

**STUDIES
IN
ANCIENT ART
AND
CIVILIZATION
20**



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Kraków 2016

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Magdalena Kazimierczak
Krakow

POTMARKS FROM TELL EL-MURRA
AND TELL EL-FARKHA CEMETERIES
(SEASONS 2011–2016)

Abstract: *The Necropolis at Tell el-Murra site, situated in the north-eastern part of the Nile Delta just several kilometres east of Tell el-Farkha, contains 22 marked vessels distributed in nine graves. The tall jars discovered there (wine jars and jars decorated with half-bows) were the most commonly marked items, but signs were also found on other types of vessels: broad-shouldered jars, a barrel-shaped jar, small jars with broad-shoulders, red-coated plates and a bowl. In the course of excavations carried out between 2011 and 2016 at Tell el-Farkha cemetery four vessels with potmarks were found. Marks from both cemeteries correspond with signs published in corpuses from other sites dated to the Early Dynastic period: Tell el-Farkha, Minshat Abu Omar, Kafr Hassan Dawood, Abydos, Abu Roash and others.*

Keywords: *Potmark; cemetery; graves; Tell el-Murra; Tell el-Farkha; signs; vessels; wine jars; Early Dynastic*

Tell el-Murra (Jucha 2009; Jucha 2010a; Jucha 2010b; Jucha 2013; Jucha *et al.* 2013; Jucha *et al.* 2014; Jucha *et al.* forthcoming a) and Tell el-Farkha sites (Ciałowicz *et al.* 2014), situated in the north-eastern part of the Nile Delta just several kilometres from each other, are being investigated by Polish expeditions from the Jagiellonian University and the Archaeological Museum of Poznań. Remains of settlements as well as funerary structures discovered on both sites are dated from the Predynastic,

through Early Dynastic, to the Old Kingdom Periods (at Tell el-Murra even until the 6th Dynasty).

The main purpose of this article is to publish potmarks retrieved during the excavation seasons 2011–2016 at Tell el-Murra (Kazimierczak 2014; Kazimierczak 2016a; Kazimierczak 2016b; Kazimierczak forthcoming)¹ and Tell el-Farkha (Jucha 2012) cemeteries, discovered in graves as well as in the areas outside the graves but in close vicinity to them. In the case of Tell el-Murra this is the first presentation of these kinds of marks. Potmarks from graves explored at Tell el-Farkha up to season 2008 had already been published (Jucha 2008), thus the signs presented below are to supplement those from earlier seasons.² The potmarks presented in this paper come from completely preserved or reconstructable vessels.

Potmarks from Tell el-Murra

The cemetery at Tell el-Murra contains 38 graves discovered up to the 2016 season, 21 with pottery vessels among the assemblages. Vessels bearing incised signs on their exterior surfaces were found in nine of them, representing about 23.7% of the total graves excavated so far and 42.9% of all graves with ceramic assemblages. 12 more graves had ceramic offerings but none of these carried potmarks. Pottery from the graves involved 140 ceramic vessels, and 22 vessels were engraved with potmarks, which amounts to 15.7% of the total volume. The shapes of jars on which signs are present are varied and include the following types:

1. Tall jars. They were made of fine or medium category Nile clay tempered with fine to medium sand and straw; the surface of the jars was smoothed, and in some cases self-slip is visible on the surface below the shoulders. All the vessels discussed below have thickened rims, short necks and flattened, slightly convex bases. Based on additional features (Kazimierczak 2014, 105–106; Kazimierczak 2016a, 7–10; Kazimierczak forthcoming) we can distinguish within this group:

1.1. Tall slender wine jars with narrow shoulders, tapering bodies,

¹ The excavations at Tell el-Murra in the years 2010–2012 were financed by funds from the Ministry of Science and Higher Education, Poland, and the National Science Centre, Poland, grant no. 2195/B/H03/2009/36. In the years 2014–2016, the project was financed by funds from the National Science Centre, Poland, which were allocated on the basis of the decision number DEC-2013/09/B/HS3/03588.

² This presentation is also a kind of report concerning potmarks from vessels discovered at cemeteries on both sites during work carried out between 2011 and 2016, in which the author of this paper has taken part.

and one applied band on the shoulders (Pl. 1: 1–3);

1.2. Tall shouldered jars with two applied bands (one on the shoulders and the other above the base) (Pl. 1: 4–8).

In both cases potmarks were situated below the band on the shoulders.

1.3. Tall shouldered jars decorated with impressed half-bows on the shoulders.³ Potmarks occur beneath the half-bow decorations (Pl. 1: 9–12).

2. Broad-shouldered, ovoid-shaped vessels with thickened rims, and rounded or flattened bases (Pl. 2: 1–2). They were made of medium quality Nile clay, tempered with fine to medium straw and sand; they usually have a rough, sometimes slightly smoothed surface. Signs appear on the shoulder or slightly lower, on the body below the shoulders (Kazimierczak 2016a, 10).

3. Barrell-shaped jar with thickened rim, angular transition between short neck and shoulders, and a flat base (Pl. 2: 3). The vessel is of better quality; it was made of fine Nile clay with a small amount of sand as a temper, has a smoothed surface of cream-yellow-white colour and is covered with a large amount of black. These colours are probably the result of the pot being burnt. The jar could imitate a stone vessel. One jar from grave no. 20 had potmarks on the shoulders (Kazimierczak 2016a, 13).

4. Small jars with slightly thickened rims, slightly angular transition between the neck and broad shoulders and a concave lower part of the body narrowing towards a flat base (Pl. 2: 4–7). In all cases potmarks were engraved on the lower part of the body, above the base. All of these small, broad-shouldered jars were classified as medium-to-rough ware, and in all cases the upper part of those jars (rim and neck) was finished by slow turning, while the middle and lower parts were scraped. They were made of medium category Nile clay, and tempered with fine-to-medium grain sand and straw (Kazimierczak 2016a, 13–14).

5. Red-coated plates made of medium category Nile clay (Pl. 2: 8–9). The vessels have only an interior surface slipped with red coat and polished or burnished. The outer surfaces were uncoated and smoothed (Kazimierczak 2016a, 15). One of them, a plate from grave no. 20, also has an outer surface decorated with two incised lines beneath the rim. All these plates have signs engraved on the outer surface on or near the rounded base.

6. Red-coated bowl with convex walls, a slightly thickened rim, and a flattened base (Pl. 2: 10). The vessel was made of good quality clay

³ The author uses the term wine jars with reference to tall jars with bands. Therefore, tall jars with half-bows are described separately.

and tempered with a small amount of very fine sand and straw; its surfaces were slipped with red coat and polished. One of this kind of bowl found in grave no. 40 has a potmark inscribed on the base.

Potmarks occur the most frequently on tall jars (wine jars with bands and jars decorated with half-bows). They were attested on seven of 15 wine jars with bands, which constitutes about 47% (46.7%) of that kind of vessel and 35% of all marked vessels from the graves. Potmarks are also present on all the four tall jars with half-bows discovered so far. Together all the marked tall jars (wine jars with bands and jars with half-bows) constitute 50% of all vessels with potmarks. This corresponds to the statistic and distribution of potmarks amongst pottery types at other sites (Klasens 1959, 48–50; van den Brink 1988, 79, figs. 13–14; van den Brink 1992, 269; Kroeper 2000, 214–215; Jucha 2008, 141; Tassie *et al.* 2008, 203, 210; Mawdsley 2009, 202) and correlates with observations of scholars regarding occurrence of potmarks on a few specific types of vessels, principally wine jars (van den Brink 1992, 267, 269).

Potmarks from these pottery types (wine jars with bands and jars with half-bows) are the most complex; the 12 marks on tall jars, six are composed of two different signs, including square (*hwt*), floral, *k3*, animal-like, fish, cross, criss-cross, triangle and curvilinear strokes (Pl. 4). Linear marks used as single signs do not appear on the wine jars. The composition of signs and single marks on the tall jars (wine jars with bands and jars with half-bows) from Tell el-Murra show a strict affinity to especially (among others) signs from vessels discovered at Abydos and described by W. F. M. Petrie:

1. Square (*hwt*) (Pl. 5) (Petrie 1900, pl. LVI: 1123–1145; van den Brink 1992, 282, tab. 2, Group I);
2. Fish and square (Pl. 5) (Petrie 1900, pl. XLIX: 466; cf. van den Brink 1992, 285, fig. 6, Group I.30);
3. Square and *k3* (Pl. 5) (cf. Petrie 1900, pl. XLVII: 249; van den Brink 1992, 285, fig. 6, Group I.28);
4. Square and horizontal line (Pl. 5) (cf. Petrie 1900, pl. LVI: 1133);
5. Floral (Pl. 5) (cf. Petrie 1900, pls. LV: 994–1010, LVII: 1302; van den Brink 1992, 282, tab. 2, Group IV);
6. Floral and curvilinear sign (Pl. 5) (Petrie 1900, pl. LIV: 75, 980–982, 987–988; van den Brink 1992, 294, fig. 15, Group XXXIV.2);
7. Animal-like (Pl. 5) (cf. Petrie 1900, pl. XLIX: 381, 384; van den Brink 1992, 282, tab. 2, Group IX);
8. Triangle and other sign-probably square (cross-cross/*hwt*) (Pl. 5) (cf. Petrie 1900, pl. LV: 1037);

9. Different curvilinear signs (bow and vertical zig-zags) (Pl. 5) (Petrie 1900, pl. XLVIII: 346–376; van den Brink 1992, 288, fig. 9, Group VII.11);

10. Curvilinear sign (bow) and four diagonal lines (Pl. 5) (Petrie 1900, pl. LIV: 922, 924–925, 933; cf. van den Brink 1992, 284, tab. 2, Group LX);

11. Criss-crosses (Pl. 6) (Petrie 1900, pl. LVIII: 1373–1374, 1376, 1378);

12. Criss-cross and cross (Pl. 6) (Petrie 1900, pl. LIV: 866; cf. van den Brink 1992, 288, fig. 9, Group VIII.20).

Other types of vessels: ovoid jar, barrel-shaped jar, small jars with broad shoulders, bowl, and plate were usually marked by a single potmark consisting of a single sign: *hwt* (square), cross, criss-crosses, or a composition of two or more lines or strokes (Pl. 7). The most frequently occurring signs (as a single mark or composed with another) on vessels from Tell el-Murra cemetery are crosses (three times), criss-crosses (three times), *hwt* sign – square (at least four times) curvilinear lines (four times) and different combinations of lines, strokes and dots (seven times).

