet of white translucent glass (F778) may perhaps have belonged to a window.

A substantial number of fragments is dated to the New Kingdom. A small fragment (3.2 × 10 cm) of a wooden coffin (F933) is dated to the Eighteenth to Nineteenth Dynasty based on the black varnish decoration with traces of an inscription in yellow paint.[124] Ramesside shabtis of various types were found in deposits in the area of the tomb of Panehsy and the area north of the tomb of Maya. Three fragmentary and very damaged wooden Ramesside shabtis (F816, F896, F897, see also Section 8.2.3) were found in two adjacent deposits (contexts 521 and 522). Two of these showed traces of black pigment. Two fragmentary ceramic shabtis (F806 and F985) were recovered in addition to the fragment of a limestone mummiform ushabti (F975) with an illegible inscription. A group of five Ramesside ceramic shabtis (F 973A–E) was found inside a small limestone chapel built with reused decorated slabs (context 535). They are made from red ceramic and have curved feet.[125] Four shabtis are mummiform with a tripartite wig, holding hoes in clenched fists folded across the chest, while the fifth shabti (F973E) (Fig. 66) is an overseer wearing a long dress and a duplex wig. Details and inscriptions are indicated in black ink, now mostly lost. A very similar set of ceramic shabtis, with three mummiform examples and one overseer, was discovered on the pavement in the north-east corner of the forecourt of the tomb of Tia.[126] As with the five Ramesside shabtis described above, these shabtis were moulded from the front, leaving surplus clay along the edges.

Among the finds dating to the Late Ramesside and Third Intermediate Periods are ten undecorated fragments of ceramic coffins and the clenched fist from a small wooden coffin (F805), bearing traces of yellow, red and black pigment. A fragment of a serpentine globular jar (F774) should perhaps be dated to the Third Intermediate Period.[127] Traces from the Late Period include 55 fragments of a variety of small faience shabtis, often uninscribed, and various kinds of faience beads and amulets.

In the subterranean chambers of the tomb of Panehsy, fragments of Ramesside calcite canopic jars (F999, F1009, F1010, F1011) were recovered, which seem to form a single set and are related to a fragment (F744) found in the 2022 season in subterranean Chamber B of the tomb of Panehsy. Fragment F1009 (Fig. 67) is a larger fragment preserving

Fig. 67 Calcite canopic jar fragment (F1009) with a scene depicting Paynedjem adoring Osiris. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

Fig. 68 Textiles from context 331. Photo by Valentina Turina/ Leiden-Turin Expedition to Saqqara.

a scene carved in low relief with the deceased wearing a long dress standing in adoration before the god Osiris wearing the *atef*-crown, a design that shows some similarity to the canopic jars from the nearby tomb of Tia and Tia.[128] This fragment and fragment F744 are inscribed for the owner Paynedjem, a first prophet of Hathor, mistress of the sycamore.[129] Two fragments of limestone canopic jars (F1012 and F1013) from the subterranean complex of Panehsy's tomb are also attributed to the New Kingdom. The latter seems to be a very weathered falcon-headed lid representing Qebehsenuef.[130]

8. Study of materials excavated in previous seasons

8.1. Textiles

(Valentina Turina)

During the 2022 excavation campaign, a detailed study focused on textile fragments recovered during the 2019 excavation season. The study included photographic documentation of all textile fragments from individual excavation contexts (Fig. 68). The most interesting finds were photographed individually. The corpus contained approximately 800 fragments of different sizes, most of which date to the so-called Pharaonic period. The majority of the fragments were found out of context in the modern spoil heaps resulting from excavations conducted in the 1980s and 1990s,[131] with very few indications of their exact dating and original use. The present study examined the original dimensions, shape and technical characteristics of a selection of 44 of the most interesting fragments, taking into consideration the presence of selvedges, warp and weft fringes, starting/finishing borders, any kinds of woven decoration, and dyed yarns. The most significant technical details identified during the study are summarized below:

Technical data	No. of technical elements[132]	Grid square and context number
Warp fringe	18	Sq. U80 (348); Sq. Y82 (340); Sq. Y82 (328); Z85 (321); Sq. 284 (326); sq. Z84 (327)
Starting/finishing border	1	Sq. Z85 (321)
Dyed decoration band	9	Sq. Z85 (321); Sq. Y83 (322)
Sartorial elements (stitching and edges)	6	Sq. 385 (321); Sq. 384 (324)
Selvedge	3	Sq. 284 (324); Sq. Z85 (321)

Table 1 Typology and distribution of the main technical elements identified on the textiles, indicating the number of fragments in which each feature was attested and their respective excavation grid squares and context numbers.

Fig. 69 Fragment of loincloth from context 321. Photo by Valentina Turina/Leiden-Turin Expedition to Saqqara.

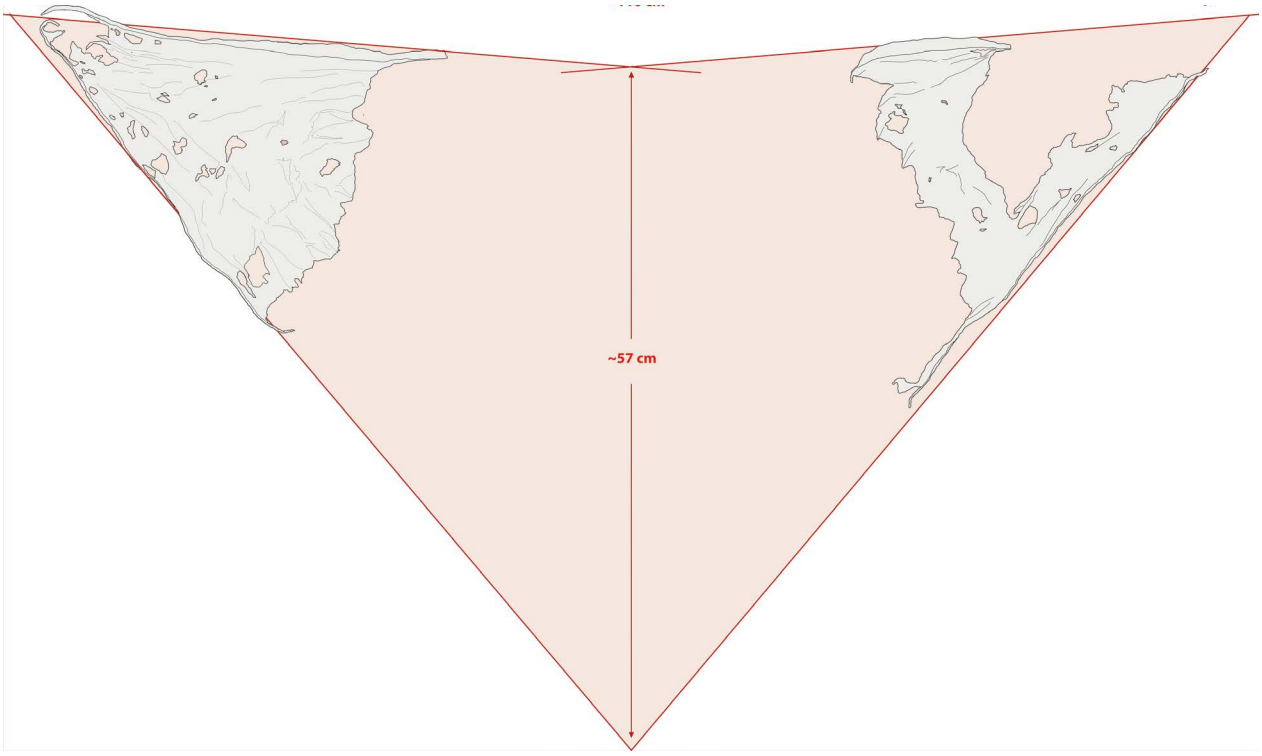

Fig. 70 Hypothetical reconstruction of the sartorial model of the loincloth from context 321. Illustration by Valentina Turina/ Leiden-Turin Expedition to Saqqara.

Context 321 and 324 contained textile fragments that could be identified as five fragments of a loincloth (Fig. 69) and one fragment of a tunic. It is probable that the loincloth fragments all belong to a single loincloth, as indicated by the shape, size and state of preservation. Examination of the fragments resulted in a hypothetical reconstruction of the original loincloth (Fig. 70). It merits a more in-depth analysis to determine the fibre characterization, weaving technique and crease mitigation treatment.

In addition, a small fragment of a fabric with colourful wefts in blue, red and white was identified from context 322. We hope to conduct a more detailed study in the coming seasons, in the hope that an examination of the distinctive decorative bands will help to determine its date.

During the 2022 season, preliminary conservation treatments were carried out, such as basic cleaning and crease mitigation. After treatment, all textile fragments were placed in individual plastic bags, perforated to avoid the formation of condensation. These essential measures carried out with basic equipment, and it will be important to monitor and reassess this housing method in the future.

8.2 Wood analysis

(Caroline Arbuckle MacLeod)

During the 2023 season, there were three goals to accomplish regarding wood analysis: 1) to complete an assessment of the wood and construction of coffins 127A and 130A, excavated during the 1999 season; 2) to complete an assessment of wooden shabtis F896, F816, and F897; and 3) to provide a general overview of the wooden fragments discovered during the 2022 excavation season.

8.2.1 Methods

For each wooden object or fragment, the same initial approach was used. The state of preservation, dimensions, and whether the piece consisted of branch or trunk wood were recorded, and each piece was photographed. A brief description was then provided, which noted the presence of decoration or tool marks. Small samples (approximately 2 mm^3) were then taken from each piece. The species of the sample was then identified following the methodology of the International Association of Wood Anatomists.[133] This included creating thin sections for three planes of reference, as well as observing anatomical features through microscopy. In the current study, a Swift SW380T Compound Microscope was used for transmitted light microscopy while in the field. Identifications were reached based on comparing the anatomical features visible in the samples with known features identified in wood reference collections created from the physical vouchered samples of the author in combination with examples provided on the InsideWood online database.

8.2.2 Analysis of the coffins

Coffins 127A and 130A were initially discovered in the 1999 excavation season.[134] A thorough analysis of the coffins, including suggestions for their date of construction, details of their decoration, and basic construction, was subsequently published.[135] Wood species was not recorded in the publication of either coffin. After this initial analysis, the coffins were placed back in a storehouse. During the 2023 season, the coffin wood was reassessed so that additional valuable information, particularly species identification, could be ascertained.

The initial publications noted that the coffin wood was in a poor state of preservation. By 2023, the wood had deteriorated further. It had become quite soft due to fluctuations in temperature and moisture, and there is extensive evidence of both ancient and modern insect damage. Some of the pieces were found to consist almost entirely of paint, plaster, and frass (the remains left after insect infestation). Many of the pieces therefore do not preserve the anatomical structures necessary for wood identification; nevertheless, a selection of larger and better-preserved fragments allowed for all major coffin sections and some added details to be assessed.

