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Rediscovering Black Coffins from Deir el-Medina: A Comprehensive Approach

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Rediscovering Black Coffins from Deir el-Medina: A Comprehensive Approach

GERSANDE ESCHENBRENNER DIEMER, LISA SARTINI, MARGARET SERPICO*

ABSTRACT

In recent years, the research carried out at Deir el-Medina under the aegis of the French Institute of Oriental Archaeology in Cairo (IFAO) has taken on new directions, accelerating the study of unpublished documentation and broadening the scope of research in many fields. In the 2018 and 2019 seasons, the reopening of pits 1022, 1049 and tomb TT217, used as magazines, led to the exciting rediscovery of hundreds of wooden objects excavated by Bernard Bruyère, among which various coffins and coffin fragments have been identified. Following this rediscovery, a team of researchers specializing in woodcraft was set up within the archaeological mission of Deir el-Medina (IFAO), with the aim of analysing, publishing and repacking all the wooden objects preserved at the site. The New Kingdom black coffins with yellow decoration found in the magazines are the subject of the present study, bringing together the archaeometric analyses in addition to the technical, stylistic and prosopographic observations made by three members of the wood team. This comprehensive analysis of the black coffins is the first stage in the on-going research.

Keywords: Deir el-Medina, Thebes, black coffins with yellow decoration, woodcraft, wood analysis, manufacturing techniques, Amarna Period, varnishes, resin, red colour, prophylactic process, New Kingdom, Middle Kingdom, funerary practices.

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RÉSUMÉ

Ces dernières années, les recherches conduites à Deir el-Médina sous l'égide de l'Institut français d'archéologie orientale au Caire (Ifao) ont pris de nouvelles directions, accélérant l'étude de la documentation inédite et élargissant le champ des recherches à de nombreux domaines. Au cours des saisons 2018 et 2019, la réouverture des puits 1022, 1049 et de la tombe TT217, utilisés comme magasins, a permis la redécouverte de centaines d'objets en bois découverts par Bernard Bruyère, parmi lesquels divers cercueils et fragments de cercueils ont pu être identifiés. Suite à cette redécouverte, une équipe de chercheurs spécialisés dans l'artisanat du bois a été mise en place au sein de la mission archéologique de Deir el-Médina (Ifao), dans le but d'analyser, publier et reconditionner tous les objets en bois conservés sur le site. Les cercueils noirs à décor jaune datés du Nouvel Empire, redécouverts dans les magasins, font l'objet de la présente étude. Elle rassemble les analyses archéométriques ainsi que les observations techniques, stylistiques et prosopographiques effectuées par trois membres de l'équipe bois. L'analyse complète des cercueils noirs est la première étape des recherches en cours.

Mots-clés : Deir el-Médina, Thèbes, cercueils noirs à décor jaune, artisanat du bois, analyse xylologiques, techniques de fabrication, période amarnienne, vernis, résine, couleur rouge, procédé prophylactique, Nouvel Empire, Moyen Empire, pratiques funéraires.

In recent years, the research carried out at Deir el-Medina under the aegis of the French Institute of Oriental Archaeology in Cairo (IFAO) has taken on new directions, with the intention of accelerating the study of largely unpublished objects and documentation and also broadening the scope of research in many fields. This new initiative is accompanied by a publication programme that aims to rapidly disseminate the results obtained by the field teams or those working with the mission. During the 2018 and 2019 seasons, the reopening of pits 1022, 1049 and tomb TT 217, used in the past as magazines,[1] led to the rediscovery of hundreds of wooden objects previously excavated by Bernard Bruyère,[2] among which various coffins and coffin fragments have been identified. Following this discovery, a team of researchers specializing in woodcraft[3] was set up within the archaeological mission of Deir el-Medina

1 An inventory of the stores was carried out in 1970 by Jean Yoyotte and Pierre du Bourguet, then scientific members of IFAO. Their inventory of the wood led to an initial classification of the material by typology, particularly in pit 1049 called the "wood magazine" where P. du Bourguet organized, in an unpublished report, the classification of the material by categories such as toiletry, tools, fragments of statues and crockery.

2 The successive discoveries of wooden objects are mentioned in the entries in Bruyère's *Journal de Fouille de Deir el-Medineh* as well as in the various FIFAO publications devoted to the excavations carried out on the site https://www.ifao.egnet.net/bases/archives/bruyere/about.

3 Within the framework of a close collaboration with the University of Pisa and an agreement with the Museo Egizio of Turin, a team of specialists in Egyptian woodcraft, led by Gersande Eschenbrenner Diemer (University of Jaén, Spain – Associate Researcher ArScAN UMR 7041) was initiated and now includes several specialist Egyptologists: Anna Giulia de Marco and Lisa Sartini (University of Pisa, Italy), Paolo Marini (curator at the Museo Egizio, Turin) and Margaret Serpico (University College London).

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(led by Cédric Larcher, French Institute of Oriental Archaeology – IFAO), working in collaboration with the conservation team, in order to analyze, restore and repack all the wooden objects preserved on site. Combining archaeometric analyses with technical, stylistic and prosopographical studies, the investigation of this archaeological furniture, which is closely linked to the collection preserved at IFAO,[4] offers an exciting prospect for new research on the particularly important and yet little-known subject of woodcraft production in the village of Deir el-Medina.[5] Moreover, the reassessment of the wood material stored on site and at IFAO will not only allow us to link this large corpus of material, only partially published, with museum objects in order to compare production methods and also to reconnect funerary objects or sets that have been dispersed over time.[6]

The rediscovery of the box of the coffin of Setau, which belongs to the category of black coffins dated to the New Kingdom, provided the impetus for a comprehensive study of the remains of several other black coffins discovered by B. Bruyère. As a result, the wood team at Deir el-Medina expanded to include Lisa Sartini, who recently defended her PhD thesis on black coffins.[7] and Margaret Serpico, Egyptologist with a research interest in natural products.[8] Presented here are the initial results of our stylistic, technical/technological and material analyses of the black coffins with yellow decoration found in a fragmentary or dismantled state in pit 1022 and tomb TT 217 (Ipuy).[9] The detailed examination of the four coffins and various isolated boards re-discovered at Deir el-Medina thus makes it possible to place these objects within an overall framework of production specific to the 18th Dynasty.

The examination of styles and manufacturing techniques by Lisa Sartini, the study of varnishes by Margaret Serpico and the anatomical identification of the woods linked to the use of red colour as a prophylactic process by Gersande Eschenbrenner Diemer shed new light on woodcraft in the Theban area during the 18th Dynasty.

4 The study of the wood of Deir el-Medina is closely linked to the PÉRCÉA Bois project (Projet d'Étude et de Restauration des Collections Égyptiennes Anciennes, Bois; IFAO no. 18315) which began in 2018 with the aims of analysing and restoring the wooden collections of the French Institute of Oriental Archaeology. Indeed, the vast majority of the IFAO collection consists of wood fragments of Theban origin, the majority coming from Deir el-Medina, thus forming an essential complement to the wood fragments still preserved on site. Since 2020, as a continuation of the PÉRCÉA Bois project, the EBENES Programme (Étude des Bois Égyptiens: Nature, Emplois, Sauvegarde, IFAO no. 20211) expands the analysis of wooden furniture from a diachronic and multidisciplinary perspective. In this, the wood assemblage at Deir el-Medina forms one of the main corpora of material for study by the EBENES project.

5 Anna Giulia de Marco, member of the wood team working as part of the mission of Deir el-Medina, defended her doctoral thesis (University of Pisa/Museo Egizio of Turin, directed by Prof. M. Betrò) in March 2020. This work, entitled *Lavorare il legno : botteghe e artigiani a Deir el Medina. Uno studio a partire dai materiali conservati presso il Museo Egizio di Torino*, focuses on workshop practices and makes an important contribution to the knowledge of wood craftsmanship in the Theban area.

6 As an example, Setau's coffin box is still stored on site while its lid is now kept in the National Museum of Warsaw (138983 NMW).

7 *I sarcofagi neri con decorazione gialla del Nuovo Regno* under the direction of Prof. Marilina Betrò, University of Pisa, Italy.

8 Sartini 2019; Sartini 2015; Serpico, White 2001; Serpico, Stern, in press.

9 No coffin fragments were found in pit 1049.

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A STYLISTIC AND TECHNICAL STUDY ON BLACK COFFINS WITH YELLOW DECORATION FROM PIT 1022 AND TOMB TT 217*

Lisa Sartini

1. The coffins from Pit 1022

From amongst the many coffins and coffin fragments stored in Pit 1022, we decided to focus initially on all of the pieces from a specific class of objects, namely the New Kingdom black coffins with yellow decoration.[10] We were able to distinguish many planks that could be ascribed to a single item, identified as the coffin of Menkheper, and twelve fragments that originally belonged to other coffins, unfortunately otherwise lost.

1.1 *The coffin of Menkheper*

Inventory Number:	DEM_19_12_031/031bis.
Dimensions:[11]	L. 197 cm; W. *ca*. 49 cm; H. 58 cm (head wall plus head end).
Dating:	Amenhotep II – Amenhotep III.
Original location:	Pit 1037, Western Cemetery.
Wood analysis:[12]	planks: *Ficus sycomorus* L.; two dowels and five tenons: *Tamarix* sp., three dowels and two tenons: *Acacia nilotica*.
Figures:	1, 5.

The coffin was found in a fragmentary condition with many missing boards, especially the upper part of the lid, the walls of the box and the foot. The identification of the coffin as that of Menkheper, published by Bruyère in 1926, was made by the author through a comparison of the remaining decorated boards with the drawings made by the excavator.[13] In addition, the box head wall is marked with the number 216, written by Bruyère himself, in order to record the area where the pieces were found.[14]

* All the drawings were made by the author. I want to thanks my dear friend Tommaso for helping me digitalise them.

10 This type of coffin is characteristic of the period from the reign of Hatshepsut/Thutmosis III to Ramses II although some examples from Dahshur seem to suggest that the style continued until the early 20th Dynasty (see Sartini 2019). For discussions on black coffins see Taylor 2016a; Taylor 2016b; Sartini 2015; Sartini 2019; Sousa 2018, pp. 28–37.

11 The dimensions of the coffin are approximate due to the fragmentary state of the object.

12 All the boards, tenons and dowels have been analyzed by G. Eschenbrenner Diemer. Unfortunately, it was not always possible to identify the species of wood used since the structure of the wood was in some cases too damaged.

13 For Bruyère's drawings, see Bruyère 1926, pp. 46–48 and Bruyère's excavation diary of the campaign 1924-1925 at https://www.ifao.egnet.net/bases/archives/bruyere/ (*DEM* 1, 1924-1925, p. 17). In fact, if we examine these images it is possible to observe some differences with respect to the boards found in Pit 1022, especially in the position of the hieroglyphs within the central vertical band. However, even between Bruyère's two drawings there are some differences. This is due to the fact that the medium itself and the exact position of the texts were of no importance to Bruyère. He was mainly interested in copying the inscriptions (as is evident on the coffin of Menkheper), only outlining the object's decoration.

14 In fact, Pit 1037 is located in the area of Tomb 216. Bruyère 1926, pp. 45–46; *DEM* 1, 1924-1925, p. 16.

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Although the coffin ultimately belonged to a man called Menkheper, he was not the original owner. In fact, we know from Bruyère's publication that his name was written over an earlier one in the vertical central inscription on the lid.[15] Unfortunately, that part of the coffin has not been preserved.[16]

Decorative scheme.[17] LID. The tripartite wig is decorated with yellow stripes on a black background. This frames the yellow painted face with the remaining proper left ear in relief. The *usekh*-collar, with terminals in the shape of a falcon head on each shoulder, is composed of green, blue and red bands, with the outer edge decorated with a series of blue drops on a red background.[18] According to Bruyère's drawings, the goddess Nekhbet was depicted on the abdomen, but only the outer parts of her wings are preserved. BOX. The spaces on both exterior walls are occupied by an *udjat*-eye positioned above a shrine and standing figures of Anubis between two Sons of Horus, shown with human heads: Hapy and Qebehsenuef on the left wall; Imseti and Duamutef on the right wall. HEAD AND FOOT. Although there is no representation of a goddess at the head (end and wall) and the foot (board and wall) is missing, Bruyère noted that an image of the goddess Isis, shown above a *nub*-sign, was depicted on the foot of the coffin.[19] EDGE OF BOX/LID AND INTERIOR OF THE COFFIN. The flat edges are painted red and yellow paint was applied to the interior of the lid and box.

Inscriptions. The vertical central band contains the offering formula *ḥtp dỉ nswt* and the lateral bands are inscribed with the *ỉmɜḫy ḫr* formula (the "revered one before...") including the names of Anubis, the Four Sons of Horus, Geb and Horus.

Construction techniques. The lid was constructed from at least six boards of wood whereas only four planks of the box walls are preserved, plus the two bent boards assembled for the head wall. Small pieces were added to make up the lappets, the topmost curve of the wig and the box shoulders as well. All of the planks were joined on the edges by cylindrical wooden dowels and pegged mortises with loose tenons. More unusually, there is also evidence that some boards were joined by a system of ties. Single matching holes were drilled on the two pieces to be joined and an animal sinew tie was then looped through these holes to hold them together. In order to hide the tie, the sinew passed through a groove cut into the faces of the

15 Only the last part of the former owner's name (*-kɜnn*) is left.

16 Bruyère states that the genealogical lists found at Deir el-Medina do not include the name of Menkheper during the Ramesside period, therefore the usurpation must have taken place before that time. He suggests that the deceased can be identified with the namesake of stelae nº 10 in Munich, a relative of Kha (TT 08), who lived during the time of Amenhotep III (BRUYÈRE 1926, pp. 47, 48).

17 The reconstruction of the decoration is based also on the Bruyère's drawing.

18 Bruyère decided to embellish the collar by adding floral motifs in the final FIFAO publication. However, they are not present in the original drawing he made of the coffin (see *DEM* 1, 1924-1925, p. 17).

19 The schema of Anubis and the Sons of Horus on the walls and the goddesses Nephthys and Isis at head and foot comes from Chapter 151 of the Book of the Dead. It is the most common one on black coffins.

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two planks, so that it could be plastered and painted over (fig. 5d).[20] Many joints reveal a coating of translucent pale beige glue, often mixed with pieces of fabric (fig. 5e). The aim of this practise was to strengthen the joints and to fill the large gaps in construction that resulted from the irregular shape of the planks.[21] Notably, some of the joined edges were painted red (see discussion below). In addition, it is evident that the coffin was constructed from reused pieces of wood originally belonging to other coffins. As an indication of this, some earlier dowel housings were later filled with plaster since they were no longer needed.

Style remarks. The decorative programme is typical of the black coffins dating just prior to the time of Amenhotep III or, at the latest, to the beginning of his reign. In particular, this coffin is missing the border inscription along the lateral edge of the lid (see Bakiset, fig. 10a), which is always present on black coffins starting from the reign of this pharaoh.[22] The lack of the god's utterance alongside Anubis and the Sons of Horus on the box exterior walls and the pattern with just one central vertical inscription on the lid are also features typical for coffins of the first half of the 18th Dynasty.[23] The yellow painted interior of the coffin, on the other hand, is attested on black coffins starting from the later part of the reign of Amenhotep III, becoming more common at the end of the 18th Dynasty/beginning of the 19th Dynasty.[24] Therefore, it is possible that this colouring was added when the coffin was reused by Menkheper.

20 A peculiar system of ties has also been found on the head-wall of the outer coffin of Henuttawy, which Arbuckle and Cooney suggest is a black coffin of the 18th Dynasty modified and reused during the 21th Dynasty (see Arbuckle MacLeod, Cooney 2019). However, considering the layout of the decoration, the atypical iconography of the gods on the box walls, as well as the fact that the background of the coffin is not black but blue, it seems more likely that later craftsmen decorated the coffin using an archaizing style, a hypothesis also considered by the authors of the paper (Arbuckle MacLeod, Cooney 2019, p. 291).

21 A piece of fabric was added over the plaster layer but under the black varnish on some boards, probably to strengthen broken parts or cover areas of damage on the plastered surface (fig. 1).

22 As part of my Ph.D. thesis (in preparation), I have catalogued about fifty black coffins with this feature.

23 Van Walsem 1997, p. 30; Taylor 2016b, p. 182. See, for example, the white coffins in Barwik 1999, pp. 7–33.

24 In my Ph.D. thesis, I catalogued fifteen black coffins with the inner surface painted yellow. See, for example, the coffins of an anonymous woman and Bakiset from the tomb of Setau (discussed below), those of Sennefer and Nefertiti also from Deir el-Medina and dated to the reign of Tutankhamun (Bruyère 1929, pp. 40–73; Dodson, Ikram 1998, p. 215) and the three coffins dated to the reign of Ramses II from TT 41 (Assmann 1991, pp. 245–58, särg 1-3).