Most of the potmarks found at Tell el-Murra were applied on the vessel before firing in wet (or dry) clay using fingers or a pointed instrument such as a sharpened stick, reed, fine flint point or maybe even a bone (Tassie *et al.* 2008, 20).

Many scholars have already published more or less extensive corpora of potmarks from different sites (van den Brink 1992; Jucha 2008; Kroeper 2008; Tassie *et al.* 2008; Mawdsley 2009; Wodzińska 2009), but the functions and meanings of particular signs are still under study. There are various suggestions and interpretations, such as:

1. Content description (Morgan 1897, 165; Amélineau 1899, 199–200; Emery 1949, 154–156), mark indicative of specific product (wine) inside (Helck 1985, 635). Contra (Tassie *et al.* 2008, 215; Kroeper 2009, 216);

2. Potter's marks, which indicate a measure of capacity (Brunton *et al.* 1927, 18, 68);

3. Tax marks (van den Brink 1992, 276, n. 4);

4. Ownership marks (van den Brink 1992, 276, n. 4);

5. Indication of the 'ultimate destination of vessel [...] to facilitate the distribution of commodities to specific [...] institutions: palace, royal tombs, royal mortuary complex, temples, cultic structures, and centres of regional administration' (Mawdsley 2009, 209; Wodzińska 2009, 233–234);

6. Indication of place of production/provenance of the vessels (Petrie and Quibell 1896, 44; Dreyer 1993; Kroeper 2000, 216; Wengrow 2006, 236–239).

The last point refers to, among others, the combination of two signs: square (*hwt*) and additional marks, which together could represent names of place of origin of the vessel. According to many scholars, the double sign of square with fish, which appears on one of the wine jars from Tell el-Murra (Pl. 5), could be associated with some production centre located in East Delta (Tassie *et al.* 2008, 210; Kroeper 2009, 188, 208–209, 216) based on the fact that many sites in Delta have a fish sign in their names (Bietak 1975, 149–177; Kaplony 1981; Tassie *et al.* 2008, 210). Different interpretations consider simple strokes or lines, from the opinion that they could indicate vessel size and volume (Nordström 1972, 79; Kroeper 2009, 216; Mawdsley 2009, 202), place of production (workshop) or potters (Hope 1999, 126; Bréand 2009, 61; Mawdsley 2009, 202), and socio-economic activities (Buchez 2004, 683–685; Tassie *et al.* 2008, 218; Mawdsley 2009, 202).

All marked vessels represent forms attributed to the time span covering the 1st Dynasty. They were found in eight (nos. 1, 2, 9, 19, 20, 34, 39, 40) of 11 graves belonging to the group dated to the Naqada IIIC2 period, which constitutes about 72.7% of all graves with pottery assemblage dated to that period. As well, one plate with a potmark was also discovered in grave no. 33 dated to the slightly later period of Naqada IIIC2/D (second half of the 1st Dynasty/first half of the 2nd Dynasty). However, it should be mentioned that the red-coated plate is a type of vessel which also occurs in an chronologically earlier group of graves. In Tell el-Murra cemetery vessels with potmarks do not appear in two graves, no. 3 and no. 21, dated to the earlier period: Naqada IIIB and Naqada IIIC1 respectively, and they are absent from graves (except grave no. 33) connected with Naqada IIIC2/D (second part of the 1st Dynasty/first part of the 2nd Dynasty). Similar data were collected at other sites (Kroeper 2000, 215; Tassie *et al.* 2008, 201) and they correspond with scholars' notes that potmarks became significant during Naqada IIIC (1st Dynasty) and their occurrence seems to increase towards that period (van den Brink 1992, 260, 271, fig. 5; Tassie *et al.* 2008, 201; Mawdsley 2009, 201).

Most of the above-mentioned graves are among the most elaborate discovered so far. The largest number of pottery in the assemblages were in graves nos. 1 and 40 (27 vessels each), and no. 2 (17 vessels). In graves nos. 1, 40, and 20 the largest number of marked vessels were found. Pottery

discovered in graves nos. 1, 2, 40 as well as in nos. 9, 19, 20, 39 consist of: ovoid jars, barrel-shaped jars, small jars with broad shoulders, tall pot-stands, trays, red-coated bowls and plates, and sporadically, beer jars (Kazimierczak 2014; Kazimierczak 2016a; Kazimierczak forthcoming; Jucha *et al.* forthcoming b). Besides, most of the graves with potmarks (except graves nos. 9, 33 and 39) contained at least one tall jar (wine jar or jar with half-bows) decorated with a sign. Furthermore, assemblages of these graves also include cooper and bone items (grave no. 1), seal impression (grave no. 9), cosmetic palette (grave no. 20), limestone beads (grave no. 39) and stone vessels (graves nos. 1, 2, 20, 33, 34, 40). Graves nos. 1, 2, 9, 20, 39 and 40 are located in the central part of trench S3 in close vicinity to each other and share a north-east – south-west orientation. Among these graves two pairs can be distinguished (nos. 2 and 20, and 40 and 39), which show closer stratigraphic relation. In both cases, the first grave mentioned was divided into yet another. In case of grave no. 2, it was proved that it is probably younger than grave no. 20, while the precise chronological relation between the second pair of graves nos. 39 and 40 is still a subject of investigation. Other graves (nos. 19, 33, 34) were situated in the south-western part of trench S3 and were oriented along the north-south axis. The precise locations of the graves in the cemetery cannot be stated, because the borders of the cemetery have not yet been found. Among all graves with potmarks we can distinguish different architectonical structures: simple pit burial (nos. 9, 19), graves with mud-brick walls (nos. 1, 2), one-chambered graves (nos. 2, 9, 19, 20, 33, 34, 39), and a two-chambered structure (nos. 1, 40); some of them were also covered with mats (no. 19), while others contained a pottery coffin (nos. 2, 20, 40).

Potmarks from Tell el-Farkha

Over the excavation conducted at Tell el-Farkha between 2011 and 2016 only four complete or reconstructable vessels with potmarks were found at the cemetery located on the Eastern Kom. Two of them were discovered in grave no. 137, and two others outside the graves in the cemetery area, in the vicinity of the graves.

Two vessels from the grave consist of two tall jars. One represents an ovoid shaped, quite elongated jar with the rim turned out, a flattened rim-top, and flattened base (Pl. 3: 1). It was decorated with a row of impressed half-bows situated on the shoulders, below which an *ntr* mark (Pl. 8) was engraved (cf. Petrie 1900, pl. L: 505; van den Brink 1992, 282, tab. 3,

Group XI). The other jar has a thickened rim, broad shoulder and rounded base (Pl. 3: 2) The mark of two diagonal lines (Pl. 8) is visible just beneath the rim (cf. Petrie 1900, pl. LVIII: 1459, 1461, 1462). Both these vessels were made of the fine category Nile clay, tempered with a small amount of sand and straw; the surface of the jars decorated with half-bows is partially covered by self-slip, while on the second jar it was smoothed. Based on the pottery assemblage, these two jars among others, grave no. 137 is classified to the first chronologically group distinguished at Tell el-Farkha cemetery and dated to the Naqada IIIB period (Jucha 2012, 77–79).

Two other vessels are tall slender wine jars with narrow shoulders, and a tapering body (Pls. 3: 3–4), one decorated with one applied rope band on the shoulders, the other with two bands on the shoulders. In both cases potmarks situated on the shoulders below the band decoration were composed of two signs. The wine jar with one applied band was marked with a combination of a square and a vertical line (Pl. 8) (Petrie 1900, pl. LVI: 1121; van den Brink 1992, 285, fig. 6, Group I.3), on the vessel with two bands, square and fish signs (Pl. 8) were incised (cf. Petrie 1900, pl. XLIX: 458–460, 468, 472; van den Brink 1992, 285, fig. 6, Group I.30). The vessels were made of good quality Nile clay tempered with fine straw and sand, the surfaces were finely smoothed, and on some part of the body self-slip is visible. Chronology of this type of wine jars is slightly later than the two described above jars from grave no. 137 and connected with the Naqada IIIC2 period (Köhler and Smythe 2004, 129–130; Jucha 2012, 80–83).

Summary

Potmarks from Tell el-Murra cemetery are comparable with signs found at other sites of similar chronology: Tell el-Farkha (Jucha 2008), Abydos (Petrie 1900), Kafr Hassan Dawood (Tassie *et al.* 2009), Minshat Abu Omar (Kroeper 2009), Tarkhan (Mawdsley 2009), Helwan (Köhler and Smythe 2004), Abu Roash (Klasens 1959) and others (van den Brink 1992), as well as to some extent to marks from chronologically later sites (Hope 1999). The same remark applies to the four potmarks presented above from vessels from Tell el-Farkha, which repeat composition and signs recognized and already described in a corpus from 2008 (Jucha) as well as at other sites mentioned above. However, if we compare signs from the two above-discussed sites in the vicinity, it could be noted that at Tell el-Murra complex

signs composed of two marks occur statistically more often than on Tell el-Farkha vessels.⁴

Because studies on the potmarks are still ongoing, the hope is that this publication will be a significant supplement to the previously collected data from other sites.