Coffin 127A is a rectangular black coffin with a gabled lid that is believed to date to the latter half of the Eighteenth Dynasty, probably from between the reigns of Amenhotep III and Tutankhamun (Fig. 71).[136] Of the 66 remaining pieces of Coffin 127A, 36 were analysed. This included three tenons and two dowels, and 31 fragments of the planks used for the coffin, one of which is too deteriorated to provide an identification. The 30 remaining pieces of the coffin plank wood were identified as sycamore fig (*Ficus sycomorus*), while one tenon and the two dowels are acacia (*Vachellia nilotica*), and the remaining two tenons are tamarisk (*Tamarix spp.*). While the basic construction and decoration information was part of the previous publication,[137] the following details were not mentioned. The planks of wood were produced by means of a plainsawn or flat-grained method. The planks were edge-joined with mortise and tenons and dowels, and connected at the corners with dovetail joints. Saw and chisel marks are visible in many areas. Large amounts of plaster were also applied to gaps in the joints or faults in the wood. For larger holes, wads of linen were inserted inside and covered over with plaster before the application of the decorative black layer (Fig. 72). The inner edge joints of a number of the long planks were painted red (Fig. 73).

Of coffin 130A, only the lid is preserved, providing an example of an anthropoid coffin with mostly white and black decoration that is believed to date to the mid-Eighteenth Dynasty, probably around the reign of Amenhotep III (Fig. 74).[138] Of the 59 remaining pieces of Coffin 130A, 21 were analysed. These included 17 major parts of the coffin, such as

Fig. 71 Side of coffin 127A as of 2023. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

Fig. 72 Wad of linen with plaster that was inserted into a large gap in the coffin wood of 127A. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

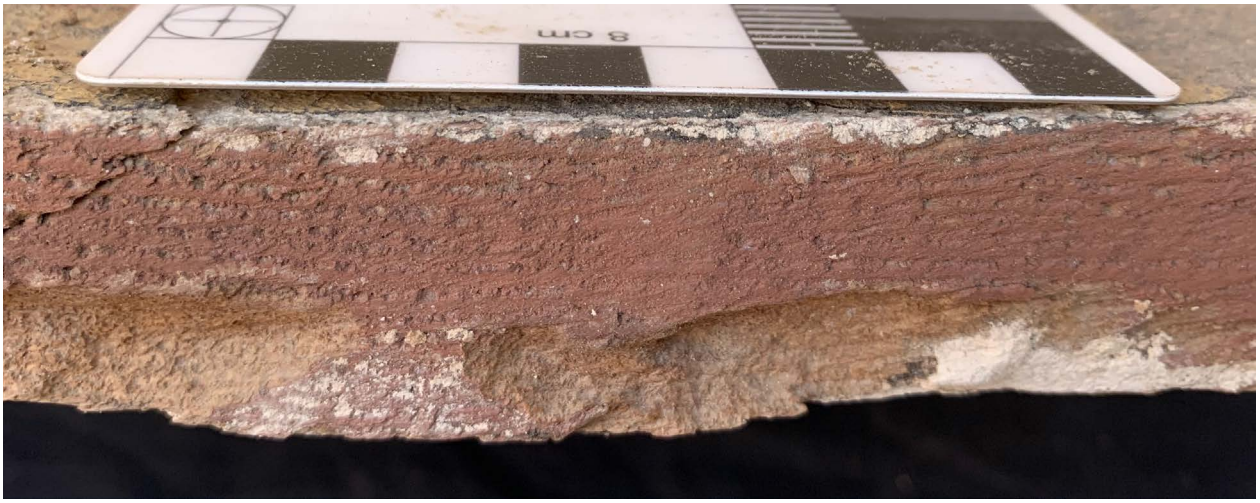

Fig. 73 Red paint on the interior join edge of one of the planks of 127A. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

planks and separately added carved hands, wig, and foot board, as well as four dowels. It should be noted that the face of the coffin could not be assessed. All 17 major coffin pieces were identified as sycamore fig wood (*Ficus sycomorus*), and all four dowels as tamarisk wood (*Tamarix spp.*). While the basic construction and decoration information can be found in the previous publication,[139] the following details were not included. As with 127A, the planks of wood were produced through a plainsawn or flat-grained method. The coffin planks were largely edge-joined together with dowels, with mortise and tenon joints used largely along the edge of the lid. A large dovetail joint was used to hold the footboard in place. Rough tool marks are visible in the areas of the coffin joints, showing clear saw and chisel marks. These are particularly visible on the areas where the hands were attached (Fig. 75), and on the foot board (Fig. 76). On the latter, additional faint remnants of red paint are visible. Faint traces of red paint are also visible on several inner edge joints of the planks (Fig. 77).

Sycamore fig wood is the most common local species found for the construction of coffins in all periods of Pharaonic ancient Egypt.[140] It is a versatile wood, but it is relatively soft and therefore it was common practice to use harder woods such as tamarisk or acacia for the dowels or tenons that held sycamore fig planks together.[141] The construction techniques of coffins 127A and 130A align with those seen elsewhere in ancient Egypt for the production of coffins belonging to what might be considered an upper middle class, i.e. individuals of some means, though not belonging to the upper echelons of society.[142] The use of the plainsawn method to log reduction for initial plank production maximizes the yield of usable construction timber from a round log. Other methods, like quartersawn, are more selective about the grain direction. Although this produces waste, it ensures more consistent moisture content across each plank and reduces the likelihood of warping. The latter seems to be used rarely in ancient Egypt, even for higher quality objects, suggesting that the Egyptians were concerned with preserving timber, which is reasonable given their dry environment.

Additional details suggest that the craftspeople who produced these coffins were working swiftly and took certain shortcuts as they worked. For the highest quality objects, all surfaces of the piece were smoothed during the finishing process, requiring only a thin layer of plaster to be applied as a base for additional decoration. This produces not only a much more finished and smooth appearance but also helps the object to remain intact longer. The use of wads of linen and thick layers of plaster, particularly for coffin 127A, shows that the carpenters, and perhaps their patrons, were willing to sacrifice these more time intensive, and therefore likely expensive, steps in production. Moreover, the lack of imported woods and expensive decorative techniques like gilding and inlay, which were used for contemporary royal and high elite coffins, contributes to our impression that the owners of these coffins were less affluent.

Other details provide insight into some of the choices and actions of the carpenters, capturing moments of dynamic activity frozen in the material record. On the foot of coffin 130A, for instance, the initial saw marks across the face of the piece are still visible (Fig. 76, A). The kerf of the saw cut that was used to produce the dovetail socket is also visible, as the carpenter cut slightly too far into the wood (Fig. 76, B). The sides of this socket were initially cut with a saw, and then finished with a chisel (Fig. 76, C). A faint red line still remains near the edge of the socket (Fig. 76, D). This served as a guideline, used as the carpenters were planning out the carving of the socket. However, it seems that the carpenter ultimately decided to reduce its size, perhaps illustrating an ancient example of the principle "measure twice, cut once".

A final important detail is the use of the red paint on the interior joints of the coffins. The inner joints and the lid and case rims of coffins were frequently painted red and sometimes inscribed with spells. This method of protection was used throughout Pharaonic ancient Egypt from the Old Kingdom through to the Third Intermediate Period.[143] The Egyptians believed red was a potent colour: by applying it to the rims and joints of coffins, craftsmen seem to have been invoking its apotropaic properties to safeguard these structurally vulnerable areas from potentially negative forces. As this process was undertaken during the construction of the coffin, it suggests that carpenters possessed a level of reli-

Fig. 74 Parts of the remains of the lid of coffin 130A. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

Fig. 75 Void on the coffin lid of 130A beneath the hand, showing saw marks. Photo by Caroline Arbuckle MacLeod/ Leiden-Turin Expedition to Saqqara.

Fig. 76 Part of the foot of the lid of coffin 130A. (A) Saw marks; (B) Saw kerf; (C) Chisel marks; (D) Remnants of red guideline; (E) Remnants of red paint. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

Fig. 77 Faint traces of red paint on the interior joint of coffin 130A. Photo by Caroline Arbuckle MacLeod/Leiden-Turin Expedition to Saqqara.

gious knowledge. This intentional practice is vividly expressed in the joints of coffin 127A, while the faint traces on 130A (Fig. 76, E) suggest the possibility, though with less certainty.

8.2.3 Analysis of the wooden shabtis

During the 2023 season, several wooden shabti were discovered, and were given find numbers F896 (Fig. 78), F816 (Fig. 79), and F897 (Fig. 80). F896 and F897 are from context 521, and F816 is from context 522 (see section 7.2 for additional contextual information). Only F896 is mostly intact, with a height of 16.9 cm. F816 is missing part of the foot, the surviving height being 15.2 cm, and F897 preserves only the foot area, measuring 5.7 cm in height. All three are roughly carved into an anthropoid form. F896 has a modelled head but lacks detailed features. The end of a wig is indicated on the back, and geometrically formed feet have been added. F816 is similar, with more clearly indicated arms. Only the geometric feet remain for F897. All three are quite poorly preserved, with indications of insect damage. Some faint remnants of black material can also be observed. On all three, tool marks are still visible, suggesting little to no effort at smoothing during the finishing stages of production. Sampling was not permitted for F896, due to its superior preservation, but the wood for both F816 and F897 was identified as tamarisk (*Tamarix spp.*).

Shabtis discovered in previous seasons share a similar form, with traces of black pigment observed on wooden shabtis recovered from the stratigraphic layer overlying the forecourt and south-east chapel of the tomb of Meryneith.[144] These were dated to the late Eighteenth or early Nineteenth Dynasties, suggesting a similar date for this group. The use of tamarisk for shabtis is also quite common. In fact, Coffin Text 472 from the Middle Kingdom specifically states that tamarisk is an effective material to be used for the manufacture of shabtis.[145]

Fig. 78 Shabti F896. Photo by Caroline Arbuckle MacLeod/ Leiden-Turin Expedition to Saqqara.

8.2.4 Analysis of wooden fragments from the 2022 season

During the 2023 season, one crate of wooden fragments discovered during the 2022 season was analysed. This consisted of a total of 131 fragments of wood. Their poor preservation only allowed for the

Fig. 79 Shabti F816. Photo by Caroline Arbuckle MacLeod/ Leiden-Turin Expedition to Saqqara.

Fig. 80 Shabti F897. Photo by Caroline Arbuckle MacLeod/ Leiden-Turin Expedition to Saqqara.

analysis of 123 fragments, and the identification of 113 (for a summary of the taxa found in each context, see Table 2). Of these, 82 can be identified as sycamore fig (*Ficus sycomorus*), 24 as cedar (*Cedrus libani*), four are palm wood (most likely *Phoenix dactylifera*), two are acacia (*Vachelia spp.*), and one is tamarisk (*Tamarix spp.*).

