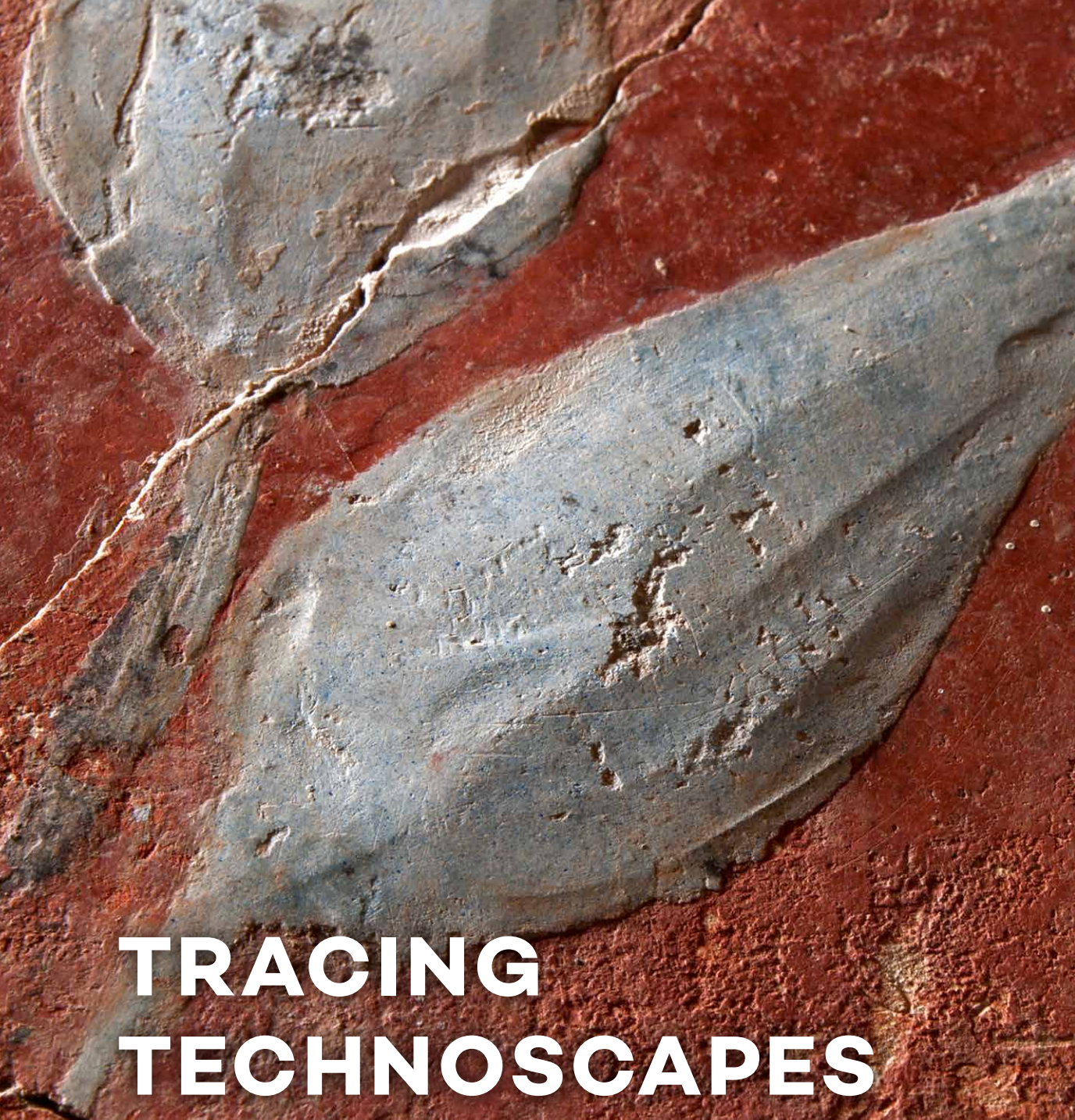




TRACING TECHNOSCAPES

THE PRODUCTION OF BRONZE AGE WALL
PAINTINGS IN THE EASTERN MEDITERRANEAN

edited by

Johannes Becker, Johannes Jungfleisch,
and Constance von Rüden

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Preliminary Remarks on the Technical and Iconographical Aspects of the Middle Bronze Age Wall Paintings from Tell el-Burak (Lebanon) in Relation to the Aegean and Egypt

*Julia Bertsch*¹

Abstract

The excavations at the site of Tell el-Burak (Lebanon), carried out by a joint German-Lebanese Team from the University of Tübingen and the American University of Beirut, revealed a representational mudbrick building dating to the beginning of the Middle Bronze Age (MBA I). In one room of this building, the remains of polychrome wall paintings were found which are still preserved on the walls in situ and have been investigated during several seasons since 2005. The depicted figural and ornamental motifs exhibit distinct Egyptianising elements besides local or so far unknown traits. Examinations of the different pigments and the painting surface comprising several layers of lime plaster show that a preliminary drawing consisting of thin red outlines was applied on the wet plaster. This fact might indicate an early step towards the development of the fresco technique generally associated with the Aegean. Thus, the wall paintings from Tell el-Burak include several different aspects which point towards connections to the neighbouring regions in the Eastern Mediterranean.