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Inventory N°	Part of the coffin	Figurative decoration	Bruyère mark	Bruyère excavation diary	FIFAO Publication	Wood analysis
DEM_19_12_003	Foot board (lid)	Goddess Isis	1098	*DEM* 2, 1927, p. 1	05.2, 1928, pp. 10–11	Plank and dowels: *Tamarix* sp.
DEM_19_12_004	Foot wall (box)	*Nub*-sign above *djed*-pillar	1137[25]	DEM 2, 1928, p. 2	06.2, 1929, pp. 10–11	*Tamarix* sp.
DEM_19_12_006	Lid	Mourners	1180 8.3.28	*DEM* 2, 1928, p. 17	06.2, 1929, pp. 99, 131–132	Unidentified. The wood was too damaged.
DEM_19_12_015	Box wall	Anubis	1098	*DEM* 2, 1927, p. 1	05.2, 1928, pp. 10–11	Planks: *Ficus sycomorus* L, *Tamarix aphylla*; Dowels: *Tamarix aphylla*.
DEM_19_12_016	Box wall	--	--	--	--	Plank: *Tamarix aphylla*.
DEM_19_12_017	Box wall (edge)	--	AF216n	*DEM* 1924-25, p. 16	03.3 1936, p. 41, pit 1013	Plank: *Ficus sycomorus* L.
DEM_19_12_018	Wig (lid)	--	1155	*DEM* 2, 1928, p. 5	06.2, 1929, pp. 29–33	Plank: *Tamarix aphylla*
DEM_19_12_021	Wig (head end)	Goddess Nephthys	1156	*DEM* 2, 1928, p. 7	06.2, 1929, pp. 33–34	Wig: *Tamarix aphylla*; dowels: *Ficus sycomorus* L.
DEM_19_12_028	Foot wall (box)	*Djed*-pillar between two *tyt*-signs	P 1451 8.2.51	*DEM* 4, 1950-51, p. 7	26, 1953, pp. 120–122	Plank 1: *Cupressus sempervirens* L. Plank 2 and dowels: *Tamarix* sp., *Ficus sycomorus* L.
DEM_19_12_050	Foot board (lid)	*Nub*-sign	--	--	--	*Tamarix* sp.
DEM_19_12_060	Wig (lid)	--	1137	*DEM* 2, 1928, p. 2	06.2, 1929, pp. 10–11	*Ficus sycomorus* L.
DEM_19_12_061	Foot wall (box)	*Nub*-sign	1137	*DEM* 2, 1928, p. 2	06.2, 1929, pp. 10–11	*Ficus sycomorus* L.

TABLE 1. List of black coffin fragments and boards from Pit 1022.

25 Bruyère labelled fragments 004, 060 and 061 with this number, but he did not describe them in his excavation diary or in FIFAO as among the objects he found in Pit 1137. It is possible that the pieces were actually originally found near the pit since it was located in a 18th Dynasty cemetery.

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1.2 *Other coffin fragments and planks*

The other twelve pieces of black coffins found in Pit 1022 were in fragmentary condition when discovered by the author and do not fit with each other. Unfortunately, it is impossible to attribute them to specific coffins, although some of them display the same Bruyère excavation mark (Tab. 1).

Decorative scheme. All of the twelve coffin fragments show the traditional iconographic programme of black coffins with one exception (see below).

The three remains of wigs (**DEM_19_12_18**, **DEM_19_12_21** and **DEM_19_12_60**) all belong to the tripartite type, with longitudinal yellow stripes on a black background. In addition, two of them preserve part of one ear in relief (**18**, **21**) whereas the third shows the goddess Nephthys in a standing position with raised arms at the head end (**60**).

With regard to the fragments deriving from the walls of the boxes, only one has figurative decoration, namely the torso of a standing god (Anubis) alongside three columns of texts recording the god's utterance (**DEM_19_12_015**) (fig. 6d). From the drawing in Bruyère's excavation diary, we know that this section was originally part of a larger plank, which included the god Duamutef with his utterance. The other two fragments show a few hieroglyphs originally belonging to two inscribed bands (**DEM_19_12_016**, **DEM_19_12_017**).

Only one board belongs to the middle part of a lid **DEM_19_12_006**) as indicated by the section of text with the word *ỉmȝḫy* (therefore the beginning of *ỉmȝḫy ḫr* formula) and by the orientation of the decoration (fig. 6a).[26] A peculiarity of this plank is its decorative programme: a series of four standing mourners depicted alongside a *nub*-sign. Figures of mourners occur on some white-style coffins decorated with funerary processions[27] but are quite rare on black coffins. In fact, I have catalogued only three examples with this iconographic motif in my PhD dissertation: the coffin of Mesre in Louvre Museum, an anonymous lid currently on the private market, and the fragmentary coffin of Maya from the South Tomb Cemetery at Tell el-Amarna.[28] The first two, dated to around the reign of Amenhotep III and to the post-Amarna period, show one crouching mourner on both sides of the vertical central band. It is the third coffin, that of Maya, which shows a very close resemblance to the board from Deir el-Medina (fig. 6b). However, in contrast to the position of the mourners on the Deir el-Medina board who are depicted on the lid, the mourners on Maya's coffin are depicted on the box walls, according to the "New Amarna" style,[29] although the iconography is the same. The most notable decorative element in common is the band that encircles the hair at ear level, tying at the back of the head. As Joyce Haynes suggests, this new hair ornament was introduced in the representation of women during the reign of Akhenaten.[30] In addition, small hieroglyphs are painted near the mourners on the Deir el-Medina board, giving parts of their forenames. A similar practice can be seen on the coffin of Taat from the tomb of Setau (see below), dated to the Amarna Period. As is evident

26 This piece was restored by Mohamed Yousef Sedek (Misr University for Science and Technology).

27 See Barwik 1999, 16, figs 4, 5.

28 See respectively: Colinart et al. 1997, pp. 26–32; Eisenberg 2007, p. 83; Bettum 2015, pp. 27–32.

29 On some black coffins from Tell el-Amarna, the traditional decorative programme, with Anubis and the Sons of Horus, has been replaced by a new decorative style which shows mourners, relatives of the deceased or priests making offerings. See Bettum 2015, pp. 29–32.

30 Haynes 1977, p. 21.

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from Bruyère's drawing, the box walls of Taat's coffin were decorated with her offering-bearer relatives, identified by their forenames.[31] In conclusion, I would suggest an Amarna period date for the board **DEM_19_12_006**.[32]

The remaining diagnostic pieces all come from the foot areas (boards and walls) of five coffins. One, **DEM_19_12_003**, represents the extended foot area of a lid with the very end of the central vertical inscription in the front and a representation of the standing goddess Isis raising her arms on the foot board preserved. The slat **DEM_19_12_050** belongs to a foot board as well, showing part of a *nub*-sign. The boards **DEM_19_12_004**, **DEM_19_12_028** and **DEM_19_12_061** are foot walls. The first is decorated with a *nub*-sign above a *djed*-pillar (fig. 6c),[33] the second shows a *djed*-pillar in between two *tjt*-signs, whereas the third is just the upper edge of a foot wall displaying part of a *nub*-sign.

Construction techniques. With the exception of three fragments where the joining methods could not be determined due to their damaged condition,[34] all of the other pieces were joined using cylindrical wooden dowels. The two horizontal boards that make up the foot wall of **DEM_19_12_028** were jointed together by two pegged mortises with loose tenons.[35] Furthermore, this foot wall was originally attached to the walls of the box by a half-lap joint whereas a dovetail joint was used on the other foot wall, that of **DEM_19_12_004**. Both of these types of joints are seen frequently on the foot walls of black coffins. Once again, a coat of translucent pale beige glue and pieces of fabric were used to strengthen the joints and to fill gaps in construction.

An interesting observation from the analyses of these pieces of coffin is the different quality of woodworking. The piece **DEM_19_12_021**, for example, represents the upper half of the wig and is made up of a single large piece of wood carved in a "u"-shape in order to insert the carved face in the middle. No small pieces were added to make up the topmost curve, in contrast to Menkheper's coffin. The feet of lid **DEM_19_12_003** are also made of a single piece of carved wood, with the addition of a central rounded piece to make up the sloped upper surface. Again, a single piece of flat wood was used for the foot wall **DEM_19_12_004**. Conversely, the foot wall **DEM_19_12_028** was made from two horizontal boards of reused wood, as it displays a different treatment on the interior side and a number of unused dowel housings. However, the piece that shows a methodical effort to use the wood economically is the box wall board **DEM_19_12_015**: it is made from six pieces of wood jointed on the edges with dowels, glue and pieces of fabric to reinforce the connections.

2. The black coffins stored in TT 217

One room of this tomb was used in modern times to store part of the grave goods from Tomb 1352, belonging to a man named Setau. He was a "Servant in the Place of the Truth" who lived in Deir el-Medina in the 18th Dynasty and died during Akhenaten's reign, or perhaps slightly later, when

31 Bruyère 1937, pp. 104–106.

32 In accordance with the proposed date, the interior side is painted yellow (see Menkheper's coffin, section 1.1, pp. 258–260).

33 On the lateral edges of the board, part of the decoration on the box walls remains, namely the torsos of two anthropomorphic gods.

34 The fragments are DEM_19_12_006, DEM_19_12_16, DEM_19_12_17.

35 Part of this type of joint is also visible on the upper edge of fragment DEM_19_12_015 (fig. 6d).

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he was about sixty years old.[36] His grave was still unviolated during the Ramesside period, when it was badly disturbed during the construction of Tomb 1346. Therefore, the artisans decided to move the four black coffins they found inside (those of Setau, a woman called Taat, a girl named Bakiset and an anonymous woman[37]) and stack them instead in two cavities on the sides of the burial room along with the undecorated rectangular coffin of a young child and other grave goods.[38] The objects were then covered by the filling soil of the Ramesside pit and thus they remained safe from future lootings. However, the new accommodation was not ideal for the preservation of the objects and the four black coffins suffered many infiltrations of water. As a consequence, the painted decoration discoloured, the wood rotted and the planks became disjointed as is evident from Figs 7 and 10.

Regarding the black coffins in TT 217, we found only the small coffin ascribed to Bakiset in a complete state, with the mummy still inside, whereas for the coffins of Setau and the anonymous woman only some of the planks of the boxes remained. In fact, their lids were moved to the National Museum in Warsaw around 1937 as the result of a research cooperation agreement between France (IFAO) and Poland (University of Warsaw) in Egypt.[39]

Unfortunately, the coffin of Taat is currently missing.

2.1 *The coffin of Setau*

Inventory Number: DEM_19_12_217_1 (box).
Dimensions:[40] L. 180 cm (box walls) W. 34 cm (head wall); H. *ca*. 30 cm (head wall).
Dating: Akhenaten – first post-Amarna period.
Original location: Tomb 1352, Western Cemetery.
Wood analysis: planks: *Tamarix aphylla and Ficus sycomorus* L.; fragments combined to complete the upper side planks: a mix of *Ficus sycomorus* L., *Cupressus sempervirens* L., *Acacia* sp. and *Tamarix* sp.; dowels: two in *Ficus sycomorus* L., five in *Acacia* sp.; tenons: four in *Acacia* sp.
Figures: 2, 7, 8.

36 Setau was buried with a bronze ring decorated with a cartouche of Thutmosis IV; the inscriptions on two of his shabtis and another coffin found in his tomb (that of Taat) include references to the god Aten and to the city of Akhetaten (Tell el-Amarna) (see Bruyère 1937, pp. 92, 95–109, pl. X–XIII; Černý 1973 (ed. 2001), pp. 4952). Due to the quality and the typology of the grave goods, Stuart Tyson Smith proposed that Setau belonged to the "Middle Class", a group of lesser bureaucrats, priests, military officers, wealthy farmers and craftmen – the equivalent to the mid-range officials of the day (Smith 1992, pp. 218–219). In addition to being a "Servant in the Place of the Truth", Setau also held the title "Servant in the Great Place" (titles applied to the artisans of Deir el-Medina who worked in the Valley of the Kings) and "Servant in the Place of Beauty" (namely, the Valley of the Queens) (Soliman 2015, pp. 34–36).

37 A blank space was left in the inscriptions in order to add her name. Unfortunately, this addition was never carried out.

38 Setau and his extended family are depicted on a stela now in the Hermitage Museum. The text indicates that he had a sister called Bakiset but there is no mention of a woman called Taat, probably one of his wives (Inventory no. 3937; see the Museum's online catalogue: <https://www.hermitagemuseum.org/wps/portal/hermitage/digital-collection/06.+sculpture/86738>, accessed 9 November 2020).

39 Inventory numbers 138983 NMW (Setau) and 138985 NMW (anonymous woman). For details on the transfer of the coffin lids to Warsaw, see Ambroziak 2016, pp. 7–17. Remarkably, the top of the foot board of Setau (with the name of the deceased in the vertical central inscription) is still at Deir el-Medina even though the lid was moved to Warsaw (fig. 7d). When the lid was heavily restored after World War II, the foot was reshaped and redecorated in order to hide the missing top part but the inscriptions on the piece of foot left *in situ* perfectly match with those on the lid in Warsaw, as is evident also from the drawing made by Bruyère.

40 The dimensions are approximate due to the fragmentary state of the object. Bruyère noted that the length of the coffin was 192 cm.

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Decorative scheme. Lid. A tripartite wig, decorated with yellow stripes, frames the red painted face which originally featured an Osirian beard. The ears were probably carved in relief but the lid's state of preservation does not allow us to confirm this hypothesis. The *usekh*-collar, apparently without terminals on the shoulders, is composed of green, blue and red bands, and shows the outer edge decorated with a series of white petals. The clenched hands, carved in relief, are painted red and are depicted crossed on the chest partially overlapping the collar. Below them, a winged Nut-figure is portrayed in a squatting position. In addition, an *udjat*-eye decorates the right shoulder of the lid. Box. On both external walls, the spaces are each occupied by two figures of Thoth, cutting an opening in the sky, framing the Four Sons of Horus shown with human heads and Anubis at the centre:[41] Imseti and Duamutef on the right wall; Hapy and Qebehsenuef on the left one. Head and foot. Apparently, there is no indication of a goddess figure at the head end[42] whereas the foot (board and wall) shows the goddess Isis squatting on a *nub*-sign above a white pyramid decorated with a red door. Edge of box/lid and interior of the coffin. The flat edge was first painted red and then covered by a black layer.[43] Traces of dark grey paint remain on interior of the coffin.

Inscriptions.[44] The coffin shows the traditional text repertoire of black coffins. The vertical central band contains a version of the Nut-prayer with the goddess asked to spread herself over the deceased for protection; the border inscriptions on the lid are inscribed with the recitations of Geb and Nut, whereas the lateral bands contain the *ḏd mdw in ỉmȝhy ḥr* formula giving the names of Anubis, the Four Sons of Horus, Geb and Dunanwy. On the box walls, the utterances of Anubis (in his two forms: Imiwt and Khentysehnetjer) and the Four Sons of Horus appear alongside each god. The function of the recitations is said to be the protection of the deceased. Each figure of Thoth is instead accompanied by a different type of text which always contains the refrain "Re lives, the tortoise is dead!"[45] Four variants of this formula have been identified on black coffins: three of these are present on Setau's coffin but the fourth inscription is too damaged to be identified. Lastly, on the foot board, the seated figure of the goddess Isis is largely framed by bands of texts that record her invocation to the god Geb, that he may put his arms around the deceased, illuminate his face and open his eyes.

Construction techniques.[46] Each wall of the coffin box is principally made up of two horizontal planks of wood joined together and to the floor board by cylindrical wooden dowels and pegged mortises with loose tenons. However, two or more supplementary pieces were added to the head and the feet of the upper side planks in order to reach the necessary length and to make up the curved wig. The head wall is made from three vertical planks, above which

41 It is impossible to see the figures of Thoth at the head end in the photos of the boards as the decoration is too damaged. However, the preserved parts of the inscriptions (with the refrain "Re lives") indicate the presence of Thoth. Bruyère also noted that there were four figures of Thoth on the box walls.

42 Bruyère does not mention the figurative decoration on this part of coffin and the poor condition of the head end precludes the confirmation of this absence. However, the head wall only shows the stripes of the wig.

43 On the composition of this black layer, see the discussion of the varnish below by M. Serpico.

44 See Fig. 8. For the transcription of the texts on Setau's coffin see Bruyère 1937, pl. XI. For discussions on these types of inscription on New Kingdom coffins see Hayes 1935; Lüscher 1998, pp. 129–284; Bettum 2013, pp. 135–149.

45 These inscriptions inform us that the living Sun emerges victorious from the conflict with his enemy Apophis, sometimes portrayed as a turtle, during his celestial journey. See, for example, Böhme 2019.

46 The analysis of the construction techniques only refers to the box of the coffin found in Tomb 217. I have not carried out a similar study of the lid in Warsaw.

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a piece of curved shape was added to make up the contoured edge of the box. The foot wall is instead composed of two vertical planks. Once again, all these pieces were joined together by cylindrical wooden dowels and pegged mortises with loose tenons. Of note, traces of mud plaster mixed with straw have been found between the jointed edges of the planks in order to strengthen the bonds and to fill gaps in the construction. As for the coffin of Menkheper, some of the jointed edges are painted red.

Style remarks. The decorative programme is typical of black coffins dated from the end of the reign of Amenhotep III. Indeed, the red-painted skin (rather than the more common yellow colour) appears on some black coffins from the Amarna period, becoming more common on Ramesside coffins.[47] The presence of white petals on the outer edge of the *usekh*-collar as well as hands that slightly overlap lower part of the collar (rather than positioned fully beneath it) also denote such a dating.[48] In addition, the decorative layout of the box with the figure of Thoth at the four corners was used most frequently on coffins from the reign of Amenhotep III.[49] Lastly, the foot wall of Setau shows another peculiar characteristic, namely the representation of a white pyramid with a red door which represents a unicum in the repertoire of black coffins (fig. 7e). However, a yellow pyramid is depicted at the end of each box wall on the coffin of the anonymous woman found in the same tomb (see below). This motif may possibly relate to the pyramid-complex tombs in use at Deir el-Medina at the end of the 18th Dynasty.[50] Notably, however, a good parallel for this type of motif can be seen on a model coffin found in the Central City of Tell el-Amarna.[51] This shows ritual scenes on the box wall in accordance with the "New Amarna" style (see above), alongside a pyramid-shaped object which was interpreted as an offering loaf.[52]

2.2. *The coffin of an anonymous woman*

Inventory Number: DEM_19_12_217_2 (box).
Dimensions:[53] L. 184 cm (box walls); W. 35 cm (head wall); H. 27 cm (head and box wall).
Dating: Akhenaten – first post-Amarna period.
Original location: Tomb 1352, Western Cemetery.
Wood analysis: planks: *Acacia* sp.; dowels: three in *Acacia* sp., three in *Tamarix* sp.; tenons: two in *Acacia* sp.
Figures: 3, 9.