The results demonstrate that sycamore fig (*Ficus sycomorus*) is by far the most plentiful, followed by Lebanese cedar (*Cedrus libani*), with smaller amounts of palm (likely *Phoenix dactylifera*), acacia (*Vachelia spp.*), and tamarisk (*Tamarix spp.*). Only the cedar wood is imported. The rest of the wood species can be found growing locally. All the larger worked wood remains are sycamore fig or cedar, and the identifiable dowels are acacia. The tamarisk is very decayed, but with some evidence of having been covered in a black substance, while the palm remains are very fragmentary pieces of unworked wood. Given that the contexts derive largely from within or around tombs, the results suggest that the pieces are from coffins and other funerary furniture. Sycamore fig is the most common wood found in this context, while cedar is commonly found in elite funerary objects, suggesting that at least some of the tombs contained elite burials. Acacia and tamarisk are also found commonly in funerary objects, and are particularly popular for cof-

Grid/Context	Ficus sycomorus	Cedrus libani	Vachellia spp.	Tamarix spp.	Palm (Phoenix dactylifera?)	Unidentifiable
N81/477	0	3	0	0	0	0
UIV 81/482	0	3	0	0	0	0
UIV 81/485	0	3	0	0	0	0
U80/414	1	0	0	0	0	0
V80/390	5	0	0	0	0	0
V80-W80	21	3	2	0	0	0
V80 + V82.1 /390	8	1	0	0	3	0
W80/394	24	10	0	1	0	8
W81/412	0	0	0	0	0	2
W81/423	15	0	0	0	0	0
W82/408	3	1	0	0	0	0
W82/411	1	0	0	0	0	0
W82/413	2	0	0	0	1	0
W82/421	2	0	0	0	0	0
Total	82	24	2	1	4	10

Table 2 Summary of Wood Fragment Analysis from the 2022 Season.

fin dowels and tenons, as supported by the evidence from coffins 127A and 130A. Palm wood is less likely found for formal funerary objects, but is occasionally found in tombs for supporting containers and as structural supports for tomb walls.

9. Magnetic survey in the south-eastern area of the New Kingdom necropolis

(Tomasz Herbich)

9.1 Research location, objectives and ground surface conditions

The objective of the magnetic survey carried out in the 2022 and 2023 seasons was to establish the extent of the New Kingdom cemetery in the area south of the set of tombs uncovered in previous years within the concession of the Leiden-Turin excavation. This area had already been partially prospected by Ian Mathieson's Saqqara Geophysical Survey,[146] however a recent magnetic survey at Abusir South, carried out within the framework of research of the Czech Institute of Egyptology of the Charles University in Prague, has demonstrated the potential for more precise imaging of subsurface structures using the same survey method and measurement apparatus.[147]

The survey covered an area of 8 ha, bounded to the north by archaeological dump heaps from the excavation of the tomb of Horemheb and nearby tombs, as well as by the monastery of St Jeremiah (Fig. 81). In the western part, the ground has numerous small mounds and depressions of various sizes, indicating modern excavation activities predating the twentieth century. The southwestern boundary follows in part a descending slope toward a wide wadi, which runs southeast and then south, which also bears evidence of modern excavation. The eastern part is largely devoid of surface traces of exploration. The central section follows the top of a ridge running roughly NW–SE; the northeastern and southwestern parts of this ridge were surveyed at this time. The southern slope ends in the wadi mentioned above, while the northern one reaches a wide valley which was presumably the main road connecting the monastery of St Jeremiah with the Nile Valley. Earlier excavations in areas that are now fenced off, situated at the center of the survey area, were excluded from the current study.

9.2 Survey methodology

The applied magnetic survey method has a proven

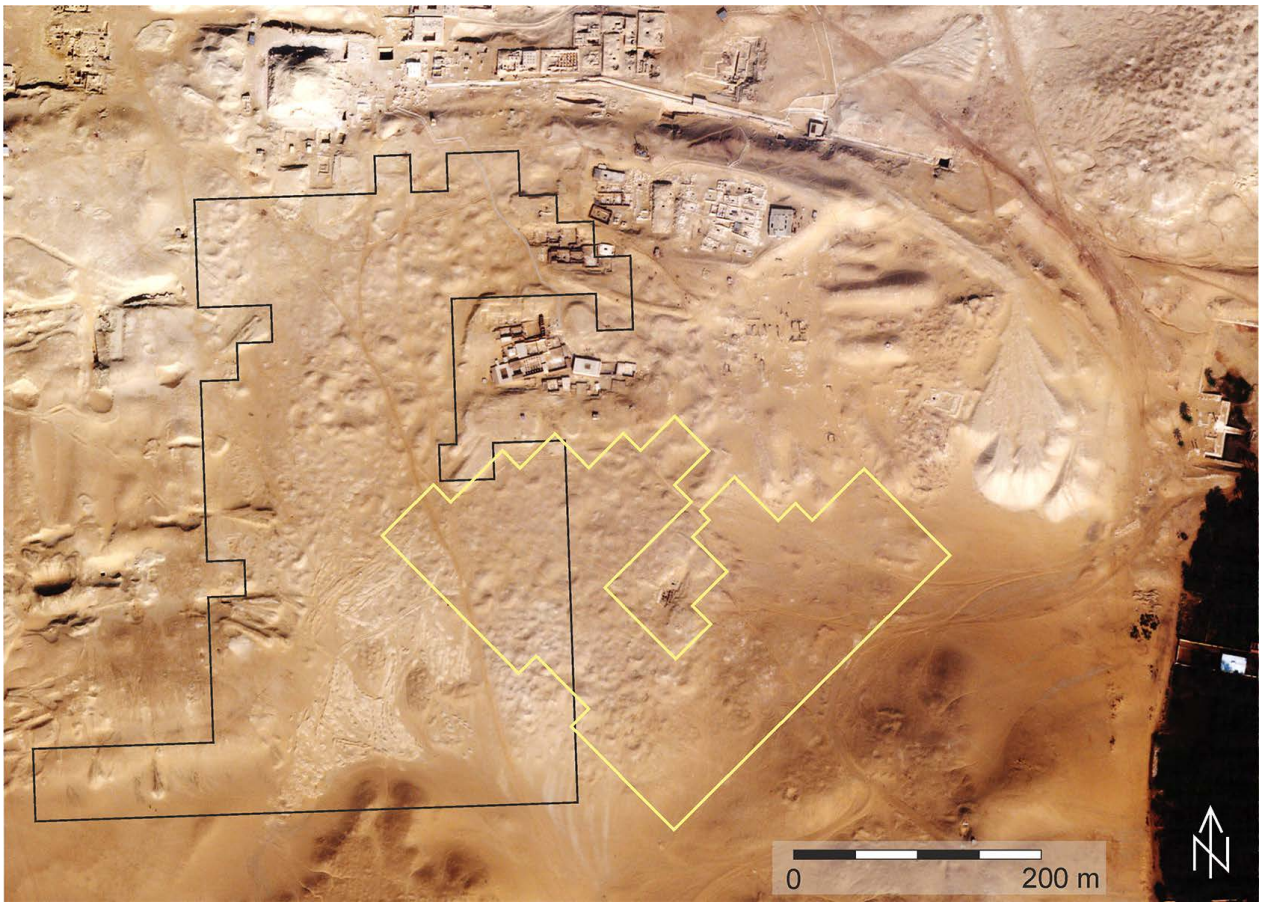

Fig. 81 Location of the magnetic surveys, superimposed on satellite imagery of the area (Google Earth, processed). The black line indicates the scope of the area already investigated by the Saqqara Geophysical Project (before 2009). The yellow line indicates the area surveyed in 2022. Image by Tomasz Herbich/Leiden-Turin Expedition to Saqqara.

effectiveness in tracing the remains of mud-brick structures found in a sandy environment.[148] This is due to the magnetic responsiveness of the Nile silt used to make the bricks, which results from the iron oxide content in the mud.[149] The method has been the primary non-invasive survey method used in Saqqara over the past 50 years.[150] Measurements have been carried out with a fluxgate gradiometer, which has a resolution of 0.1 nanotesla (nT) (Geoscan Research FM256) and records the vertical component of magnetic field intensity. Sampling density was set at eight measurements per square meter, collected in zigzag mode (where the gradiometer was carried in alternating directions) within a 20-metre square grid and with traverses spaced 0.5 m apart. The grid was positioned at an angle to the cardinal directions based on a methodological assumption: measuring along lines that are angled relative to the axis of symmetry of the structures helps to map architectural features (especially walls) in the clearest way. The general east–west orientation of the tombs, defined by their longitudinal axes, was established through prior archaeological excavations and corroborated by Mathieson's geophysical survey.

9.3 Survey results

A number of linear anomalies can be observed on the magnetic map of the western part of the surveyed area, where earlier research had already indicated the presence of structures interpreted as tombs with mud-brick architecture. Some of these anomalies connect in rectangular complexes, measuring approximately 8–12 m in length and 5–8 m across the shorter axis. In two places, the rectilinear anomalies form larger complexes covering an area of approximately 15 × 20 m (southern part of square G1, Fig. 82) to 20 × 50 m (southern part of square H4). The eastern border of the area with mud-brick structures appears to run along a north–south line, between squares C4 and H8. The southern limits cross the centre of square H7.

The changes of the magnetic values mapped in the eastern part of the surveyed area (that is, east

of the hypothetical line marking the eastern extent of the New Kingdom cemetery) suggest architecture built of both dried mud and fired brick. Clusters of anomalies with higher magnetic values and a small diameter (up to 1–2 m) correspond to concentrations of fired brick. The extent of these clusters was determined with a standard deviation analysis (Fig. 83). The most distinct cluster, covering a rectangular area measuring a maximum of about 50 × 25 m can be observed in the eastern part of the magnetic map (squares A8 and A9, and by the northeastern edge of B8, Fig. 82). The nature of this anomaly is such that it suggests fired brick as the primary building material in this area. Southeast of this feature (squares B8 and B9) is another set of anomalies with the same orientation, corresponding in this case to a mud-brick structure with only a few fired bricks. To the north, west and south are linear anomalies corresponding to features constructed of mud brick, which are most probably an enclosure wall around this structure. Remains of architecture can be seen on either side of the western end of this enclosure wall, presumably mud brick for the most part on the western side and a concentration of fired bricks on the eastern side. Further complexes can be seen on the map in squares C5, D6, E7, and smaller structures were detected in squares D8 and D9. They are of identical orientation as the structure within the enclosure wall and are apparently constructed of both fired brick and mud brick. The buildings noted in the northeastern part of square E8 and around the border between squares F8 and G8 were constructed of mud brick. The survey also mapped open areas, either streets or urban squares. A street about 5 m wide runs north–south between the northern part of square E8 and the eastern part of square D7. Rectangular structures can be seen in the northeastern part of the area inside the enclosure wall (square C8). The use of fired brick and a provisional examination of ceramic fragments visible on the surface in these architectural complexes in the eastern part of the surveyed area suggest they are structures dating to the Late Antique period.

