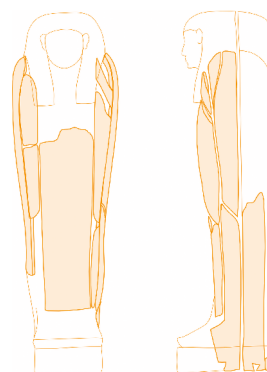


The documentation and conservation of coffins from TT 414: new approaches and initial results



Abstract: The LMU Ankh-Hor Project has been studying “neglected” finds discovered during the Austrian excavations of the tomb of Ankh-Hor in Asasif (TT 414) since 2018. The project’s priority is the wooden coffins, dating from the Twenty-sixth Dynasty to the Roman period, which serve as primary evidence for reconstructing the complete use life of the tomb and its multiple tomb groups. The most important results from five seasons in the Asasif regarding the large corpus of coffins from TT 414 are summarized, and future work is outlined. The advantages of state-of-the-art documentation techniques, such as 3-D models and infrared photography, are also presented.

Keywords: Asasif, TT 414, Late Period, Ptolemaic, coffins, conservation, funerary practice

INTRODUCTION

The plain in front of the valley of Deir el-Bahari, known as the Asasif, is an area of the Theban necropolis with a particularly intriguing history of use, ranging from the early Middle Kingdom to Ptolemaic and Roman times.¹ The Asasif was not only used for non-royal tombs of

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¹ On the Asasif, including a discussion of the toponym and a history of research, see Eigner 1984.

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Our work on the material from TT 414 would not have been possible without the constant support of the local inspectorate on the West Bank. I am very thankful to the following persons (status: March 2024): the General Director of Antiquities of Upper Egypt, Fathy Yassin Abdel Kareem; the General Director for the Antiquities of the West Bank of Luxor, Baha Abdelgabr; the Director of the West Bank, Ezz El Din Kamal El Noby; the Director of the Foreign Missions of the West Bank, Ramadan Ahmed Ali; the Director of the Antiquities of the Middle Area of the West Bank, Abdelelghany Abdel Rahman; and Ahmed Hassan, Chief Director of the Magazines of the West Bank, as well as Ahmed Ezz, Director of the Magazine. Many thanks go to all of our helpful inspectors over the five seasons. I am grateful to all team members, especially Patrizia Heindl, Caroline Stadlmann, Hassan Ramadan Aglan, and Ashraf Hosni Teegi. My thanks go to Chloë Ward for improving the written English of this article. I would like to thank Hassan Ramadan Aglan for his support in editing some of the illustrations.

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various types and from different periods, but it is also the location of a large unfinished Twentieth Dynasty royal temple and the royal causeways leading to Deir el-Bahari (Budka 2021–2022). These royal monuments, as well as the tombs, illustrate that the long use of the Asasif necropolis is closely linked to Deir el-Bahari (Budka 2010a: 45–78 with references).

In the eastern part of the Asasif, there are monumental Late Period tombs (for example, TT 389, Basa; TT 410, Mutirdis; TT 414, Ankh-Hor, and TT 27, Sheshonq) as well as smaller structures with mud-brick chapels (Eigner 1984: Fig. 67; also Bietak 1972; Budka 2010a). According to Manfred Bietak (1978), the distribution of the tombs is influenced by the presence of important cultural landmarks that dominate the general landscape: the causeways to the royal temples at Deir

el-Bahari. These causeways functioned as streets and processional routes within the necropolis, especially for the “Beautiful Festival of the Valley” and related activities.² They continued to be used after the New Kingdom, up to the Ptolemaic era, despite changes at the temples of Deir el-Bahari in the first millennium BC following a major earthquake (Chudzik 2022), particularly in the Late Period (Strudwick 2003: 183).

Excavations by an Austrian team, directed by Manfred Bietak, were undertaken in the Asasif from 1969 to 1977. This work uncovered many small tombs with mud-brick superstructures, as well as numerous shaft tombs, mostly dating to the Late Period, but also including Middle Kingdom tombs (Budka 2010a: 60–78 with references). The major discovery by the Austrian team in 1971 was the

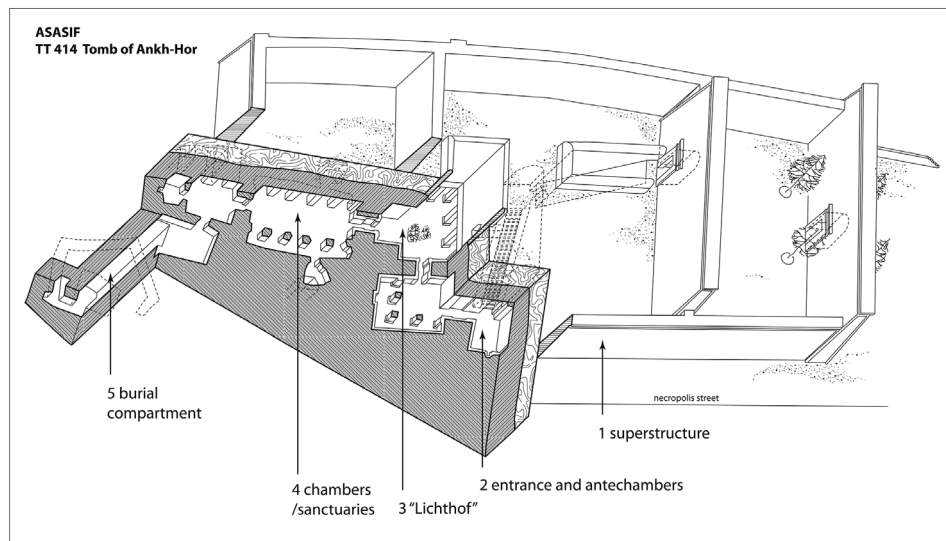


Fig. 1. Isometric view of the tomb of Ankh-Hor, TT 414, after Eigner (LMU Ankh-Hor Project | graphic Hassan Ramadan Aglan)

2 For a new study on the Valley festival in Ptolemaic times, see Dogaer 2020; also Smith 2020–2023, with some alternative interpretations.

monumental tomb of Ankh-Hor, TT 414 (Bietak and Reiser-Haslauer 1978; 1982), one of the Theban temple tombs of the Twenty-sixth Dynasty [Fig. 1]. Knowledge of TT 414 predates 1971, and in the 19th century CE, agents of the British consul Henry Salt entered the tomb (Eigner 1984: 54–55; Budka 2008: 64–65). Richard Lepsius also reported rich findings in the tomb, including numerous mummies and coffins, without naming Ankh-Hor as the owner (see Budka 2010b: 59). During the 19th century CE, well-preserved and portable burial equipment (e.g. Ptah-Sokar-Osiris statues, stelae, and boxes) from TT 414 were sent to Europe (see Budka 2019 with references). Objects unearthed during the Austrian excavations fit together, like complex jigsaw puzzles, with pieces from European museums, particularly those in London, Paris, and Turin (Budka 2010b: 56; see also Budka and Mekis 2022).

Considering the well-preserved condition of temple tombs, such as TT 414, and the number of relevant publications from previous and ongoing excavations, it is striking how little is known about the original contents of tombs from the Twenty-fifth and Twenty-sixth Dynasties. This is connected not only to repeated looting but also to a prevalent scholarly attitude of ignoring fragmentary or uninscribed objects from the tombs in favor of their architectural and decorative counterparts (a notable exception is Graefe 2003). Reconstructing an elite burial within one of the Kushite or Saite temple tombs is, therefore, a considerable challenge and relies mostly on unpublished data and a detailed study of excavated objects. Fragments of Ankh-

Hor's inner and outer coffins from TT 414 provide a rare example of a dateable coffin set dating to between 600 and 300 BC (Budka 2019: 173–174). Based on the known dates during which he held the title of high steward of the god's wife Nitocris (approximately 590–586 BC), the coffin set of Ankh-Hor can be securely dated to the reign of Apries (Budka 2019: 173, n. 30).