47 See, for example, Cooney 2009, p. 105.
48 Sartini 2015, pp. 50–51.
49 Sartini 2019, p. 32. This composition comes from the Chapter 161 of the Book of the Dead. See Bettum 2013, pp. 143–148; Böhme 2019; Lüscher 1998, pp. 82–85; Taylor 2016a, p. 53.
50 On this type of tomb, see Meskell 1999, pp. 188–190.
51 The object is in the British Museum (BM EA63635). Taylor 2001b, p. 226, fig. 166.
52 Skinner et al. 2019, p. 212.
53 The dimensions are approximate due to the fragmentary condition of the object. Bruyère states that the length of the coffin was 192 cm.

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Decorative scheme. Lid.[54] The tripartite wig is decorated with yellow stripes on a black background and this frames the red painted[55] face with the ears probably in relief. The *usekh*-collar, apparently without terminals on the shoulders, is composed of green, blue and red bands featuring a double outer edge decorated with a series of polychrome drops and a row of white petals tinged with blue. On the abdomen, the vulture goddess Nekhbet is depicted stretching her wings over the deceased, holding a *shen*-sign in each talon. Box. The spaces on both exterior walls are occupied by the standing figures of Anubis, each between two Sons of Horus with human heads (Imseti and Duamutef on the right wall; Hapy and Qebehsenuef on the left one), followed by a yellow pyramid. Notably, the decoration on the panel on the upper shoulder differs from one wall to the other. On the proper right side, Anubis is shown in animal form on a shrine, whereas on the proper left, he is replaced by an *udjat*-eye. Head and foot. Apparently, there is no image of a goddess at the head end,[56] whereas the foot board shows the goddess Isis standing on a *nub*-sign. Edge of box/lid and interior of the coffin. The flat edge is painted red and the interior is painted yellow.

Inscriptions.[57] The coffin shows the same text repertoire as Setau (see above), with some differences. The central vertical band contains a version of the Nut-prayer, whereas the border inscriptions on each side of the lid include recitations by Geb and Nut. The lateral bands contain the *ḏd mdw ỉn ỉmȝḫy ḫr* formula including the names of Anubis (Imiwt and Khentysehnetjer), Duamutef, Qebehsenuef,[58] and Thoth as well as an invocation of the crown of Lower Egypt. On the box walls, the utterances of Anubis (in his two forms) and the Four Sons of Horus[59] appear alongside each god.

Construction techniques. Each wall of the coffin box is principally made up of two horizontal planks of wood, although only a fragment remains of the lower side plank on the right wall. These pieces are joined together by pegged mortises with loose tenons and were originally edge-jointed dowelled to the floor board. Two supplementary pieces of wood were added on the interior wall of the upper side planks near the head in order to make up the thickness of the curved wig. Remarkably, the walls of the box show two different techniques regarding the construction of the upper edge. Unlike the left side, additional pieces of wood were dowelled to the upper plank of the right side in order to make up the topmost edge. These varying methods of construction were probably due to the availability of wood or to the use of reused pieces of coffin. Nevertheless, there is no clear supporting evidence of alteration or reuse, such as unused dowels or unused joints, although on the right wall of the box two unusual vertical lines are carved close to the far ends of the upper plank.

54 The lid is currently preserved in the National Museum of Warsaw. The following description is based on the photographs of the object kindly given to me by Monika Dolińska, Senior Keeper of Egyptian Collection (Department of Ancient Art) at the museum, and on the description published by Bruyère in FIFAO.

55 Bruyère stated that the face was painted red, but it appears yellow in the photograph supplied by the Museum, perhaps due to a misinterpretation of the decoration during the old restoration.

56 As for Setau, Bruyère does not mention the figurative decoration on the head end but this may possibly be due to the poor state of preservation. The head wall only shows the stripes of the wig.

57 For the transcription of the texts on the lid, see Bruyère 1937, pl. XIII.

58 It seems that Qebehsenuef appears twice in the lateral inscriptions. The damaged decoration does not allow reading all inscriptions.

59 Imseti's speech is missing but this is probably due to the poor condition of the decoration.

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The head wall is made up of two vertical planks of similar size joined together by pegged mortises with loose tenons and cylindrical wooden dowels. However, one plank is in turn composed of two pieces, joined together by many dowels randomly arranged, probably after damage occurred to the plank.

As seen for other coffins, a coat of plaster and glued pieces of fabric were used to strengthen the joints and to fill gaps in construction. Some of the jointed edges are red painted.

Style remarks. The decorative programme on this coffin becomes typical on black coffins from the beginning of the Amarna period (see comments on the coffin of Setau).

2.3. *The small coffin ascribed to Bakiset*

Inventory Number:	DEM_2019_217_093/093bis.
Dimensions:	L. 139 cm; W. 38 cm; H. 40 cm.
Dating:	First post-Amarna period.
Original location:	Tomb 1352, Western Cemetery (?).
Wood analysis:	all planks: *Ficus sycomorus* L. except two thin and long planks added on the top of each main side: *Cupressus sempervirens*; dowels: eight in *Acacia* sp.; tenons: one in *Acacia* sp., two in *Tamarix* sp.
Figures:	4, 10, 11.

The identification of the boxes **DEM_19_12_217_1** and **DEM_19_12_217_2** as the ones belonging to Setau and the anonymous woman in Tomb 1352 was made by the author through a comparison of the descriptions and drawings provided by Bruyère with the planks stored in Tomb 217 and the lids in Warsaw. The identification of the small complete coffin stored in Tomb 217 as that of Bakiset, also from Tomb 1352, is more problematic primarily as the damaged decoration does not allow us to properly read the inscriptions bearing her name. In fact, with regard to her coffin, Bruyère only states: "Longueur 1 m. 40, forme androïde, modèle courant de la fin de la XVIII^{e} dynastie, fond noir brillant, texte jaune, représentation des génies des canopes sur le flanc de la cuve".[60] No drawings or pictures accompany this statement. Thus, unfortunately, the available information is insufficient to confirm that coffin **DEM_2019_217_093** is indeed Bakiset's with confidence. Nonetheless, it is evident that the brief description perfectly matches the small coffin stored in TT 217. In addition, despite the damage to the decoration, we can possibly distinguish some of the hieroglyphs that composed her name , as reported by Bruyère, in the inscriptions. These observations, and the fact that the coffin was found alongside the boxes of Setau and of the anonymous woman, both coming from Tomb 1352, strengthen this identification.

Decorative scheme. Lid. The tripartite wig is decorated with yellow stripes on a black background and features a fillet made of petals with a lotus flower in the centre. The wig frames the yellow painted face and ears. The *usekh*-collar, with falcon-headed terminals, is composed of blue, (green?), red and yellow bands between the wig lappets, whereas the outer part is decorated with a series of blue drops, white petals and probably mandrake fruits. In addition, two red straps are depicted in the centre of the collar, probably to support a pectoral, unfortunately lost. The clenched hands, carved in relief, are painted yellow and are depicted

60 Bruyère 1937, p. 107.

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crossed on the chest overlapping the collar itself. However, from the imprint on the lid's surface between and beneath the hands, with no trace of decoration, it is possible that crossed arms, carved in relief, were also originally attached. On the abdomen, the vulture goddess Nekhbet is depicted stretching her wings over the deceased, holding a *shen*-sign in each talon. Box. The spaces on both external walls are occupied by an *udjat*-eye on a shrine and the standing figures of Anubis between two Sons of Horus shown with human heads: Hapy and Qebehsenuef on the left wall, with Imseti (?) and Duamutef (?) on the right one. Head and foot. At the head end, the decoration is too damaged to recognize a figurative motif while on the head wall, only the stripes of the wig are represented. At the foot (board and wall), the goddess Isis is shown in a standing position on a *djed*-pillar. Edge of box/lid and interior of the coffin. The flat edge is painted red and yellow paint is applied on the interior.

Inscriptions. The texts are very damaged and it is only possible to recognize part of the recitations: the *ḏd mdw in ỉmȝḫy ḫr* formula in the lateral bands; the gods' utterances alongside Anubis and the Four Sons of Horus; probably the Nut-prayer in the central vertical band; and Nut's speech in the border inscription on the lid's left side.

Construction techniques. The lid is made from five planks edge jointed by cylindrical wooden dowels and possibly pegged mortises with loose tenons. Small pieces of wood were added to make up the topmost curve of the wig, the lappets, the neck, the hands and also the feet. In addition, one piece of wood was added to the interior edge of the lid to reach the necessary thickness. The box was partially dug out from one log of wood, with the exception of the right wall and the whole head part (floor board, walls and head wall) which were joined to the main body with cylindrical wooden dowels. As for the lid, some pieces of wood were added to the interior wall, again to reach the necessary thickness, but a thin band of wood was added at the top of the wall, in order to hide the underlying miscellaneous methods of construction.

As seen on the other coffins, a coating of plaster/mud and glued pieces of fabric were used to strengthen the joints and to fill gaps in the construction. Some of the jointed edges were painted red.

Style remarks. The decorative programme is typical of black coffins dating from the Amarna Period onward. In addition to the white petals in the *usekh*-collar and the presence of crossed clenched hands fully positioned on the collar (see Setau), this coffin presents two other distinctive features which appeared on coffins from this period: the head fillet and, possibly, the mandrake fruit band in the collar,[61] which became more typical on Ramesside coffins.

The black coffins and coffin fragments from pit 1022 and Tomb 217 mainly show the traditional decorative scheme and textual repertoire of black coffins dating to the 18th Dynasty. There are, however, notable variations which appear to follow the "New Amarna" style, namely in the representation of pyramids on the coffins of Setau and the anonymous woman, and in the depiction of figures of mourners on fragment **DEM_19_12_006**.

The study of the manufacturing techniques indicates that nearly all of the coffins were constructed with a mixture of perfectly cut boards of large dimensions and various pieces of wood used as fillers. If we take into consideration the boxes of Setau and the anonymous

61 For a general discussion on this decorative motif, see Casini 2018.

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woman, for example, we can see how their side walls were mainly made up from just two long planks of wood, while the small box of Bakiset was, more unusually, partially dug out from a single log. However, all of them show a considerable use of additional pieces of wood to reach the necessary length and height of the box or to make up the wall thicknesses. What does vary from one coffin to another is the quality of the assembly and the pieces of wood. While the planks used for the coffin of the anonymous woman do not match perfectly due to their rather rough shape, the boards that make up the box of Setau appear skilfully shaped with no gaps visible between them. Moreover, the pieces of wood and fillers added to the feet of the upper side planks were jointed with precision, especially on the right side, which must have required a large expenditure of time and effort.

In conclusion, the quality of the assembly of a coffin, in addition to that of the wood, may give us an idea of the social status of the owner or his financial means. Indeed, whilst the coffin of Setau, who belonged to the "Middle Class," was purposely built for him, the coffin of the anonymous woman was the result of mass production with the name of the owner intended to be added at a later date after purchase.

In parallel with the study of style and manufacturing techniques carried out by L. Sartini, the varnishes and resins used on the coffins have been studied by Margaret Serpico.

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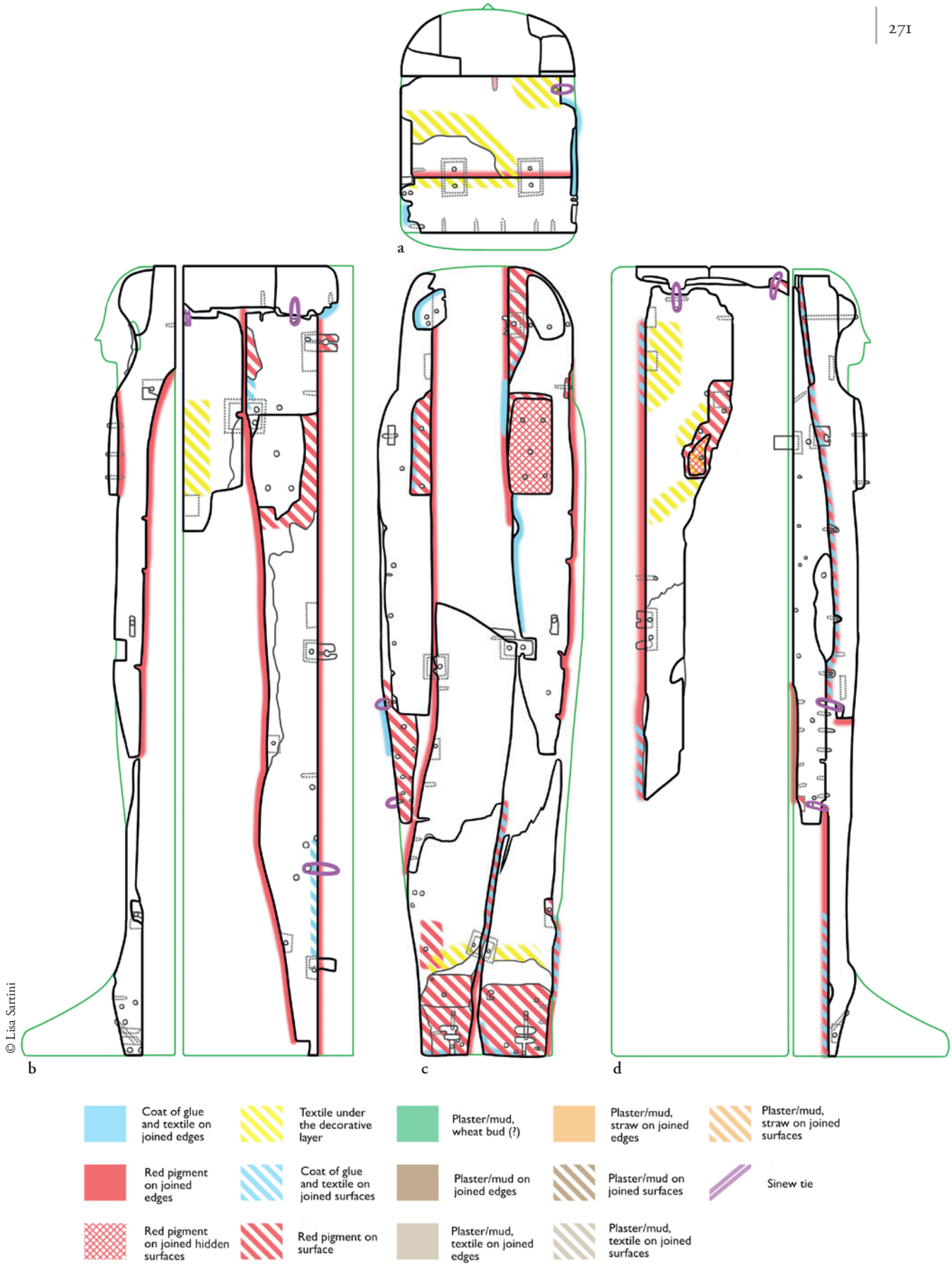


Fig. 1. Technical drawing of Menkheper's fragmentary coffin. **a.** Head end and head wall; **b.** Left wall of coffin; **c.** Lid; **d.** Right wall of coffin.

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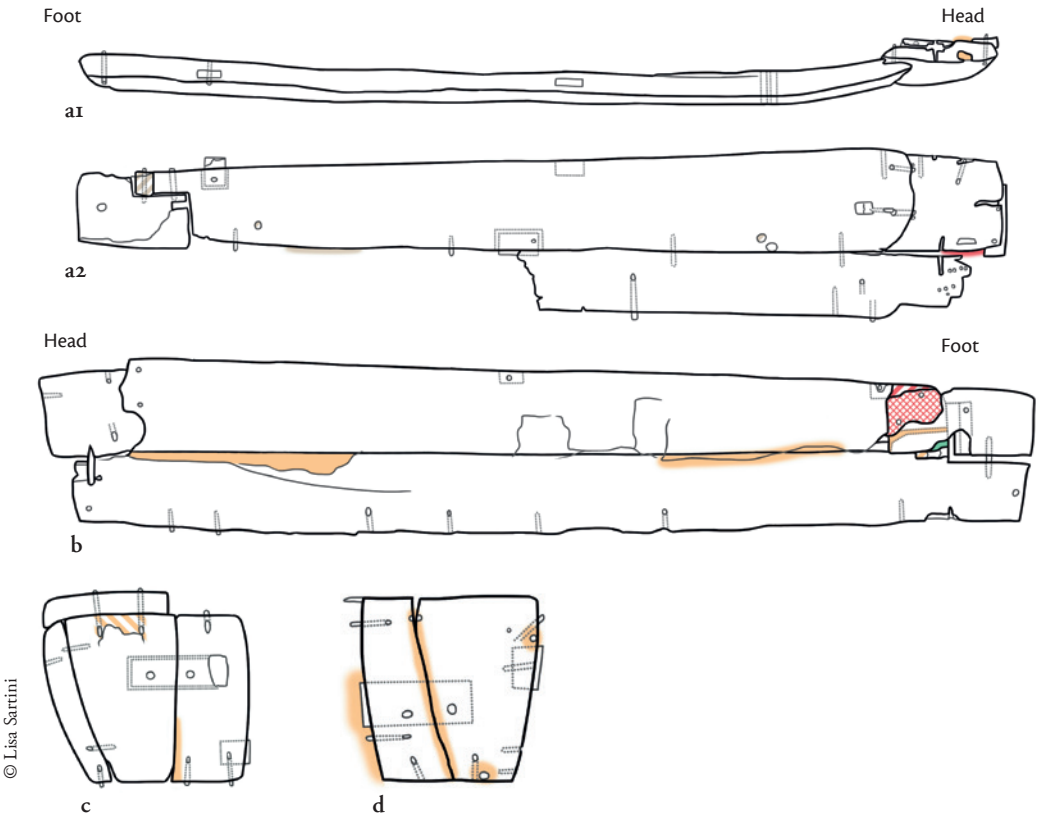


Fig. 2. Technical drawing of Setau's coffin box. **a1**, **a2.** Left wall of the box; **b.** Right wall of the box; **c.** Head wall; **d.** Foot wall.