Structures of a different nature were detected at the southeastern edge of the surveyed area. The anomalies appear to be constructed of mud brick and have walls up to 3 m thick. The most complete image is of a rectangular structure about 25 m long

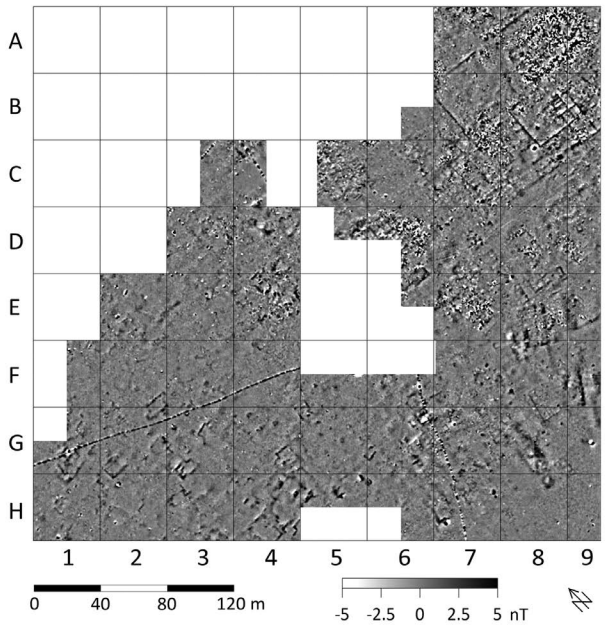

Fig. 82 Magnetic map. Dynamics -5/+5 nT. Sampling grid 0.25 × 0.50, interpolated to 0.25 × 0.25. Processing: destagger, despike (etc.), zero mean traverse. Image by Tomasz Herbich/Leiden-Turin Expedition to Saqqara.

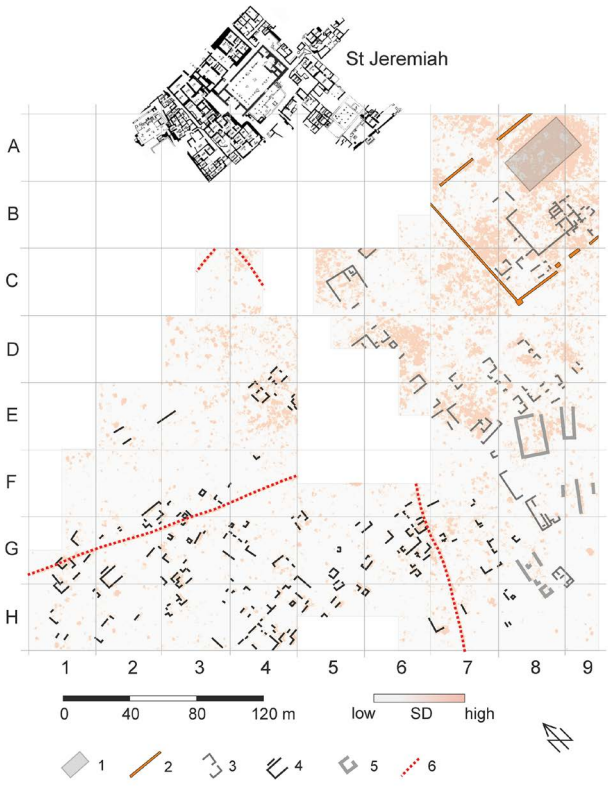

Fig. 83 Graphic interpretation of the image of changes in the intensity of the Earth's magnetic field. (1) Church; (2) Enclosure wall; (3) Coptic-period architecture; (4) Funerary architecture from the New Kingdom; (5) Architecture of unrecognized chronology; (6) Power lines. Standard deviation map as background. Plan of the southern part of the monastery of St Jeremiah after Quibell 1912. Image by Tomasz Herbich/Leiden-Turin Expedition to Saqqara.

Fig. 84 Remains of a presumed church, seen from the northwest. The workers seen in the image are standing on mounds corresponding to the corners of the church on its eastern side. Photo by Tomasz Herbich/Leiden-Turin Expedition to Saqqara.

and 15 m wide, present in square E8. A narrower structure of similar length lies to the east of this building. The anomaly in square F9 is also of similar length. These structures share the same orientation (longer axes aligned northeast–southwest), which is remarkably different from that the east–west orientation observed in the New Kingdom necropolis and in the Late Antique architecture in the area south of the Unas causeway. A structure in square G8 is oriented like most New Kingdom tombs in this area of Saqqara, although its longer axis is actually perpendicular to the axes of the tombs.

Finally, the survey also detected contemporary interventions in the landscape, such as the linear anomalies with a large amplitude of values (between squares G1 and F4, F6 and H7 and in C3 and C4) that correspond to the presence of modern power lines.

9.4 Interpretation and conclusions

A graphic interpretation was prepared (Fig. 83) on the basis of an analysis of the anomalies. In the area of the New Kingdom necropolis, the measurements reveal only parts of individual tombs. This appears to be due to the state of preservation: the most distinct anomalies, characterised by the highest magnetic values, correspond to walls situated close to the ground surface at a depth of no more than 0.3–0.5 m (e.g. in squares G3 or H4).[151] The gaps in the walls seen in the magnetic image are related to walls at a greater depth (at least 1 m) or walls that were completely destroyed during exploration in the previous century and earlier.

The meaning of the architectural complex discovered in the eastern part of the surveyed area, located within an enclosure wall, is better understood in the context of the architecture uncovered in the immediate vicinity (just 50 m away) at the beginning of the 20th century, namely, the monastery of St Jeremiah (Fig. 83). The newly detected complex appears to be a monastic compound with practically the same orientation as the monastery of St Jeremiah. Thus, the structure built of fired brick is most probably a church, perhaps 40 m by 19 m, which corresponds almost exactly to the dimensions of the church inside the monastery of St Jeremiah.[152] An analysis of the ground topography supports this interpretation. The outline of the church walls matches the small mounds visible at this location. An evident embankment corresponds to what would have been the south wall of the church, while the mounds are highest in the eastern corners

Fig. 85 Ahsraquet Bastawrous, Servaas Neijens and Fatma Keshk interviewing Youssef Hammady, October 2022. Photo by Nicola Dell'Aquila/Leiden-Turin Expedition to Saqqara.

of the building (Fig. 84). The gap in the northern section of the wall (square A7) might have been a gate giving access to the neighbouring monastery. The same orientation of the architecture on the eastern and southern sides of the enclosure wall suggests it is contemporaneous with the use of the monastery. The layout of the newly detected monastic compound could be only partially reconstructed. The width of the complex was ascertained at about 83 m. Determining the full dimensions of the complex requires further investigation toward the east.

10. Researching the contribution of workmen in the Leiden-Turin Expedition

(Fatma Keshk and Servaas Neijens)

During the 2022 season of the Leiden-Turin Expedition to Saqqara, a new research project was initiated by Lara Weiss and undertaken in the field by Fatma Keshk, Ashraquet Bastawrous and Servaas Neijens (Fig. 85).[153] The project's primary aim was to study and document the contribution of the archaeological workmen who have participated in the excavations at Saqqara since 1975. Many of these workmen have worked at the concession of the Leiden-Turin excavation for numerous years, and some are descendents of a group of archaeological workers who came to Saqqara from Quft in the early 20th century. The primary goal of the project was to record and examine aspects of their life and work at Saqqara through interviews with both current workmen and some well-known foremen from the past (Fig. 86). Many of the interviewed workmen generously, and proudly, shared with the project team some of their own archival material such as photos and old newspapers in which their work was mentioned, and allowed the project team to scan these documents. The research thus relies on paper documentation as well as oral history and aims to embed this in previous scholarship on archaeological workmen in Egypt and archival research. Prior to the research project, Ahsraquet Bastawrous and Fatma Keshk had collaborated in May 2020 on a campaign entitled "Hands that excavated a civilization" that was published on the Facebook page of the project "The Place and the People".[154] This campaign sought to raise public awareness about the legacy of the archaeological workmen in Egypt with contributions in the form of a series of posts in which a number of workmen told their own stories and photos. The work for this campaign was an informative experience for the team and deepened understanding of the complex legacy of this group of archaeology professionals who had inherited their occupation from their ancestors. Indeed, their lineage can be traced back to a group of men from Quft who were part of a workmen's team formed by William Flinders Petrie (1853-1942) in the 1880s.

Fig. 86 Ahsraquet Bastawrous and Fatma Keshk interviewing Essam Sayed Ahmed and Raafat Abdel Karim, October 2022. Photo by Servaas Neijens/Leiden-Turin Expedition to Saqqara.

10.1 Previous research on Egyptian archaeological workforces

There is significant scholarship on the history of Egyptian workforces in archaeological excavations. The monograph *Hidden Hands* (2010) by Stephen Quirke[155] is a contribution that paved the way for the documentation and study of the legacy of the archaeological workmen through an analysis of William Flinders Petrie's excavation notebooks and diaries. This book opened the door to better understanding and acknowledging the contribution of generations of archaeological workmen who mostly originated from the village of Quft. Further research by Joanne Rowland,[156] Wendy Doyon[157] and Maximilian Georg[158] added considerable detail to the complex histories of various archaeological workforces in Egypt through different perspectives and studying additional archival sources. Current research projects that study the contribution of archaeological workmen in Egypt across different archaeological sites, regions and timeframes include the Abydos Archive Project[159] and the Arabic Diaries Project.[160] Combined, this body of scholarship provided inspiration and a baseline for the current research project, which has formulated its own priorities related to geographic, temporal and social aspects.

10.2 Fieldwork of the 2022 season

In anticipation of the 2022 field season, the team started in September 2022 with a general plan for the fieldwork through a survey of literature on Egyptian archaeological workmen and writing a basic questionnaire for the interviews with workmen as part of the data collection. The preliminary questionnaire included the following questions:

- How long have you been working in archaeological excavations?
- How long have you been working with the Leiden-Turin Expedition in Saqqara?
- What other archaeological missions have you worked for?
- Why did you choose this profession and how did you start it?
- Do you have other family members who worked or are still working in archaeological excavations?

The fieldwork for the project commenced on 14 October and ended on 26 October 2022. During twelve full days of fieldwork, the project team gathered valuable data thanks to the collaboration of several team members of the expedition: workmen, inspectors, archaeologists and directors. The first day of fieldwork was spent getting to know the team of archaeological workmen who participated in the 2022 excavation season through introductions by Mr. Hossam 'Azzam, the foreman (*rais*) of the crew. The project team spent the day examining the general distribution of work within the workforce. Thanks to the kind collaboration of Mr. Hossam 'Azzam, the project team was then able to schedule research interviews with a large group of the workforce. In addition, the project team is very grateful for the interview with Dr. Mohamed Youssef, director of the Saqqara inspectorate at the Ministry of Tourism and Antiquities, who generously shared his knowledge and key insights on the research topic.