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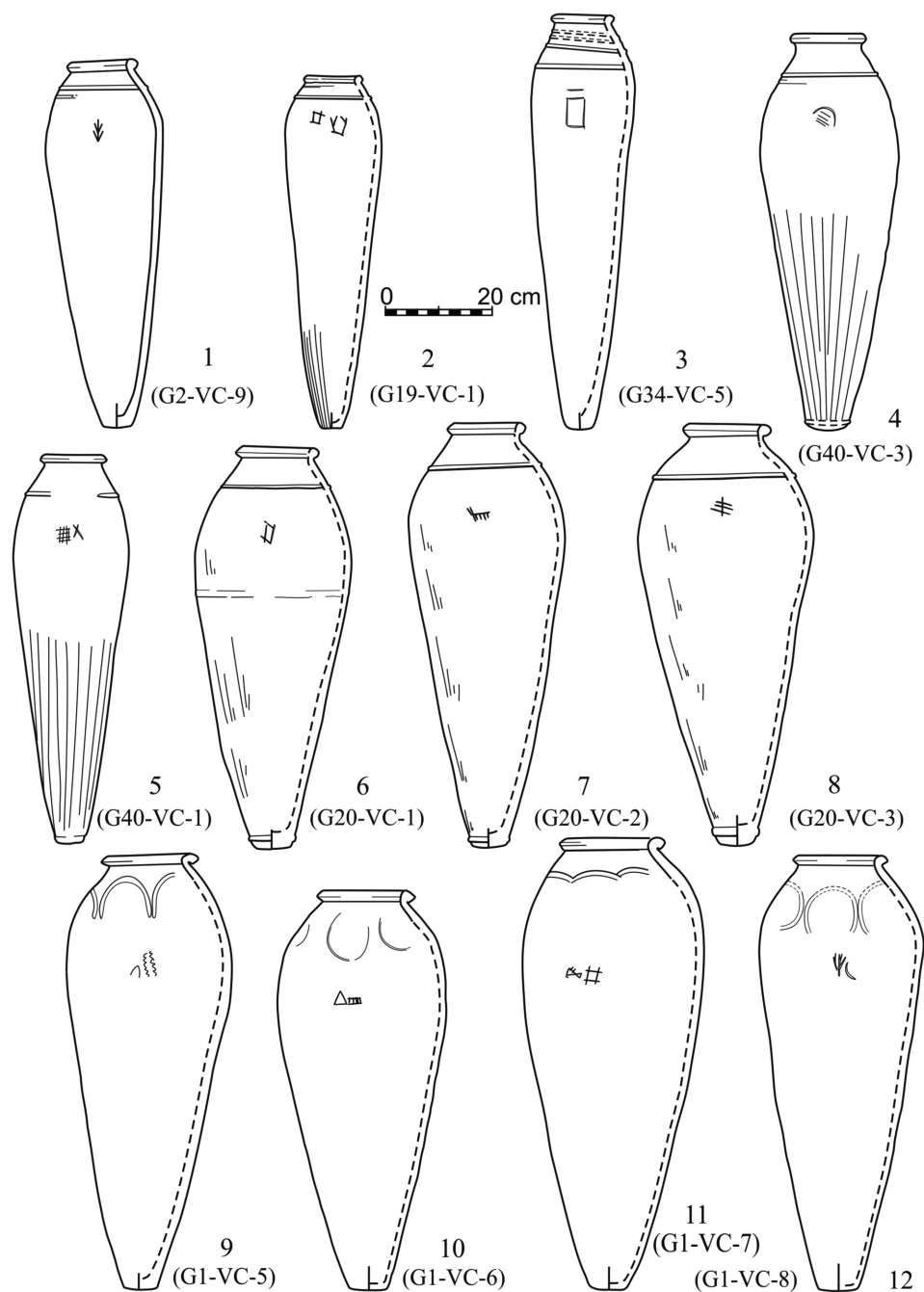
⁴ It concerns potmarks from seasons 2011–2016 as well as those already published in corpus from 2008.

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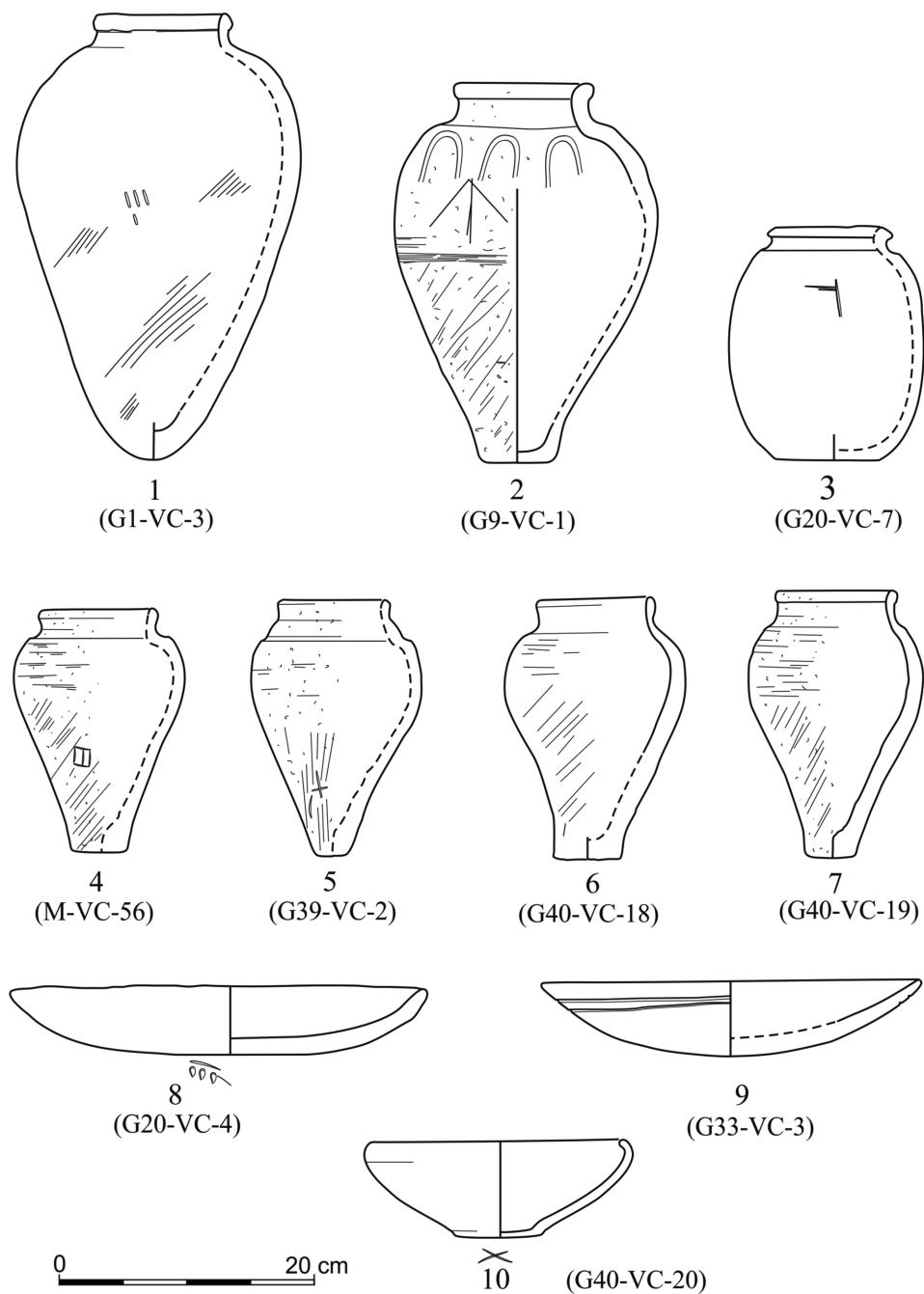
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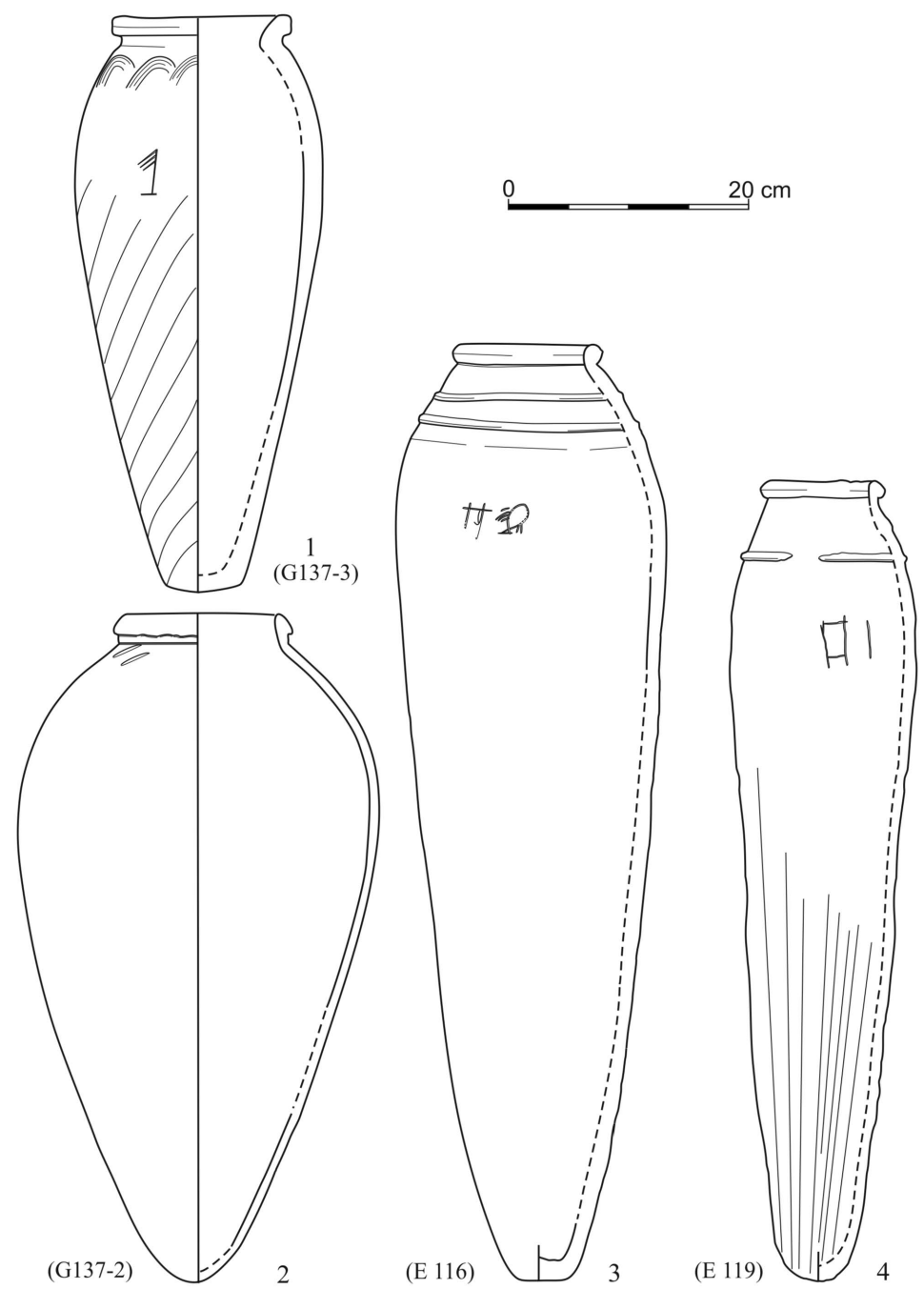
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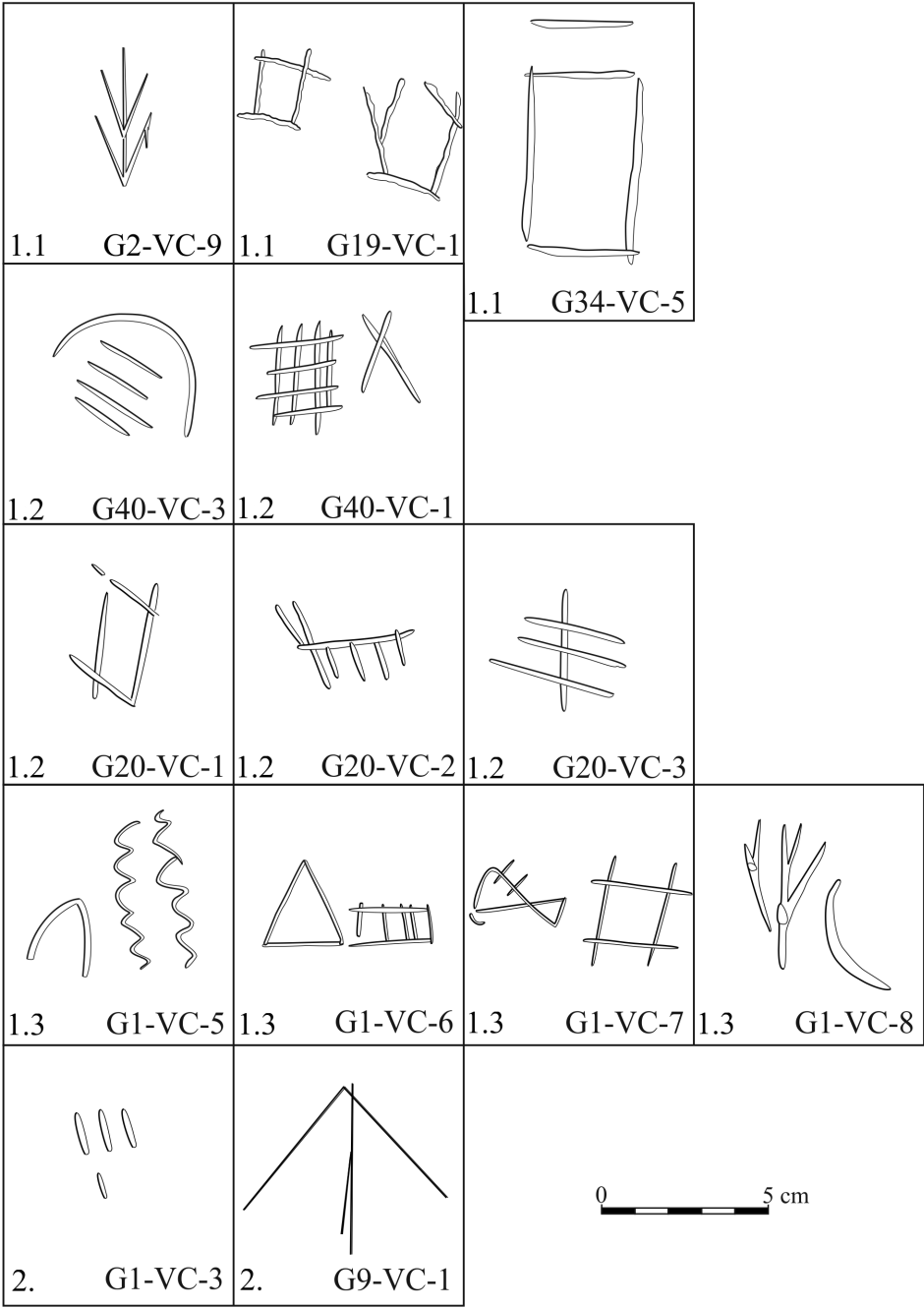
Pl. 1. Vessel types containing potmarks from Tell el-Murra cemetery.
Archives of the expeditions. Digitizing by U. Bāk