This article presents an overview on the technological and iconographical analyses of the wall paintings from Tell el-Burak and gives a preliminary assessment of the various possible cultural interrelations they attest to.

Keywords: wall paintings; fresco-technique; Eastern Mediterranean; interconnections; Lebanon; Middle Bronze Age.

1. Overview

Tell el-Burak is situated in the south of Lebanon, approx. 9km south of Sidon, directly on the coast and close to the ancient site of Sarepta. Excavations have been

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carried out in a joint German-Lebanese project since 2001² and have revealed remains of three major occupation phases belonging to the Middle Bronze Age, the Iron Age and the Ottoman Period.³ The main feature of the Middle Bronze Age is a monumental mudbrick building which was constructed on top of an artificial mound.⁴ This artificial hill was surrounded by a revetment wall in the southeast and strengthened by a monumental stone and pebble glacis on the northwestern slope. The building consists of a central courtyard surrounded by rooms of different sizes (Fig. 1). Its stratigraphy can be separated into two major building phases and several sub-phases. Originally, in phase 1, the northwestern part of the building was situated on a lower level than the courtyard and the remaining rooms. However, the walls of these lower, northwestern rooms were not stable and started to bend towards the northwestern slope. In order to prevent a complete collapse, the rooms of this part of the building had to be backfilled probably rather shortly after its construction while the doorways were blocked up with mudbricks. Then, in phase 2a, new floors were put on top of the fill, more or less on the same level now as the southeastern rooms. As the northwestern rooms were completely emptied before they were filled and there are no rising walls but only foundations left in the southeastern part of the building, the archaeological evidence shows a general lack of installations and finds. Therefore, the exact function of the building remains unclear.

The radiocarbon dates which have been analysed most recently imply a date early in Middle Bronze Age I for the construction of the building and phase 1.⁵ The samples which stem from six different contexts show that the highest probability for the construction date centres around 1900 BC, while the total duration of use of the building amounts to a maximum of 150 years but probably did not last that long.⁶

2. The Wall Paintings

One of the main results of the excavations at Tell el-Burak is the discovery of Middle Bronze Age mural paintings which were found in room 10, the biggest room of the building (6,5 × 14,0m). The room is situated in the northwestern part of the building which originally had a lower floor level in phase 1 and which was filled later due to instability. Due to this backfill the polychrome paintings which were applied on a lime plaster surface were preserved on the walls in situ. The painted walls were investigated during the 2005, 2008, 2009 and 2010 seasons of excavations.⁷ So far, the room has

2 The project has been directed by the American University of Beirut (Hélène Sader) and the University of Tübingen (Jens Kamlah) in cooperation with the German Archaeological Institute (Margarete van Ess) since 2001. The University of Mainz (Aaron Schmitt) joined the team in 2013.

3 For an overview on the excavation results cf. Kamlah – Sader 2010a; Kamlah – Sader 2010b; Kamlah *et al.* 2016.

4 Cf. Kamlah – Sader forthcoming.

5 Höflmayer *et al.* 2016.

6 Höflmayer *et al.* 2016, 64.

7 The conservation and technical analyses of the wall paintings in Tell el-Burak as well as the interpretation of the results were conducted by Daniela Arnold and Janka Verhey, funded by the German Archaeological Institute.