During the first day of interviews with the archaeological workmen, the complexity of the project became increasingly apparent. The point of departure for each interview with the workmen was the prepared questionnaire, but thanks to the generosity of the interviewed workmen and their readiness to share their stories with us, we were gradually able to develop the questionnaire to cover in different levels of detail the multiple aspects of their contribution to the Leiden-Turin excavations and other archaeological missions in Saqqara. In total, the project undertook almost 15 interviews with many of the workmen of the 2022 season of the Leiden-Turin mis-

sion. These interviews formed the basis of an initial assessment of key aspects of the research, including:

- The different origins of the current archaeological workmen in Saqqara. Some have roots in Quft, others are originally from the villages of Saqqara and Mit-Rahina.
- The work history of individual archaeological workmen.
- The inheritance of the profession from their fathers and grandfathers.
- The mapping of networks and families of generations of archaeological workmen in Saqqara since the mid-nineteenth century until today.
- The collective history of different generations of workmen who participated in the excavations in the concession of the Leiden-Turin Expedition from 1975 until the present day.
- Perspectives of the archaeological workmen on the history of archaeological excavations in Saqqara since the early 20th century until today.
- The different tasks of workmen and their distribution at the archaeological site.
- The different jobs undertaken by these archaeology professionals within the horizon of archaeological work in Saqqara as archaeological workmen, ceramic specialists, restoration assistants, archaeological security guards, cooks at excavation houses, gardeners, and archaeological (assistant) photographers.

In addition to interviews with archaeological workmen, the project team also spoke to non-Egyptian team members of the Leiden-Turin Expedition to Saqqara in order to include their perspectives, memories and professional encounters with the workmen of the mission. The project team held an interview with Lara Weiss and informal conversations with other team members to record their memories of and stories about the archaeological workmen, with a brief questionnaire as the point of departure. It included the following questions:

- How long have you been working with the mission and during which seasons did you participate?
- What is your role in the archaeological fieldwork?
- Have you been working closely with archaeological workmen?
- With whom of the archaeological workmen have you worked the most?
- What is your most unforgettable memory of working with the archaeological workmen of the mission?
- What are the different tasks of the archaeological workmen in the mission?
- Did you have photos taken with archaeological workmen?

10.3 Preliminary results

A preliminary analysis of the collected data was published in 2023.[161] As part of the reconstruction of the histories, legacies and networks of archaeological workmen in Saqqara, one of the most significant outcomes of the research to date sheds more light on the legacy of foreman Rubi Hamzawi (c. 1838–1904). On the first day of fieldwork, the project team interviewed foreman Hossam 'Azzam who revealed that his grandfather was foreman Rubi Hamzawi who had also worked at Saqqara. Rubi Hamzawi had inherited the profession of archaeological foreman from his father, foreman Hamzawi (†1873), who had led the workforce in the excavations at Saqqara in the 1850s, led by Auguste Mariette (1821-1881). At the time, his son Rubi Hamzawi was working at the same excavations as a basket boy at the age of twelve until about twenty years later when he became the foreman of the archaeological workforce that excavated the Serapeum of Saqqara under Mariette's directorship.[162] The legacy of foreman Rubi Hamzawi is significant for a number of reasons. It highlights the story of a local archaeological workman and his family that has been engaged in archaeological excavations in Saqqara since the mid-nineteenth century. This case study also provides insights into the history of archaeological labor in Egypt before the excavations of William Flinders Petrie in the early 1880s and his employment of workmen from Quft.

Another outcome of the research project was a short documentary film that was shot and directed by Servaas Neijens, which includes footage of the interviews conducted in 2022[163] combined with relevant film clips of the work in the field and photographs of previous excavations and individuals. The film was edited in the winter of 2022-2023. Arabic texts were translated by Mahmoud Ibrahim and Nurhan Ameen and subtitles were compiled by Noha El Hennawy. The Egyptian premiere of the film took place on 16 March 2023 at the Netherlands-Flemish Institute

in Cairo (Fig. 87). Another screening in Cairo took place at the Institut français d'archéologie orientale on 24 May 2023 and was preceded by a presentation about the project by Fatma Keshk. The event was attended by some of the workmen who are featured in the film. The film premiered in the Netherlands on 3 June 2023 during the Saqqara Day in Leiden organised by the Friends of Saqqara Foundation.

10.4 Further research

The project will continue to analyse the collected data to further the study of the legacy of the archaeological workforce in Saqqara and the ways in which it is interconnected to the history of archaeological research in Egypt, the history of Egyptology and the social history of Egypt in the late 19th century and the early 20th century. Research plans include a scientific exchange between our project team and other scholars currently engaged in research on archaeological workmen in Egypt.

11. Outlook for the next season of fieldwork

(Christian Greco and Daniel Soliman)

This preliminary report summarises the findings of the fieldwork and specialist studies conducted by the Leiden-Turin Expedition to Saqqara during the 2022 and 2023 seasons. The excavation of the area north of Maya is not yet fully completed and the architecture and relief decoration will require more study on-site. Moreover, from 2025 onwards we will continue the exploration of the subterranean spaces of Panehsy's tomb, with the aim of understanding their secondary use after the New Kingdom, as well as investigate the shafts of the Ramesside chapels (context numbers 135, 270, 545).

Fig. 87 Film screening at the NVIC, 16th March 2023. Photo by Servaas Neijens/Leiden-Turin Expedition to Saqqara.

Notes

[1] Mohammed 'Abd el-Halim Sayed, 'Abd el-Tawab 'Abd el-Min'em, Mohammed 'Abd el-Min'em Youssef, Tuba 'Abd el-Min'em Youssef, Mohammed 'Abd el-Nabi, Mohdi 'Abd el-Nabi, Rabi'a 'Abd el-Nabi, Sayed 'Abd el-Nabi Abu el-'Ayla, 'Abd el-Tawab 'Abd el-Nabi Mohammed, Ibrahim 'Abd el-Qawy, Hussein 'Abd el-Zhaher, Ismail 'Abdu, Mostaffa Ahmed Zikri, Shaheen 'Ali, Caroline Arbuckle MacLeod, Barbara Aston, 'Atef Ameen 'Abd el-Nabi Ahmed Badr, Ragab 'Amr Mousa, Mohammed 'Amr Rubi, Sa'ad 'Ashour 'Abd el-Min'em el-'Eseely, 'Abd el-Karim 'Awad, Gad Ayman, Ashraquet Bastawrous, Hamdi Behy' el-Deen, Nicola Dell' Aquila, Paolo Del Vesco, Youssef Ehab Fattouh, Rafa'at 'Eid 'Abd el-Karim Morsi el-Kis, 'Emad 'Eid 'Abd el-Min'em, Nasser el-Sha'aban Gad, 'Abdallah Fares Mohammed, Hisham Fattouh Ahmed, Shahata Fattouh Zaki el-Khrawaby, Hassan Farrag Hamza, Ahmed Fikri Sho'eeb, Simone Galli, Valentina Gasperini, Christian Greco, Youssef Hamadi Khalil, Mousa Hassaballah el-Tayeb, Ahmed Hassan 'Abd el-Shafiq, Ayman Hassan Farrag, Tomasz Herbich, Hassan Hisham, Ahmed Hussein, Sabr Hussein, 'Abdel-Rahman Ibrahim el-Kis, Sa'eed Imam, Konrad Jurkowski, Fatma Keshk, Walid Khaled, Hamza Maged Rubi, Sayed Mahmoud Qutb Ibrahim el-Badr Sheely, Alessandro Mandelli, 'Abd el-Hakim Mohammed Mohammed, Ahmed Mohammed Fikri, 'Assam Mohammed Sayed Ragab, Mohab Mousa Hassaballah, Miriam Müller, Mostaffa Nagy Mohammed, Ragab Nasser el-Sha'aban, Servaas Neijens, Andrea Pasqui, Lyla Pinch-Brock, Hossam Ramadan, Magdi Ramadan Fikri, Corinna Rossi, Maged Rubi 'Assam, 'Assam Sa'ad Mohammed Khalil, Mohammed Sa'ad, Maged Sa'eed 'Abd el-Karim, Alice Salvador, Sameh Sa'eed Ragab, Ragab Sameh, 'Abd el-Nabi Sameh Imam, 'Assam Sayed Ahmed Taha, Mohammed Sayed Ragab, Ali Jelene Scheers, 'Eid Shahata, Daniel Soliman, Shahad Soliman Ahmed, Nico Staring, Valentina Turina, Mary van den Hoorn, Lara Weiss, Ivana Wolff and Fattouh Zaki el-Khrawaby.

[2] V82.1 indicates where the first remnants of the tomb (a portion of the east wall) were recorded, in square V82 of the local archaeological grid, during the 2018 fieldwork season. The mud-brick wall (context 116) represented the first architectural feature found in that square. See Raven et al., *JEOL* 47 (2018–2019), fig. 9; Del Vesco et al., *RiME* 3 (2019), pp. 13–14, figs. 1–2, 21.

[3] Raven, *Five New Kingdom Tombs*, 2024.

[4] Dry-stone retaining walls built by nineteenth-century robbers are a very common feature in the area, found at almost every funerary shaft opening – see for instance Raven, *Ptahemwia and Sethnakht*, 2020, pp. 22–23.

[5] All deposits and structures in the area were deeply affected by the excavation in the nineteenth century of several large pits and clusters of smaller circular pits dug with the aim of testing the archaeological stratigraphy and looking for structures, shafts and reliefs of the Pharaonic period.

[6] A good parallel, although square in shape, is offered by the garbage pit found in 2013 in the southern part of the concession between the tombs of Meryneith and Ry, in connection with remains of domestic structures and mud floors dated to the Coptic period – see Raven, *Five New Kingdom Tombs*, 2024, pp. 29–30.

[7] Del Vesco et al., *RiME* 4 (2020), pp. 67–71.

[8] See also Weiss and Staring, *SaqqNewsl* 20 (2022), pp. 8–27; Weiss and Staring, *Archeologie Magazine* 1 (2023), pp. 8–12.

[9] A construction technique common to Memphite tombs dated to the Eighteenth and early Nineteenth Dynasty until roughly the second decade of the reign of Ramesses II. Tomb walls constructed solely of limestone became common at Saqqara in the course of Ramesses II's reign. An example is the tomb of Tia located south of that of Maya – see Martin, *Tia and Tia*, 1997.

[10] See Staring, *The Saqqara Necropolis*, 2023, pp. 146–48, 343 (tomb 090/USC), figs. 49–50.

[11] Staring, *The Saqqara Necropolis*, 2023, chapter 4.

[12] The spaces outside of the tomb were continuously used until long after Panehsy had died.

[13] The *Prosopographia Memphitica* lists eight individuals named Panehsy: https://anneherz.github.io/ProM/, last accessed 25.01.2023. The proper name Panehsy translates as "the Nubian" (*PN* I, p. 113.13). However, this designation does not necessarily indicate Nubian ethnic origin. The meaning might have been symbolic, honorific, or even arbitrary rather than a literal ethnic identifier.