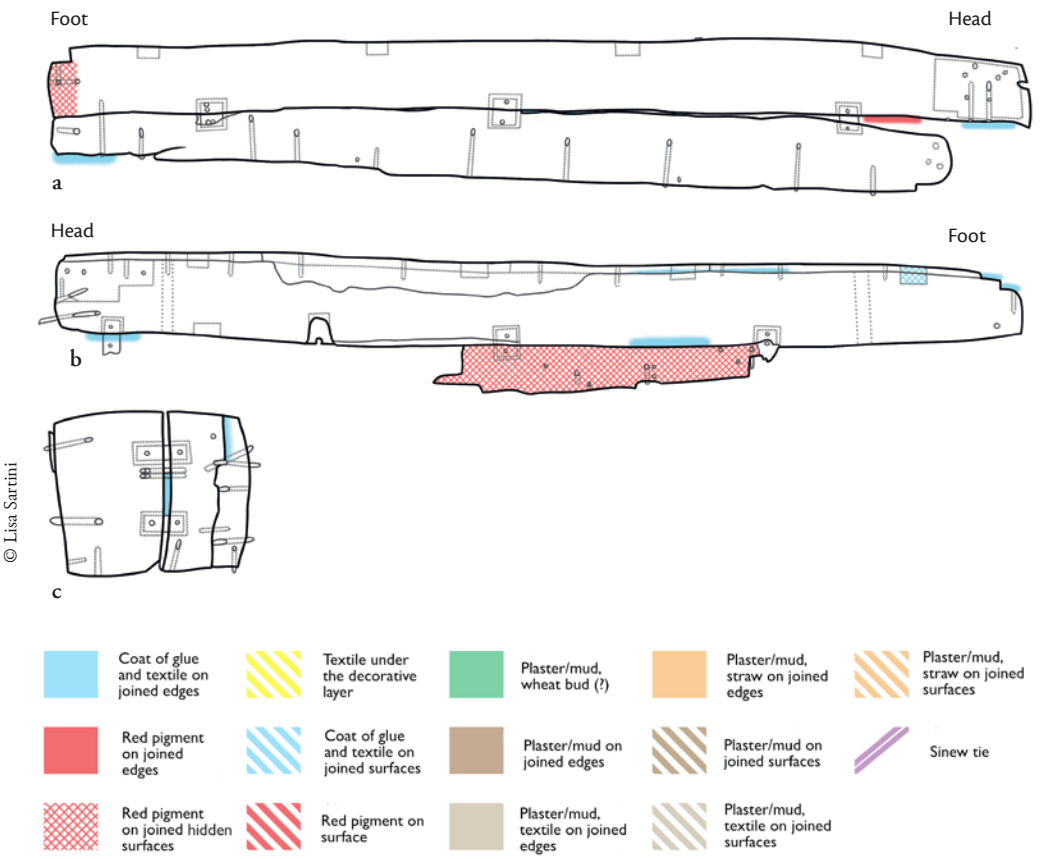
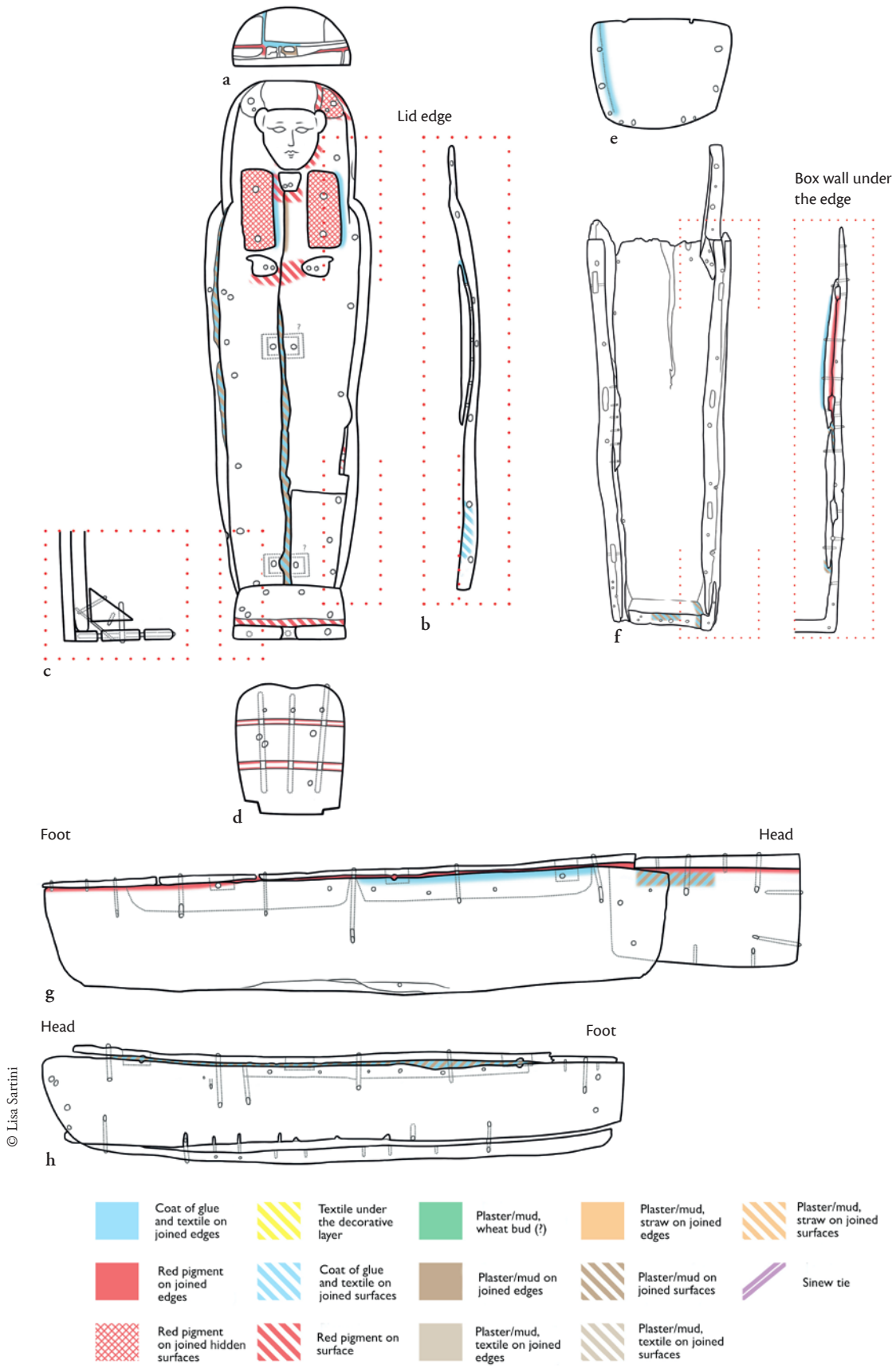


Fig. 3. Drawings of the Anonymous woman's coffin box. **a.** Left wall of box; **b.** Right wall of the box; **c.** Head wall.

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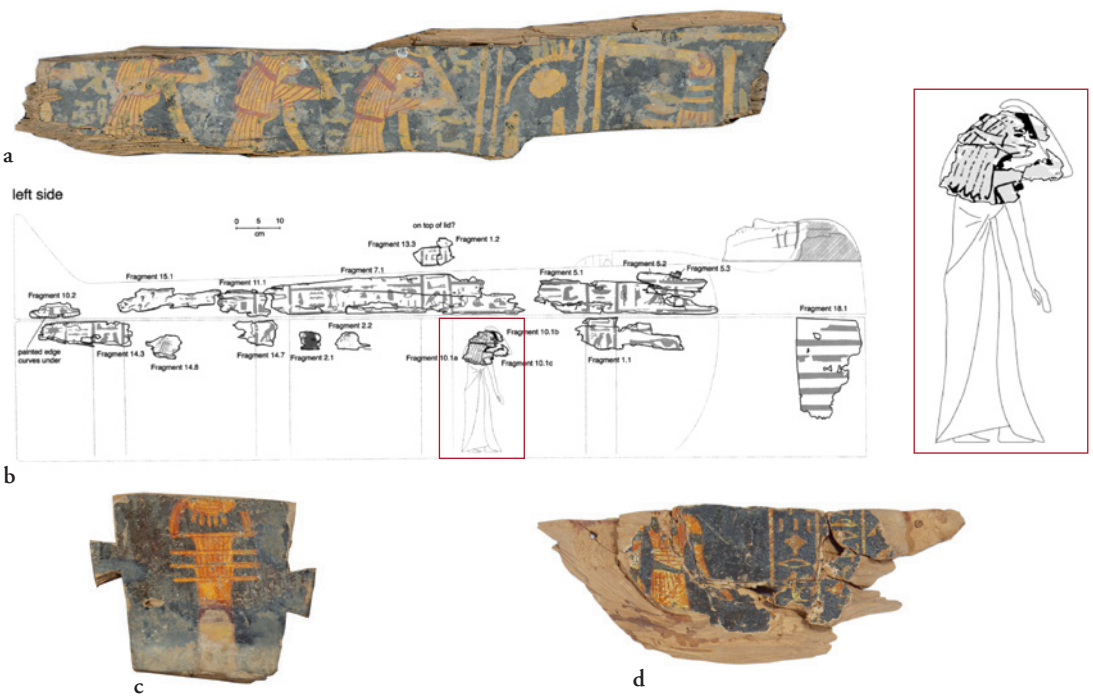
Fig. 4. Drawings of the coffin of Bakiset. **a.** Head-end of the lid. **b.** Lid; **c.** Lateral view of the foot; **d.** Foot board; **e.** Head board of the box; **f.** box; **g.** Left wall of the box; **h.** Right wall of the box.

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Fig. 5. Coffin of Menkheper. **a.** Right wall of the box; **b.** Lid; **c.** Left wall of the coffin; **d.** Head wall; **e.** Sinew tie joints; **f.** Jointed edge with a coat of glued pieces of fabric.



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Fig. 6. Coffin fragments from Pit 1022. **a.** Lid board with mourners DEM_19_12_006; **b.** Drawing of the coffin of Maya from Tell el-Amarna (image from Kemp 2008, fig. 11); **c.** Foot wall DEM_19_12_004; **d.** Board from a box right wall DEM_19_12_015.

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Fig. 7. Coffin of Setau. **a.** Right wall of the box; **b.** Left wall of the box; **c.** Head wall with separated edge; **d.** top of the foot board (lid); **e.** foot wall.

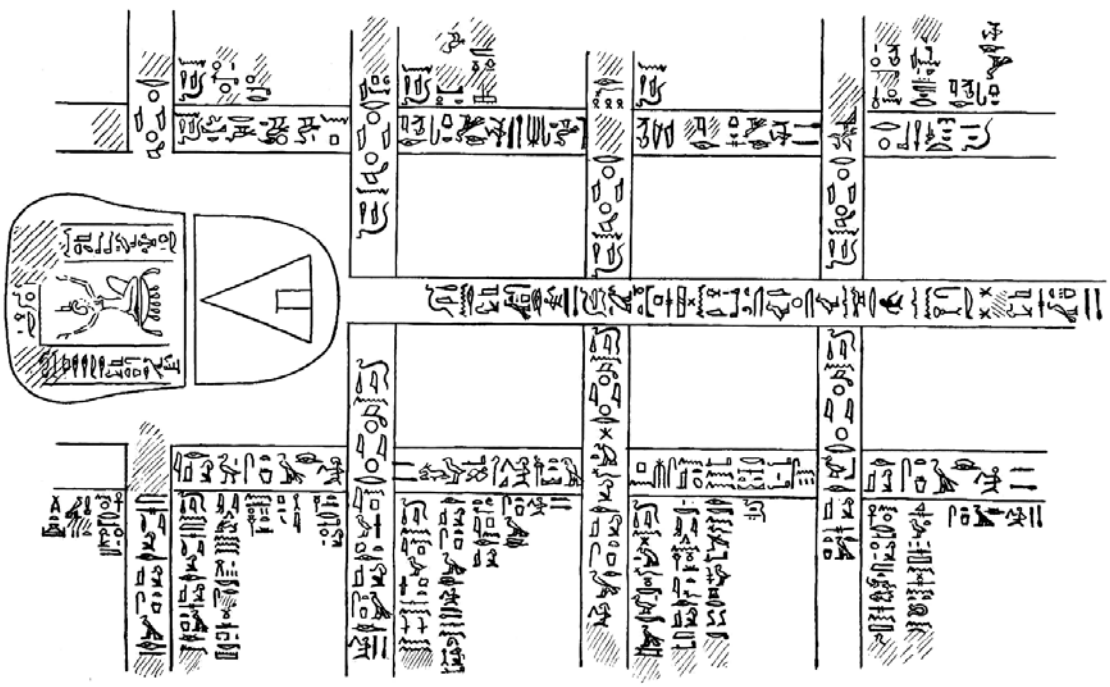


Fig. 8. Drawing of the coffin of Setau (after Bruyère 1937, Pl. XI).

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FIG. 9. Coffin of the anonymous woman. **a.** Left wall of the box; **b.** Right wall of the box; **c.** Head wall.

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Fig. 10. Coffin of Bakiset. **a.** Lid; **b.** Lid edge; **c.** Box; **d.** Head wall; **e.** Foot board; **f.** Foot wall.

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FIG. 11. Box of Bakiset. **a.** Right wall; **b.** Left wall.

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TECHNICAL STUDY OF THE VARNISHES ON 18TH DYNASTY COFFINS AT DEIR EL-MEDINA[62]

Margaret Serpico

As expected, many of the rediscovered 18th Dynasty coffins and coffin fragments show evidence of glossy yellow and black varnishes applied to their surfaces. The description of these coatings as 'yellow' and 'black' is in fact slightly misleading as the black varnish may range in color from dark grey to black, while the yellow varnish is today usually dark yellow-orange or even reddish-orange in color.[63] Significantly, rather than purely aesthetic varnishes, these coatings are, in fact, substances of ritual significance. Previous scientific analyses of samples of varnishes on funerary objects in museum collections has shown that the yellow varnish generally consists entirely or mostly of *Pistacia* spp. resin, which was also widely used as incense and known as *sn.tr*.[64] The resin may therefore have been applied to coffins in order to confer divinity on the deceased.[65] Conversely, black varnishes, associated with the fertile black earth, rebirth and the god Osiris, have a more varied composition typically including combinations of oil/fat, beeswax, coniferous resin/pitch or other coniferous products, pistacia resin/pitch and bitumen.[66] As the resinous components and possibly also the bitumen would have been imported commodities, these substances therefore provide evidence of ancient Egypt's dependence on trade networks for their burial practices.

The yellow varnish, which is present on the majority of examples discussed here, could be comprehensively, selectively or randomly applied to the surface. It is most obvious when coating polychrome decoration with a yellow or white background, but was frequently applied to black style coffins of this period, including sometimes over the black background. The black background itself may consist of black paint or black varnish.

Regarding the discussions of the objects presented below, a few general comments can be made. Notably, visual identification of the presence and extent of the yellow and black varnishes is, in most instances, surprisingly difficult even with the help of a digital microscope.[67] In contrast to better preserved museum examples, these coffins and fragments often have considerable areas of damage and still retain coatings of mud and dust. As discussed above,[68] this is particularly true for the group from Setau's tomb where both ancient and post-excavation storage conditions have resulted in encrustations of mud and water damage. As a result, it should be noted that these and most of the other fragments often have a mostly matte surface

62 I am most grateful to Gersande Eschenbrenner Diemer for inviting me to join the 'wood team' and also to Cédric Larcher and IFAO for permission to take part in the expedition. I would also thank Lisa Sartini for kindly sharing her data and discussing her research on the coffins.

63 For a comprehensive typology of ritual substances applied to coffins and funerary goods, see Serpico, Stern in press. The varnishes discussed here are considered Type 1, 'Primary Deposits', that relate to the decoration. More specifically, the coatings discussed here mostly fall into Type 1A, 'Yellow varnish over decoration', and Type 1C, 'Black varnish as a solid undercoat for painted decoration'.