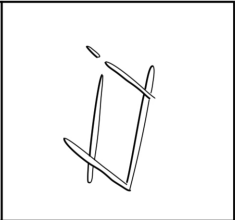
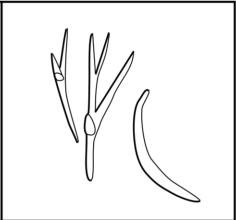
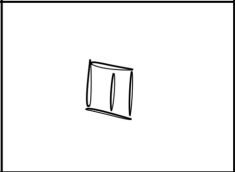
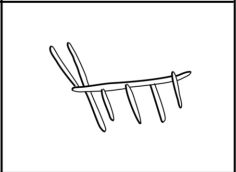
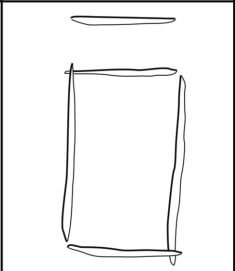
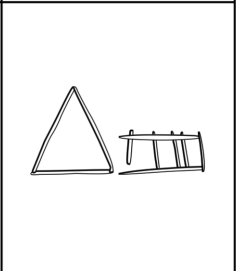
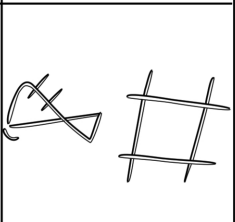
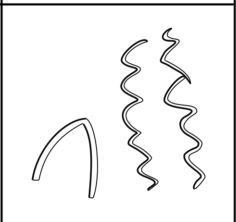
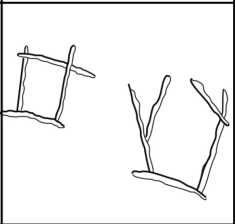
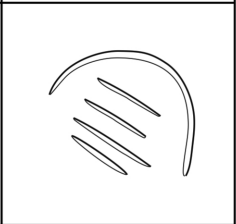
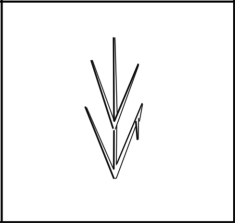

Pl. 2. Vessel types containing potmarks from Tell el-Murra cemetery.
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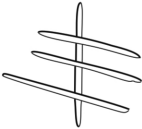


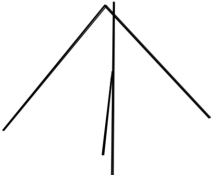





Pl. 3. Vessel types containing potmarks from Tell el-Farkha cemetery.
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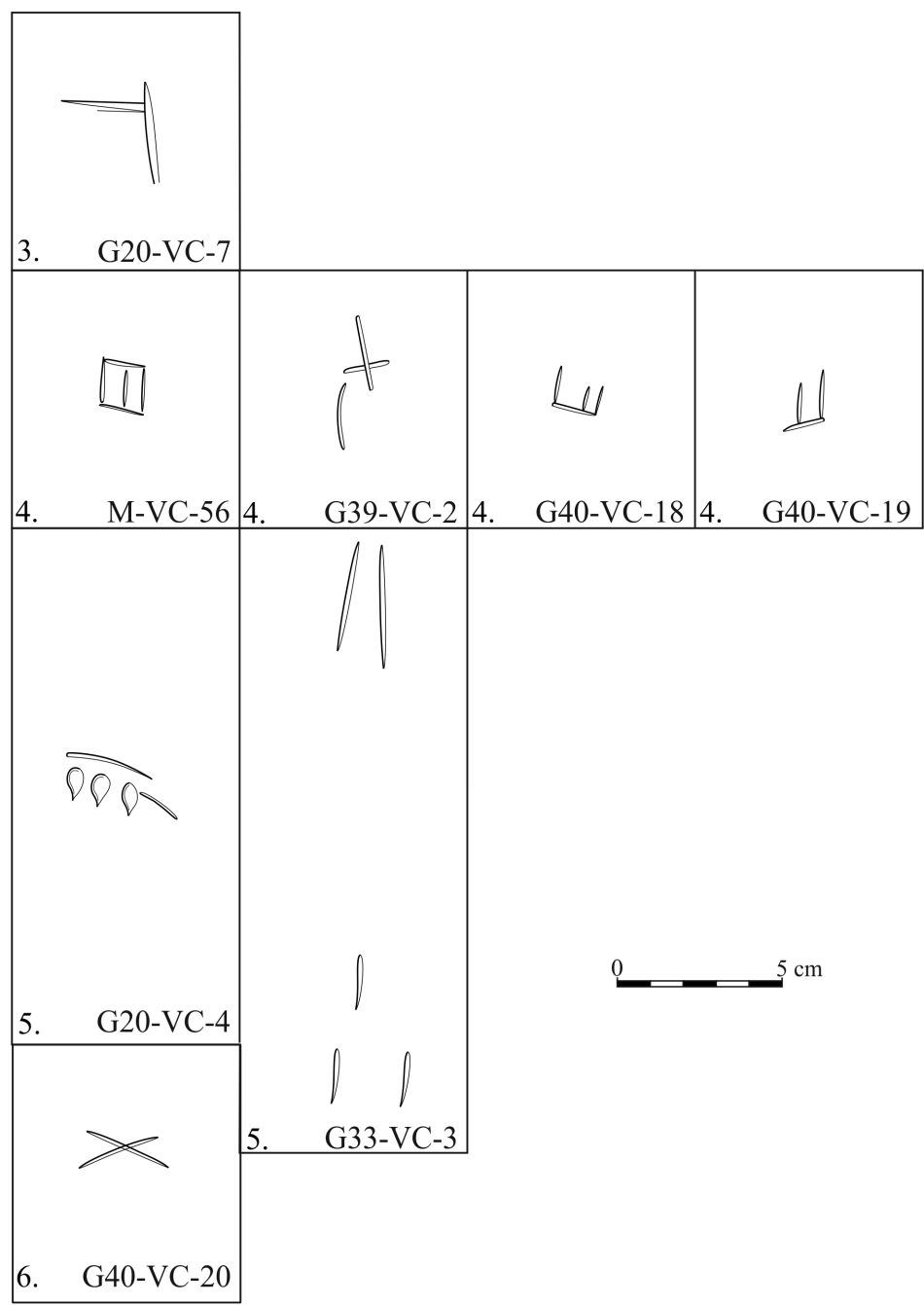
Pl. 4. Occurence of potmarks from Tell el-Murra on certain types of vessels.
Digitizing by U. Bąk