[14] For a discussion of the title "steward of the temple of Amun" in the god's Theban temple, see Eichler, *Verwaltung*, 2000, pp. 11–22; cf. also observations made in relation to the contemporary steward of the Memphite temple of Ptah, Ptahmose: Staring, *BIFAO* 114/2 (2014), pp. 496–99.

[15] The findspot of statue fragments of the god suggest it may have stood to the southwest of the temenos of the temple of Ptah, see Petrie, *Memphis*, I, 1909, p. 3.

[16] For observations regarding the personnel of the Memphite temple(s) of Amun, see most recently Herzberg-Beiersdorf, *Prosopographia Memphitica*, 2023, pp. 195–218. Until now, only one Memphite steward of Amun was known, namely Paser (I), the father of Paser (II), overseer of builders of the king, and Tjunery, overseer of works on all monuments of the king. The tomb of the son, Paser (II), is located west of Horemheb's, see: Martin, *Tomb-Chapels of Paser and Raᶜia*, 1985. The two brothers, Paser and Tjunery (well-known because of the Saqqara king-list derived from his now-lost tomb), are dated to the reign of Ramesses II.

[17] The spouses of a large number of high-ranking officials resident at Memphis held the title "singer of Amun" (var. Amun-Re). For an overview, see Herzberg-Beiersdorf, *Prosopographia Memphitica*, 2023, pp. 203–07, table 33 (71 entries).

[18] Cf. *PN* I, 94.7, for the personal male name *Bw-nḫt=f*. The present, likely Memphite, epithet of Amun is listed neither in Guermeur, *Les cultes d'Amon*, 2005, nor in Pasquali, *ENiM* 2 (2009), pp. 67–90.

[19] We owe the suggested reading and references to Philippe Collombert, personal communication 04.06.2023. A close parallel from Thebes is Amun-buqenen, see Blackman, *JEA* 11 (1925), p. 251, n. 10 (attested in pBM 10335, dated to the Twentieth Dynasty). Blackman suggests that Buqenen was a district of Thebes with a local form of Amun. The district was probably named after the god's epithet. Compare also the personal name *Bw-ḳn-tw=f* (*PN* I, 94.18). A man with this name was the scribe of a tomb construction dossier found at Saqqara, dated to the reign of Ramesses III: Quibell and Olver, *ASAE* 26 (1926), pp. 172–76; Olsen, "Socioeconomic Aspects", 2018, pp. 31–65.

[20] A round-topped stela now held in the collection of the National Museum of Antiquities (RMO) in Leiden, inv. no. VDL 1 (measuring 62 × 46 cm), might just possibly belong to the same individual, Piay. The stela was acquired by the museum in 1831 from Albert van der Linden. He claimed to have bought it in Smyrna on the Aegean west coast of Anatolia, present-day Turkey. The stela's provenience is thus unknown. Since Piay is a common name and the individual on the Leiden stela bears the title "scribe of the offering table" without the addition "of Amun", it is problematic to identify him with Piay who is mentioned in the tomb of Panehsy.

[21] Peraaerneheh, "lector priest of the overseer of the treasury Maiay", is a close parallel – see Raven, in Aksamit (ed.), *Essays Jadwiga Lipińska*, 1997, pp. 139–48. His stela, now held in the Warsaw National Museum, inv. no. 142294, may derive from a small, mud-brick memorial chapel built against the south exterior wall of Maya's tomb. Like Panehsy and Piay, Peraaerneheh officiated in the early Nineteenth Dynasty.

[22] Cf. the fragments from the autobiographical text carved in the entrance portico of his tomb – see Martin, *Maya and Meryt*, I, 2012 pp. 19–20, scene [5], pls. 13–14. The narrative of Maya's text is reminiscent of Tutankhamun's so-called Restoration Stela, Cairo, Egyptian Museum CG 34183. The activities outlined in the latter were in practice carried out under the direction of Maya.

[23] The title *sšm.w-ḥb n ỉmn n ỉmn* was recorded in Maya's Memphite tomb, see Martin, *Maya and Meryt*, I, 2012, pp. 19, 21, 61, scenes [5], [8], fig. 3, pls. 13–14. The closely related title *sšm.w-ḥb n ỉmn m ỉp.t-rsy.t* points to Maya's role as festival leader in the temple of Amun at Karnak. See also Herzberg-Beiersdorf, *Prosopographia Memphitica*, 2023, pp. 202–03. One wonders if the former title refers to Maya's role in the Memphite temple of Amun. The addition "in Memphis" to the title would have been superfluous given the geographical context of the tomb and the Memphite necropolis.

[24] It is likely that the stela had been rectangular, perhaps crowned by a cavetto cornice. Round-topped stelae were positioned either against the west wall of Memphite chapels with a vaulted roof (thus matching the shape of the vault) or against walls in open-air spaces such as the courtyard.

[25] No name spelt exactly like hers is listed in Ranke's *Personennamen*; however, compare *PN* I, 89.17 (*Bȝi*).

[26] For the proportions of the figure of Maya depicted in the substructure, Room K, scene [7], see Martin, *Maya and Meryt*, I, 2012, pl. 50. The length of the feet and the width at the shoulders are the same, but the distance from the convexity (i.e., protruding curvature) of the buttocks to the belly fold is wider, measuring just over three squares. The belly fold lies at horizontal 11, like Panehsy's, but the small of the back is situated half a square higher and the convexity and lower border of the buttocks are half a square lower, resulting in more pronounced hips. The head is three squares high, like Panehsy's, but the neck is slightly shorter, resulting in a longer face.

[27] Van Dijk, in Aston and Aston, *Maya and Meryt*, III, 2023, pp. 368–69, cat. 51 (with references to earlier publications).

[28] Proportions taken from the figure of Tia depicted in the second courtyard, north wall, see Martin, *Tia and Tia*, 1997, scene [23], pls. 18–19, 132. Like Panehsy's, Tia's head is also three squares high, whereas his neck is slightly longer than Panehsy's, with horizontal 17 at a level near his chin, resulting in the characteristically round Ramesside face. The lower border of the buttocks is at horizontal 10 and the small of the back at 12, the convexity of the buttocks at 10 ½ and the belly fold at 11 ¾.

[29] Staring, *The Saqqara Necropolis*, 2023, pp. 164–65.

[30] Interestingly, shaft iv of Horemheb, the main burial shaft accessed from the inner courtyard, likewise descends to a depth of 10.25 m below floor level – see Martin, *Memphite Tomb of Horemheb*, I, 1989, p. 140, figs. 24, 26. The subterranean complex of Horemheb continues beyond the first shaft to reach a depth of 28.12 m. Note that burial shaft i, situated in the first peristyle courtyard of Horemheb's tomb, descends to an astounding depth of 17.24 m. Like shaft iv, shaft i was made in the Old Kingdom and adapted for reuse in the New Kingdom.

[31] The cross section of the burial shaft shows that the upper part of the shaft down to the level of the upper Chamber, A, is wider and more regular in shape than the part below the level of this chamber. This might be indicative of a two-stage excavation of the shaft, perhaps pointing to the fact that the upper part of the burial shaft and Chamber A formed part of an earlier, Old Kingdom burial complex. To verify this hypothesis, closer examination of the underground complex is required.

[32] About 20 royal cubits of 52 cm.

[33] The intention may have been to create a raised platform (*mastaba*) in the western part of the chamber. Compare, for example, the raised platform in the burial chamber of Ry, dated to the late Eighteenth Dynasty reign of Tutankhamun: Raven, *Five New Kingdom Tombs*, 2024, fig. IV.16.

[34] *PN* I, 127.5. The personal name is followed by the so-called cloaked man determinative (Sign list A76a), which has chronological implications. Van Dijk, in Di Biase-Dyson and Donovan, *Cultural Manifestations*, 2017, pp. 327–37, observes that the use of the sign originated in Memphis, around year 30 of Ramesses II, in inscriptions of Khaemwaset and his circle. The sign remained a Memphite/northern phenomenon for most of the Nineteenth Dynasty (it is attested at Thebes from the second half of the Nineteenth until the Twentieth Dynasty), and after the Ramesside period disappears from textual sources.

[35] Herzberg-Beiersdorf, *Prosopographical Database*, 2020, has one attestation of the name in Memphis during the New Kingdom (ID 232).

[36] The south wall of Panehsy forms the shaft's north wall, the north wall of Maya forms the shaft's south wall, and two thin mud-brick walls built between the two form the west and east walls (contexts 146 and 147, respectively).

[37] The north wall of Maya's northwest chapel serves as the shaft's south wall. Thus, the excavation of the shaft yielded new information about the construction of Maya's tomb: Maya's north wall was built directly on the bedrock at a depth of 1.5 m below the paving slabs in the inner courtyard.

[38] Compare to the burial complex (Chamber A) accessed from the north wall of shaft 99/I at a depth of 11.97 m: Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 35–38, figs. I.16, 19. Shaft 99/I is located south of the tomb of Horemheb and dates to the Old Kingdom. It descends to a depth of 23.3 m. The secondary burial chamber is c. 5 m deep, 2 m wide and 1.8 m high. Each long side wall has two rectangular side chambers of mummy niches. Their floors are raised above that of the central chamber and three niches have a mummy-shaped recess in the floor, originally covered by means of limestone slabs. In total, the decayed remains of at least 66 individuals were identified. The lavish use of resin and the position of the arms crossed over the chests suggest a date in the Ptolemaic period, which is confirmed by the finding of a demotic stela and a hoard of coins. See also Donker van Heel, in Verschoor et al. (eds.), *Imaging and Imagining*, 2017, pp. 137–45.

[39] During the 2019 season of fieldwork, an artificial step of c. 1.5 m had already been removed from this deposit. Following its removal, the maximum elevation in squares X83–84 lay at c. 59 m ASL; see Del Vesco et al., *RiME* 4 (2020), pp. 64–65, fig. 1.

[40] Compare to the two-room chapel of Tatia, chief of goldsmiths and priest of front of Ptah, dated to the second half of the reign of Ramesses II and located in the southern part of the Leiden-Turin concession area: Oeters, in Raven, *Five New Kingdom Tombs*, 2024, pp. 127–35. As in the chapel of Yuyu, of the two rooms of Tatia's chapel only the north one (which was built of limestone throughout) contained relief decoration.

[41] The layer that had accumulated against the exterior west wall of the chapel is c. 0.5 m thick, measurable in the section provided by the hole (context 596) dug in the west part of the chapel.