64 Serpico, White 2000; Serpico et al. 2003, pp. 368–369.

65 Serpico, White 2001, pp. 36–37.

66 Bitumen was most often available from the Dead Sea area but some limited sources do occur in Egypt. On the religious significance of black varnish, see Serpico, White 2001, pp. 36–37; Serpico, Stern in press.

67 Unfortunately, it has not been possible to carry out scientific analyses of varnishes which would have been helpful to confirm their presence, particularly for the black varnish.

68 See above for the coffin of Setau and the anonymous coffin (section 2.1, pp. 264–266; section 2.2, pp. 266–268).

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which obscures the tell-tale glossy appearance of the varnishes.[69] In particular, this can make the black background more mottled in color, with shades of dark grey, brown and black, in turn making it difficult to distinguish from black paint. Interestingly, however, scientific analysis of samples from coffins in museum collections has shown that some matte black coatings which look like paint may in fact be mixtures containing low quantities of resin.[70] Thus, any notation here that the black coatings are matte only means that the appearance of the layer seems to be more consistent visually with a paint rather than resin and is not intended as a conclusive judgement. Moreover, when yellow varnish has been applied over a black painted undercoat, it can make the surface appear darker and shinier, giving a convincing impression of a glossy black varnish and making distinction of the layers problematic.

An overview of some of the initial observations of a short field season is provided below for the four best preserved examples along with two of the smaller fragments. For a summary of the varnishes present on the other fragments, see Table 1.

1.1. *Coffin box of Setau: DEM_18_217_1* [FIGS 2, 7]

Despite the damage and mud encrustations on many of the surfaces of this coffin, it is possible to observe a comprehensive coating of yellow varnish over much of the proper right exterior wall of the box. The varnish varies slightly in colour and also displays areas with the typical network of fine cracks on the surface, termed 'crazing' or 'craquelure'. In addition, there is some limited evidence of the downward dripping of the varnish on this side suggesting that the box was horizontal as the varnish dried (fig. 14a).

Conversely, while the poorly preserved proper left side wall, head board and lid foot board fragment have evidence of yellow varnish, there are also areas that appear unvarnished. This may have been deliberate in part but certainly in places is clearly due to disintegration of the yellow varnish as can be seen on the upper area of the foot board (fig. 14b). As the varnish is typically very friable, it often breaks along the hairline fractures and easily disengages from the underlying surface. Therefore, it is not possible to determine distinct edges that would offer evidence of selective varnishing.

Due to the yellow varnish and the condition of the surface, it is also not clear whether the varyingly shiny and matte and mottled grey-black background coating is paint or black varnish. There are, however, a number of small irregular patches of a glossy black deposit on the upper flat edges of the proper left side of the box (fig. 14c), which could be an overlap of the coating on the surface of the wall, hence suggestive of black varnish, or may perhaps be the remains of adhesive to seal the lid to the box. Unfortunately, it is difficult to trace the patches over the edge to the surface with any confidence and thus further investigation is needed. Examples are known where resins have been used in the construction of coffins[71] but admittedly the deposits on Setau's coffin are darker than the typical adhesives seen on these coffins (see the discussion of Menkheper's coffin above, section 1.1, pp. 258–260).

69 Gentle cleaning with a brush unfortunately makes little to no difference to the matte surface.
70 SERPICO, STERN in press.
71 SERPICO, STERN in press, termed Type 0.

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What is evident is that, where some areas of surface decoration have been damaged, a paler grey undercoat can be seen beneath (fig. 12d). Although it is not uncommon for the yellow varnish to take away the painted surface beneath when it disengages, this undercoat seems too homogenous and smooth to be the remains of the black coating. This raises the question of whether this is due to two layers of black colouring deliberately applied to the coffin or evidence of reuse. Notably, there seems to be no evidence of decoration visible on this substrate to clearly imply reuse.[72] A layering of black varnish over a matte black surface would not be unique, and seems to be present on other 18th Dynasty coffins.[73] One could question whether the black background for the yellow decoration was perhaps applied later over the grey surface as part of a subsequent funerary ritual.[74] However, on Setau's coffin, there is evidence of plaster between the two dark layers in some places, suggesting some type of reuse, either of the entire coffin or of some of its components.

The damaged foot wall of the box, with the bright white pyramid, differs to some extent from the other areas. Here, yellow varnish is still evident at least in places over the black background, but the white pyramid itself was almost completely avoided apart from very few accidental overlaps. While there are areas where the black background colour is matte and mottled dark grey to black, again probably due to dirt and damage, notably in one break across the black surface viewed with a microscope there appears to be a relatively thick black glossy coating suggesting that black varnish may be present.

1.2. *Coffin box of an anonymous woman: DEM_1_ 217_2* [FIGS 3, 9]

This coffin box has a dark grey to black matte undercoat with yellow decoration and, over that, random yellow varnishing, particularly on the better preserved proper left wall, although the exact distribution is difficult to determine. Notably, the drips of yellow varnish seem to suggest that the box was horizontal when it was applied as on Setau's coffin. Where the yellow varnish extends onto the black areas the surface appears much darker and glossier but, certainly in the wig area on the box head end, the varnish has given the dark background more of a very dark brown-black colour rather than black. Also on the wig, the varnish can be seen on the black striations but the largely unvarnished yellow painted bands have mostly flaked away, exposing the black matte undercoat (fig. 13a).

72 The undecorated pale grey areas are particularly telling given that the style of the 18th Dynasty coffins is fairly consistent in the positioning of the elements and therefore one might have expected to see text panels beneath.

73 For example, a lower dark grey/black coating seems to be present beneath the black varnish on the coffin of Baktamon in Athens (National Archaeological Museum, Registration number 3420) and of Nub-em-weseret in Marseille (Archaeological Museum, Marseilles Registration number 254), based on personal observation of the coffins in their vitrines. Further study is needed to clarify the layering, particularly taking into account any conservation treatment. Both are of roughly the same date as the coffin of Setau (Sartini, pers. comm.).

74 Dodson (1998, p. 335) has suggested that black varnish was ritually applied in the tomb. While this may sometimes have occurred, the textual evidence from Deir el-Medina indicates that varnishing could be carried out in conjunction with the decoration of the coffins at least in the later New Kingdom (SERPICO, WHITE 2001, p. 36; COONEY 2007, p. 147; similarly, also yellow varnish, see SERPICO, WHITE 2001, p. 36; COONEY 2006, pp. 52–53).

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In contrast to the bright white pyramid decorating the foot panel on Setau's coffin, the pyramid design on both sides of the box nearest the foot was painted yellow and varnished. Craquelure is visible on some parts of these and some areas for example on the proper left side display another feature of pistacia resin, namely its tendency to become paler yellow, matte and powdery where disturbed (fig. 13b).

1.3. *Coffin of Bakiset: DEM_19_217_093* [FIGS 4, 10, 11]

As for the other coffins in this group, a skim of mud is visible on much of the surface including the lid, although with magnification yellow varnish could be identified (fig. 14a). The varnish can also be seen in places on the box over the black undercoat, particularly on the better preserved proper left side, and on part of the wig on the head end.

The yellow varnish is not comprehensive, however, with many areas of yellow paint visible. This could be an example of random varnishing but at least in part is certainly also the result of significant areas of disengagement of the yellow varnish, exposing the black background beneath (fig. 14b). Notably, unless this disengagement dates to the time period after the original excavation, it is difficult to reconcile this with Bruyère's original description of the surface as "fond noir brillant" as noted above (see above, p. 268), given that nearly all of the surface is quite matte today. In light of Bruyère's inaccuracies in recording as noted above (see footnote 13), it is possible that he was similarly careless here. It also seems unlikely that the standing figure of Isis on the exterior lid foot board was covered with varnish.

1.4. *Coffin of Menkheper: DEM_19_12_031* [FIGS 1, 5]

The coffin of Menkheper has yellow painted decoration over a black background and there is no evidence of a final coating of yellow varnish over the yellow paint. However, study of the black background reveals a great deal of variation in the colour and appearance, with matte dark grey areas visible below darker, glossier patches (fig. 15a). While at first glance these black glossy areas would seem to be black varnish, they are in part quite orange in colour and seem to show evidence of craquelure, as well as becoming lighter where disturbed, features typical for pistacia resin.

Indeed in general, the appearance of the shiny coating looks very close to known examples of yellow varnish over a black background. If so, then the presence of a yellow varnish coating under, rather than over, the yellow painted decoration would be very unusual. This could be further evidence of the reuse of the coffin as discussed above where, as well as the later addition of Menkheper's name, there was also evidence of reuse of some of the wood pieces. If this is yellow varnish, it raises the question of whether the coating relates to the finished coffin or to the fragments of wood used to manufacture it. It should be noted, though, that the same mottled orangey-black coating occurs on the lid fragments and on the box suggesting a more systematic application and there is also one small area visible with the microscope where it appears that yellow varnish can be detected over the white gesso beneath the black (fig. 15b).

Thus, although the dark orangey-black layer could be the more typical black varnish beneath yellow paint, perhaps with a high but poorly mixed pistacia resin content, this seems less likely and study of sections through the black layers offered no firm evidence of a glossy black appearance. Also of note, if this were black varnish, then it would appear that this was added over black paint resulting in a double layer of black as seen on the coffin of Setau. In

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either case, whether yellow varnish over black paint or two coatings of black, it seems that some type of layering is present and consistent with the other indications of reuse. The probability that there are three layers present, black paint, black varnish and yellow varnish, seems less likely overall, but since the coffin was constructed from a number of pieces, some reused, the possibility of variation in surface treatments across the coffin cannot be excluded. It therefore seems most likely, on present evidence, that this is an atypical occurrence of yellow varnish over black paint but under yellow decoration.

1.5. *Coffin box fragment: DEM_19_12_017*

Of all the pieces studied, this fragment (fig. 16a) shows the clearest indication of black varnish with subsequent yellow painted decoration. There is no indication of another coating of yellow varnish above this. While there is clearly dust/dirt on most of the surface, giving it a matte appearance, the glossiness of the black is visible in part, along with craquelure, which can also be present in black varnish, in some places (fig. 16b).

Some areas of the black coating are relatively smooth but generally the surface seems quite irregular with bubble holes and visible small lumps. This is in fact quite common for black varnish since the composition can vary considerably. From the areas which could be studied with a microscope, the shininess of the coating could also be seen along some of the broken edges and sections. There was, however, no evidence of obvious inclusions to explain the unevenness of the surface. The color of the black coating is indeed very dark and despite some tiny patches that might appear to be slightly lighter and more matte at magnification, this is most probably again due to dirt on the surface. There is no evidence of the orangey color that could indicate a yellow varnish over the surface or indeed anything in the appearance suggestive of pistacia resin although the resin could of course be present in the mixture.

1.6. *Coffin box fragment: DEM_19_12_006* [FIG. 6A]

This box wall fragment has no evidence of yellow varnish and the black background seems more likely to be paint. The absence of yellow varnish is of particular interest given that so many of the other rediscovered coffins and coffin fragments do seem to have evidence of it. The reason for the seeming omission here is not clear and, while perhaps unlikely, it is possible that other areas of the coffin did have evidence of varnish. The style of decoration with the mourning figures follows the 'New Amarna' style found at Amarna as discussed above (see above, p. 262–263). However, at least some of the coffins from the South Tombs Cemetery at Amarna, both in the traditional and 'godless' styles, do have evidence of yellow varnish[75] arguing against any presumed definitive link between decorative style and the use or absence of varnish.

75 BETTUM 2015, p. 31. Also my own personal observation.

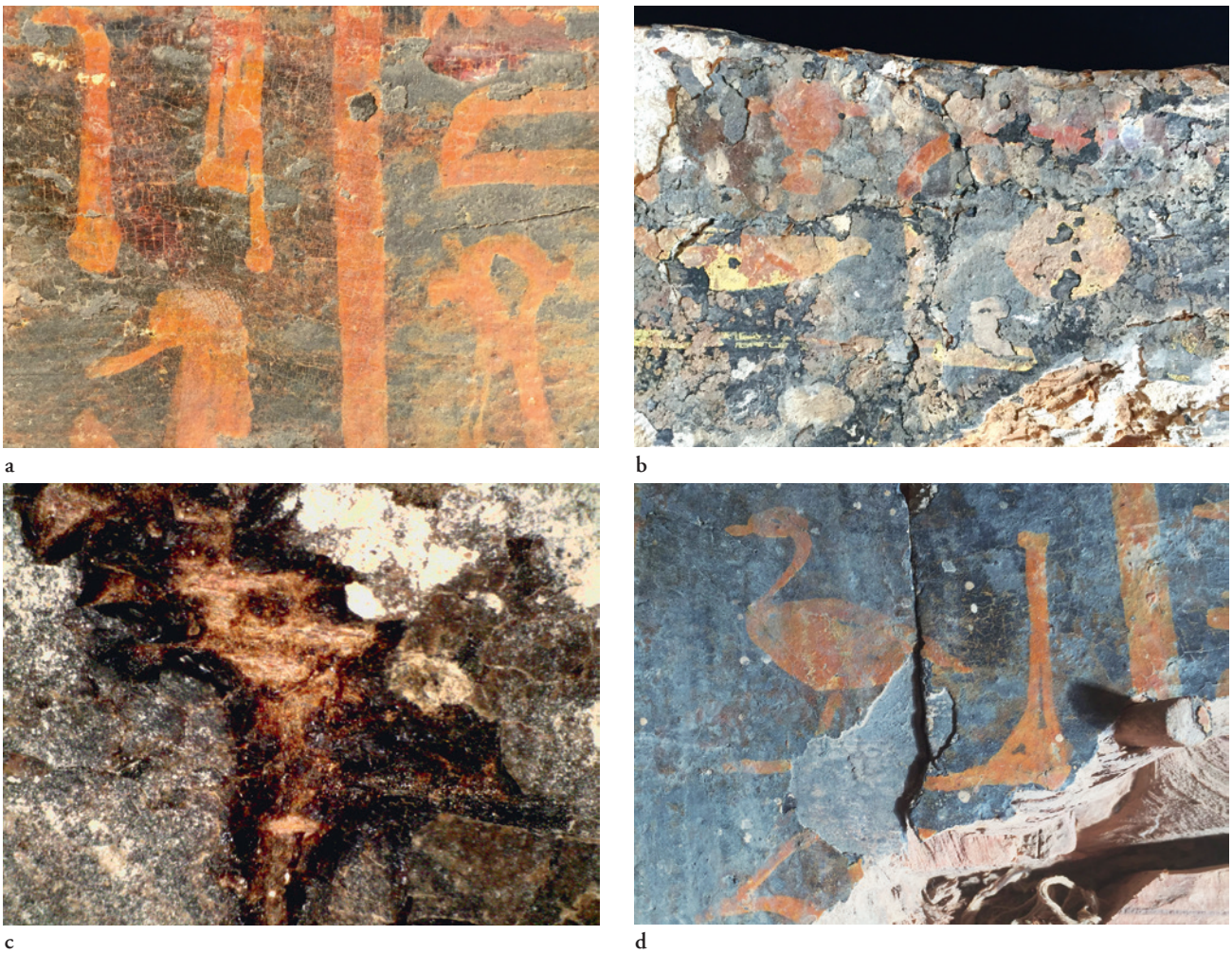
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Inventory N°	Coffin part	Yellow varnish	Black varnish	Black matte background	Comments
DEM_19_12_003	Foot board (lid)	✓		✓	
DEM_19_12_004	Foot wall (box)	✓		✓	
DEM_19_12_006	Lid			✓	
DEM_19_12_015	Box wall	✓	?	✓	Some areas of the black background appear glossy in section when viewed with a microscope.
DEM_19_12_016	Box wall	✓			Black background not yet studied.
DEM_19_12_017	Box wall (edge)		✓		
DEM_19_12_018	Wig (lid)	✓			
DEM_19_12_021	Wig (head end)	✓			
DEM_19_12_028	Foot wall (box)	✓		✓	
DEM_19_12_050	Foot board (lid)			✓	
DEM_19_12_060	Wig (lid)	✓			
DEM_19_12_061	Foot wall (box)	✓		✓	

Table 2. List of fragments from pit 1022 with a summary of the presence/absence of yellow and black varnishes and coatings.

In conclusion, study of the varnishes and resinous residues present on these coffins has in many ways been surprisingly challenging, not least due to both their ancient and post-excavation life-cycles. While most of the examples do follow expected practices for the application of these coatings, some clearly show anomalies that deserve further study. Together with the evidence for re-use and improvised construction techniques, these variations highlight the complexity of coffin production. However, two further important aspects of coffin manufacture should now be added for consideration: the identification of the different wood species used and an investigation of the intriguing practice of applying red pigment to different assembly areas of the coffin.