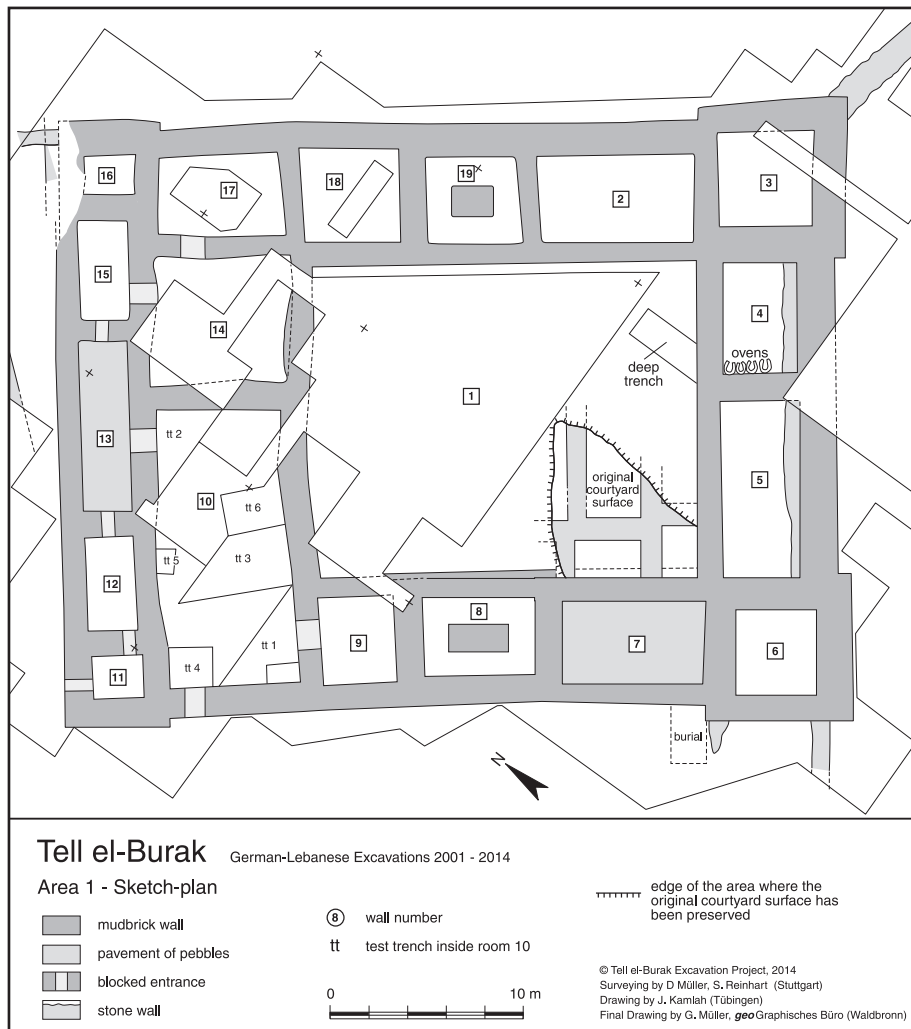


Fig. 1: Plan of the Middle Bronze Age mudbrick building at Tell el-Burak (© Tell el-Burak Excavation Project; final drawing: G. Müller).

not been excavated completely. Six trenches of different sizes were dug to investigate the structure of the room, expose the walls and enable work on the paintings. The fill in the room consists of alternating layers of pebbles and muddy clay soil. Therefore, the state of preservation of the wall surface and the methods applied for conservation vary; in some parts the pebbles were pressed into the plaster, damaging and disfiguring the paintings (Fig. 2), and in the areas with mud layers the soil was often difficult to remove from the walls. The paintings showing the best state of preservation, so far, were uncovered on the southeastern wall, in the southern corner and, to a lesser extent, in the western corner of the room. In addition, several plaster fragments which may belong to a painted floor were uncovered in both corners.

2.1 Iconography

On the southeastern and southwestern walls several figural and ornamental motifs could be identified and partly reconstructed (Pls. 1–2).⁸ The first ornamental feature is a band of two parallel red stripes, each approx. 5cm wide, which imitates a kind of socle on the southeastern, southwestern and – hardly traceable – on the northwestern wall. These two stripes also frame the blocked doorway in the southeastern wall leading to room 9 and the one in the southwestern wall leading out of the building (Fig. 3). Thin red lines parallel to the two stripes which frame the door in the southeastern wall, as well as traces of brown, blue and yellow pigment in between and next to the stripes, indicate an originally more complex door frame.⁹

The second geometric element is a frieze that separates two registers of figural scenes on the southwestern wall, each register being roughly 1.5m high. This frieze continues south of the doorway on a higher level and could be traced on the southwestern wall as well. It consists of two multicoloured bands that are composed of blue, red and brown rectangles separated from each other by three vertical black stripes. A row of rhombs which are surrounded by linear circles was placed in between the two bands (Fig. 4).

In the upper register of the southwestern wall a hunting scene is depicted (Pl. 1). Two dogs chase several gazelles towards a person that can be interpreted as a hunter holding a weapon. In the lower register at least three persons heading south and forming a procession could be traced. Behind them, several patches of yellow-orange pigment are visible. Here, other people of different skin colour might have been depicted originally, however the state of preservation did not allow for a definite interpretation. The adjoining southern lower part of the scene has not been excavated yet.

South of the door and in the southeastern corner of the room the remains of a curved tree or bush were found (Pl. 2). It is placed on top of a three-dimensional mountain, formed by the supposed floor of the room which rises in the corner. On its left side the outlines of a blue-coloured animal, probably a caprid, could be traced standing on its hind legs, putting its front legs into the tree, grazing.

The paintings on the southwestern wall are not as well preserved and it was not possible to identify certain features (Pl. 2). Additionally, the trench in the southwestern corner revealed a continuation of the two parallel red framing lines and a big area of yellow pigment; however, no distinctive features were identifiable.