[42] The jambs entered the museum collection in 1927, when they were bequeathed by the painter Albert Maignan. He may have acquired the objects in 1904 from the French Egyptologist Émile Amélineau. The latter never excavated at Saqqara, so he probably acquired the jambs on the antiquities market himself. For a brief note on the collection history of the two jambs, see Seillier and Yoyotte, *Société et croyances*, 1981, p. 40, cat. 223 (inv. no. 88.3.4.2); Perdu and Rickal, *La collection égyptienne*, 1994, pp. 14–15, cat. 1–2. The authors would like to thank Sophie Labbé-Toutée and Agathe Jagerschmidt-Séguin for information about the objects.

[43] Compare to the funeral procession depicted on block Cairo, Egyptian Museum JE 8374 from the tomb of Hormin, the early-Nineteenth Dynasty overseer of the royal household *(ỉp.t nsw)* at Memphis. The now-lost tomb (Lepsius number LS 29) stood c. 25 m northwest of Maya and c. 45 m west of Yuyu. For the approximate location of Hormin's tomb, see Staring, *The Saqqara Necropolis*, 2023, pp. 155–57, fig. 53.

[44] Interestingly, the element *mˁ* is written with Gardiner G20, a combination of Gardiner G17 and Gardiner D37. Elsewhere, the element *mˁ* in the name of Yuyu's son is written with Gardiner Aa15 and Gardiner D37.

[45] In Egyptian his title is *ḥr.y ỉr(.w) nbw p<ỉ>ḳ*. He might be the same individual as Neferrenpet called Kartana, the owner of a Book of the Dead papyrus now held in the British Museum, EA 9940 (ex-coll. G. d'Anastasi, 1839): https://www.britishmuseum.org/collection/object/Y_EA9940-1, last accessed 03.07.2023. This man held the title *ḥr.y ỉr.w nbw pỉḳ* and his spouse is *nb.t pr šmˁ.yt n ỉmn Ḥw-nr*. Interestingly, certain details of the vignettes are painted in gold foil, befitting the man's office. See: Staring, in Vivas Sainz et al. (eds.), *Clever Minds*, 2025, pp. 198–204.

[46] Alternatively, one may read *mỉˁ-ḫrw-Ptḥ* or *mỉˁ<.t>-Ptḥ*. All three are known from New Kingdom sources, see: *PN* I, 144.20, 144.26.

[47] Provisional reading: *mỉˁ-ḫrw m ḥr.t-nṯr*. The latter part of the inscription is carved into a layer of plaster and at present partly covered by dirt. A definitive reading might be possible after a thorough cleaning of the relief.

[48] *ỉr.w ḏˁm*.

[49] Despite its close link to Memphis, the bark of Sokar is not commonly attested in Memphite tomb decoration. The single completely preserved representation is found in the tomb of Mose, scribe of the temple of Ptah (Nineteenth Dynasty, *temp*. Ramesses II), located in the Teti Pyramid Cemetery, see Gaballa, *Tomb-chapel of Mose*, 1977, pp. 13–14, pl. 28. For loose relief fragments depicting the bark of Sokar, see Raven and Van Walsem, *Tomb of Meryneith*, 2014, scenes [103], [104] and perhaps [109], pp. 160–61. Additionally, a scene depicting the procession staged during the Sokar festival has been reconstructed from reused temple blocks found at Memphis (dated to the reign of Amenhotep III), see Johnson, in Aston et al. (eds.), *Under the Potter's Tree*, 2011, pp. 531–40. For textual references in Memphite tombs to the procession staged during the Sokar festival, see Staring, in Staring et al. (eds.), *Perspectives on Lived Religion*, I, 2022, pp. 210–13; Weiss, *The Walking Dead*, 2022, pp. 194–96; Herzberg-Beiersdorf, *Prosopographia Memphitica*, 2023, pp. 263–68. Depictions of the bark are more commonly found in Theban tomb decoration, see, e.g., Graindorge-Héreil, *Le dieu Sokar à Thèbes*, 1994. For the Sokar festival in general, see Gaballa and Kitchen, *Orientalia* 38 (1969), pp. 1–76. The single Memphite parallel for the scene of a tomb owner offering (the head of) an oryx before the bark of Sokar is also found in the chapel of Mose, located in the Teti Pyramid Cemetery, see Gaballa, *Tomb-chapel of Mose*, 1977, pp. 13–14, pl. 28. Gaballa, *Orientalia* 41/2 (1972), p. 179, remarks that, at the time of writing, the scene from the tomb of Mose presented the only known such scene from a private tomb, thus also without known parallels from Thebes. In the Unas South Cemetery, the cult stela in the chapel of Tatia, chief of goldsmiths and wab priest of the front of Ptah (Nineteenth Dynasty, *temp*. Ramesses II), depicts the tomb owner cutting the throat of an oryx gazelle situated on an offering table before Re-Horakhty, see Oeters, in Raven, *Five New Kingdom Tombs*, 2024, scene [5], pp. 145–47 (A2), pp. 169–70.

[50] Brovarski, in Helck and Westenforf (eds.), *Lexikon der Ägyptologie*, V, 1984, p. 1066.

[51] There are few parallels in Memphite tombs for the motif of the Hathor cow emerging from a mountain. An example found very near to Yuyu is in the tomb chapel of Paser, overseer of builders of the king (Nineteenth Dynasty, *temp*. Ramesses II), see Martin, *Tomb-Chapels of Paser and Raˁia*, 1985, pls. 8, 9 (stela London BM EA 165). The partly rock-cut tomb of Netjerwymes, chief steward of Memphis (Nineteenth Dynasty, *temp*. Ramesses II, third decade), located in the Cliff of Ankhtawy/Bubasteion, includes a half-sculpted representation of Hathor emerging from the living rock, see Zivie, *Lost Tombs of Saqqara*, 2007, figs. on pp. 127, 129.

[52] Reading: *sš n ///.t wr Ỉmn-m-ỉp.t*.

[53] In this spelling not attested in *PN* I, though variant spellings are listed on p. 33. One wonders if this is perhaps the individual's short name.

[54] The precise spelling not attested in *PN* I. Variant spelling on p. 129.3–6, all citing examples of males.

[55] In this spelling not attested in *PN* I.

[56] There are several parallels for the veneration of the Sons of Horus in the presence of Osiris on New Kingdom tomb walls, though the arrangement in Yuyu's chapel is rather unusual. In the tomb of Yuyu's neighbour to the south, Maya, the four Sons of Horus are depicted standing on a blooming lotus flower before Osiris seated on his throne, see Martin, *Maya and Meryt*, I, 2012, scene [3], pp. 18–19. For a somewhat similar arrangement of the Sons of Horus flanking a scene of the tomb owner in adoration before Osiris, see the wooden shabti box in Vienna, Kunsthistorisches Museum, Ägyptisch - Orientalische Sammlung inv. no. 960 (https://www.khm.at/objektdb/detail/318337/, last accessed on 05.09.2023).

[57] This work was made possible by a generous grant of the Amarna Research Foundation.

[58] Del Vesco et al., *RiME* 3 (2019), pp. 9–11, figs. 14–15.
[59] This is consistent with Qantir IV.7.5. For further reference to the petrographic analysis of this Levantine clay, see Ownby et al., *JAEI* 6/3 (2014), p. 2.
[60] For a discussion about Canaanite jars distribution and their contents, see Serpico and White, *Antiquity* 74 (2000); Stern et al., *Archaeometry* 45 (2003); Aston, *ÄgLev* 14 (2004), pp. 176–84.
[61] See Amphora type B1: Aston, *ÄgLev* 14 (2004), pp. 187–91.
[62] For parallels from the New Kingdom necropolis at Saqqara, see Greene Aston, in Schneider (ed.), *Tomb of Iniuia*, 2012, p. 159, nos. 45–50.
[63] For parallels see Amphora Type B3, Aston, *ÄgLev* 14 (2004), p. 193.
[64] For parallels see Aston, *Die Keramik*, 1998, p. 617, n. 2504; p. 625, n. 2532.
[65] Aston, *CCE* 3 (1992).
[66] For example in the tomb of Iniuia, see Aston, *CCE* 3 (1992), p. 159, nos. 45–50; the tomb of Tia and Tia, see Aston, *CCE* 9 (2011), p. 203, nos. 1–6.
[67] Some of these are among the most commonly attested closed containers produced throughout Egypt and Nubia during the New Kingdom, see Martin, *Egyptian-type Pottery*, 2011, pp. 51–57, 61–63, 64–66.
[68] For the reuse of sherds for the preparation of mud brick and in preparatory strata for mud-brick architecture, see, for example, Lorenzon et al., *AJA* 124 (2020), p. 120.
[69] Attested are Marl A and Marl F that suggest imports respectively from Upper Egypt and the Eastern Delta, along with a few specimens from Marl D.
[70] For the funerary offering formula and its connection with bread and beer, see Darby et al., *Food*, 1977, pp. 503–06; Müller, *ÄgLev* 17 (2017); Roeten, *Loaves*, 2008.
[71] Gasperini and Salvador, in Del Vesco et al., *RiME* 3 (2019), pp. 14–17; Gasperini and Salvador, in Del Vesco et al., *RiME* 4 (2020), pp. 80–85.
[72] Numerous examples were retrieved during previous seasons at the site. See, for example, Aston, *CCE* 9 (2011), pp. 1–36; 242–52.
[73] On the stylistic evolution of blue-painted decorations, see Aston, *Die Keramik*, 1998, p. 354.
[74] Gasperini and Salvador, in Del Vesco et al., *RiME* 3 (2019); Gasperini and Salvador, in Del Vesco et al., *RiME* 4 (2020).
[75] Aston and Aston, *Late Period Pottery*, 2010.
[76] Gasperini and Salvador, in Del Vesco et al., *RiME* 3 (2019); Gasperini and Salvador, in Del Vesco et al., *RiME* 4 (2020).
[77] Gasperini and Salvador, in Del Vesco et al., *RiME* 3 (2019); Gasperini and Salvador, in Del Vesco et al., *RiME* 4 (2020).
[78] Aston and Aston, *Late Period Pottery*, 2010; see also Aston, in Raven et al. (eds.), *Memphite Tomb of Horemheb*, V, 2011, pp. 253–303.
[79] Dixneuf, *Amphores égyptiennes*, 2011, pp. 141–42; figs. 9–11, 128–30.
[80] Other parallels were already attested in the wider area of Saqqara, see for example Lecuyot, in Marchant and Marangou (eds.), *Amphores d'Egypte*, I, 2007, p. 203, fig. 1.11.
[81] Gasperini and Salvador, in Del Vesco et al., *RiME* 3 (2019); Gasperini and Salvador, in Del Vesco et al., *RiME* 4 (2020).
[82] For the chronology of these materials, see Bonnet Borel and Cattin, in Bridel (ed.), *EK 8184*, IV, 2003, p. 634, pls. 84, 77bis.
[83] For a more elaborate study and interpretation of this installation, see Gasperini, *RiME* 9 (2025).
[84] Dixneuf, *Amphores égyptiennes*, 2011, pp. 141–42; figs. 128–30.
[85] During the fieldwork season of 2022, Ali Jelene Scheers was the biological anthropologist on site, assisted by Aida Tadesse and Mary van den Hoorn. During the fieldwork season of 2023, the biological anthropologist on site was Mary van den Hoorn, assisted by Ali Jelene Scheers and Ivana Wolff.
[86] Now published as Raven, *Five New Kingdom Tombs*, 2024.
[87] For the analysis of this material, see Horáčková et al., in Raven, *Five New Kingdom Tombs*, 2024, pp. 374–78.
[88] Del Vesco et al., *RiME* 4 (2020).
[89] Raven et al., *JEOL* 47 (2018–2019), pp. 144, 149.
[90] Raven et al., *JEOL* 47 (2018–2019), pp. 142, 149.
[91] Del Vesco et al., *RiME* 3 (2019), p. 40.
[92] Del Vesco et al., *RiME* 3 (2019) pp. 40–41.
[93] This is based on the following contexts: 146, 463, 464, 465, 466, 467, 468, 469, 477, 479, 480, 481, 482, 484, 485, 584, 592, 594, 606, 608, 619, 622 and out of context material from the shaft and Chamber A.
[94] Maresh, in McCammon (ed.), *Human Growth and Development*, 1970, pp. 157–200.
[95] Horáčková, in Raven, *Ptahemwia and Sethnakht*, 2020, pp. 323–98.
[96] Horáčková, in Raven and Van Walsem, *Tomb of Meryneith*, 2014, pp. 295–322.
[97] For the seemingly different stamped mud bricks from the tomb of Maya, see Raven, *Maya and Meryt*, II, 2001, p. 59, cat. 331, pls. 24, 38.
[98] Compare Raven, *Maya and Meryt*, II, 2001, p. 78, cat. 444; pl. 45.
[99] Some fragments were registered under numbers F666 and F668A–D.
[100] A stylistic parallel for the modelling of the face is a wooden coffin from the same period excavated in Saqqara in 1985, see Raven, *Tomb of Iurudef*, 1991, coffin no. 67, pl. 33.
[101] A very close parallel for dimensions, material and style is offered by Museo Egizio amulet Cat. 281.
[102] For Coptic funerary stelae and burials in this part of Saqqara, see Raven, *Ptahemwia and Sethnakht*, 2020, pp. 21–22, 130–34.
[103] For a similar mud seal impression, see Raven, *Pay and Raia*, 2005, p. 83, cat. 123, pl. 107.
[104] Compare Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 132–33, cat. 258–261.
[105] Compare Schneider et al., *Memphite Tomb of Horemheb*, II, 1996, p. 66, cat. 486–492; Raven and Van Walsem, *Tomb of Meryneith*, 2014, p. 252, cat. 148; Raven, *Ptahemwia and Sethnakht*, 2020, p. 225, cat. 256.
[106] Compare the Arabic inscription *bi-smillāh* on a coin found near the shaft 2009/15: Raven, *Five New Kingdom Tombs*, 2024, p. 246, cat. 163.