Square (<i>hwt</i>)		Floral with curvilinear	
<i>Hwt?</i>		Animal-like	
Square (<i>hwt</i>) with single line		Triangle with other sign (criss-cross/ <i>hwt</i> ?)	
Square (<i>hwt</i>) with fish		Curvilinear	
Square with <i>k3</i> ?		Curvilinear with lines	
Floral			

Pl. 5. Types of potmarks from Tell el-Murra cemetery. Digitizing by U. Bāk

Cross			
Cross with single line			
Criss-cross			
Criss-cross with cross			
2-5 lines/strikes/dots			
			
			

Pl. 6. Types of potmarks from Tell el-Murra cemetery. Digitizing by U. Bąk



Pl. 7. Occurence of potmarks from Tell el-Murra on certain types of vessels.
Digitizing by U. Bāk

<i>ntr</i>	
Two diagonal lines	
Square (<i>hwt</i>) with fish	
Square (<i>hwt</i>) with vertical line	

Pl. 8. Potmarks from Tell el-Farkha cemetery. Digitizing by U. Bąk

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IN THE REALM OF THE SCHEME.
THE LIMITS OF INTERPRETATION OF
ARCHAIC GREEK VISUAL CULTURE.
THE CASE OF A BLACK-FIGURE
LEKYTHOS FROM KRAKOW¹

Abstract: *The aim of this paper is to examine the possibilities of interpretation using readings of pictorial schemes on Archaic Greek vases on the example of a black-figure lekythos from the collection of the Institute of Archaeology of the Jagiellonian University in Krakow. The current interpretation of the scene on the vase describes it as setting out for the hunt. It is argued here that this scene represents warriors setting out for war, in line with the first interpretation of this piece made by Piotr Bieńkowski. Furthermore, it is argued that since the readings could always be plural, the creator of the vase made deliberate attempts to limit interpretation, however, the vase can still retain its interpretational freedom if put in a viewing context that stimulates unorthodox readings.*

Keywords: *Greek vase painting; warfare in ancient Greece; hunting in ancient Greece; Greek vases from the Institute of Archaeology of the Jagiellonian University in Krakow*

Among Archaic Greek black-figure vases in the possession of the Institute of Archaeology of the Jagiellonian University in Krakow, one lekythos particularly stands out (Pls. 1 and 2: 1). One of the gifts from

¹ This paper is a contribution to the National Science Centre project no. 2013/11/N/HS3/04857.

prince Władysław Czartoryski, this vessel of unknown provenience was attributed to the hand which was given the name of the Gela Painter and dated to about 505–500 BC (inv. no. 345=Cracow 345; Bieńkowski 1917, 4, figs. 2–3; Bulas 1935, pl. 7: 6a–b [Pologne 80]; Haspels 1936, 207.47; Bernhard 1976, no. 342, fig. 75; Schnapp 1997, 245–246, no. 171, fig. 171: drawing; Barringer 2001, 213, n. 47, 51; Papuci-Władyka 2007, 206–207, pl. 36; Papuci-Władyka 2012, pls. 43–45 [Pologne 505]; *BADB* 14006). It bears a very unusual decoration on the frontal part of the body. It shows two riders and one youth in what appears to be the action of setting out, as a very brief description by Emilie Haspels (1936, 207.47) informs us. On what exactly these characters are setting out will be the subject of this short essay. The *communis opinio* is that the scene depicts the setting out for a hunt; it will be argued not only that this is not the case here, but first and foremost that the interpretation of this vase faces one of the most disturbing problems that a scholar dealing with Greek iconography can encounter: vagueness of the scheme.

Let's start the discussion with a detailed description of the scene. Starting from the right end (unusually, as vase description goes from left to right, but here we will start from the front of the procession), we find a bearded horseman turned right, wearing a Thracian himation called *zeira*, and a *petasos* hat. In his right hand he holds a pair of spears, and on his right shoulder there hangs a large shield (Papuci-Władyka 2012, 76–77). The shield has a distinctive rim and is decorated with two large white dots constituting a blazon, a feature common for large, round shields of the hoplites, also known as Argive shields (for blazons on shields see Ducrey 1985, 51; Snodgrass 1999, 55; Sekunda 2000, 10, 46; van Wees 2004, 53–54). Under the horse a dog stands, also facing right, just as all the figures on this vase. Behind the horseman we can see a beardless youth on foot, also wearing a *petasos* hat and a dotted cloak which hangs over his shoulders and body. He also carries a pair of spears and his left hand is raised in a gesture. Behind him, the pair of horseman and dog is repeated, with minor changes to the stance and the decoration of the *zeira*. Finally, behind them, the scene is closed by a Doric column.

The interpretation of this scene as a departure for a hunt was established before the war (Bulas 1935, 40) and afterward it was repeated unchallenged in other publications (Schnapp 1997, 245–246, no. 171; Barringer 2001, 213, n. 47, 51). It was significantly reinforced by Alain Schnapp (1997, 245–246, no. 172), who paired this vase with another lekythos by the Gela Painter, from a private collection (Basel, Market, Münzen und Medaillen

AG SN, private; Beazley 1956, 700.16BIS; Beazley 1971, 215; Carpenter *et al.* 1989, 119) which shows a return from the hunt (Pl. 2: 2).² However, although it may seem clear why this scene is identified as a hunting scene, in reality, this is caused by very different, often contradictory criteria. The image on Cracow 345 has its own syntagma,³ a set of signs that allow the viewer to read it and assign meaning to it. This syntagma is one of the many variations possible on the paradigmatic axis which collects all the possible variations within the imagery (Barthes 1977, 51; Bérard 1983, 5–12; Morgan 1985, 5–19; Barthes 1986, 58–88; Sourvinou-Inwood 1991, 9–13; Chandler 2007, 84–86; Miścicki 2015, 113–116); operating along these lines, with knowledge of the system and the rules of creating images, one should be able to understand what the picture is about. Rewriting the decoration of the lekythos as a set of signs would not be very different from our previous description, only this time the focus would be on the relations between the signs and not the signs themselves (Barthes 1977, 37, n. 1). The syntagma of this scene consist of two horsemen paired with dogs separated by a youth on foot. But the signs had been modified. Let's take a look at the scheme of the horseman: it's a horseman with a Thracian cloak, a *petasos* hat, a pair of spears, and a shield. This set of signs has its meaning and one may ask why it should mean 'hunt' instead of 'warfare'. In other words, why should this scene depict going on a hunt instead of for a war? To answer this question we should first properly understand with what particular type of departure scheme we are dealing here, and how warfare and hunting are depicted on vases, by what schemes they are conveyed.

The main problem is that the domains of hunt and war are closely related to one another (Durand and Schnapp 1989, 61; Schnapp 1997, 242–244; Barringer 2001, 7–8; Lissarrague 2001, 93), but most importantly, the participants of said activities could interchange costumes, which makes reading the departure scene very problematic. For instance, François Lissarrague (2001, 93) writing about images of horsemen, despite keeping the two possibilities very close, suggested that the presence of dogs in

² This lekythos will be referred to as Basel-private in this essay.

³ Syntagmatic and paradigmatic relations can be described as chains of signs: a syntagma is a set of 'this and this and this', whereas the paradigmatic axis is defined around 'this or that or that'. The syntagma is created by adding and deleting signs from the image, while the paradigmatic relation is based on substitution and transposition of signs. The basic test for the analysis of these relations is known as the commutation test in which the signs are changed according to those four transformations and the changed scheme is contrasted with the original to assess whether the change was significant. The full description of the theory behind this method can be found in the cited literature.

a scene evokes the hunt, giving as an example the departure on the hydria Louvre CA4716 (Pl. 3: 1), attributed to the Leagros Group (Paris, Musée du Louvre CA4716; Schnapp 1997, 244, no. 169; Lissarrague 2001, 92, fig. 72; *BADB* 3018). However, Schnapp (1997, 242–244, nos. 167–170, 221–222), in interpreting this and other pieces which show horsemen departing, had convincingly argued that it is not the case. First and foremost, he did not make a clear distinction between riders going for warfare and for hunting, as he viewed both activities as interchangeable, evoking values of the elite. Secondly, he believed, after Cook (1997, 244), that the scheme of a dog does not evoke the hunt, but is connected to the scheme of the horse; it is its artistic extension. Citing a few pieces which depict horsemen departing, he made a different, modest claim, that it is the Thracian garment that brings the depicted riders closer to hunting than warfare.