The few possible floor fragments in the southeastern and southwestern corner show red stripes combined with depictions of plants, like various twigs with oval-shaped leaves in light red, dark red and black colour (Fig. 5).

Given the existence of different wall decoration traditions in the Eastern Mediterranean during the Middle and Late Bronze Age, along with the varying degrees of influence they may have had over each other, the paintings at Tell el-Burak have to be viewed both in their local background and in the light of this interregional network

8 I would like to thank the directors of the project for entrusting me with the iconographical investigation of the wall paintings from Tell el-Burak. For a more detailed description and analysis of the iconography of the paintings cf. Bertsch forthcoming. Preliminary reports on the wall paintings were also published in Kamlah – Sader 2010a, 136–138; Kamlah – Sader 2010b, 108–111.

9 Arnold 2005, 14–15.

Fig. 2: Remains of the pebble fill in room 10 pressed into the wall surface and demolishing the painted plaster (photo: D. Arnold, DAI Orientabteilung).



Fig. 3: Red stripes framing the doorway in the southeastern wall of room 10 (photo: D. Arnold, DAI Orientabteilung).



Fig. 4: Detail of the multi-coloured frieze: encircled rhomb (photo: D. Arnold, DAI Orientabteilung).

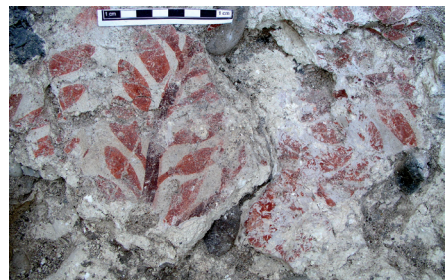


Fig. 5: Possible floor fragments with red twigs in the southeastern corner of room 10 (photo: D. Arnold, DAI Orientabteilung).

of exchange. Thus, in order to further identify and analyse the depicted motifs, parallels from the Near East, Egypt and the Aegean were considered.

For example, multi-coloured bands consisting of alternating coloured rectangles separated by two or three vertical black stripes are a well-known feature in Egyptian

paintings from the Old Kingdom onwards.¹⁰ Yet, in Egypt, these bands were not normally used to separate two registers, but framed whole walls or doors.¹¹ Also the combination with the row of rhombs is highly unusual and offers no close comparison. Imitations of these typical Egyptian multi-coloured stripes also decorated other Egyptianising objects from the Levant such as a rectangular pendant from the tomb of king Ip-shemu-abi at Byblos.¹²

The closest parallels for the hunting scene are the reliefs and paintings in Egyptian private tombs which show hunters or the tomb owner himself accompanied by his dogs, hunting animals of the desert.¹³ The gazelles can be identified as *Dorcas Gazelles* which were often depicted in Egypt in a similar manner.¹⁴ However, in Egyptian hunting scenes of the Old and Middle Kingdom, the dogs are normally shown in front of the hunter and follow his walking direction; they never herd the caprids towards the hunter as in Tell el-Burak.¹⁵

The caprid and tree motif is a very old and common Ancient Near Eastern motif which is already attested during the Uruk- and Proto-Elamite Period¹⁶ and is also part of the motif repertoire of other Near Eastern palace wall paintings such as Mari or Tell Sakka.¹⁷ Usually, there are two caprids flanking the tree in antithetical composition. Goats at trees are also known from scenes of everyday life in Egyptian private tombs of the Old and Middle Kingdom.¹⁸ However, here the general context and the setting of the motif differ significantly from the Ancient Near East and the motif mostly lacks the heraldic Near Eastern character. Additionally, the blue colour of the goat is a really un-Egyptian feature, as Egyptians usually used naturalistic colours. Another is the fact that the motif continues from one wall to the other, which is unusual for Egyptian principles of iconographical composition. The third is the mountain on which the tree was placed, an element that does not exist in the Egyptian version of the motif and is basically Mesopotamian. The three-dimensional execution of the mountain is, however, a unique feature so far.

All these parallels considered, it is possible to identify several iconographical Egyptian elements which were incorporated but reinterpreted and used in a different way at Tell el-Burak. Other features are of Near Eastern origin and some cannot be identified clearly so far and may be unique, foreign or a local peculiarity. Also, no distinct Aegean features are detectable. Therefore, the iconographical analysis so far suggests that the paintings were not carried out by foreigners but by local people and can be referred to as Levantine or 'Sidonian'.