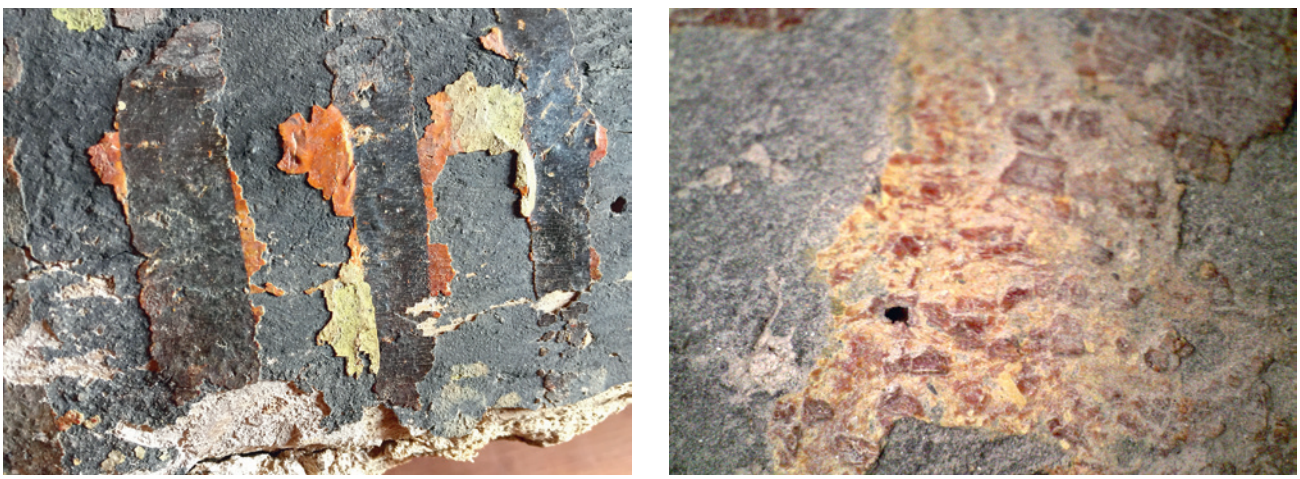
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a b c d

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Fig. 12. Coffin of Setau, DEM_18_217_1. **a.** Yellow varnish on the proper right side of the box showing variation in the colour, craquelure and an area of thickened dripping; **b.** Top of the foot board of the lid showing red-orange yellow varnish, patches of mud and places where the varnish has disengaged to reveal the yellow paint beneath; **c.** Shiny black deposit on the flat edge on the proper left wall of the box. Photograph at ×41.2 magnification; **d.** Exposed grey matte coating below the black layer and yellow painted decoration on the proper right exterior wall of the box, Photograph at ×29.9 magnification.

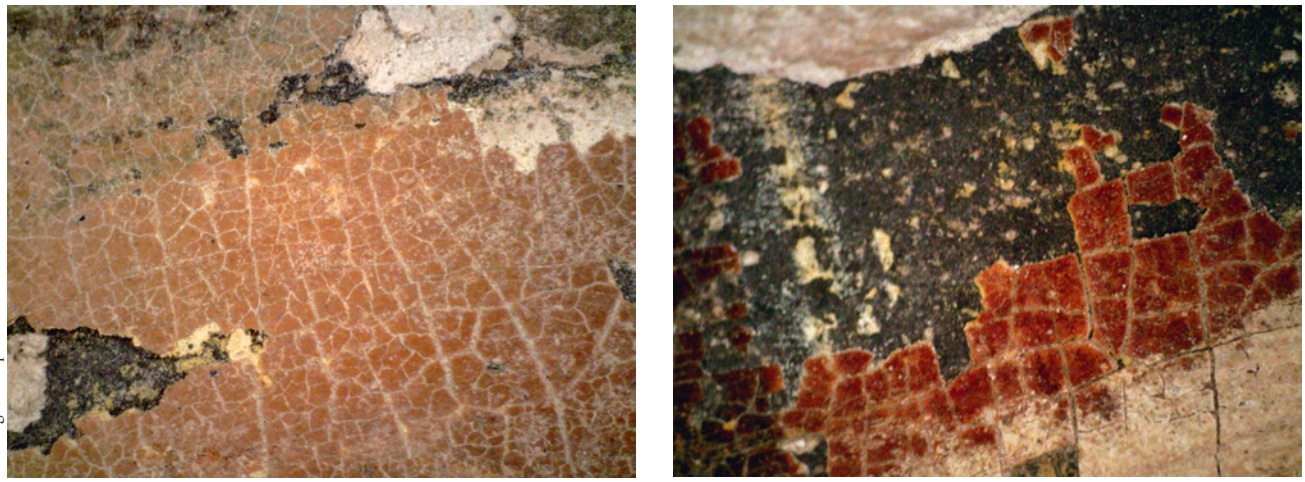


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Fig. 13. Coffin of an Anonymous woman, DEM 18_217_2. **a.** Wig area on the box head wall with matte black background, yellow painted striations and glossy orange-coloured yellow varnish primarily over black striations; **b.** Example of yellow varnish with patches of darker glossy craquelure and paler, matte, disturbed areas on the upper proper left side of the foot end. Photograph at ×31.0 magnification.

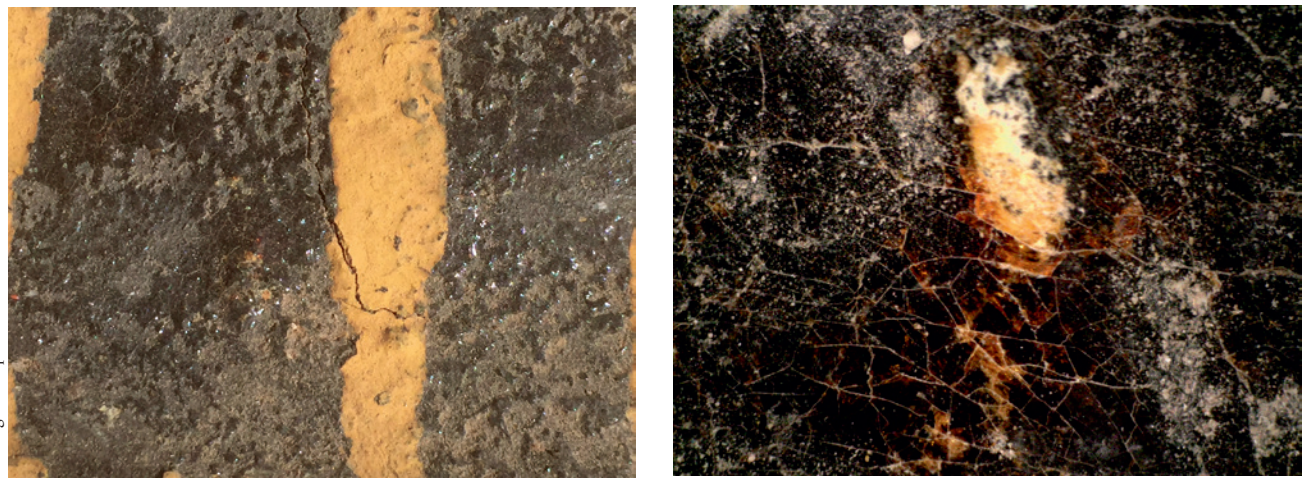
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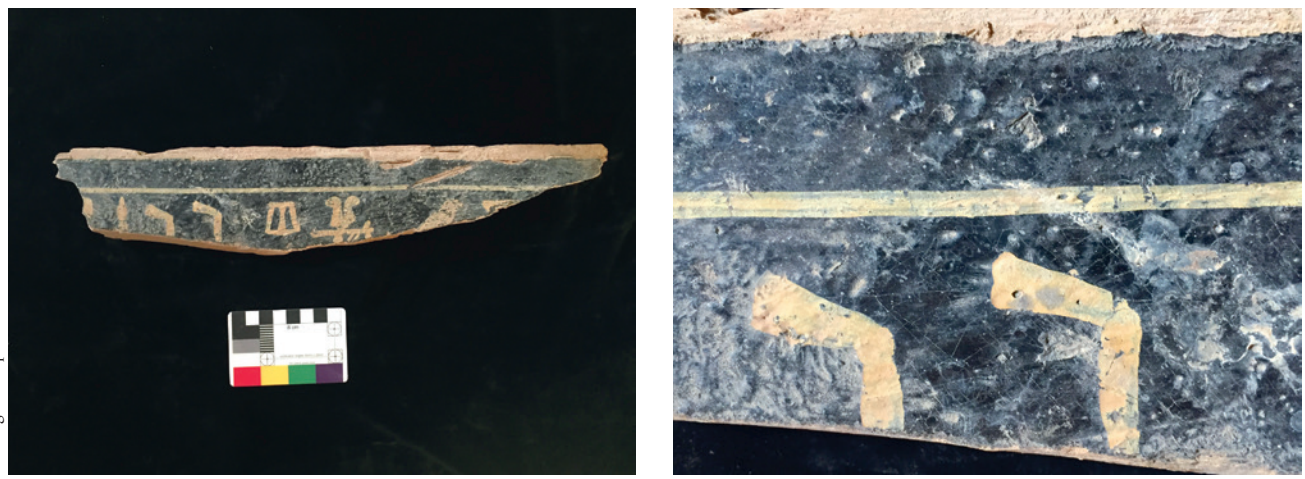
Fig. 14. Coffin of Bakiset, DEM_19_217_093. **a.** Example of yellow varnish covered with a thin coating of mud on the proper right side of lid, lower shoulder area. Photograph at ×42.1 magnification; **b.** Example of yellow varnish displaying craquelure and disengaging completely from the surface on the proper right side of lid, lower shoulder area. Photograph at ×42.9 magnification.



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a b

Fig. 15. Coffin of Menkheper, DEM_19_12_031. **a.** Wig area on box head wall showing mottled black matte and glossy surface beneath the yellow painted striations; **b.** Glossy orange patches on the black undercoat and over an exposed area of gesso on the proper right side of the case wall. Photograph at ×47.2 magnification.



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a b

Fig. 16. Coffin, Owner unknown, DEM_19_19_017. **a.** Coffin box wall with lateral band of yellow painted text over black varnish; **b.** Detail of box wall showing mottled dark grey to black varnish background with uneven surface.

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CONVERTING A RAW MATERIAL INTO AN "ACTING" TOOL. WOOD IDENTIFICATIONS AND USES OF RED COLOUR ON THE BLACK COFFINS WITH YELLOW DECORATION FROM DEIR EL-MEDINA: EVIDENCE OF PROPHYLACTIC PROCESSES?

Gersande Eschenbrenner Diemer

The coffins and coffin fragments in the black style found at Deir el-Medina have been the subject of systematic analysis to identify the species of wood used (Table 1).[76] The results of this study indicate that these are mainly local species (*Ficus sycomorus* L., *Tamarix* sp., *Acacia* sp.) (fig. 17a, b, c). More rarely, imported woods such as *Cupressus sempervirens* L. and *Cedrus libani* A. Rich. were employed (fig. 17d, e), not for their anatomical characteristics, their prestige or value, but rather because of their availability in the workshop at the time when the coffin was made. Indeed, it is not a question here of large, well-cut boards specifically prepared for the manufacture of these coffins, but of fragments that have been recut and adapted to the spaces that required filling at the time of assembly. Moreover, different species may be used for the construction of one coffin: the boards used for the long sides of the box may all be made of *Ficus sycomorus* L. while those used for the feet or head-boards may be made of *Ficus sycomorus* L. or *Tamarix* sp. Some species were possibly chosen for a specific use, in particular for the manufacture of tenons which requires a dense wood as is generally recognized.[77]

While these wood identifications give us some insight into the construction of the coffins, another process relating to the manufacture of the coffins, namely the application of red pigment, also deserves consideration. Although red pigment was often used to contour figures and enhance details on the black coffins and planks from Deir el-Medina, a more specific application of red colouring to different areas of the lids and boxes may also be observed. On the four most complete coffins, namely those of Menkheper, Setau, Bakiset and an anonymous woman, red colouring can be seen at the junction between the box and the lid, at joints between the boards, or between two pieces of wood (figs 1, 2a, b; 3a, b; 4a, b, d, f). The application of this red colouring is not arbitrary, nor part of an adhesive but was intended as a prophylactic treatment that aimed to help make the coffin impenetrable and thus protect the integrity of the body of the deceased, a connection first observed by Anne-Hélène Perrot based on a study of several coffins kept in the collections of the Louvre Museum.[78]

The red colour, which appears to consist of pigment without any binder or other fixing material,[79] seems therefore to have been applied to spaces considered 'vulnerable' because they were 'open' to the dangers of the afterlife,[80] hence at the junction between the lid and the box,

76 These analyses were carried out in the field by G. Eschenbrenner Diemer in 2019 and 2020. Depending on the state of preservation of the material, the boards, pegs and tenons were analysed using a portable optical microscope (magnification X20 to X100).

77 Killen 2017, pp. 1–12.

78 Perrot 2010, pp. 15–23.

79 The red pigment identified on Satjeni's coffin discovered at Qubbet el-Hawa was analysed with a portable x-ray fluorescence analyzer (pXRF) by Maria José Ayora Cañada and Ana Domínguez Vidal (Department of Physical and Analytical Chemistry, University of Jaén) in 2018. The analysis showed that it was only iron-based red pigment. These analyses will have to be extended in order to obtain a more secure idea of the composition of this red particularly in conjunction with the chronological period and the workshop.

80 Taylor 2001b, p. 176.

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in the space between two adjoining boards, or at an area of repair. This red was applied in a very thin layer by the artisan at the time of assembling the object and was thus hidden once the object had been fully constructed. By this process the wood, 'reddened' at key places, became 'magically' active, taking on the potency of the red colour. This colour has been the subject of several studies[81] that have highlighted its seemingly contradictory nature. The symbolism of red is ambiguous,[82] dangerous as it is linked to the god Seth[83] but also the source of protection.[84] Red is therefore a dichotomous colour, both positive and negative: "Red things were dangerous but they might, if handled in the right way, provide the most powerful protection".[85]

Notably, on the coffins at Deir el-Medina, this application is not absolutely consistent, however, but varies from coffin to coffin and, indeed, also on individual coffins. On the coffin of Menkheper, for example, the red colour is visible between the main board and the fragments assembled at the end of the left wall (figs 1b, 14) and at the joints between on the composite wig of the coffin (figs 1c, 5b). While red was applied to most of the joints on the coffins of Setau and Menkheper (fig. 18), on the coffin of Bakiset and on the box boards of the anonymous coffin its use is more limited and heterogeneous. Given the importance of protecting the deceased, it is difficult to understand the reason(s) for the variations in application seen on these coffins: was this a deliberate choice on the part of the carpenter who would perhaps have thought some spaces more vulnerable than others? Would a sporadic application of the red colour have been considered sufficient to be effective on the whole coffin? The individual boards examined also show the use of red even in the smallest spaces, as demonstrated by **DEM_2019_12_015** (fig. 6d).[86] This fragment, although small in size, is made up of six wood fragments pegged together and consolidated by the use of fabrics strands, a technique identified on several coffins.[87] Found disjointed, these six fragments could be examined and confirm the use of red under the textile. Therefore, this inconsistent use of the colour red clearly corresponds to the assembly phase of the coffins. In fact, the presence of this colour seems specific for its function: no trace of wood that has been reused and painted red beforehand could be identified. The reason for these variations has yet to be determined.

Although A.H. Perrot was the first to mention the prophylactic nature of the red colouring applied to vulnerable areas of the coffin, this usage has also subsequently been discussed by other authors.[88] In addition, my own examinations of various coffins in museum collections[89]

81 Pinch 2001; Ćwiek 2014; Wilkinson 1994, pp. 104–125; Aufrère 1991, pp. 556–557; Baines 2007, pp. 240–262; Mathieu 2009, pp. 34–38; Phipps 2010, p. 5; Robins 2002.

82 Taylor 2001b, pp. 164-181; Mathieu 2009, pp. 25–52; Ritner 1993, p. 178.

83 Robins 2002, p. 292; Aufrère 1991, pp. 36–37.

84 Bettum 2013, pp. 58–59.

85 Pinch 2001, p. 184.

86 On this fragment, see *supra*, p. 262. It was restored by Mohamed Yousef Sedek (MUST University).

87 On the use of fabrics on coffins construction, see *supra*, p. 263.

88 Bettum 2013, pp. 58–59; Arbuckle MacLeod, Cooney 2019, p. 292 n. 46. Caroline Arbuckle McLeod (UCLA) mentioned this practice at a talk entitled "Keep it Simple! Keep it Safe! Hidden Magic and Coffin Construction in Ancient Egypt" (UCLA Cotsen Institute Virtual Pizza Talk, 22 July 2020) where she presented her observations on this practice. Regarding her hypothesis on the status of artisans, see below, *Synthesis and research perspective*.

89 The TRACER project (Marie Skłodowska Curie Action no. 707295), devoted to the study of wooden funerary furniture dating from the Middle Kingdom and the Second Intermediate period, was developed at University College London (2016-2018). Through this project, I was supposed to examine the entire wood collections dating to these periods in the British Museum and the Petrie Museum of Egyptian Archaeology. The use of red colour was observed on coffins from Thebes, Asyut, Meir, Beni Hasan, Bersha and Lahun.

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and on archaeological sites[90] has highlighted the continuous use of this protective process on funerary furniture. Indeed, it is not limited to 18th Dynasty yellow-decorated black coffins, such as those from Deir el-Medina, but extends back to wooden coffins from the Old Kingdom[91] and Middle Kingdom[92] and continues at least to the 21st Dynasty.[93] Moreover, while in the Old and Middle Kingdoms this prophylactic use was only observed on private funerary furnishings,[94] in the New Kingdom the 'protective' red was used on both royal[95] and private funerary equipment.