THE LMU ANKH-HOR PROJECT

The new LMU Munich Ankh-Hor Project is a follow-up project to the study seasons conducted by the present project director, Julia Budka, on behalf of the Austrian project between 2007 and 2009 in the Asasif (see Budka 2008; 2009; 2010b; 2015). Although TT 414 was published soon after excavation as a two-volume monograph by Manfred Bietak and Elfriede Reiser-Haslauer (1978; 1982), large amounts of finds from the Austrian excavations are, as yet, unrecorded and were left on-site. These finds are currently stored in Tomb I of the former Austrian concession, a Middle Kingdom *saff*-tomb (MM 737 of Winlock's cemetery 700, see Budka 2017). The majority of the finds are from the complex reuse of TT 414 from the Thirtieth Dynasty onwards (Budka 2010a: 358–364; Budka, Mekis, and Bruwier 2012–2013; Budka and Mekis 2017). This material, therefore, has considerable potential for understanding the funerary customs of the Late Period, the Ptolemaic, and Roman eras, and has not yet been published.

In addition to the actual artifacts in Asasif, the archive of the Austrian project—held at the Austrian Academy of Sciences in Vienna—is consulted for the

final assessment of all the material from TT 414. This archive includes the register book used during the excavation and numerous photographs — predominately black-and-white object photographs, as well as a small number of color slides.

From 2018 until October 2023, five seasons of the LMU Ankh-Hor Project were successfully conducted in the project's storeroom (for the results of the

2018 and 2019 seasons, see Budka 2019; 2020; for the 2021 season, see Budka 2021; for the 2022 season, see Budka 2023 and Budka submitted). The following is a summary of the results from the documentation and consolidation of a significant number of wooden and cartonnage coffins from TT 414, with a particular focus on the progress made during the 2023 season.

COFFINS FROM TT 414

The coffins excavated in TT 414 belong to both the primary burials of members of the Ankh-Hor family and the secondary burials of priests of Amun, mostly dating to the 4th and 3rd centuries BC. As the remains of two anthropoid wooden coffins of Ankh-Hor (Bietak and Reiser-Haslauer 1982: 167–170, Figs 69, 70, 73 and Pl. 93), as well as fragments of *qrsu* coffins from close relatives (his daughter and his brother), have already been discussed elsewhere (Bietak and Reiser-Haslauer 1982: 176–178, 250–251; Budka 2008), the focus in the following is on coffins from the Thirtieth Dynasty and the Ptolemaic era (see also Budka 2022).

Possibly in the Twenty-ninth Dynasty (399–390 BC), but definitely by the Thirtieth Dynasty, the family of the priest of Amun, Pa-di-Amun-neb-nesut-tawy I, purchased the right to use the long-abandoned tomb of the Twenty-sixth Dynasty official, Ankh-Hor, for the burial of its members. TT 414 was used by this family for several generations (Budka and Mekis 2022). Elfriede Reiser-Haslauer and Herman De Meulenaere undertook important work to reconstruct the genealogies of the families buried in TT 414 (Reiser-

Haslauer 1982a; 1982b; De Meulenaere 1989).

Reiser-Haslauer, who registered all of the coffins and documented the texts and decorative elements, conducted important work on the coffins from TT 414 in the 1970s. The numerous coffins datable to the early, mid, and late Ptolemaic period represent the most extensive cluster of Ptolemaic material from all the Late Period tombs in the Asasif (Strudwick 2003: 173; Budka 2019). The coffins fall into various types, primarily colorfully painted inner and outer anthropoid coffins, as well as very large outer anthropoid coffins of the yellow-on-black and red-yellow-on-black types. It is significant that the type of shrine, or *qrsu* coffin, was re-invented in the 4th century BC and is well attested in TT 414, with different surface treatments (Budka, Mekis, and Bruwier 2012–2013: 230 and 243, n. 216). With the ideal coffin set comprising a *qrsu* coffin, an outer anthropoid coffin, and an inner anthropoid coffin, it is clear that the Thirtieth Dynasty and early Ptolemaic coffin sets closely resemble those from the Twenty-fifth and Twenty-sixth Dynasties, when

the temple tombs were originally used.

In their use of excerpts from the Book of the Dead and other so-called *Unterweltsbücher*, such as the Amduat, the Litany of the Sun, the Book of Gates, and temple texts, the texts and illustrations on the wooden coffins from TT 414 are comparable to those found on royal and non-royal stone sarcophagi (cf. Jenni 1986; Leitz 2011). However, through the well-known family relationships of its secondary burials, TT 414 demonstrates how significantly the design of a burial assemblage can vary, even within the same family (Budka 2019 with references). Despite common themes and a clear association with Theban workshops, each of these coffins exhibits unique characteristics. The common denominator, however, is the emphasis on regeneration and, especially, the preservation of the human body's physical functions (Budka 2013; 2022). Personal choices and diverse motifs, which can be traced back to various textual sources and perhaps pattern books, attest that the 4th century BC in Thebes was a time of innovative composition in visual and textual funerary arts (see, e.g. Budka, Mekis, and Bruwier 2012–2013; Elias and Mekis 2019). These compositions are not purely Theban in appearance but include elements known from other regions, including Akhmim (Budka 2024).

WOODEN INCISED COFFINS

Wooden incised coffins are used in TT 414 as outer and inner anthropoid coffins, as well as *qrsu* coffins (Budka 2008). These coffins, with their carefully polished natural surfaces, often featured a flower collar and carved inscription columns.

They are mostly made of tamarisk wood, though more rarely from a type of unidentified coniferous wood. One striking corpus consists of a collection of seven inner anthropoid coffins, all excavated from the burial compartment of Ankh-Hor (Bietak and Reiser-Haslauer 1982: 166). In addition to incised decorations on the lid, the masks of these coffins display inlaid eyes and eyebrows.

Examples of inner anthropoid coffins with incised decoration

Pa-di-Amun-neb-nesut-tawy I was the first to reuse TT 414 after a period of abandonment. Only fragments of his inner and outer anthropoid coffins (Reg. Nos 607 and 680) were found in Ankh-Hor's original burial chamber (Budka 2022: 88–90). The foot section of his inner coffin, made of coniferous wood with incised decoration, has survived (Reg. No. 607, Budka 2020: 71, Fig. 4) and illustrates the use of such coffins paired with wooden painted outer coffins. The instep of Pa-di-Amun-neb-nesut-tawy I's inner coffin is decorated with two jackals on shrines, with a falcon spreading its protective wings between them. The front of the pedestal bears a horizontal inscription with his name and titles.

Reg. No. 614 is an example of an almost complete coffin made of tamarisk wood with incised decoration, datable to the Thirtieth Dynasty and made for a female member of Pa-di-Amun-neb-nesut-tawy I's family. The lid of the coffin was partially damaged by looters, who stole the mummy and destroyed the vertical inscription line containing the name and titles of the deceased [see also below, Fig. 13]. Interestingly, remains of the

Book of the Dead were found *in situ* at the base of the coffin, next to the mummy. Part of the papyrus was stuck in bitumen and remained in place when the robbers took out the roll of the Book of the Dead (Budka 2008; for well-preserved Book of the Dead papyri from TT 414 in European museums, see, e.g. Gill 2019).

The only *in situ* discovery of an inner coffin with incised decoration was made in Room 10,2 in TT 414: the complete inner coffin of Wah-ib-Re I (Reg. No. 865), featuring incised and gilded decoration, was found inside a painted wooden outer coffin within a stone-cut niche (Bietak and Reiser-Haslauer 1982: 199–211). This type of coffin is slightly different from

those found in Room 7,1, since it also features painted decorative elements (and the mask was gilded). For example, the design of the instep of Wah-ib-Re I's coffin is markedly different from that of his father, Pa-di-Amun-neb-nesut-tawy I, incorporating five painted uraei as protective symbols *in lieu* of the deceased's toes (Budka 2010b: 58, Fig. 6). The uraei are placed above the standard shrines with recumbent jackals, while the central motif of the instep features Osiris as a deified *djed*-pillar, flanked by small figures of Isis and Nephthys [Fig. 2]. The goddesses are shown mourning Osiris, a frequent motif on foot panels of Ptolemaic coffins (Kucharek 2018: 99).



Fig. 2. Detail of the instep of Wah-ib-Re's inner coffin (Ankh-Hor Project, LMU Munich | photo J. Budka)

WOODEN PAINTED COFFINS

Several hundred fragments of painted wooden coffins from TT 414 have been preserved. While many are in poor condition, others have survived as more substantial pieces. Wooden painted coffins from TT 414 include inner and outer anthropoid coffins in various designs, as well as *qrsu* coffins. The latter are highly fragmented and will not be addressed in this paper (but see, e.g., Budka and Mekis 2022: 34–35, 69–71).