10 Fořtová-Šámalová – Vilímková 1963, pl. 59, nos. 189–194.

11 Dziobek 1992, Taf. 16; Kanawati – Woods 2010, 54–57, figs. 46–53, photos 3–5, 8–9, 17–19, 149.

12 Jidéjian 1968, fig. 50.

13 Newberry 1893, pl. XIII; Blackman 1914, pls. VI–VIII; Decker – Herb 1994, 297–352, Taf. CXXXII–CLXXXVI.

14 Strandberg 2009, 9–10.

15 Cf. note 10.

16 Amiet 1961, pl. 34, no. 537; pl. 43, no. 636-B; pl. 48bis, G; Boehmer 1991, 57, Abb. 7a, c.

17 Andrae 1923, Taf. 2; Parrot 1958, 28, fig. 23; Aruz *et al.* 2008, 129, cat. no. 70b.

18 Mohr 1943, 51, fig. 21; Moussa – Altenmüller 1971, pl. 18; Moussa – Altenmüller 1977, Taf. 21, Abb. 8; Shedid 1994, 80, Abb. 132; Kanawati – Woods 2010, photos 179–181.

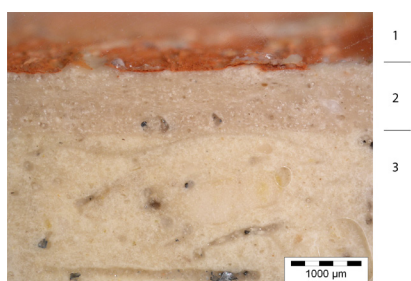


Fig. 6: Thin section of coloured plaster fragment: 1) red paint, 2) layer of fine plaster, 3) layer of coarse plaster (© Prof. Dr. Steffen Laue, Fachhochschule Potsdam, Studiengang Konservierung und Restaurierung).

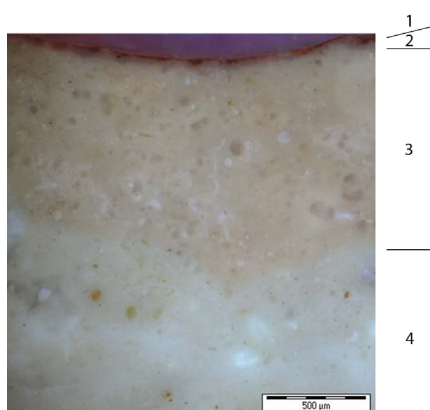


Fig. 7: Thin section of coloured floor fragment after UV-excitation: 1) red paint, 2) very thin layer of lime wash, 3) layer of fine plaster, 4) layer of coarse plaster (© Prof. Dr. Steffen Laue, Fachhochschule Potsdam, Studiengang Konservierung und Restaurierung).

2.2 Technical Aspects

Due to the conservation in situ and the subsequent analyses of plaster and pigment samples from several excavation seasons, certain technical characteristics of the wall paintings at Tell el-Burak could be ascertained.¹⁹

The plaster which covers the mudbrick walls is 1.0–1.2cm thick and consists of lime plaster with several inclusions. The samples from both the walls and the possible floor in the southeastern corner show a general similarity in composition. In general two different layers are visible, a coarser plaster as a base and a finer plaster on top (Fig. 6). The lower layer is approx. 1cm thick and consists of lime (calcium carbonate), with limestone inclusions and a low percentage of quartz particles being used as fillers. It was applied directly onto the mudbricks and probably served to smooth the surface of the walls.²⁰ The top layer is approx. 1–2mm thick and is slightly darker, much harder, more homogenous and was completely smoothed. It consists of lime and contains chalk inclusions (fossil calcium carbonate) as fillers.²¹ This second layer was probably applied while the lower layer was still partly wet, as they are tightly bonded and it was not always possible to detect a clearly defined dividing line.²² On top of the smoothed second layer the paint was applied. However, the floor samples from the southeastern corner of the room show an additional third and very thin layer of lime wash on top of the other two plaster layers which was visible only after UV-excitation. It probably served as

a coating on which the paint was applied (Fig. 7). This third layer was difficult to differentiate in the plaster samples from the walls.²³

Several different colour pigments could be identified: natural iron oxide (iron oxide red, iron oxide hydroxide yellow), lime white, carbon black and Egyptian blue (calci-

19 The samples were analysed by Christoph Herm (FH Dresden) (colour pigments) and Steffen Laue (FH Potsdam) (plaster). For a principal overview on damage assessment, conservation techniques and analyses of the paintings and the plaster cf. Arnold 2005; van Ess forthcoming; Verhey forthcoming.