These claims are confusing at best. Firstly, the dog would more plausibly signify domestic surroundings. Although they are depicted along with horses, dogs accompany footmen as well. Most importantly, they are often depicted in scenes of departure of warriors (on foot), usually being the closest figures to the warrior in such scene (see 1. Munich, *Antikensammlungen* 1520; Beazley 1956, 278.33; Kunze-Götte 1973, Taf. 421: 1–2 [Germany 1839]; *BADB* 320195; 2. Berlin, *Antikensammlung* F1857; Beazley 1956, 370.135; Mommsen 2013, Taf. 49 [Germany 4605]; *BADB* 302130; 3. Los Angeles, County Museum 36.11.1; Beazley 1956, 273.113; Packard and Clement 1977, pl. 6: 1–4 [USA 846]; *BADB* 320124; 4. Horseman departing for war with dog by his side: New York, Metropolitan Museum 41.85; Beazley 1956, 283.13, 391.1; von Bothmer 1963, pl. 21: 1–2 [USA 553]; *BADB* 320258). Of course, the animal is used in hunting, but the images connecting a dog to warriors are very frequent. Furthermore, sometimes dogs are the only figures other than warriors in the scenes. They could evoke a military encampment, or could be a minimal signifying unit for a domestic space.⁴ The scheme of a dog is too versatile to evoke hunting alone. Schnapp's suggestion that the Thracian garment should be connected with hunting is not closely based on the sources. Although hunters are depicted wearing the *chlamys* and *petasoi*, they do not wear the *zeira*; mounted hunters are usually very scantily clad. Although in the last quarter of the 6th century BC, an oriental costume appears in hunting scenes, it is not the Thracian one. Although I would leave open the possibility that the Thracian garment

⁴ This could explain why they are often depicted crowding the scene with horsemen: they are the best possible indicator of setting out from home that could be painted in a limited space.

could signify a hunt, the fact remains that the Thracian cloak, or the Thracian costume, features mostly in warfare scenes. Here, cavalry very similar to the riders on Cracow 345 are engaged in all kinds of activities, from departure to actual combat. It seems that the opposite is more plausible: the less the riders wear, the more they have in common with hunting scenes.

If it is not the Thracian cloak or the presence of dogs, then what could distinguish the riders on this lekythos as hunters? The most obvious explanation would be that they do not represent a typical warrior scheme. If we put their costumes on an axis in which one end would be gear proper for war, and the other would be gear for hunting, we would find that hunting is done in light garments and warfare in armour, therefore the figures departing with light equipment will be closer to hunting. However, this could hold true if we were dealing with a departure on foot, if, for instance, we had only our beardless youth footman represented. The present state of discourse concerning Greek warfare somehow vindicates such light-armed warriors (van Wees 2004, 61–76); however, it would be unusual to depict them departing alone, as they were still mostly insignificant for vase painters. If the scene depicted only light footmen, we could say it evoked hunting, but the riders are not ‘light’ in the same sense. They represent typical warfare attire, and, what makes this piece truly outstanding, it is actually somewhat atypical attire, as they are carrying shields. In fact, the very first interpretation of this vase by Piotr Bieńkowski (1917, 4–7) corresponded perfectly with that view. Even though Bieńkowski (1917, 6) follows Furtwangler and Helbig with the identification of such riders as mercenary Thessalians, from the presence of the shields he correctly concludes that they are meant to be used from horseback, and that this is a depiction of heavy cavalry with a foot squire.

Presently, the image of a warrior on horseback and with a shield is strongly connected with the so-called mounted hoplites – warriors who rode to battle on horses and then dismounted to fight on foot (Helbig 1902, 157–264; Greenhalgh 1973, 75–78, 96–98, 103–106; Anderson 1975, 175–187; van Wees 2004, 57–60). Therefore, usually when this scheme is presented, it is interpreted as such. Recently, some scholars have expressed different opinions; e.g., José Johannes Brouwers (2007, 305–319; 2010, 109–110) made a claim that the Argive shield was designed for riding on horseback, as it had a double-grip which allowed one to hold the reins, and a round rim so as not to injure the animal. Riders with their shield hanged on the shoulder or back were believed to be rare instances. Although scholars acknowledge their presence (Greenhalgh 1973, 131–132, A94–A96; Anderson 1975, 185),

they remain highly sceptical about the possibility of using shields while mounted. There are, however, images (Pl. 3: 2) that clearly show a cavalryman fighting from horseback with his Argive shield (see 1. Paris, Musée du Louvre F72; Plaoutine 1938, pl. 80: 1–7 [France 621]; Greenhalgh 1973, 121, fig. 64; *BADB* 7966; 2. Paris, Musée du Louvre MNC672; Pottier 1926, pls. 29: 4–5, 30: 1 [France 195–196]; *BADB* 10772), and another (Brussels, Musées Royaux R300; Mayence and Verhoogen 1949, pl. 23: 2a–2c [Belgium 117]; Beazley 1956, 288.9; *BADB* 320312) which shows a horseman fighting with a shield probably hanging on his back (or perhaps he put his forearm through the grip). Scenes showing horsemen with shields departing were not the most popular scheme, yet they do feature on several pieces, aside from the aforementioned Louvre CA4716 (see 1. Vatican, Museo Gregoriano Etrusco Vaticano 383; *BADB* 9032803; 2. Altenburg, Staatliches Lindenau – Museum 217; *BADB* 350460; 3. Tarquinia, Museo Nazionale RC3454; *BADB* 13882; 4. Syracuse, Museo Archeologico Nazionale 21956; *BADB* 301846; 5. London, British Museum 1836,0224.125; *BADB* 200728).

It would seem that the scheme of horsemen with shields signifies departing for war, but things are not as straightforward as this. Judith Barringer (2001, 21) has put great emphasis on how the hoplite equipment is introduced in the hunting imagery of the last quarter of the 6th century BC. She believes that this was done to reinforce the metaphor that hunting is like warfare. One of the features introduced was of course the shield. However, she does not cite numerous representations of this phenomenon from the Archaic period,⁵ only three, to be precise. Two of them are boar-hunting scenes, and since the scheme is connected to the Calydonian boar hunt, the presence of shields (and in one instance the full panoply, only without helmets) could have been used to emphasize the ferocity of that animal (see 1. Villa Giulia 74981; *BADB* 9028861; Barringer 2001, 26, fig. 15; 2. Munich, Antikensammlungen 1386; Beazley 1956, 306.39; Barringer 2001, 28, figs. 16–17; *BADB* 301519). It should be noted that Barringer (2001, 21, 213, n. 48) calls the horsemen wearing armour ‘mounted hoplites’, although in none of the instances to which she refers are the warriors equipped with shields; these are: Villa Giulia 74981 and Athens, National Museum 14858. There are heavy cavalrymen on those vases, but they are without any shields. Only one, much earlier vase with a representation of a Calydonian boar hunt has a row of mounted hunters with shields depicted chasing the beast at the very end of the hunting party (Boston, Museum of Fine Arts 34.212; Beazley 1956, 87.18; True 1978, pls. 64: 1–4, 65: 1 [USA 898–899]; Schnapp

⁵ Plus one from the 4th century BC.

1997, 290, no. 238; *BADB* 300807). However, it seems logical that this scheme is used to render the tension of this event. The third representation cited by Barringer (2001, 22, figs. 11–12) is a depiction of a shield in a deer hunting scene, where youths are using *chlamydes* like shields and one of them has an actual shield (Paris, Musée du Louvre G22; *BADB* 201376). The two other ones which she cites are more problematic, as one of them is none other than our *lekythos* Cracow 345 (Barringer 2001, 213, n. 47, 51). The last one is non-Athenian (Barringer 2001, 231, n. 124), and I believe it does not depict hunting at all. It is a terracotta *cima* frieze of c. 540–525 BC from Thasos (and also another rendering of this scheme found in Thasos; see Picard 1941, 56–68, figs. 1, 5, 8). It depicts Thracian horsemen galloping with raised shields and spears in an attack position and below the dogs are chasing hares. Charles Picard (1941, 56–68, figs. 1, 5, 8) was puzzled why shields were needed to hunt hares, but the horsemen are not actually interested in the game. Their eyes and spears are not facing downward but upward, toward the invisible foe. The dogs chasing hares could be viewed as a metaphor for warfare; it is actually best suited for referring to a swift and deadly cavalry chase. Barringer (2001, 43) herself postulated that her analogy should go both ways, that we should have representations where warfare is like hunting, but concluded that: ‘There are no extant battle scenes marked with hunting peculiarities’. A scene very close to those from Thasos can be found on Athenian vases. For instance, Tübingen S/10 1298 (Beazley 1956, 81.5; *BADB* 300758) depicts a dog chasing a hare under heavy cavalymen; the two animals are separated, as they are depicted under the horses on opposite sides of the vase.

So, if the depictions of shields in hunting scenes are rare, and they are frequent in scenes of warfare, then we could infer that the horsemen on Cracow 345 are in fact closer to being warriors. This is yet a hypothetical claim, as the scene on this vase was connected with other, unquestionable representations of hunting based on their syntagmatic and paradigmatic similarities. Schnapp also wanted to add a *lekythos* from Vienna to the sequence of hunting, although, from my understanding, he perceived the connections between this set of three vases not to be as strong as those between the two pieces by the Gela Painter. In truth, Vienna 194 shows hunters who could easily be connected with Basel-private, as it also shows two hunters on foot. The Basel-private *lekythos* depicts a return from the hunt, where two huntsmen arrive on foot at the Doric column similar to the one on Cracow 345. They are carrying hares, but Schnapp (1997, 245–246) is not fazed but such small prey, as it is simply a symbolic rendering of returning

home with game. In other words, the game carried here is conventional, as is the fact that hunting is often depicted on horseback and hunters always return on foot (Schnapp 1997, 245). However, Schnapp does not stop at these generic similarities and he claims that the hunter with a stick on Basel-private is strikingly similar to the footman on Cracow 345. I would claim the opposite. We could omit the details, like the fact that one wears a *petasos* and the other does not, or that one has a stick, whereas the other does not; the fundamental difference is that on Cracow 345 the footman is a youth, and on Basel-private he is a bearded man. These two do not interchange in a syntagma of Greek vases without changing its meaning.