Two anthropoid painted coffins

Among the best-preserved examples are the two coffins of Padias, an Amun

priest of the early Ptolemaic period (Reg. Nos 655 and 655a). He was buried in the original burial chamber dedicated to Ankh-Hor, Room 7,1, where the coffins were found *in situ* (Bietak and Reiser-Haslauer 1982: 165, Figs 67 and 68). While the outer anthropoid coffin was entirely covered in black paint, his inner coffin was beautifully painted in multiple colors and remains largely intact (see Budka 2022: 90–91, Fig. 2). Similar to Reg. No. 614, the lid was destroyed in antiquity by looters, who also removed the mummy and a papyrus roll of the Book of the Dead, originally placed next to the body.

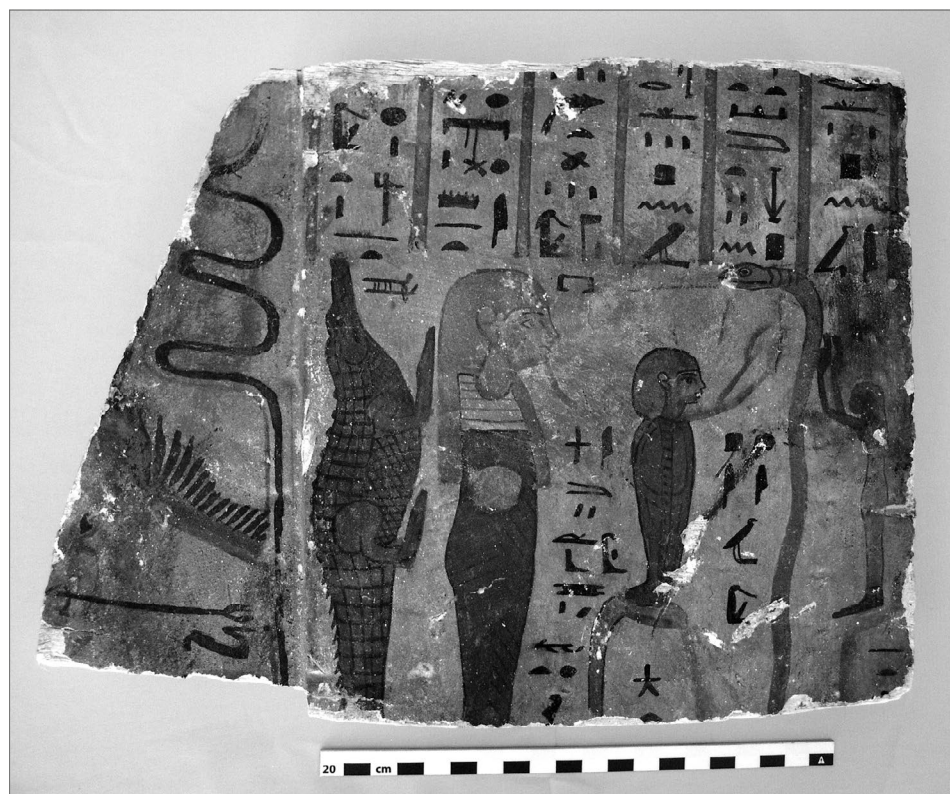


Fig. 3. Detail of the outer side of the foot section of Pa-di-Amun-neb-nesut-tawy I's outer coffin (Reg. No. 680), infrared photo (Ankh-Hor Project, LMU Munich | photo J. Budka)

Outer anthropoid coffins

Pa-di-Amun-neb-nesut-tawy I's inner coffin, with its incised decoration, has already been discussed above. His outer anthropoid coffin is colorfully painted, although only fragments of the lateral side and the foot section have survived. The pedestal features the standard frieze of protective symbols, following Theban Saite coffin decoration conventions (Budka 2022: 89–90, Fig. 1). The inner decoration is particularly noteworthy. The inner side of the pedestal and instep display a modified version of the final scene from the Book of Gates (Hornung 1997: 141, Fig. 25), depicting the sun disc in a boat beneath the curled body of Osiris, from whose head the goddess Nut emerges.

The decoration on the exterior of the coffin's foot section [Fig. 3] includes a scene from the tomb of Ramesses VI, probably inspired by the relief in the New Kingdom royal tomb. In KV 9, this scene appears on the back wall of the



Fig. 4. Detail of the lid of coffin Reg. No. 664: the goddess Isis to the left of the bier scene, infrared photo (Ankh-Hor Project, LMU Munich | photo J. Budka)

sarcophagus hall as part of a composition from the Book of the Earth (Abitz 1989: 131, Fig. 30; Hornung 1997: 151, Fig. 35).

Although fragmentary, the outer coffin of Pa-di-Amun-neb-nesut-tawy I presents a sophisticated blend of traditional iconographic elements and innovative motifs adapted from various New Kingdom funerary compositions. These elements emphasize the sun's journey and symbolize the deceased's passage through the underworld.

Similar motifs can also be found on the wooden coffins of Pa-di-Amun-neb-nesut-tawy I's children. The coffin of one of his sons, Pa-kher-Khonsu II (Reg. No. 664), is particularly exceptional (Budka 2024: Figs 1–3). A fragment from the lid of Pa-kher-Khonsu II's outer painted anthropoid coffin (featuring blue, green, red, pink, and black on a yellow surface) is thought to be the only Theban example of a so-called Lamentation coffin (Kucharek and Coenen 2021: 130–133). The lid's central panel displays a mummy bier scene, including canopic jars at the bottom, flanked by the lamenting figures of Isis and Nephthys alongside lamentation spells [Fig. 4]. The *ba* bird above the mummy on the bier is notable for being depicted “in the top view perspective typical of Akhmim” (Kucharek and Coenen 2021: 130). However, as stated elsewhere (Budka 2024), a number of other coffins from TT 414 exhibit features that may initially appear Akhmimic but actually reflect shared stylistic knowledge within Theban workshops. Furthermore, other coffins from TT 414 also contain excerpts from the Lamentations (see Budka submitted).

Slightly later, probably mid-Ptolemaic in date, is the outer coffin, Reg. No. 510 [Fig. 5], painted in the yellow-on-black style with some details in red (Budka 2019: 182, Fig. 13). It belonged to a male individual named Tut (Reiser-Haslauer 1982b: 283, G159). His titles are only partly preserved and include that of the elder Horus, Her-wer. The name of his mother is illegible but appears to contain the name of the god Min. His father, Djehuti-irdis, was also buried in TT 414, in a similar outer coffin (Reg. No. 514) and a colorfully painted inner coffin (Reg. No. 524). The presence of Djehuti-irdis's name means this family can be linked to Mut-Min's (Budka, Mekis, and Bruwier 2012–2013), possibly in the fifth generation. The genealogical data suggest that Tut was buried between 175 and 150 BC.

The largest preserved fragment of Reg. No. 510 is the left side of the coffin, which depicts the deceased in front of an offering table, along with Osiris and Isis. A series of kneeling demons in shrines and standing deities are depicted behind Isis, with short text columns identifying them. Tut's mummy was covered by a cartonnage coffin (see below); whether he

also had an inner painted wooden coffin like his father remains unclear.

Inner anthropoid coffin

Reg. No. 656, the lower half of an anthropoid painted coffin belonging to the lady Aset-em-akhbit III (Reiser-Haslauer 1982b: 268, G9), is stylistically and chromatically similar to Reg. No. 655. Its back is decorated with a crudely drawn *djed*-pillar. The footboard features a unique design with two registers [Fig. 6]: four kneeling protective deities oriented toward the center and two standing figures of Horus and Thoth, facing each other in the lower central register. This motif may reference Book of the Dead 161.

Another Aset-em-akhbit (Reiser-Haslauer 1982b: 268, G10) owned a very similar inner anthropoid coffin. Reg. No. 657 is particularly remarkable, especially because on the lid, directly next to the scene with the mummy bier (with canopic jars below) on its left side, part of the speech of Isis is preserved. The typical phrase “*mj r pr=k*” indicates that this coffin is another example of a TT 414 coffin containing excerpts from the Lamentations.