20 Arnold 2005, 10, 20; Verhey forthcoming.

21 Arnold 2005, 11, 20; Verhey forthcoming.

22 Arnold 2005, 20; Verhey forthcoming.

23 Arnold 2005, 20.

um copper silicate). The colours that were still traceable are light red, dark red, blue, black, brown, yellow and orange.²⁴

A preliminary drawing of thin red lines was observed in all excavated areas which includes horizontal and vertical framing lines for the doors, the socle lines, and the frieze as well as outlines for all figural motifs. These thin red lines are still clearly visible in most parts and there is evidence for their pigments clearly penetrating into the plaster. Therefore, it is assumed that the lines of the preliminary drawing were most probably painted *al fresco* while the plaster surface was still partly wet, using very thin brushes.²⁵

The multicoloured paintings which were executed afterwards are by contrast in a much worse condition than the preliminary drawing. The pigments are preserved only very fragmentarily. Also, there is no evidence for any penetration of pigment into the plaster. Presumably, these principal paintings were added *al secco*, using an organic binder which could not be attested so far because it has most likely disintegrated.²⁶

As a final step, some of the motifs – such as the frieze and the animals – were additionally outlined with thin black lines executed with thin brushes and covering the red preliminary drawing.²⁷

The assumption that the preliminary drawing was applied *al fresco* on a partly wet surface, whereas the principal paintings and the final drawing were later added *al secco*, could explain both the different state of preservation and the difference in pigment penetration between preliminary drawing and paintings. However, both differences might also partly be due to divergent physical characteristics of different pigment particles.²⁸

In addition, the regularity of the circles of the rhomb frieze suggests the use of a compass or some kind of template, as they all have the exact same diameter of 5cm. Yet, no traces, like puncture marks, could be found.²⁹ Furthermore, strings or rulers might have been used to produce straight lines, but no string impressions, as typical for the Aegean fresco technique, could be documented so far, and there is also no evidence for an Egyptian grid system.³⁰

3. Summary

The analyses of the painting technique show that several different specific features are discernible in the wall paintings in Tell el-Burak.

In addition to several iconographical features, the red preliminary drawing might point to a further connection to Egypt, as red lines were used for the same purpose in Egyptian wall paintings.³¹ Yet, preliminary drawings consisting of red lines were also used in the Aegean and at sites such as Qatna (Syria) and, consequently, cannot pro-

²⁴ Arnold 2005, 20–21.

²⁵ Arnold 2005, 21; van Ess forthcoming; Verhey forthcoming.

²⁶ Arnold 2005, 24; van Ess forthcoming; Verhey forthcoming.

²⁷ Arnold 2005, 23; Verhey forthcoming.

²⁸ Jones – Photos-Jones 2005, 219–222.

²⁹ Arnold 2005, 21; Verhey forthcoming.

³⁰ van Ess forthcoming.

³¹ Cf. Madden – Tavier this volume.

vide sufficient evidence for an Egyptian connection by themselves.³² Also, the painting on a still wet lime plaster surface is generally assumed to have originated in, and be connected with, the Aegean. With the exception of the Aegean-style wall paintings at Tell el-Dab'a³³, this technique was not usually used in Egypt. Here, mud plaster surfaces were painted *al secco*.³⁴ The same is thought to be typical for the Near East.³⁵ However, the technique used in Tell el-Burak can hardly count as a fully-developed fresco-technique as most of the drawings were probably executed *al secco*. The application of pigments on the at least partially wet lime plaster surface can only be presumed with some certainty for the preliminary drawing so far. In addition, no traces of other features typical for Aegean fresco painting, like string impressions, were found.³⁶

Furthermore, it is difficult to compare the paintings from Tell el-Burak directly to Aegean paintings because, according to the ¹⁴C dates³⁷, they predate the earliest well-preserved Minoan frescoes by roughly 200 years depending on which chronology system is used. Therefore, the evidence from Tell el-Burak rather constitutes an early step towards fresco painting. As yet, it remains unclear whether this step was somehow triggered by an early Minoan influence or if the painting technique at Tell el-Burak is part of a completely independent Levantine development which subsequently may or may not have influenced the art of wall painting in the eastern Mediterranean. The case of Tell el-Burak may then represent an early forerunner of later fresco paintings in the eastern Mediterranean region, which also includes Alalakh and Tell Kabri.³⁸

The iconographical analyses of the motifs so far provide mixed results as well, but they show that the wall paintings at Tell el-Burak were most probably the work of local artists who included several Egyptianising and originally foreign elements. They represent expressions of the local Middle Bronze Age culture and have to be understood as Levantine art. Similar cases can be found when looking at Old Syrian seals, the wall paintings from Tell Sakka or various objects from the tombs of Byblos.³⁹

In summary, both iconography and technology exhibit a mix of different features which are usually assumed to belong to separate wall painting traditions. The paintings at Tell el-Burak show that the region was part of a broader network system that covered the whole area of the eastern Mediterranean, where ideas such as motifs and technological knowledge were exchanged.

Yet, these are only preliminary results. The next step the project wants to undertake and which is already in preparation is the complete excavation of the painted room. This will hopefully lead to a more thorough understanding of the painting technique, the iconography and the meaning of Room 10 as a whole.