[107] Compare Raven, *Five New Kingdom Tombs*, 2024, p. 246, cat. 162.
[108] Compare Quibell, *The Monastery of Apa Jeremias*, 1912, pl. LIV; Schneider, *Memphite Tomb of Horemheb*, II, 1996, p. 61, cat. 427, pl. 81; Lythgoe (ed.), *The Monastery of Epiphanius*, I, 1973, p. 70/ll.
[109] Compare Quibell, *The Monastery of Apa Jeremias*, 1912, p. 141, pl. LIV; Lythgoe (ed.), *The Monastery of Epiphanius*, I, 1973, pp. 59–60.
[110] Compare Schneider, *Memphite Tomb of Horemheb*, II, 1996, cat. 429, pls. 41, 81; Quibell, *The Monastery of Apa Jeremias*, 1912, pl. LIV.
[111] For similar wooden combs from the Late Antique period, see Quibell, *The Monastery of Apa Jeremias*, 1912, pl. LIII; Martin, *Three Memphite Officials*, 2001, p. 41, cat. 33, pl. 77. For wooden combs attributed to the New Kingdom, see Schneider, *Memphite Tomb of Horemheb*, II, 1996, cat. 431, pl. 81; Raven, *Tomb of Iurudef*, 1991, p. 40, cat. 35, pl. 40.
[112] Cf. Quibell, *The Monastery of Apa Jeremias*, 1912, pl. LIV; Raven, *Ptahemwia and Setnakht*, 2020, pp. 212–13, cat. 199a-c. For other wooden spindle whorls from the vicinity that, despite other interpretations, likely also date to the Late Antique period, see Raven, *Maya and Meryt*, II, 2001, p. 76, cat. 429a–b, pl. 42; Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 138–39, cat. 281.
[113] Compare Raven, *Maya and Meryt*, II, 2001, p. 41, cat. 177a–b, pl. 19.
[114] Compare Raven, *Maya and Meryt*, II, 2001, p. 37, cat. 132, pl. 18.
[115] Raven, *Pay and Raia*, 2005, p. 92, cat. 217.
[116] Compare Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 138–39, cat. 285.
[117] Cooney, *Glass*, 1976, p. 106, no. 1090.
[118] Kucharczyk, *PAM* 15 (2004), pp. 64–66.
[119] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 124–25, cat. 219. Compare also Quibell, *The Monastery of Apa Jeremias*, 1912, pl. LII.5, second row from top, fourth fragment from the right.
[120] Cooney, *Glass*, 1976, p. 106, no. 1090.
[121] Kucharczyk, *PAM* 15 (2004), pp. 64–65.
[122] Rodziewicz, *Les Habitations Romaines Tardives d'Alexandrie*, III, 1984, pp. 240–41, nos. 375–79, pl. 73.
[123] Compare Cooney, *Glass*, 1976, p. 105, no. 1081.
[124] Sartini, *EVO* 38 (2015), pp. 49–66.
[125] Schneider, *Shabtis*, II, 1977, p. 205, cl. VF.
[126] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, p. 88, cat. 44a–d.
[127] Aston, *Ancient Egyptian Stone Vessels*, 1994, p. 161, no. 215.
[128] Schneider, *Memphite Tomb of Horemheb*, II, 1996, p. 26, cat. 120, 121, pl. 61; Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 180–81, cat. 300, 301.
[129] The Panedjem who may have lived in the second half of the Nineteenth Dynasty and is attested with the title wab priest of Ptah on a false-door stela from Saqqara (Rijksmuseum van Oudheden AP 50) seems to have been a different individual, see Herzberg-Beiersdorf, *Prosopographical Database*, 2020, ID 232.
[130] Compare Schneider, *Memphite Tomb of Horemheb*, II, 1996, p. 25, cat. 114, pl. 60.
[131] Del Vesco et al., *RiME* 4 (2020).
[132] Some technical elements were found in the same textile fragment.
[133] As discussed in detail in Arbuckle MacLeod et al., in Arbuckle MacLeod and Koons (eds.), *Egyptian Mummies and Coffins*, 2021, pp. 96–98.
[134] Van Walsem et al., *OMRO* 79 (1999).
[135] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, pp. 76–81.
[136] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, p. 80.
[137] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, p. 76.
[138] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, p. 81.
[139] Raven et al., *Memphite Tomb of Horemheb*, V, 2011, p. 81.
[140] Arbuckle, "A Social History of Coffins", 2018.
[141] As noted in Dawson et al., in Strudwick and Dawson (eds.), *Death on the Nile*, 2016; Arbuckle MacLeod et al., in Koons and Arbuckle MacLeod (eds.), *Egyptian Mummies and Coffins*, 2021.
[142] For an overview, see Arbuckle, "A Social History of Coffins", 2018.
[143] For a discussion, see especially Arbuckle, "A Social History of Coffins", 2018; Arbuckle MacLeod and Cooney, *JEA* 105/2 (2019), p. 292, n. 46; Eschenbrenner-Diemer et al., *BIFAO* 121 (2021); Arbuckle MacLeod, in Candelora et al., *Ancient Egyptian Society*, 2023, pp. 71–72.
[144] Raven and Van Walsem, *Tomb of Meryneith*, 2014, p. 228, cat. 25, 26.
[145] Faulkner, *Ancient Egyptian Coffin Texts*, 1973, p. 106.
[146] Mathieson and Dittmer, *JEA* 93 (2007), pp. 79–93. This magnetic survey in the area of the New Kingdom necropolis south of the causeway of Unas was carried out in 2009 and summarised (without published magnetic maps) in Price, in Mathieson (ed.), *Seeing Under the Sands of Saqqara*, 2013, pp. 51–55. The author is grateful to Jon Dittmer for the opportunity to see the magnetic maps.
[147] Herbich, in Wunderlich et al. (eds.), *Advances*, 2023, pp. 135–37.
[148] Herbich, in Persico et al. (eds.), *Innovation in Near-surface Geophysics*, 2019, pp. 195–251.
[149] Hesse, *Prospezioni Archeologiche* 2 (1967), pp. 43–48.
[150] For a full bibliography of the prospections, see Herbich, in Bussmann et al. (eds.), *Spuren der altägyptischen Gesellschaft*, 2022, pp. 385–407.
[151] Herbich, in Jucha et al. (eds.), *Aegyptus est imago caeli*, 2014, pp. 307–17.
[152] As deduced from the plan of the church in Quibell, *The Monastery of Apa Jeremias*, 1912, pl. I.
[153] This project was possible thanks to the research project "The Walking Dead at Saqqara: The Making of a Cultural Geography", which received a grant from the Dutch Research Council (NWO), dossier no. 016. Vidi.174.032, and was hosted at Leiden University, Institute for Area Studies (LIAS), as well as a grant from the Impact Fund of the Faculty of Humanities, Leiden University.
[154] https://www.facebook.com/profile.php?id=100064481598493.
[155] Quirke, *Hidden Hands*, 2010.
[156] Rowland, *EA* 44 (2014), pp. 10–12.
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[158] Georg, *Deutsche Archäologen und ägyptische Arbeiter*, 2023; Georg, in Ashmawy et al. (eds.), *Heliopolis*, 2020; Georg, in Navratilova et al. (eds.), *Towards a History of Egyptology*, 2019; Georg, in Miniaci et al. (eds.), *The Arts of Making*, 2018.

[159] https://abydosarchive.org/.

[160] Der Manuelian, *JARCE* 58 (2022).

[161] Keshk and Bastawrous, *EA* 62 (2023).

[162] https://www.victor-loret.mom.fr/?attachment_id=588; Doyon, "Empire of Dust", 2021. We are grateful to Nico Staring for these references.

[163] Featured are conversations with foreman Hossam 'Assam, inspector Ashraf 'Abdel 'Aziz 'Abdel Hamid, excavation technician 'Essam Sa'id Ahmed, excavation technician Raafat 'Abdel Karim, retired restoration specialist Youssef Hamady, and foreman Ibrahim 'Abdel Monsef.

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