Fig. 5. The preserved fragment of the outer coffin, Reg. No. 510 (Ankh-Hor Project, LMU Munich | photo C. Geiger)

CARTONNAGE COFFINS

In Theban funerary archaeology, little research has been conducted on Ptolemaic cartonnages, although important preliminary work was carried out by the late Gabor Schreiber (2006). The rich corpus of cartonnage elements from TT 414 has been largely neglected and remains to be studied in detail — and, of course, published. This material from the tomb of Ankh-Hor spans a long and intriguing period. Cartonnage trappings are already known from the *in situ* burial of Wah-ib-Re I in Room 10,2 (Bietak and Reiser-Haslauer 1982: 208, Fig. 94), originating in the Thirtieth Dynasty and peaking in early Ptolemaic times.

Many cartonnage elements from TT 414 come from funerary masks, although

some derive from foot cases or trappings placed on the mummified body (cf. Vandenbeusch, O'Flynn, and Moreno 2021). Pectorals in the shape of broad collars, featuring alternating dotted and floral motifs, and including representations of a winged scarab and falcon heads on the sides, are common. Depictions of the goddess Nut spreading her wings are also present. Thus, a range of motifs appears across various types of coffins. In line with this, many cartonnage elements are decorated on both sides. However, due to their state of preservation, identifying individual pieces and matching fragments is often challenging. The following outlines the results from the 2023 season, many of which remain preliminary.



Fig. 6. Footboard of Reg. No. 656 (Ankh-Hor Project, LMU Munich | photo C. Geiger)

Examples of bivalve cartonnage coffins

Apart from the cartonnage trappings placed on the mummy within the wooden anthropoid coffins, there is evidence of inner cartonnage coffins from TT 414 being combined with a wooden coffin.³ One of the newly identified bivalve cartonnage coffins from mid-Ptolemaic times is Reg. No. 23/03 [Fig. 7], belonging to the priest Tut, the owner of the wooden outer coffin Reg. No. 510 (see above). The cartonnage fragments still need to be consolidated and fitted together, but the iconography of Tut is remarkable and can be compared to the different style of painting on his outer coffin. Unfortunately, no remains of a presumed inner anthropoid wooden coffin have been found for Tut, so a complete assessment of his set of coffins is not possible for the time being.

Another cartonnage coffin that still

requires conservation is Reg. No. 860, a bivalve coffin of the Ptolemaic Amun priest Hor-akh-bjt, of which both lid fragments and large fragments from the lower part are preserved. Numerous pieces of this coffin were identified in 2023, scattered across dozens of boxes in the magazine of the Austrian project. The process of fitting together the external side of the coffin's base, which features the delicate drawing of a feline/panther skin, is assisted by consulting the original black-and-white photographs from the 1970s [Fig. 8].

The panther skin is rooted in the mythology of the sky and is associated with the celestial mother goddess Nut. As Rummel has shown, it serves as an instrument of ritual rebirth and can be worn both by the person performing the ritual act and by the deceased person who has received the regenerative cult (Rummel



Fig. 7. Fragments of the cartonnage coffin of Tut, Reg. No. 23/03 (Ankh-Hor Project, LMU Munich | photo J. Budka)

³ These coffins are comparable to the bivalve cartonnage coffins attested in the Twenty-fifth Dynasty, see Taylor 2018: 351.

2008; 2010: 24–25). The association of the panther skin with the sky is made clear by texts and iconography, such as the fact that the panther skin costume of ritual practitioners (such as kings, priests, and gods) is often depicted with stars from the New Kingdom onward. In TT 414, the coffins with panther skins are also decorated with depictions of the signs of the zodiac (see below) — in other words, these coffins have a very strong focus on celestial aspects.

The lid of the cartonnage coffin Reg. No. 860 is very poorly preserved, but it is clear that the interior featured a zodiac. Several unregistered fragments from TT 414 indicate that multiple coffins bear the zodiac motif and design [see also below, Fig. 9]. The importance of this material is highlighted by the recent work of Daniela Mendel (2022), which documented representations of astronomical ceilings and zodiacs in Ptolemaic and Roman temples, coffins, sarcophagi, and tombs. Unfortunately, this study did not include examples of zodiac representations on cartonnage, as the Theban ones remain

so poorly published. It is well known that the wooden coffins of the famous Soter family from Thebes include representations of the sky with a zodiac (see most recently Winkler and Zellmann-Rohrer 2023). However, as the examples from TT 414 demonstrate, such depictions existed well before the Roman era.

Unfortunately, no wooden coffin fragments from TT 414 can be definitively associated with Hor-akh-bjt. However, the base of Reg. No. 860, with its feline skin decoration, closely parallels the wooden painted coffin Reg. No. 829 [see below, Fig. 14]. The owner of this wooden coffin is the god's father and prophet of Amun in Karnak, *sakh-wedjat*, and prophet of Sobek who dwells in Qus, Hor-pa-bjk — likely a brother of Hor-akh-bjt (Reiser-Haslauer 1982b: 280). Hor-pa-bjk had a cartonnage coffin, of which lid fragments were documented in the 1970s (Reg. No. 864). These preserved fragments depict the goddess in a beadnet dress on a yellow background on the interior of the lid. However, due to the small size of these fragments, it is not possible to

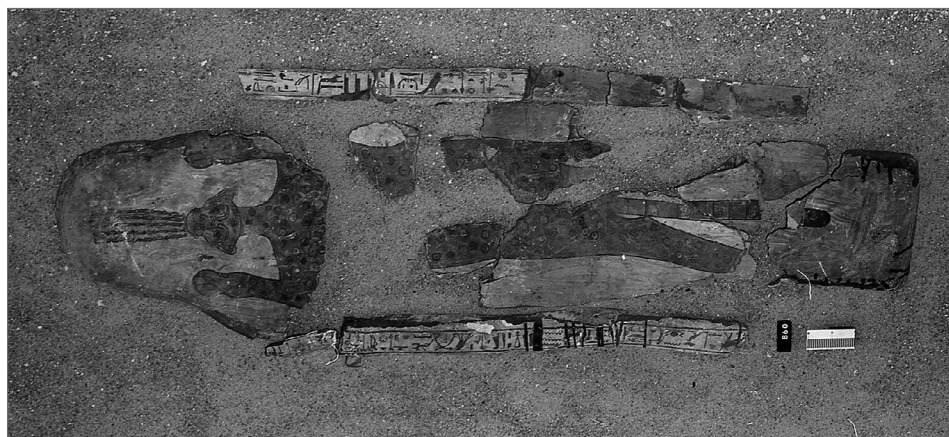


Fig. 8. Bottom of the base of cartonnage coffin Reg. No. 860 (Austrian Academy of Sciences)

conclusively reconstruct the entire decorative design of this cartonnage coffin.

Other instances of cartonnage coffins with a zodiac in TT 414, like Reg. No. 860, include Reg. No. 23/05 [Fig. 9]. This fragmented cartonnage coffin lid features inner decoration similar to that of Reg. No. 860, both in terms of motifs and style. However, while the background of Reg. No. 860 was painted yellowish, Reg. No. 23/05 depicts the zodiac on a blue background. The small fragment illustrated in



Fig. 9. Fragment of cartonnage coffin Reg. No. 23/05, showing part of the zodiac on its interior (Ankh-Hor Project, LMU Munich | photo J. Budka)

Fig. 9 represents Taurus and the crown of Orion. Due to the fragmentation, it is currently unclear whether the relative arrangement of motifs on Reg. 23/05 is comparable to that on the coffins of the Soter family.⁴

Furthermore, several fragments from the edge of the base of a cartonnage coffin, newly documented in 2023 as Reg. No. 23/04 [Fig. 10], are very similar to Reg. No. 860. Based on the father's name, titles, and the close similarity between these two coffins, I propose that the owner of Reg. No. 23/04 is a previously unknown brother of Hor-akh-bjt and Hor-pa-bjk. Following the convention of “papyponymy” (where the eldest son was usually named after his paternal grandfather), this individual would most likely be the eldest son of Nes-ba-neb-djedet — a previously unrecorded Wesjr-wer III— named after his grandfather, Wesjr-wer II (see Reiser-Haslauer 1982b: 271, G47). In 2025, it was confirmed that the base Reg. No. 23/04 and the lid Reg. No. 23/05 were once part of the same two-part cartonnage coffin (Budka 2025: 185–186). It is hoped that more matching pieces will be located to provide a more complete picture.