32 Cf. von Rüden 2011, 92.

33 Cf. Becker this volume; Jungfleisch this volume; Morgan this volume; von Rüden – Skowronek this volume.

34 Cf. Madden – Tavier this volume.

35 For an overview on assumed wall painting “traditions” in the Near East, Egypt and the Aegean cf. e.g. Bietak 2007; von Rüden 2013.

36 Brysbaert 2008, 112–120; van Ess forthcoming.

37 Höflmayer *et al.* 2016.

38 Woolley 1955, 228–234, pls. 36–39; Niemeier – Niemeier 2000; Niemeier – Niemeier 2002; Cline *et al.* 2011; von Rüden 2011; von Rüden 2013.

39 Eder 1995; Aruz *et al.* 2008, 57–58, cat. no. 29; 128, cat. no. 70a.

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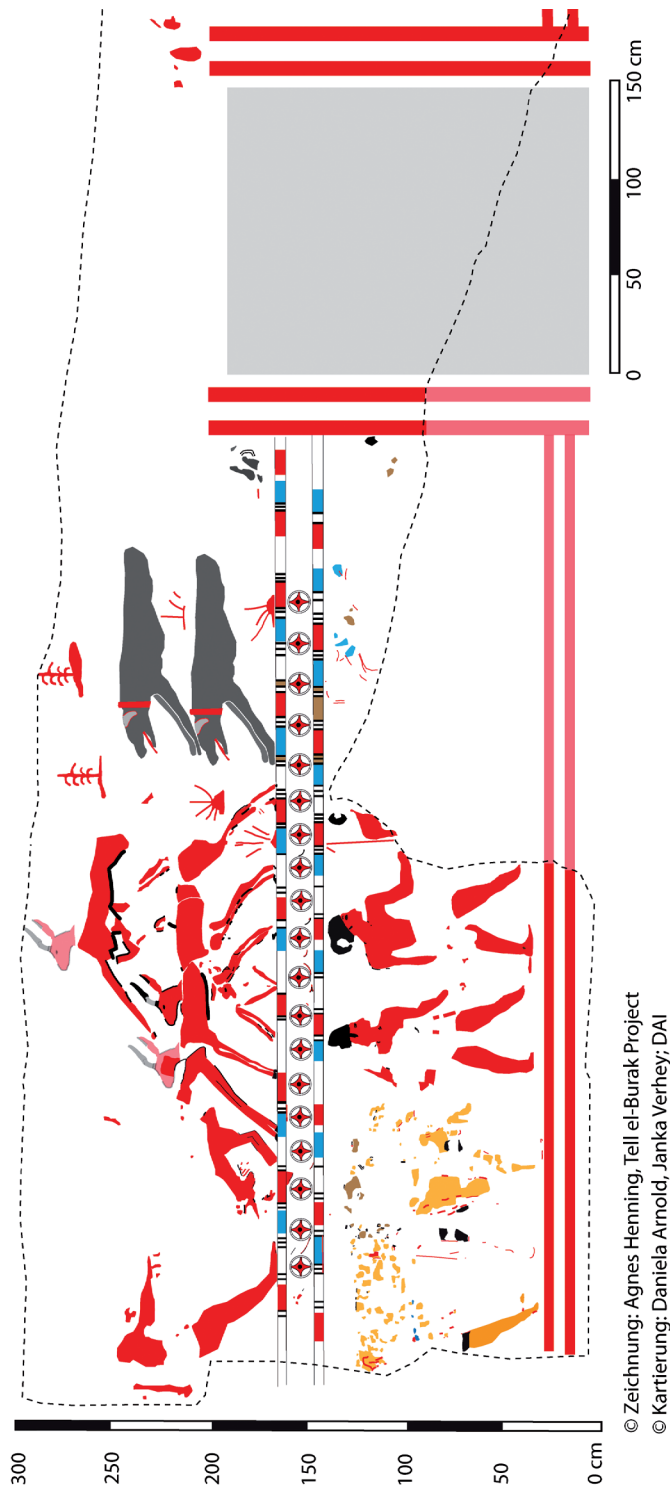
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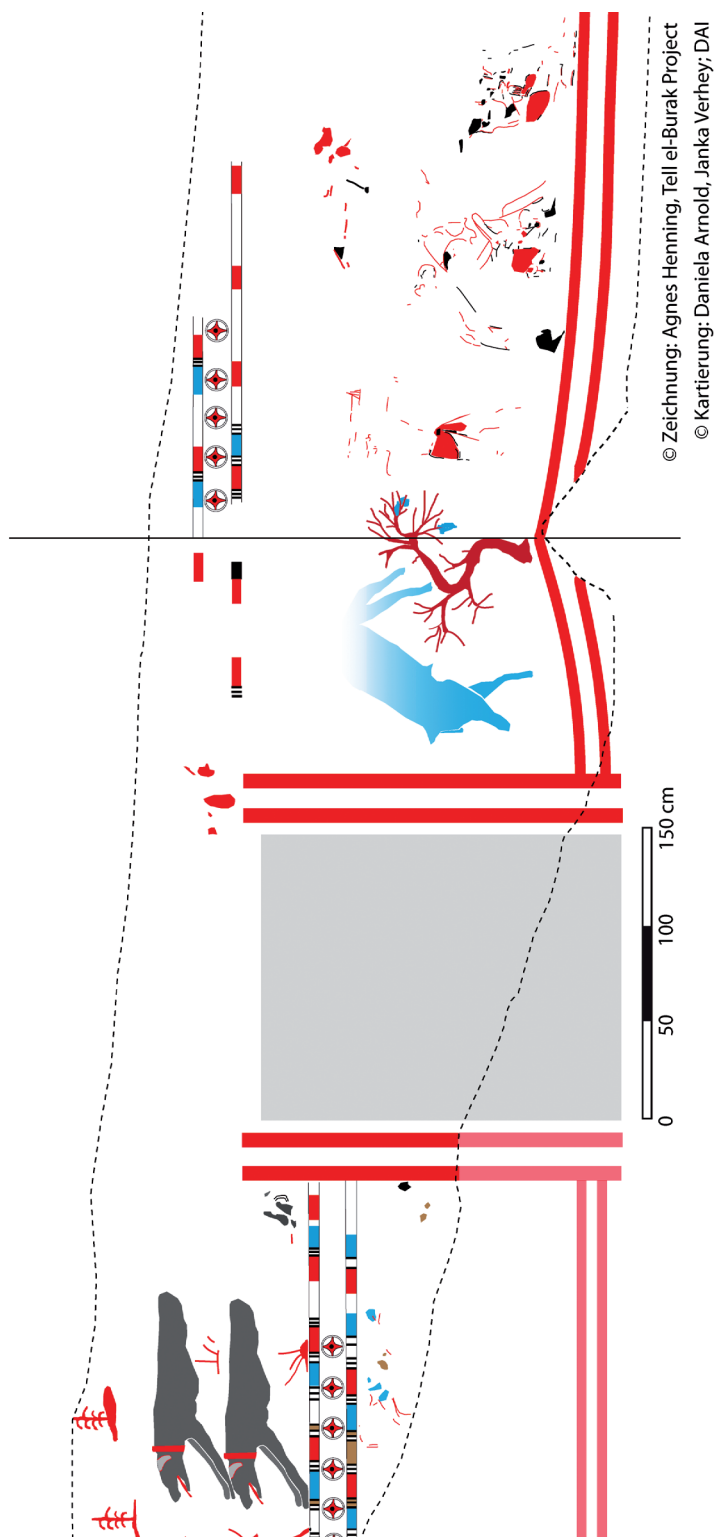
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Pl. 1: Tracing and partial reconstruction of the paintings on the southeastern wall of room 10, northern part (tracing: D. Arnold, J. Verhey, DAI Orientabteilung; drawing: A. Henning).