Furthermore, one might ponder the differences within the syntagmas of said scenes regarding these figures. If we look at the whole scene on Cracow 345 (Pl. 2: 1), it may seem that the youth is in the centre of it. That is not the case here for two reasons. First, all figures are moving in one direction, so there is not a centre of the scene per se, as there would have been had one of the horsemen turned toward the youth. Secondly, and more decisively, in the viewing context of the pot only a part of the scene can be seen at once. Although the figure of the youth is painted directly opposite the handle, it is not the primary viewing context, as the vase would be held in the right hand, thereby the centre-right surface of the scene would be visible first (see Stansbury-O'Donnell 1999, 73–74, esp. fig. 30). When holding the vase in its natural position, we can see the frame with the first horseman and the youth following him, exactly like on similar lekythos (Pl. 4: 1). The scene visible when holding Basel-private in such position can be seen in Pl. 3: 2, and there the man who, according to Schnapp, corresponds to the youth is leading the group of hunters, so if we compare the syntagmas, his equivalent would be the first rider, and not the youth. What is really similar about them is the way their figures are painted: the artisan used one figure-scheme and made some minor adjustments in composition, but these changed the meaning of the scheme, which tells us more about how the image is constructed. The painter is adding and removing pieces along the syntagmatic axis based on pre-configured pictorial templates. Other scenes painted by the Gela Painter seem to confirm the scheme theory. Schemes of setting out are constructed as such, like on the lekythos from a private collection (Pl. 4: 1), where this artisan painted two horsemen almost exactly like on the Cracow 345, but between them stands not a youth, but a bearded man in a Phrygian cap; also, the dogs and the column are missing (London, Market, Bonhams; *BADB* 9029282). And to render the subject of warriors setting out, the Gela Painter also used another template, of two warriors leading horses,

like on the oinochoe from Villa Giulia (Rome, Museo Nazionale Etrusco di Villa Giulia 47466; Beazley 1956, 475.28; *BADB* 303360) and on another vase from a private collection (Paris, Market; Beazley 1971, 215; *BADB* 340825), where heavy-armed warriors lead one horse each. This scheme was used also in another image of two bearded males leading horses with two spears (Ferrara, Museo Nazionale di Spina T737; Beazley 474.20; *BADB* 303352). As they do not possess any features connected with warfare, could it be that it is a depiction of setting out for a hunt? I believe that it could, as it cannot be read in such a way that would exclude the possibility of hunting. But, is it not a case similar to the lekythos Cracow 345? Perhaps the painter put dogs in this picture deliberately, to evoke the hunt in that particular scheme? This notion could be tempting, but the most obvious explanation is a different one: that he put shields on the back of the horsemen to specifically *not* evoke a hunt.

If we set Cracow 345 with another piece Cleveland 29.134 (Cleveland, Museum of Art 29.134; Boulter 1971, pl. 18: 1–3 [USA 698]; *BADB* 760) from the Leagros group, the similarities would again be striking. Here we have what is believed to be a return of a warrior (Pl. 4: 2); the hero is leading a horse, and his retainer is flanking the scene on foot. Both have wreaths on their heads and are greeted by sitting men. The warrior leading the horse wears light attire, carries two spears and is un-armoured, except for the Argive shield slung on his back. That scene shows greater similarities with Cracow 345, as the key features are preserved, while Basel-private really has only the Doric column, which could be just a technical feature used by the Gela Painter to render a domestic or urban environment. And a brief look at the works of this artisan seems to confirm this hypothesis.⁶

The pairing of Cracow 345 and Cleveland 29.134 will result in a coherent warfare set, but the combination proposed by Schnapp still holds. Remarkably, looking at those two vases we could still be imagining a hunting sequence. This is happening because the syntagma of the scene is not closed and defined as structuralists would think, but open and dependent on the viewing context (Miścicki 2015, 116–118). Context is the most important

⁶ Some of the lekythoi with columns depicted, attributed to the Gela Painter, that have subjects unconnected to the aforementioned pieces include: 1. Boston, Museum of Fine Arts 99.526; Haspels 1936, 209.81, pl. 24: 4; *BADB* 2930 (merchants selling oil); 2. Agrigento, Museo Archeologico Regionale C845; Haspels 1936, 210.117; *BADB* 15723 (Dionysos); 3. Hamburg, Museum für Kunst und Gewerbe 1899.96; Haspels 1936, 210.100; Beazley 1971, 214.100; *BADB* 340803 (Maenads dancing).

factor, and putting two images close to each other is enough to establish a link between them (cf. Marconi 2004, 30–40). In some cases, the schemes of the scenes with their plural meanings could be prone to very different readings. However, in other cases, the painters had arranged the signs on the vase so that the person who already knows their meaning could have his interpreting possibilities severely limited. The 5th century scenes depicting the departure of warriors could serve as an example, as they present very precise rendering of different parts of *ephebia* which limits the interpretation (Matheson 2009, 396–403). Interestingly, Cracow 345 could also undergo such a reduction.

Nevertheless, it should be asked whether this distinction is meaningful, given the strong connection between warfare and hunting in the imagery. For Schnapp, the setting out for war could be substituted for setting out for a hunt, and Barringer had shown how these activities are close. Yet, although these subjects are similar, they evoke something different. The bulk of warrior scenes is agonistic, in the sense that equal warriors are pitted against each other; the way in which hunting is depicted could be either fighting monsters (terrible beast like the Calydonian boar), or catching and slaughtering game. Barringer (2001, 21) even cites one lekythos where heavy cavalrymen are mauling a deer as a hunt resembling warfare. That scene has its almost exact analogies in depictions of warfare, where two cavalrymen are mauling a fallen hoplite (see Munich, *Antikensammlungen* 1500; Kunze-Götte 1982, Taf. 30 [Germany 2327]; *BADB* 7640; cf. above Paris, Musée du Louvre MNC672).⁷ Hunting is like warfare, but not like every kind of warfare, only its particular, most brutal and terrifying aspects. This distinction is further elaborated by the inclusion of the hoplite armour in the hunting scene, as it serves a completely different role than it would in war. This case is very similar to the depictions of pursuits interpreted by Christianne Sourvinou-Inwood (1991, 29–51), where the spear in the chase cannot be exchanged with a sword; they are not equivalent. Here, in warfare, armour is a source of pride, identity (Lissarrague 1989, 51; Lissarrague 2010, 194–196); it could even be viewed as a second skin of the warrior, or it could be said that a warrior is not a warrior without armour. Even the scheme of the so-called ‘heroic nudity’ consists of a naked man, but with a helmet and greaves, a shield and a spear (Hurwit 2007, 45–52). In hunting scenes, elements of equipment serve to emphasise the danger of the hunt. The equivalent of ‘armour’ in hunting scenes is ‘non-armour’, that is why one of the most

⁷ Which is in itself a variation on the scheme of two horsemen fighting with each other over the lying hoplite, who is being trampled.

popular schemes is a man shielding himself with a chlamys to signify that non-armour elements are being used as armour.

Given the differences between those two subjects, let's return to our lekythos and inspect the scene looking for syntagmatic features that will limit the interpretation. How to look for such features? The answer is: via a commutation test (Barthes 2005, 37; Chandler 2007, 88–90). The viewer must read the signs, and then change them one by one and see how the meaning will change. First of all, the signs must reflect reality in such way that putting them within the image should be conceivable for the viewers: to put simply – things have to work properly. When we see a rider with a shield, two options are possible: he could either use it on horseback, or dismount. For warfare imagery, as we have concluded, both options are possible. As for hunting, it would be very puzzling to envisage huntsmen using shields from horseback, not only because hunters are shown without shields and only hurling javelins, but because it is illogical: the horse protects the rider from animals, so they could not attack the man himself, they could not even reach the shield, therefore it seems useless. True, the hunters on the solitary Calydonian boar hunt scene are mounted and have shields, but they are at the rear of the chase, and furthest apart from the animal. They could very well dismount for the actual hunt. However, their rendering signifies that they are not to be viewed as the most noble members of the hunt, quite the contrary: the mixing of two protective devices, a horse and a shield, should evoke further fear of the boar in the viewer's mind. Maybe the horsemen on the lekythos could dismount for the hunt? It would work if the image was taken out of context, but given its signs operate within the frames of Greek imagery, this is not the case. The horsemen on the lekythos are heroes, the most important figures in the scene, as sitting on horse is valued higher than being a youth on foot. If they were destined for dismounting for the hunt, their shields would demote them, for in the hunt less is more, and the shield-less youth would seem to be more dominant, therefore turning around the meaning of their positions on the vase. Even if we stuck to the reading where shields do not demote the members of the hunting party, they certainly do not promote them, and dismounting for a figure dressed as the epitome of a rider – the Thracian horseman – would seem very odd.

To sum up, the lekythos from the Institute of Archaeology of the Jagiellonian University in Krakow has its base-reading set as a departure of warriors, although since they are depicted in versatile attire, it could be viewed as a hunting party. To specify the reading, certain measures were

taken by the painter, as the riders were equipped with shields, making interpreting them as hunters difficult. Since the space for rendering a scene on a lekythos is constrained by the form of the vase, simple solutions are preferred. Here, the pictorial template is definitely that of departure for war. However, since the scheme is still composed of very few signs, and most of them have multiple meanings, open interpretations are still possible and welcomed.

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Pl. 1. Athenian lekythos, Cracow 345.
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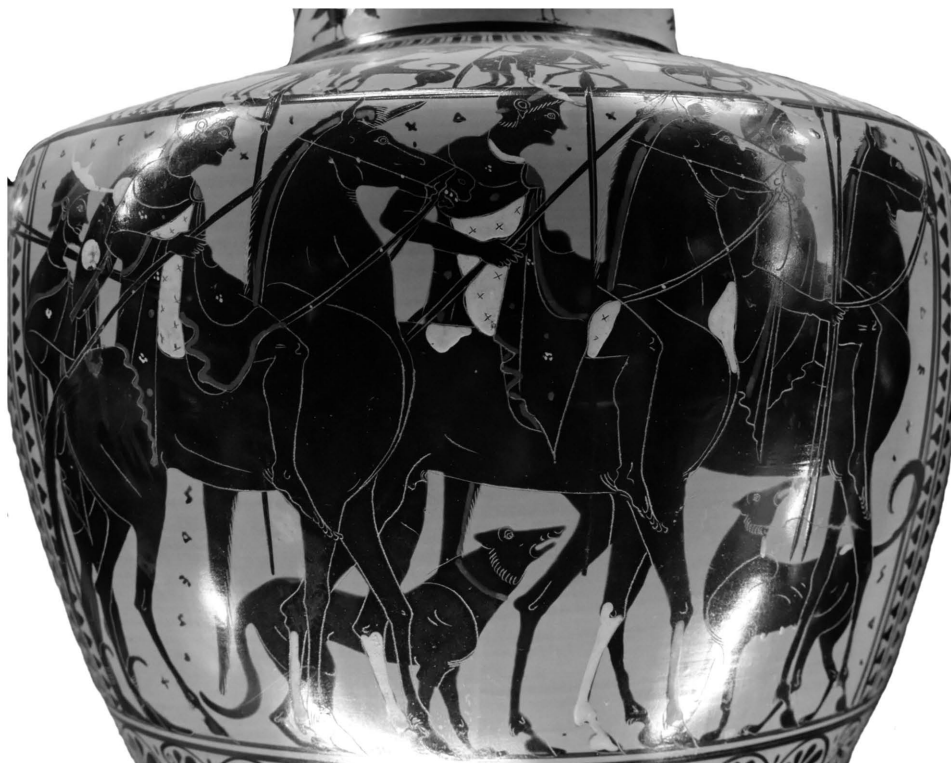