Fig. 10. Fragments of cartonnage coffin Reg. No. 23/04 (Ankh-Hor Project, LMU Munich | photo J. Budka)

4 I am very grateful to Andreas Winkler for a fruitful exchange of thoughts on this topic via email in February 2024.

DOCUMENTATION AND CONSERVATION

TRADITIONAL PHOTOGRAPHY AND INFRARED PHOTOGRAPHY

After cleaning and consolidation, all coffin fragments from TT 414 are photographed using a full-frame high-resolution camera (Nikon D810 with a 35 mm lens). These new photographs enable a detailed study of the inscriptions on a large number of objects, primarily the inscribed and painted coffins. Additionally, they can be compared to the black-and-white photographs from the 1970s to assess changes in the state of preservation and the addition of newly identified matching coffin pieces. [Fig. 11] of Reg. No. 657 illustrates the incorporation of “new” fragments into the coffin (compare Budka 2019: Fig. 2 for its status in 2019), as well as the partial loss of a paint layer since 1972.

Since many of the painted objects from TT 414 have darkened surfaces, infrared photography was used to reveal the original decoration (using a Sony Cybershot DSC-F828 with an IR-filter and a small magnet). This method, first

introduced to the project in 2018 by the conservator Daniel Oberndorfer from the Austrian Archaeological Institute, was applied to more than 150 objects and yielded significant results, such as the identification of object owners and new genealogical data (for the use of IR photography on Egyptian coffins, see e.g. el-Hadidi et al. 2019). Additionally, the method allows for a more detailed analysis of the painting styles used on the coffins (see also *Figs 3–4* in this paper). As demonstrated in [Fig. 12] with the example of Reg. No. 655, individual brushstrokes, fine details, and, most importantly, instances of overpainting can be easily identified.

3-D MODELS

After some preliminary application of photogrammetry to stone blocks and objects in 2018 and 2019, a new documentation method was introduced to the Ankh-Hor Project in 2023, taking advantage of the rapid advancements in video-based photogrammetry using



Fig. 11. Comparison of the state of preservation and documentation of Reg. No. 657 in 1972 and 2022 (Photo 1972: Austrian Academy of Sciences; photo 2022: Ankh-Hor Project, LMU Munich | photo J. Budka)

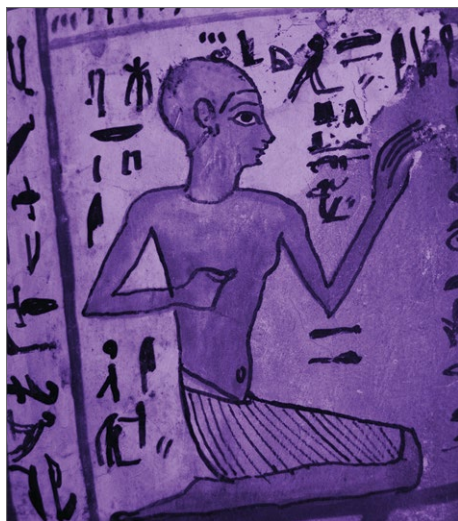


Fig. 12. Infrared photo showing details of the painting on Reg. No. 655 (Ankh-Hor Project, LMU Munich | photo J. Budka)



Fig. 13. Screenshot of the Scaniverse App showing the 3D model of Reg. No. 614 (Created by J. Budka)

LiDAR sensors on mobile devices (see, e.g. Paukkonen 2023). The Scaniverse app, developed by Toolbox AI (see <https://scaniverse.com/>), was used to capture objects in three dimensions. This photogrammetry application is fast, highly accurate, and easy to use, but it is limited to Apple devices such as iPhones and iPads. In 2023, an iPhone 12 was used. A total of 170 objects from TT 414 were captured in metrically accurate 3-D models, complementing our photographic documentation. These included the nearly complete coffins Reg. Nos 655, 656, 614, and 865 (for the use of 3-D models in studying Egyptian coffins cf., e.g., Lucarelli 2021; Mainieri 2023). These 3-D models will enable detailed technological studies of the wooden coffins, as well as precise documentation of looting-related damage, such as in the case of Reg. No. 614 [Fig. 13].

CONSERVATION AND CLEANING

The main objective of the conservation work, which began in 2018, is the cleaning and consolidation of painted wooden objects, particularly coffins and coffin fragments (for an initial outline of the work, based on the report by conservator Daniel Oberndorfer, see Budka 2019). The objects were methodically cleaned using different brushes and, when possible, latex sponges (Akapad) and polyurethane sponges. In most cases, it was necessary to partially consolidate unstable or flaking paint layers before proceeding with cleaning. The adhesives used for consolidation were

applied with syringes or fine brushes. For powdery paint layers, Klucel G (hydroxypropylcellulose) was used in different concentrations of ethanol. To stabilize flaking paint layers and cracks, Klucel G and Klucel E in ethanol were applied in most cases. Loose wood fibers and matching fragments were glued together using Paraloid B44 (30% in acetone) and fish glue. When additional stabilization was required, gaps between fragments and paint layer bubbles were filled with wood flour or bast fibers mixed with Tylose or fish glue.

A number of fragments were successfully joined and are now glued together. Although this is a time-consuming task, it is particularly valuable for reconstructing fragmented coffins and improving their documentation. For example, Reg. No. 829, the outer side of the base of Hor-pa-bjk's coffin was documented for the first time with matched fragments in full color [Fig. 14]. The project's conservators se-

cured all loose fragments and connected them with modern dowels.

In 2022, the project's conservator, Antje Zygalski, produced sketches mapping the preserved fragments within the complete coffin. Her drawing of Reg. No. 657 [Fig. 15] also includes technical observations.

All consolidated objects were documented photographically before and after conservation using a Canon 5D Mark II with a 50 mm lens; during conservation, snapshots were taken with smartphones (see Zygalski 2024). For each object, a datasheet was completed, listing any observed damage, the conservation measures applied, and images from before and after conservation. This information from the conservation sheet can be linked to the project's coffin database (created using FileMaker Pro). Detailed observations were also recorded on pigments, particularly pigment discoloration (e.g., the transformation of blue to black, see Zygalski 2024).



Fig. 14. Base of coffin Reg. No. 829, as reconstructed by the conservators in 2023 (Ankh-Hor Project, LMU Munich | photo J. Budka)

POTENTIAL AND RELEVANCE OF THE MATERIAL

The rich corpus of funerary assemblages from the monumental tomb of Ankh-Hor (TT 414), particularly the wooden painted coffins and cartonnages, illustrate the multi-faceted history and diversity of burials within this Asasif monument. These finds can provide valuable insights into the interplay between tradition and innovation in late Egyptian funerary art. This artistic development reached its zenith in Thebes in the

4th century BC, when Saite monumental temple tombs were modified and reused as burial sites. The coffins and their designs reflect the tension between innovation and tradition during this period. The coffin designs can be contextualized within the Theban sacred landscape, incorporating both New Kingdom funerary compositions and Late Period temple tombs. Additionally, they reveal patterns that indicate the professional