Pl. 2: Tracing and partial reconstruction of the paintings on the southeastern wall, southern part, and on the southwestern wall of room 10 (tracing: D. Arnold, J. Verhey, DAI Orientabteilung; drawing: A. Henning).

TRACING TECHNOSCAPES

Colourful surface treatments form an integral element of vernacular and élite architecture of ancient societies. This is also true for the various regions of the Eastern Mediterranean in the 2nd millennium BCE, where elaborate wall paintings furnished temples, tombs, palatial buildings, and in general more elaborate houses. From a present-day perspective, these rich images provide invaluable insights into past realities as well as interconnections between different visual systems. However, beyond stunning images, the materiality of wall paintings implicates a whole range of specific technical choices and gestures executed during the artistic process. The bodies of knowledge immanent in the practice of plaster and pigment preparation, in the application of paint and in the conception and execution of compositions allow us to compare the wall painting corpora of the Eastern Mediterranean on a technical level and to trace differences and similarities in a cross-cultural perspective.

Evolved from an interdisciplinary workshop held at the 10th ICAANE in Vienna, this volume provides insights into the various technical approaches and underlying bodies of knowledge in the different wall painting traditions of the Eastern Mediterranean and West Asia and throws light on the way and extent of their possible interwovenness. Moreover, it seeks to overcome regional as well as disciplinary isolation of technical studies by bringing together authors of different scientific backgrounds ranging between Conservational Studies, Archaeometry, Prehistory, Egyptology, as well as Western Asiatic and Classical Archaeology. In doing so, the book permits an interdisciplinary perspective on this field of study.

This book is equally intended for archaeologists, art historians, conservators and the interested layperson and hopes to stimulate more research in this direction in future.

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