In addition, from the time of the Middle Kingdom, this prophylactic process was sometimes combined with texts, which were written in ink or engraved in the wood at the joints between the boards of the coffin and/or on the tenons. These texts, called "mitre inscriptions" by Silke Grallert,[96] are regenerative formulae "intended to prepare the deceased for his new life in the beyond in the role of the king or of Osiris".[97] Like the addition of red pigment, these texts clearly correspond to a final step in the coffin-making process since they were meant to be hidden from view in the finished coffin.[98] In these texts, the deities of Isis, Nut, Thoth, Anubis or the Four Sons of Horus were invoked to ensure the well-being and vitality of the deceased, using the formulae of *ḏd mdw jn*, "To be recited by" (if the deceased speaks) or *ḏd mdw jn GN*, "To be recited by God/Goddess N".[99] Organized from A to F by S. Grallert, the texts allow the deceased to free himself/herself from the shackles of the bandages, restoring an active dimension to the body of the deceased so that he/she regains the freedom to move in the afterlife.[100]

The two processes, the application of the red and the addition of the texts, may occur either independently or concomitantly. Notably, however, when the texts are associated with the red colouring, they are always written over the red, never covered by the colour. As an example, on the Middle Kingdom coffins from Asyut, the texts were written with ink or engraved in the wood at the joints between the boards and/or on tenons, sometimes in conjunction with the red colouring.

90 These are the sites of Qubbet el-Hawa (University of Jaén) and the Western Wadis (University of Cambridge) where I am in charge of studying the wooden material. Examination of the cedar coffins discovered in Qubbet el-Hawa shows an extensive use of red at the board joints. On the Middle Kingdom coffins from Qubbet el-Hawa, see Eschenbrenner Diemer, Jiménez Serrano in press.

91 In 2010, Naguib Kanawati (Macquarie University, Sydney) entrusted me with the study of several 6th Dynasty coffins discovered in the necropolis of El-Hawawish. Examination of the manufacturing techniques of these anepigraph coffins has allowed me to identify this process on the boxes of these coffins.

92 Perrot 2010. On the use of red on coffins in the Middle Kingdom, see Eschenbrenner Diemer, Jiménez Serrano in press. A study of the use of the colour red as a prophylactic process and associated processes through time in Egypt is in preparation.

93 Bettum 2013, pp. 58–59.

94 Further analysis will be done on Middle Kingdom daily life objects, specifically on beds.

95 For example, the bed decorated with the heads of hippopotami and lion-feet found in the tomb of Tutankhamun (Cairo, JE 62012) uses this practice as well. The presence of the red colour was mentioned to me by Mohamed Moustafa, wood conservator at Grand Egyptian Museum.

96 Grallert 2007, pp. 35–80.

97 Grallert 2007, p. 38.

98 The use of hidden text on coffins has been mentioned by different authors, see Barbotin 2019, pp. 37–50; Nyord 2014, pp. 35–36; Grallert 2007, pp. 35–80.

99 Grallert 2007, p. 45.

100 Grallert 2007, p. 57.

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For Middle Kingdom, the study of the hidden texts by S. Grallert has indicated the use of these formulae on coffins found in the various major necropolises of the period: Asyut, Meir, Beni Hasan, Deir el-Bersha, Saqqara and Thebes. S. Grallert, however, never mentioned the presence of red colouring, which is clearly visible, for example, on the coffins from Asyut[101] (fig. 19). In fact, in general, red is used much more often than hidden texts.

In addition, not only are there major regional variations in the combined use of text and red, but in some instances it may be possible to discern links between the choice of wood and the techniques used to write the texts. My study of several coffins dating from the beginning of the 12th Dynasty from Asyut[102] indicates that the formulae were engraved rather than written with ink on coffins made of cedar. In these cases, red is absent. Could the use of cedar wood, a reddish wood, explain the absence of red? Conversely, examination of the cedar coffins discovered at Qubbet el-Hawa[103] shows an extensive use of red at the joints but, with one exception, no hidden texts. Amongst the fragments of the cedar coffin found in the grave of the Governor Sarenput (QH31) was a tenon inscribed with a hieratic formula over the red colouring.[104]

It can be hoped that the ongoing investigation of workshop practices at these sites will perhaps yield some explanations for the variations. Other aspects of the use of colour and text also deserve consideration. As Harco Willems demonstrated with regard to the Coffin Texts,[105] could the use of hidden colour and text have been a prerogative restricted to a select elite of Egyptian society? Could Text B,[106] a prayer to Nut or Isis, which was spoken to remove the bandages of the deceased, be linked to the archaeological reality of mummification or does it correspond to a theoretical or even ideal vision of the body of the deceased? A systematic and comparative study of the use of these formulas, in conjunction with possible associations with the colour red, may help to clarify this point.

The combined use of red and mitre texts has never been studied in depth for the Middle Kingdom, nor for the New Kingdom, when the combined use of red and protective formulae or signs continued. For example, this dual use of red and regenerative formulae is apparent on the coffin of Puia (Turin Museo Egizio Provv. 718) dated to the beginning of the 18th Dynasty, where the rim is painted bright red and covered with texts. Several pegs from this coffin (Turin Museo Egizio Provv. 718/2) are also decorated with formulas and show traces of red pigment.[107]

101 The study of the wooden coffin boards from Asyut and dated to the First Intermediate Period and the Middle Kingdom was carried out jointly with Caroline R. Cartwright (Scientific Research Department British Museum) in order to compare the types of wood used and the methods of using red pigment and hidden texts. The publication of this research is in preparation.

102 Cf. footnote 90.

103 Eschenbrenner Diemer, Jiménez Serrano in press.

104 Eschenbrenner Diemer, Jiménez Serrano in press. C. Barbotin identified also two inscribed wood fragments as tenons, see Barbotin 2019, pp. 37–50.

105 Willems 2008.

106 Grallert 2007, pp. 47–49.

107 <https://collezioni.museoegizio.it/eMP/eMuseumPlus?service=direct/1/ResultDetailView/result.t1.collection_detail.$TspImage.link&sp=10&sp=Scollection&sp=SfieldValue&sp=0&sp=0&sp=3&sp=SdetailView&sp=1&sp=Sdetail&sp=0&sp=F>, accessed 14 November 2020.

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For royal burials of the 18th Dynasty, there is also evidence that the earlier use of red and hidden texts did continue. Nicholas R. Brown (UCLA) has highlighted the presence of text based on the mitre inscriptions on the coffin of Thutmosis III[108] (CG 61014). Moreover, it is evident from the published photographs that the formula was inscribed on red pigment although this was not mentioned.[109] In another instance, the use of the red colour and protection signs is also visible on two tenons, one inscribed with a *nfr* sign, whose ends have been painted red. These tenons come from a coffin discovered in one of the royal tombs excavated by the Egyptian-British mission in the Western Wadis led by Piers Litherland, dating from the 18th Dynasty.[110]

However, changes between the Middle and New Kingdoms do occur. Notably, the formulae of the mitre inscriptions leave their hidden spaces to migrate to the coffin box and lid. S. Grallert related this change to the evolution of the shape of the coffin from a rectangular to an anthropomorphic shape in the latter Middle Kingdom. With this migration, not only are the texts no longer hidden but they are in some instances placed in specific spaces on the box and lid (Texts A-C and E).[111]

By comparison, the black coffins from Deir el-Medina seem to lack any evidence of hidden texts, either on the boards or on the tenons. Instead, examination of the decoration on these coffins reveals the use of several texts inherited from the mitre inscriptions (A, B, C, G and H).[112] The painted texts also do show some variation from their earlier versions, for example in the reference to Geb in Text A,[113] although the initial meaning of the formulae has been preserved.[114] All, except the Nut prayer (Text G),[115] belong to Chapter 151 of the Book of the Dead.[116]

108 The use of the colour red associated with hidden text is never mentioned although it is present in the majority of cases, for example on Thutmosis III's coffin. Concerning the coffin of Thutmosis III, see the online conference paper by N.R. Brown, "Raise Me Up and Repel My Weariness! A Study of Thutmose III's Coffin (CG 61014)", ARCE 2020 Annual Meeting. Isa Böhme also refers to the use of mitre inscriptions on several stone sarcophagi dating from the New Kingdom (Böhme 2013, p. 10).

109 The DStrecht software used by N. Brown to reveal the hieratic inscription found hidden on the coffin of Thutmosis III clearly shows the use of red under the text.

110 Litherland 2014.

111 Regarding the introduction of the anthropoid coffin and the use of mitre inscriptions in the New Kingdom and Late Period, see Grallert 2009, pp. 73–80.

112 Contrary to other examples, Text E, usually inscribed on the head end of black coffins, is never used on the coffins of Deir el-Medina. It is also the formula found hidden on the coffin of Thutmosis III.

113 I am very grateful to Lisa Sartini for her collaboration in the study of these formulas and for the valuable informations she gave me concerning their use within the general corpus of black coffins.

114 The formulae inscribed on Setau's coffin are currently being studied. The purpose here is to give some preliminary observations from the comparative study in progress.

115 The Nut Prayer comes from the Pyramid Texts of the Old Kingdom, namely PT 580c, 638a, 777a, 825a and 1607a–b. See, for example, Hays 2012, p. 587.

116 Bettum 2013, pp. 135–143; Lüscher 1998; Hayes 1935, pp. 80–95.

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Mitre Text A,[117] commonly found on the foot board of black coffins, was identified on Setau's coffin[118] and probably also occurs in the fragmentary text on the foot board of the lid, Dem_19_12_050.[119]

Mitre Text A:

ḏd mdw Gb ꜥ.wj=k ḥɔ=j/PN sḥḏ=k ḥr=j/f wn=k ỉr.tj=j/f

"To be recited: O Geb, may your arms be (turned) around me/PN, may you illuminate my/his face, may you open my/his eyes."

The formula changes slightly when found on the boxes of black coffins:

ḏd mdw ỉn Ỉst Gb ꜥ.wy =k ḥɔ=j Wsỉr (PN) sḥḏ=k ḥr=j/f wn=k ỉr.ty=j/k

"To be recited by Isis: O Geb, may your arms be (turned) around me, the Osiris PN, may you illuminate my/his face, may you open my/his eyes."

Mitre Text B,[120] which frequently occurs on one side of the box of black coffins and always in association with Anubis, was identified on the box of Setau's coffin as well as on the composite board Dem_19_12_015 (fig. 6d). However, while the mitre inscription mentions Nut, Isis appears in her place on black coffins.[121] The boxes of Bakiset's coffin and the anonymous coffin are too badly damaged to allow a good reading.

Mitre Text B:

(ḏd mdw) ḥɔ mw.t (=j)/PN Nw.t mj n=j/f dr=ṯ ṯɔm(.w)=j/PN/ḥr=j m-ꜥ ỉrj (nn) r=j/f

(To be recited:) "O (my) mother/of PN Nut, come to me/him! You might remove the/my mummy bandages of PN/ upon me by the hand of him who did (this) against me!"

The formula on the boxes of black coffins thus appears:

ḏd mdw ỉn Ỉnpw ḥɔ mw.t=j/PN Ỉs.t mỉ n=j/f dr=ṯ ṯɔm.w ḥr=j m-ꜥ jrr

To be recited by Anubis: "O my mother/of PN Isis, come to me/him! You might remove the mummy bandages upon me by the hand of him who did (this) against me!"

117 Concerning Text A, see Grallert 2007, pp. 46–47.

118 B. Bruyère's drawings of the lids of the inscribed coffins show some variations, notably *ḥɔ=j* becomes *ḥɔ=k*. See Bruyère 1937, pp. 95–103.

119 Only the sign *wn* remains.

120 On Text B, see Grallert 2007, pp. 47–49.

121 Notably, on the coffin of Setau, we can read the name of Nut in the text, although it is very damaged (see Bruyère 1937, pl. XI). Lisa Sartini, in her PhD dissertation, has only catalogued two other coffins with the name of Nut instead of Isis in the text, namely the ones of Kamwese (Brooklyn Museum 37.15E) and Mesre (Louvre Museum N 2583), both dated around the reign of Amenhotep III.

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Mitre Text C,[122] which has five versions, corresponds to the formula usually inscribed on the exterior wall of black coffins in association with Anubis.

Mitre Text C:[123]

ḏny ỉr(=j) n nny(=j) n gḥ ʿ.wt(=j) ỉptn

Ny belongs to me. I will not be tired. These my limbs will not be weary.

On black coffins, the incipit *ny ir(=j)* does not occur and thus the formula usually reads:

ḏd mdw jn Ỉnpw nn nny Wsỉr PN mɜʿ-ḫrw nn gḥ ʿ.wt=f ỉptn Wsỉr PN mɜʿ-ḫrw

To be recited by Anubis: the Osiris PN justified will not be tired. These his limbs will not be weary, the Osiris PN justified!

This was identified on Setau's coffin (fig. 7) and probably on the anonymous coffin (fig. 10a) where *nn nny* is clearly visible on the third column and also on that of Bakiset, although the state of preservation does not allow us to be certain.

Mitre Text G,[124] an invocation to the goddess Nut, appears on most black coffins, usually in the central text band of the lid. It has been identified on the anonymous coffin and on Setau's coffin. Notably, on the latter, the *ỉḫm.w-wrḏ* stars are mentioned alongside with the *ỉḫm.w-sk* stars.[125]

Mitre Text G:

mw.t Nw.t psš ṯn ḥr PN rḏj=ṯ sw m ỉḫm.w-sk jmj=ṯ

"O mother (Nut), spread yourself over this PN! May you place him under the imperishable (stars) that are in you!"

The complete formula normally found on black coffins is as follows:

ḏd mdw jn PN ḏd=f ḥɔ mw.t Nw.t psš ṯn ḫr=j dj=t w(j) m(-m?) ỉḫm.w-sk jmj(w)=ṯ nn mwt Wsr PN

To be recited by PN. He says: "Descend my mother Nut, spread yourself over me; may you place me among the imperishable stars which are in you, so that Osiris PN may never die."

122 On Text C, see Grallert 2007, pp. 50–53.

123 This version was found on Asyut coffins. See Grallert 2007, p. 51. Regarding the word "*ny*", S. Grallert says that "the deceased himself utters the sound *ny* and assures that his extremities are not in the state of weariness". However, she admits that other coffins show different versions of the formula, which does not start with *ny* but with *nnj*. Therefore, she proposes the following: *n nny (=j) ỉr(=j)* "(I) then will not be tired".

124 On Mitre Text G, see Grallert 2007, p. 60.

125 See *supra*, 2.1, the coffin of Setau, pp. 264–266.

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Finally, as on the vast majority of black coffins, a variant of Mitre Text H[126] occurs on the four black coffins from Deir el-Medina, in the lateral band of inscriptions which start on the lid and end on the side of the box.

Mitre Text H:

ỉmɜḫy.t ḥpj/ḏwɜ-mwt.t=f/ (Ỉ)m(s).t/Qbḥ-sn.w=f

"Revered of Hapy/Duamutef/Imseti/Qebehsenuef."

The variant found on black coffins uses *ỉmɜḫy ḫr* instead of *ỉmɜḫy.t*, usually mentioning the Four Sons of Horus, Anubis, Geb, Horus or Dunanwy. The incipit of the formula can be different, using *ḏd mdw ỉn ỉmɜḫy ḫr*, "to be recited by the revered one before…".

Although the symbolism of the coffin and its evolution have often been discussed, in contrast, little attention has been given to the use of 'hidden' colour and texts.[127] As Bettum notes, "the anthropoid containers mainly take on the role as the inhabitant of the space defined by the rectangular ones, and work as an extension of the mummy".[128] The lid and the box must be sealed: this is the role of the red colour. The use of these procedures indicates that the coffin is no longer considered as a 'container' but as the 'envelope' for the body of the deceased[129], which must be impenetrable and protected from outside incursions. In this context, the symbolic use of the colour red as associated with blood or flesh must be considered.[130] As Sydney Aufrère reminds us, quoting Gabriel Camps: "the red ochre, whose colour is reminiscent of blood, is a magical restorative conferring on the dead the strength that enables them to pursue a new life".[131] Beyond the well-known meanings of red as a colour of rebirth, could the presence of this red at the joints be a means of bringing this 'vital blood' to the deceased and, by extension, connect the body to the solar disc to which the colour red is closely linked?[132]

From a chronological perspective, the changes observed on black coffins are not sudden but are clearly the result of an evolution that took place from the end of the Middle Kingdom with the appearance of the anthropoid coffin in the funerary assemblage. John H. Taylor has pointed out how the decorative schemes of coffins and sarcophagi fused with the introduction of the 'classic' New Kingdom anthropoid coffin in the early 18th Dynasty.[133] Bettum

126 On Mitre Text H, see Grallert 2007, p. 61.

127 Nyord 2014; Bettum 2013, pp. 43–84; Taylor 2001a, p. 164 ; Willems 1988, p. 51; 238–244.

128 Bettum 2004, p. 43.

129 "For anthropoid coffins, the primary symbolic significance lies in the human shape, either as a mummy or as a living person. Elements belonging to the primary decoration are thus the ones that contribute to realizing that image: the shape of the human silhouette in the carpentry and application of plaster, the wig, facial mask, collar, arms, hands, feet, jewelry, garments, mummy bindings, etc.": Bettum 2013, p. 51.

130 On the various symbolic meanings of the colour red, including that of blood as marker of violence and destruction but also one of rebirth, see Goebs 2008, pp. 204–264. For discussions on "negative and positive blood", see Mathieu 2009, pp. 35–36.

131 Aufrère 1991, p. 560; Camps 1961, p. 521.

132 On the "the bloody aspects of the Sungod", see Goebs 2008, pp. 297–299.

133 Taylor 1989, p. 32.

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dates this 'fusion' earlier, to *rishi* coffins.[134] He shows how parts of the ornamentation of the lid and virtually all of that on the box were derived from the decoration on rectangular coffins.[135] The evolution in the use of red and regenerative formulas follows the same trend. This is particularly noticeable on the white coffin of Puia (Turin Provv. 718), one of the last white coffins produced[136] and dating from the beginning of the 18th Dynasty, which combines the hidden texts and the colour red, marking the transition to black coffins. As observed on the rectangular coffins of the Middle Kingdom, several tenons with traces of red were inscribed with hidden texts.[137] The rim of Puia's coffin box was painted red and covered with formulae, a unique combination in this part of the coffin. Thus, this coffin clearly illustrates a transitional phase in which the hidden texts gradually migrate to the decorated surface.