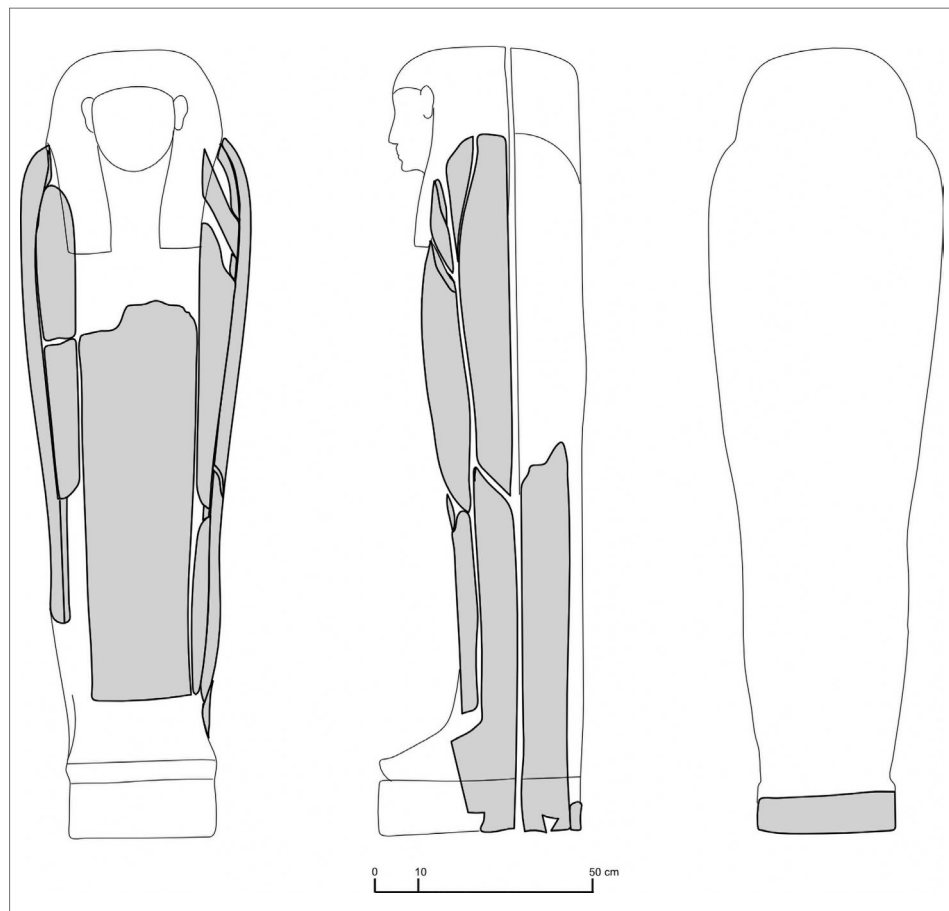


Fig. 15. Reconstruction of the location of the fragments on Reg. No. 657 (Ankh-Hor Project, LMU Munich | original drawing A. Zygalski, digitalization Hassan Ramadan Aglan)

networks of Theban priests beyond the Thebais (for a general assessment of the Ptolemaic funerary culture, see Cannata 2020). The so-called “Akhmimic” features found on TT 414 coffins—such as Lamentations and specific representations of *ba* birds—must also be considered. The priests reusing the tomb of Ankh-Hor were evidently connected to the cults of Qus (especially the Osirian cult and the worship of a local Khonsu) and Coptos, as well as to the priesthood of Akhmim (on possible links between the families buried in TT 414 and Akhmim, see Kucharek and Coenen 2021: 114). Overall, the innovative production of funerary art in the 4th and 3rd centuries BC must be understood as the result of intellectual exchanges between highly educated individuals from various cultic communities in Thebes and beyond. This

cultural interaction explains the fusion of religious ideas and figurative language observed in these artifacts.

To conclude, the coffin corpus from TT 414 has the potential to fill a significant gap in our archaeological understanding of Theban coffin development from 600 to 300 BC, as well as from mid- to late Ptolemaic times. Examples such as Tut’s cartonnage coffin demonstrate the importance of investigating these objects as integral components of tomb ensembles, alongside wooden coffins. Furthermore, the similarities among the cartonnage coffins of the three brothers of the Wesjr-wer family (Reg. Nos 860, 864, and 23/04) highlight not only the relevance of a cartonnage corpus with well-understood genealogies but also the innovative decorative elements, including zodiac representations.

OUTLOOK

The aim of this contribution was to summarize the major new achievements in the study of coffins from TT 414, based on conservation efforts and state-of-the-art documentation techniques, such as infrared photography. The latter, in particular, has been fundamental in enhancing our understanding of material from the tomb of Ankh-Hor. As recently as 2021, an infrared photograph of the base of a Ptah-Sokar-Osiris statue was used to identify a previously unknown member of Pa-di-Amun-neb-nesut-tawy’s extended family: Pa-kher-Khonsu (Reg. No. 693, see Budka submitted). Previously, Pa-kher-Khonsu was not considered part of the TT 414 family because the inscription containing his father’s and mother’s names was not

legible. Thanks to infrared photography, he can now be identified as the eldest son of Pa-di-as II and Aset-em-Akhbit II. The “new” Pa-kher-Khonsu VII was previously unknown and is now recognized as the elder brother of Pa-di-Amun-neb-nesut-tawy VI, who was also buried in TT 414. This example—just one of several dozen—illustrates that the establishment of genealogies for the families buried in TT 414 remains a work in progress and is not yet fully understood.

In terms of design and motifs, the research on Ptolemaic coffins presented here serves as a tentative step toward reconstructing highly sophisticated burial assemblages that reflect complex religious concepts (cf. Cannata 2020). These assem-

blages require assessment within a broader historical context, extending at least as far back to the Saite period, if not to the Middle and New Kingdoms, when Thebes' sacred landscape was first developed (cf. Strudwick and Taylor 2003). Therefore, the

material from TT 414 likely holds significant potential to expand our knowledge of funerary practices in the Theban necropolis, extending beyond the Asasif and encompassing not only the Late Period and Ptolemaic era but also earlier periods.

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References

- Abitz, F. (1989). *Baugeschichte und Dekoration des Grabes Ramses' VI* (=Orbis Biblicus et Orientalis 89). Freiburg–Göttingen: Universitätsverlag; Vandenhoeck & Ruprecht
- Bietak, M. (1972). *Theben-West (Luqsor): Vorbericht über die ersten vier Grabungskampagnen (1969–1971)* (=Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse: Sitzungsberichte 278). Vienna: H. Böhlau
- Bietak, M. (1978). Zur Topographie des Asasif und der Lage des 'Anch-Hor-Grabes innerhalb der Thebanischen Nekropole. In M. Bietak and E. Reiser-Haslauer, *Das Grab des 'Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris I* (=Denkschriften der Gesamtakademie 6) (pp. 19–37). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Bietak, M. and Reiser-Haslauer, E. (1978). *Das Grab des 'Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris I* (=Denkschriften der Gesamtakademie 6). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Bietak, M. and Reiser-Haslauer, E. (1982). *Das Grab des 'Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris II* (=Denkschriften der Gesamtakademie 7). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Budka, J. (2008). Neues zu den Nutzungsphasen des Monumentalgrabes von Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris (TT 414). *Ägypten und Levante*, 18, 61–85
- Budka, J. (2009). Ankh-Hor revisited: Study, documentation and publication of forgotten finds from the Asasif. In J. Popielska-Grzybowska and J. Iwaszczuk (eds), *Proceedings of the Fifth Central European Conference of Young Egyptologists: Egypt 2009. Perspectives of research, Pultusk, 22–24 June 2009* (=Acta Archaeologica Pultuskiensia 2) (pp. 23–31). Pultusk: Pultusk Academy of Humanities

- Budka, J. (2010a). *Bestattungsbrauchtum und Friedhofsstruktur im Asasif: Eine Untersuchung der spätzeitlichen Befunde anhand der Ergebnisse der österreichischen Ausgrabungen in den Jahren 1969–1977* (=Denkschriften der Gesamtakademie 59). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Budka, J. (2010b). Varianz im Regelwerk. Bestattungsabläufe im Monumentalgrab von Ankh-Hor, Obersthofmeister der Gottesgemahlin Nitokris (TT 414). *Ägypten und Levante*, 20, 49–66
- Budka, J. (2013). Krokodil, Schlange und Kuhantilope. Ein frühptolemäischer Holzsarg aus dem Grab des Ankh-Hor (TT 414). In J. Budka, R. Gundacker, and G. Pieke (eds), *Florilegium Aegyptiacum: Eine wissenschaftliche Blütenlese von Schülern und Freunden für Helmut Satzinger zum 75. Geburtstag am 21. Jänner 2013* (=Göttinger Miszellen Beihefte 14) (pp. 41–57). Göttingen: Seminar für Ägyptologie und Koptologie
- Budka, J. (2015). The Asasif revisited: New results from the Austrian concession. In P. Kousoulis and N. Lazaridis (eds), *Proceedings of the Tenth International Congress of Egyptologists, University of the Aegean, Rhodes, 22–29 May 2008* (=Orientalia Lovaniensia Analecta 241) (pp. 111–130). Leuven–Paris–Bristol, CT: Peeters
- Budka, J. (2017). Re-use of a Middle Kingdom saff tomb in the Asasif. In B. Németh (ed.), *Now behold my spacious kingdom: Studies presented to Zoltán Imre Fábrián on the occasion of his 63rd birthday* (pp. 58–68). Budapest: L'Harmattan Kiado
- Budka, J. (2019). TT 414 revisited: New results about forgotten finds from the Asasif/Thebes based on the 2018 and 2019 seasons of the Ankh-Hor Project. *Ägypten und Levante*, 29, 171–188
- Budka, J. (2020). Linking Karnak and the Asasif: New thoughts based on Ptolemaic burials from TT 414. In F. Coppens and H. Vymazalová (eds), *11. Ägyptologische Tempeltagung: The discourse between tomb and temple, Prague, May 24–27, 2017* (=Königtum, Staat und Gesellschaft früher Hochkulturen 3/6) (pp. 55–71). Wiesbaden: Harrassowitz
- Budka, J. (2021). Back to Egypt: The 2021 season of the Ankh-Hor Project in Luxor. *The Project Repository Journal*, 11, 8–11
- Budka, J. (2021–2022). Der ramessidische Tempel im Asasif: Datierung und Funktion eines Bauvorhabens der 20. Dynastie im Vorfeld von Deir el-Bahari. *Sokar*, 40, 136–151
- Budka, J. (2022). Winged snakes, crocodiles, sphinxes and bulls: Selected motifs of funerary art between tradition and innovation from the tomb of Ankh-Hor (TT 414). In F. Coppens, J. Janák, and K. Smoláriková (eds), *Knowledge and memory: Festschrift in honour of Ladislav Bareš* (pp. 87–103). Prague: Charles University, Faculty of Arts
- Budka, J. (2023). The Ankh-Hor Project. In *Austrian Archaeological Institute Annual Report 2022* (pp. 73–74). Vienna: Austrian Academy of Sciences. <https://doi.org/10.1553/oeai.report2022>
- Budka, J. (2024). Reassessing Akhmimic features in Ptolemaic Theban coffins from TT 414. In N. Strudwick and D.A. Aston (eds), *From objects to histories: Studies in honour of John H. Taylor* (pp. 76–89). Wallasey: Abercromby Press

- Budka, J. (2025). Spurensuche zwischen Wien, Kairo und Theben: Neues zu Kartonagen aus dem Asasif. In K.C. Lakomy, S. Abdel Razik Saddik, and R. El-Sayed (eds), *Egypt's Greatest Treasure. Studies in Egyptology, Museology and Archaeology in Honour of Wafaa T. El-Saddik* (pp. 175–186). Wiesbaden: Reichert
- Budka, J. (submitted). Between tradition and innovation: Contextualising Ptolemaic funerary equipment from the tomb of Ankh-Hor (TT 414). In S. Vuilleumier, L. Dogaer, and C.H.W. Fong (eds), *From one shore to the other—New perspectives on funerary and religious practices in Ptolemaic and Roman Thebes. Proceedings of the International Conference, Basel, 14–16.09.2022*
- Budka, J. and Mekis, T. (2017). The family of Wah-ib-re I (TT 414) from Thebes. *Ägypten und Levante*, 27, 219–240
- Budka, J. and Mekis, T. (2022). *The family of Pa-di-Amun-neb-nesut-tawy from Thebes (TT 414) revisited: The case study of Kalutj/Nes-Khonsu (G108 + G137) (=Archaeopress Egyptology 42)*. Oxford: Archaeopress
- Budka, J., Mekis, T., and Bruwier, M.-C. (2012–2013). Reuse of Saite temple tombs in the Asasif during the early Ptolemaic time—the tomb group of Mw.t-Mnw from TT 414. *Ägypten und Levante*, 22/23, 209–252
- Cannata, M. (2020). *Three hundred years of death: The Egyptian funerary industry in the Ptolemaic period (=Culture and History of the Ancient Near East 110)*. Leiden–Boston: Brill
- Chudzik, P. (2022). Post-New Kingdom topography and chronology of the Hatshepsut Temple at Deir el-Bahari in light of new archaeological evidence. *Polish Archaeology in the Mediterranean*, 31, 123–152
- De Meulenaere, H. (1989). Notes de prosopographie thébaine. Quatrième série. *Chronique d'Égypte*, 64(127–128), 55–73
- Dogaer, L. (2020). The Beautiful Festival of the Valley in the Graeco-Roman period: A revised perspective. *Journal of Egyptian Archaeology*, 106(1–2), 205–214
- Eigner, D. (1984). *Die monumentalen Grabbauten der Spätzeit in der thebanischen Nekropole (=Denkschriften der Gesamtakademie 8)*. Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- el-Hadidi, N., Darwish, S., Ragab, M., Abd el-Razek, S., and Abd el-Rahman, M. (2019). Beyond the visible: Merging scientific analysis and traditional methods for the documentation of the anthropoid coffin of Amenemhat. In H. Strudwick and J. Dawson (eds), *Ancient Egyptian coffins: Past, present, future* (pp. 13–21). Oxford: Oxbow Books
- Elias, J. and Mekis, T. (2019). An exemplary burial in Ptolemaic Thebes. In M. Mosher, Jr (ed.), *The Book of the Dead, Saite through Ptolemaic Periods: Essays on Books of the Dead and related topics* (pp. 123–169). Prescott, AZ: SPBDStudies
- Gill, A.-K. (2019). The funerary papyri of the brothers Djedher and Pakherkhonsu in the Museo Egizio and the British Museum with some observations on scribal practices. *Studien zur Altägyptischen Kultur*, 48, 95–106
- Graefe, E. (2003). *Das Grab des Padihorresnet, Obervermögensverwalter der Gottesgemahlin des Amun (Thebanisches Grab Nr. 196) (=Monumenta Aegyptiaca 9)*. Turnhout: Brepols

- Hornung, E. (1997). *Altägyptische Jenseitsbücher: Ein einführender Überblick*. Darmstadt: Wissenschaftliche Buchgesellschaft
- Jenni, H. (1986). *Das Dekorationsprogramm des Sarkophages Nektanebos' II* (= *Ägyptiaca Helvetica* 12). Geneva: Éditions de Belles-Lettres
- Kucharek, A. (2018). Mourning and lamentation on coffins. In J.H. Taylor and M. Vandenbeusch (eds), *Ancient Egyptian coffins: Craft traditions and functionality* (= *British Museum Publications on Egypt and Sudan* 4) (pp. 77–115). Leuven–Paris–Bristol, CT: Peeters
- Kucharek, A. and Coenen, M. (2021). *The Lamentations of Isis and Nephthys: Fragmentary Osirian papyri, part I* (= *The Carlsberg Papyri* 16). Copenhagen: Museum Tusculanum Press
- Leitz, C. (2011). *Der Sarg des Panehemisis in Wien* (= *Studien zur spätägyptischen Religion* 3). Wiesbaden: Harrassowitz
- Lucarelli, R. (2021). Annotating texts on 3D (coffin) models. In C. Gracia Zamacona and J. Ortiz García (eds), *Handbook of Digital Egyptology: Texts* (pp. 55–68). Alcalá de Henares: Editorial Universidad de Alcalá
- Mainieri, S. (2023). Photogrammetry and face carvings: Exploring the “face” of the Egyptian anthropoid coffins by 3D modeling. In R. Lucarelli, J.A. Roberson, and S. Vinson (eds), *Ancient Egypt, new technology: The present and future of computer visualization, virtual reality and other digital humanities in Egyptology* (= *Harvard Egyptological Studies* 17) (pp. 261–280). Leiden: Brill
- Mendel, D. (2022). *Die Geographie des Himmels: Eine Untersuchung zu den Deckendekorationen in ägyptischen Tempeln der griechisch-römischen Zeit und zeitgleichen Darstellungen auf Särgen und in Gräbern I–III* (= *Studien zur spätägyptischen Religion* 37). Wiesbaden: Harrassowitz
- Paukkonen, N. (2023). Towards a mobile 3D documentation solution: Video-based photogrammetry and iPhone 12 Pro as fieldwork documentation tools. *Journal of Computer Applications in Archaeology*, 6(1), 143–154
- Reiser-Haslauer, E. (1982a). B. Familien aus der zweiten Belegungszeit des Grabes (ca. Zeit der 30. Dynastie und frühe Ptolemäerzeit. In M. Bietak and E. Reiser-Haslauer, *Das Grab des 'Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris II* (= *Denkschriften der Gesamtakademie* 7) (pp. 252–256). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Reiser-Haslauer, E. (1982b). IX. Genealogisches Register. In M. Bietak and E. Reiser-Haslauer, *Das Grab des 'Anch-Hor, Obersthofmeister der Gottesgemahlin Nitokris II* (= *Denkschriften der Gesamtakademie* 7) (pp. 267–284). Vienna: Verlag der Österreichischen Akademie der Wissenschaften
- Rummel, U. (2008). Das Pantherfell als Kleidungsstück im Kult: Bedeutung, Symbolgehalt und theologische Verortung einer magischen Insignie. *Imago Aegypti*, 2, 109–152
- Rummel, U. (2010). *Iunmutf: Konzeption und Wirkungsbereich eines altägyptischen Gottes* (= *Sonderschriften des Deutschen Archäologischen Institut, Abteilung Kairo* 33). Berlin: De Gruyter