Synthesis and research perspectives

The evolution of the coffin and the prophylactic procedures linked to it are perfectly illustrated by the combination of red and specific formulae which first appear in the Middle Kingdom and evolve during the New Kingdom, as here with the black coffins dating to the 18th Dynasty. The practice of 'reddening' the vulnerable spaces of the coffin was clearly part of the construction process and cannot be considered an ornamentation. Applied by the carpenter as a final step, this practice shows that the artisans had an expert knowledge of the protective power of the colour red and its ability to protect vulnerable parts of the coffin.[138] Notably, the presence of red on the edge of the lid of a coffin model rediscovered in pit 1022 in Deir el-Medina illustrates that this practice was an integral part of the coffin manufacturing process, even on smaller scale pieces.[139] On the other hand, the implementation of the hidden texts raises the question of the access of craftsmen to these formulas: could they be craftsmen who have received higher teaching or should a third party be considered for the implementation of these texts? Moving these formulae to the coffin surfaces in the New Kingdom suggests that this stage of the coffin production was carried out by a painter/scribe and not by a carpenter. Also, this scribe-painter/carpenter association could have been in practice as early as the Middle Kingdom with regard to the processes of constructing and decorating coffins using prophylactic red and hidden formulas. The change in the shape of the coffin probably explains

134 Bettum 2013, p. 47. Red was observed on different areas of a *rishi* coffin in the British Museum (EA 52950), in particular around the rim of the coffin box.

135 Bettum 2013, p. 47.

136 On the coffin of Puia, see Barwick 1999, pp. 16–21, fig. 7, catalogue D9.

137 Turin Provv.718/2 <https://collezioni.museoegizio.it:443/eMP/eMuseumPlus?service=ExternalInterface&module=collection&objectId=126185&viewType=detailView>, accessed 14 November 2020.

138 Caroline Arbuckle McLeod describes these artisans as 'priest-carpenters' (UCLA talk, 22 July 2020). Indeed, two documents mention the 'secret' knowledge acquired by two master craftsmen: the Irtysen stele (Louvre Museum, C14) denotes its owner as "overseer of craftsmen, a scribe and a sculptor" who "knows the hidden knowledge of hieroglyphs, and the conduct of festive rituals;" also Hatiay's biography from the 19th Dynasty. However, while these two documents show the access of certain master craftsmen to this restricted knowledge, it is difficult to confer the status of 'priest-carpenter' to all the craftsmen who made coffins. On Irtysen and Hatiay, see the recent article by Andreas Stauder 2018, pp. 239–271.

139 DEM_2019_23_018, pit 1049. This practice is also visible on a shabti coffin preserved at the British Museum (EA 35014).

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why the hidden texts of the Middle Kingdom, still used by Thutmosis III,[140] changed position to become part of the decorative scheme on key areas of the anthropoid coffin, thereby still protecting and revitalizing the deceased. Used alone or in combination, the colour and text turn the coffin into a 'ritual machine'.[141] However, to verify this hypothesis, it will be essential to continue the study of these two practices from the beginning of their use.

In addition, it is important to consider the prophylactic use of the colour red on other wooden substrates: on private wooden statue bases,[142] on architectural elements[143] and perhaps also extending to the ritual of breaking red vases in front of tombs during the Middle Kingdom.[144] Further study of use of red on everyday objects of the New Kingdom is needed and should also be extended to furniture dating to earlier periods.[145] Finally, as with the Middle Kingdom furniture currently under study,[146] the significance of the association between specific wood species, the colour red and the use of regenerative formulae must be examined for the New Kingdom. By studying the evolution of these processes over an extended period of time,[147] this study will make it possible not only to compare regional practices but also to understand whether the formulae used could be linked to the 'archaeological reality'. For example, Text B, an invocation to Nut or Isis to remove the bandages of the deceased, could relate either to mummification or to the idealised version of the body, freed from the bandages. The results of this research will be the subject of a specific publication which will shed light on the evolution of the use of red on wooden furniture and the practices associated with to make this material 'active'.[148]

140 It is interesting to note how this practice of hidden texts continues on royal coffins. The fragmentary material discovered in the royal tombs of the Western Wadis dated to the reign of Amenhotep III illustrates the use of protective signs on two pegs also painted red. Examination of the rims of the coffins of Yuya (Cairo CG 51003-51004) and Tuyu (Cairo CG 51006-51007), discovered in KV 46 and which are painted in bright red, would be of particular interest in understanding the evolution of this practice. On the coffins of Yuya and Tuyu, see Davis 1907 and Quibell 1908, pls. III, V, IX, XI, XVI.

141 Willems 1988, p. 51.

142 Eschenbrenner Diemer 2013, pp. 375–378. The publication of this doctoral thesis is in preparation under the title *Façonner l'au-delà. Production, diffusion et utilisation des modèles funéraires en bois en Égypte ancienne (VI^e^-XII^e^ dynastie)*, forthcoming 2021.

143 Examples of painting the frames of houses and buildings in red can be observed in a domestic context in Deir el-Medina. On the frames of houses at Deir el-Medina see Masquelier-Loorius 2018, fig. 1. Red is also used on the frames of several buildings that belong to the corpus of wooden funerary models, for example the granaries discovered in Asyut (Louvre E283 – N1622; Louvre E 11939; Turin 8651) or the brewery of Gemni-em-hat from Saqqara (Copenhagen AEIN 1632). For a study of wooden funerary models, see Eschenbrenner Diemer 2013.

144 López Grande 2013, pp. 249–272.

145 Observations made recently on two furniture legs discovered at Elephantine (season 2020) show that the use of red was not restricted to funerary objects but may also have been applied to other pieces of furniture used in daily life such as beds. The presence of red on beds, as observed on one example from Tutankhamun's burial (Cairo, JE 62012), could be explained by the fact that sleeping was considered to be a potentially dangerous state.

146 Cf. *supra*, note 96.

147 A. Bettum devotes a small section to the use of red on the coffin box entitled "Red as Liminality: the Color in Between", in which he develops various lines of thought that are perfectly in keeping with the analysis of the role of red as a prophylactic color. However, research into the use of red on coffins after the New Kingdom needs to be developed further. See Bettum 2013, pp. 58–59.

148 On the links between the hidden texts, wood craftsmanship with the prophylactic properties associated with the colour red, see G. Eschenbrenner Diemer, *The Red Colour and Wood: Activating a Raw Material*, in preparation.

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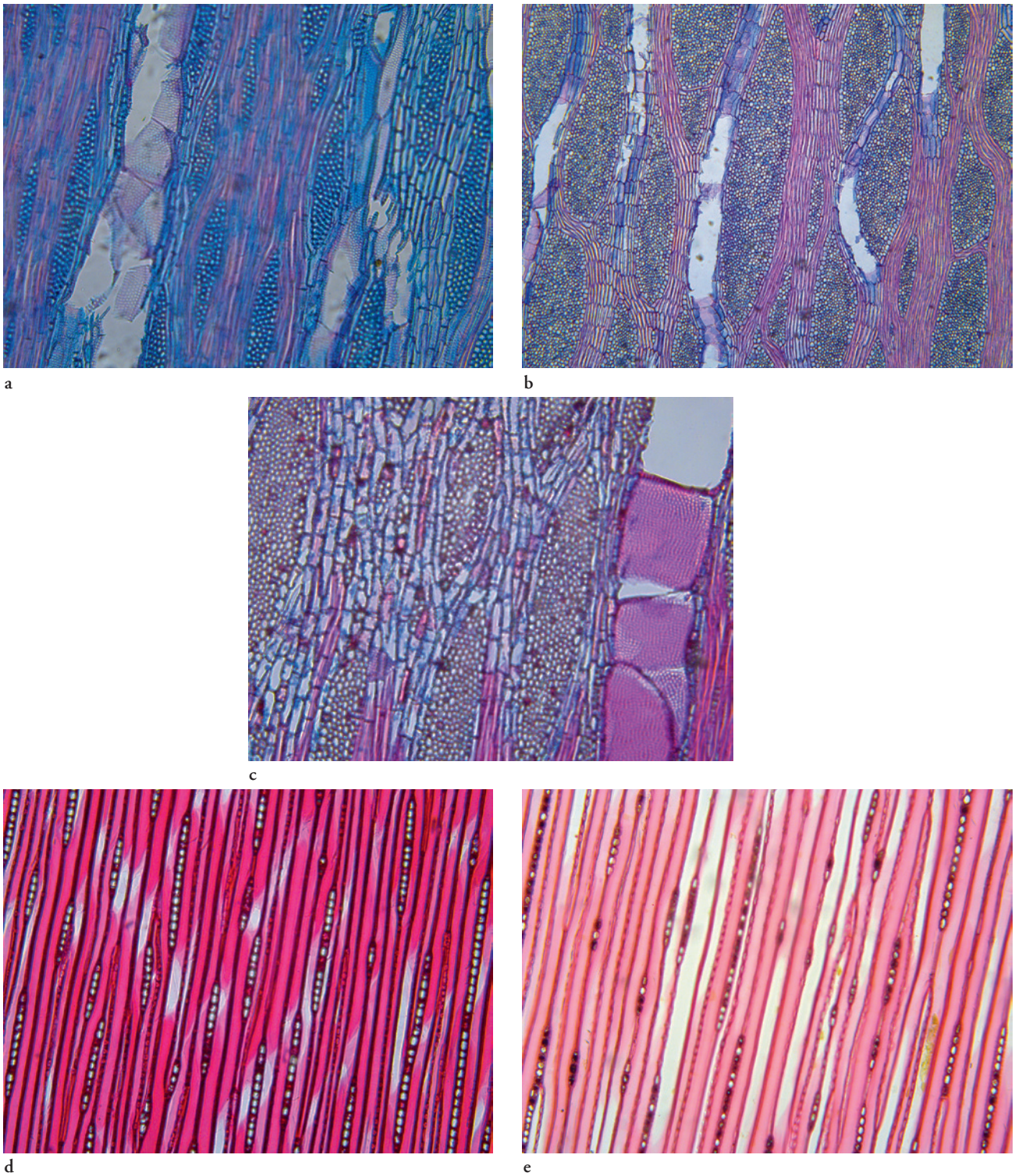
The study of black coffins with yellow decoration rediscovered at Deir el-Medina sheds light on workshop practices and opens up new research possibilities.[149] The material analysis of this furniture will be continued, in particular through ^{14}C analyses of fabrics, woods and varnishes, and also analysis of the red pigment using pXRF in order to identify the types of pigment used. Through these investigations, possible links between the different coffins can be explored.

Wood is a material that can be read. The comprehensive analysis of the black coffins with yellow decoration discovered at Deir el-Medina is the first milestone in the work carried out by the members of the wood team within the French mission at Deir el-Medina. It paves the way for the publication of all the wooden furniture rediscovered on site,[150] the overall study of which will draw the contours of an artistic landscape that is ultimately unknown: woodcraft in the Theban area.

149 Lisa Sartini's doctoral thesis on yellow-decorated black coffins, defended in 2021 and entitled *I sarcofagi neri con decorazione gialla del Nuovo Regno* under the direction of Prof. Marilina Betrò, University of Pisa, will constitute a major source of knowledge for this corpus and will include an overview of this material. Regarding workshop practices, she catalogued a small group of coffins (result of a mass production) which were probably built in the same workshop, active in the Theban area between the end of the reign of Amenhotep III and Tutankhamun. See for example the coffins of Sennefer (musée du Louvre, E 14026; Bruyère 1929, pp. 40–73), Takhat (Toronto, Royal Ontario Museum, ROM 910.9.1&2; Ikram 2015, p. 116); Anonymous coffin in Egyptian Museum, Cairo (4-11-16-1); Qent (Museo Egizio di Firenze, 6526; Guidotti 2001, 27) and the anonymous one in the Universitetsmuseum of Bergen (BMU E3882; Skumsnes, Bettum 2015, pp. 3–39). In addition, a canopic chest found in the 18th Dynasty tomb K10.5 (Polz 2010, pp. 136–137; Polz 2011, pp. 167–168) located in Dra Abu el-Naga (Hilbig 2020), shows a very similar decoration to that of the box of Setau. All these evidences suggest that products of same workshops were used in the Theban area.

150 Many coffins dating from different chronological periods are waiting to be analysed. They will be the subject of specific studies involving specialists in each corpus which, like black coffins, will in turn be the subject of dedicated publications. In parallel, the toilet items (combs, mirrors, hairpins, kohl pots) rediscovered on the site of Deir el-Medina and currently being analysed, will be the subject of a future publication and will allow us, through typologies, to connect the material still preserved *in situ* with that exhibited in different museum collections.

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Fig. 17. Tangential sections of: **a.** *Ficus sycomorus* L.; **b.** *Tamarix aphylla*; **c.** *Acacia nilotica*; **d.** *Cedrus libani* A. Rich.; **e.** *Cupressus sempervirens* L. Photograph at 4× magnification.

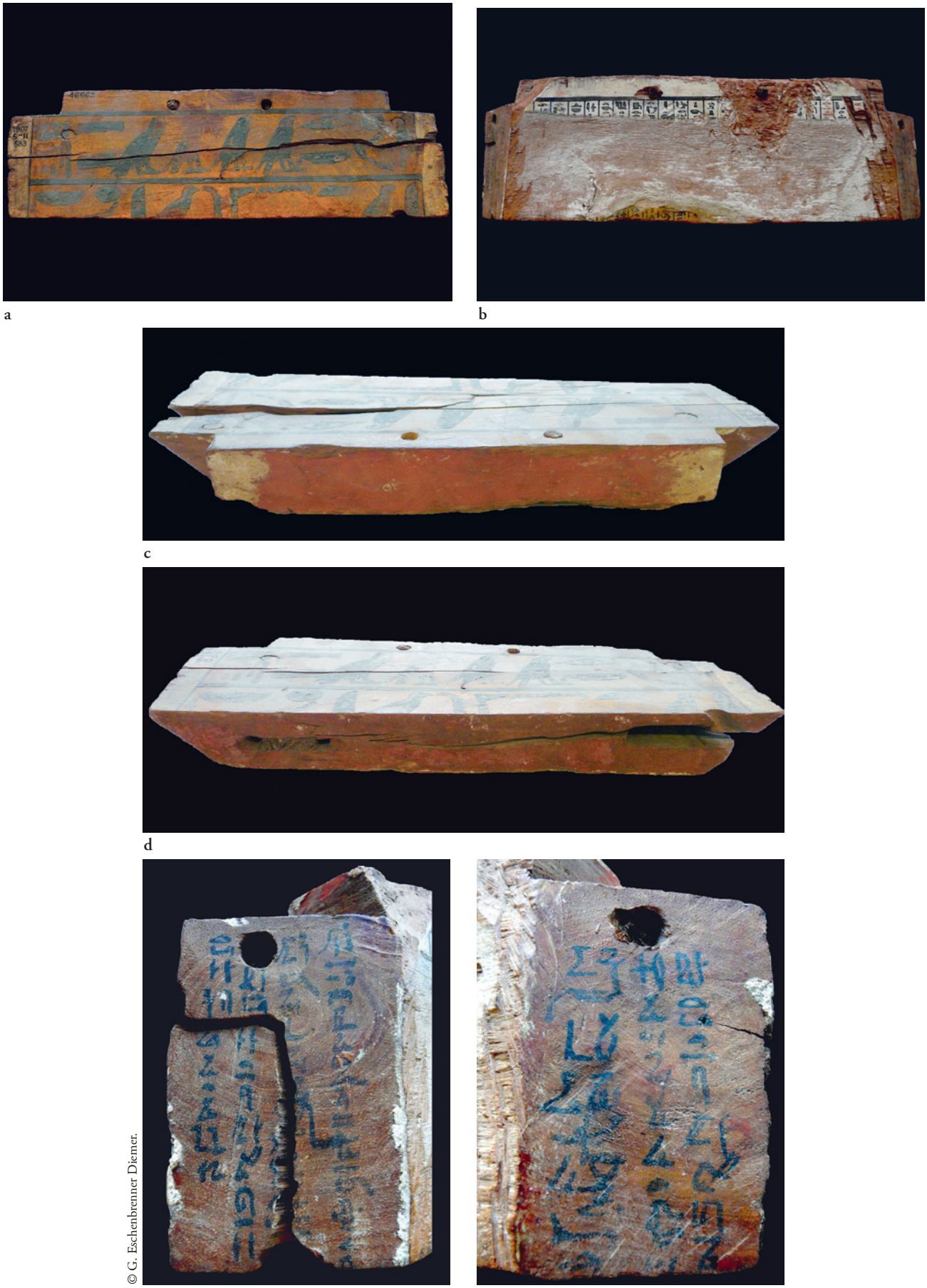
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Fig. 18. Coffin of Menkheper, DEM_19_12_031. Joint painted red between two board at the end of the left wall.

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a b c d e

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Fig. 19. Head board from a coffin discovered in Asyut by D. G. Hogarth, 11th dynasty (British Museum EA 46662). **a.** front; **b.** back; **c.** rim painted red; **d.** bottom painted red; **e.** mitres inscribed with hieratic inscriptions.

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