- Schreiber, G. (2006). Ptolemaic cartonnages from Thebes. In H. Győry (ed.), *Aegyptus et Pannonia III: acta symposii anno 2004* (pp. 227–246). Budapest: MEBT-ÓEB
- Smith, M. (2020–2023). The Beautiful Festival of the Valley in the Graeco-Roman period: another perspective. *Enchoria*, 37, 39–65
- Strudwick, N. (2003). Some aspects of the archaeology of the Theban necropolis in the Ptolemaic and Roman periods. In N. Strudwick and J.H. Taylor (eds), *The Theban necropolis: Past, present, and future* (pp. 167–188). London: British Museum Press
- Strudwick, N. and Taylor, J.H. (eds). (2003). *The Theban necropolis: Past, present, and future*. London: British Museum Press
- Taylor, J.H. (2018). Evidence for social patterning in Theban coffins of Dynasty 25. In J.H. Taylor and M. Vandenbeusch (eds), *Ancient Egyptian coffins: Craft traditions and functionality* (=British Museum Publications on Egypt and Sudan 4) (pp. 349–386). Leuven–Paris–Bristol, CT: Peeters
- Vandenbeusch, M., O'Flynn, D., and Moreno, B. (2021). Layer by layer: The manufacture of Graeco-Roman funerary masks. *Journal of Egyptian Archaeology*, 107(1–2), 281–298
- Winkler, A. and Zellmann-Rohrer, M. (2023). Zodiacs and monuments: An early pictorial “horoscope” from Egypt. *Journal for the History of Astronomy*, 54(2), 125–152
- Zygalski, A. (2024). The ancient Egyptian coffin of Istemkheb (30th Dyn.; Asasif, TT 414; Ankh-Hor project, Reg. 657): Pigment discoloration. In A. Weyer and U. Schädler-Saub (eds), *Aus Rot wird Schwarz – und dann? Pigmentveränderungen an Kunst- und Kulturgut* (=Schriften des Hornemann Instituts 24). Berlin: Hendrik Bäbeler Verlag. <https://doi.org/10.5165/hawk/536>

APPENDIX. LIST OF COFFINS FROM TT 414 DISCUSSED IN THIS PAPER

Reg. No.	Object	Motif/content	Owner	Dating	Figure	References
Reg. No. 607	Inner anthropoid coffin, wood, incised	Instep with two jackals on shrines and a falcon with outstretched protective wings	Pa-di-Amun-nebesut-tawy I (G65)	Thirtieth Dynasty	–	Budka 2019: 179, Fig. 8; 2020: 71, Fig. 4
Reg. No. 614	Inner anthropoid coffin, wood, incised	Vertical inscription line with name and titles of deceased (fragmented); papyrus roll of the Book of the Dead	NN (daughter of Neskhons)	Thirtieth Dynasty	Fig. 13	Budka 2008: 70

Reg. No.	Object	Motif/content	Owner	Dating	Figure	References
Reg. No. 865	Inner anthropoid coffin, wood, incised and painted	Vertical inscription lines with name and titles of deceased; in-step with five painted <i>uraei</i> (for toes), two shrines with jackals, central motif: Osiris as a deified <i>djed</i> -pillar flanked by small figures of Isis and Nephthys	Wah-ib-Re I (G42)	Thirtieth Dynasty	Fig. 2	Bietak and Reiser-Haslauer 1982: 199–211; Budka 2010b: 58, Fig. 6
Reg. No. 680	Outer anthropoid coffin, wood, painted	Interior: final scene from the Book of Gates; exterior: scene from the Book of the Earth	Pa-di-Amun-nebesut-taw I (G65)	Thirtieth Dynasty	Fig. 3	Budka 2019: 179, Fig. 9; 2020: Fig. 3; 2022: 89–90, Fig. 1
Reg. 655a	Outer anthropoid coffin, wood, painted	Only lower case preserved, blackened	Padiaes II (G79)	Early Ptolemaic	—	Bietak and Reiser-Haslauer 1982: 165, Figs 67 and 68
Reg. 655	Inner anthropoid coffin, wood, painted	Complex decoration; papyrus roll of the Book of the Dead	Padiaes II (G79)	Early Ptolemaic	Fig. 12	Budka 2008: 71, Fig. 6; 2013: Fig. 1; 2022: 90–91, Figs 2 and 6
Reg. No. 664	Inner anthropoid coffin, wood, painted	Lamentation coffin (bier scene with mourning goddesses)	Pa-kher-Khonsu II (G56)	Ptolemaic	Fig. 4	Kucharek and Coenen 2021: 130; Budka 2024: Figs 1–3
Reg. No. 510	Outer anthropoid coffin, wood, painted yellow-on-black style	Texts and scene with deceased in front of an offering table and Osiris and Isis	Tut (G159)	175–150 BC	Fig. 5	Budka 2019: 182, Fig. 13
Reg. No. 23/03	Bivalve cartonnage coffin, fragment from lid (exterior)	Deceased kneeling in front of offering table; <i>ba</i> bird behind him	Tut (G159)	175–150 BC	Fig. 7	
Reg. No. 514	Outer anthropoid coffin, wood, painted yellow-on-black style	Fragmented (texts)	Djehuti-irdis (G160)	About 200–170 BC	—	

Reg. No.	Object	Motif/content	Owner	Dating	Figure	References
Reg. No. 524	Inner anthropoid coffin, wood, painted	Fragmented (fragments from lid and base – base shows on the inside the goddess of the West)	Djehuti-irdis (G160)	About 200–170 BC	–	
Reg. No. 656	Inner anthropoid coffin, wood, painted	Footboard: four kneeling protective deities oriented toward the center and two standing figures of Horus and Thoth (cf. BD 161)	Aset-em-akhbit III (G9)	Early Ptolemaic	<i>Fig. 6</i>	
Reg. No. 657	Inner anthropoid coffin, wood, painted	Lamentation coffin (bier scene with mourning goddesses)	Aset-em-akhbit (G10)	Early Ptolemaic	<i>Figs 11, 15</i>	Budka 2019: Fig. 2; Zygal-ski 2024
Reg. No. 860	Bivalve cartonnage coffin, base	Exterior base: panther skin; interior lid: zodiac; exterior lid: collar and various registers of deities	Hor-akh-bjt (G125)	Late Ptolemaic	<i>Fig. 8</i>	
Reg. No. 23/05 + 23/04	Bivalve cartonnage coffin, fragments from lid and from lateral side of bottom	Interior lid: zodiac; lateral side of bottom: horizontal line of text (name and titles)	Wesjr-wer III	Late Ptolemaic	<i>Figs 9, 10</i>	Budka 2025: 185–186, Figs 13–14
Reg. No. 829	Inner anthropoid coffin, wood, painted	Exterior of base: panther skin	Hor-pa-bjk (G126)	Late Ptolemaic	<i>Fig. 14</i>	
Reg. No. 864	Cartonnage bivalve coffin	Interior of lid: goddess in beadnet	Hor-pa-bjk (G126)	Late Ptolemaic	–	