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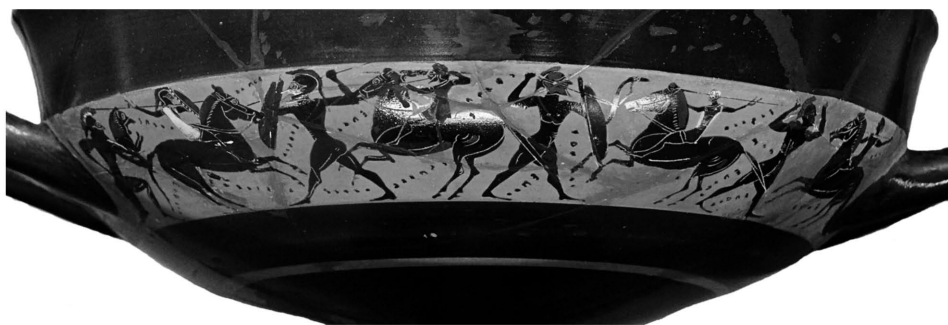


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Pl. 2. 1 – Athenian Lekythos, Cracow 345. Drawing after Bieńkowski 1917, fig. 3. Reprinted by permission from the Polish Academy of Arts and Sciences;
2 – Athenian lekythos from private collection, previously in Basel.
Drawing by the author



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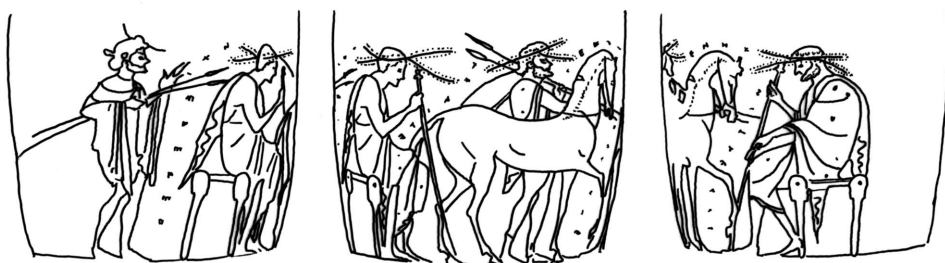


2

Pl. 3. 1 – Athenian hydria, Louvre CA4716. Photo by Marie-Lan Nguyen. Photo in Public Domain; 2 – Athenian Little Master Band Cup. Louvre F72. Photo by Marie-Lan Nguyen. Photo in Public Domain



1



2

Pl. 4. 1 – Athenian lekythos, from private collection. Drawing by the author;
2 – Athenian Lekythos, Cleveland 29.134. Drawing by the author

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INVESTIGATION
ON THE IMPLEMENTATION
OF OPTICAL REFINEMENTS
IN THE PARTHENON FRIEZE RELIEFS

Abstract: *Issues related to visual representations as perspective distortions, optical illusions and refinements were known in antiquity, since a number of architectural monuments are illustrative of such practices. The Parthenon of Acropolis in Athens is a relevant example where this knowledge was probably applied. The present paper aims at providing analytically documented evidence of whether optical refinements were considered in adjusting the background level inclination of the Parthenon west frieze reliefs and in the design of the carved human figures. For this reason, the implementation of optical refinements for avoiding perspective distortions is elucidated and the calculations for their prediction described. Employing this mathematical analysis, optical refinements related to the west frieze reliefs and their background inclination were determined. These diminish optical illusions when a region of the frieze blocks' is observed from a viewpoint on the stylobates' level between two columns. Also presented are characteristic anthropometric proportions per international standards, and their modifications when optical refinements are applied. These modified proportions of a human body are compared to those of human figures carved on the Parthenon west frieze blocks.*

The latter were determined via evaluation of their digital data obtained by means of 3D laser scanning. What was revealed, was an impressive conformity between the reliefs' background inclination along with the depicted human body proportions of the Parthenon frieze, and the corresponding ones calculated for avoiding optical illusions due to perspective distortions. These findings give substantial weight to the hypothesis that optical refinements were implemented in the Parthenon west frieze. However, they cannot exclude the fact that the human body proportions followed aesthetic rules and norms of the Parthenon construction period.

Keywords: *Parthenon west frieze; perspective distortion; anthropometric proportions; optical refinements*

Introduction

Issues related to visual representations, as perspective distortions, optical illusions and optical refinements were known in antiquity, since a number of architectural monuments provide at least empirical evidence of such practices (Le Corbusier 1986; Korres 1999). The complex of the Acropolis in Athens, and particularly the temple of the Parthenon, is the most striking example where this knowledge was perhaps applied at its best (Fletcher and Sir 1996; Bouras 1998; Korres 1999). This *peripteral* temple on the Athenian Acropolis with *hexastyle* double *prostyle cella* was dedicated to the goddess Athena Parthenos, the patron (Polias) of Athens. Its construction began in 447 BC and was completed in 438 BC, although its decoration continued until 432 BC. While difficult to be seen from the ground, since it was positioned almost right under the coffered ceiling of the *pteromata* and partly masked by the columns of the *peristyle*, a significant feature in the architecture and decoration of the Parthenon is the bas-relief frieze illustrated in Pl. 1: 1. It was an uninterrupted band that ran roughly 11.5m above the *stylobate* of the *peristyle*'s columns, along the upper edge of the exterior walls of the *pronaos*, *naos*, *opisthodomos* and *opisthonaos*. It consisted of 115 blocks of approximately 160m in total length and 1m in height (see Pl. 1: 2). The frieze, carved mainly with continuous figured sculpture, represents a procession consisting of human figures and animals, mostly horses. The present paper investigates whether the parameter of perspective distortions influenced the design of human figures carved in the frieze reliefs, as well as the adjustment of their background inclination. Hereupon, based on measurements of sculptured human figures depicted in the west frieze reliefs, characteristic human body proportions were

calculated. These were compared to corresponding ones of human bodies, respecting anthropometric standards that were adequately modified using analytical methods. The modifications enable the avoidance of perspective distortions of human figures placed on the frieze and observed from the *stylobates*' level, between two columns.

Optical refinements for avoiding perspective distortions

The first systematic scientific attempt to analytically describe optical phenomena can be found in Euclid's *Optics*, early in the 4th century BC (Kourniati 1998). Through a number of definitions and postulates, Euclid introduced a body of theorems about vision and visual representation. The basic postulates presented in *Optics* related to the described investigations can be freely expressed as follows. The perceived size of an object is related to the distance between the object and the observer (viewpoint). The perceived size of the object and the distance between the object and the viewpoint are always inversely proportional, thus meaning that the more the distance increases the more the perceived size decreases. The related Euclidian statement describing these dependencies is, in its original phrasing: *Τά ἴσα μεγέθη ἀνίσον διεστηκότα ἀνίστα φαίνεται καί μείζον αἰεί τό ἐγγιον κείμενον τοῦ ὀμματος* (statement 5 of Euclid's *Optics* and visual representations in Kourniati 1998, appendix I). Therefore, as shown in Pl. 2 in the case of a high building, when entities of the same height u are located at different distances from the observer, the one nearest to the viewpoint, for example entity 1, is seen as larger (height u_1) compared to entity 2 (height u_2), although both entities possess the same height u . This happens because, as the distance from the viewpoint increases, the objects are gradually seen smaller than they actually are. To avoid such optical illusions due to perspective distortions, optical refinements (corrections) have to be part of the initial design of an object. In this case, the object should be designed adequately modified to appear correct when observed from a specific viewpoint. In the calculation of the corrections, the relevant location of the viewpoint relative to the observed object has to be considered.

Analytical determination of optical refinements

Having explained the rationale behind the artist's need to make optical refinements in order to bypass optical illusions due to perspective distortions, the analytical definition and calculation of these necessary

optical corrections is introduced. The conducted procedure in the case of an object of a height U is explained in Pl. 3: 1, 2. The objective is to observe the n vertical equivalent sub-regions u_1 to u_n of this object, as presented in Pl. 3: 1, as of equal size from a certain viewpoint. The position between the object and the viewpoint is fixed and defined by the parameters b and Y . Without optical corrections, the equal-sized n sub-regions $u_1, u_2, \dots, u_n (=U/n)$ would correspond to unequal sub-visual angles $\omega_1, \omega_2, \dots, \omega_n$ (see Pl. 3: 1). In this way, according to the principles of visual perception, the unequal sub-visual angles $\omega_1, \omega_2, \dots, \omega_n$ result in a distorted perception as far as the size of each sub-zone is concerned. As already described, the observer perceives the sub-zones closest to him as larger than they really are, as opposed to those that are at a greater distance, whose length he sees as smaller than the actual. To avoid this kind of optical illusion, the perspective distortion of the object when seen from a specific viewpoint should be taken into account and the necessary optical corrections determined, as elucidated in Pl. 3: 2. Keeping the overall height U constant, the heights of the sub-regions must be changed in order to correspond to equal sub-visual angles $\omega_1', \omega_2', \dots, \omega_n' = \Omega/n$, whereas Ω is the constant sum of the sub-visual angles. In this way, every sub-visual angle ω_i of constant value is associated with diverse sub-regions' heights u_1', u_2', \dots, u_n' which can analytically be determined employing the following equations:

$$\Phi = \text{atan}((Y+U)/b) \quad (1)$$

$$\varphi = \text{atan}(Y/b) \quad (2)$$

$$\Omega = \Phi - \varphi \quad (3)$$

$$\omega = \Omega/n \quad (4)$$

$$u_i' = b * \tan(\varphi + i * \omega) - b * \tan(\varphi + (i-1) * \omega) \quad (5)$$

$$i = 1, 2, \dots, n \quad (6)$$

Consequently, the lower sub-regions are shorter than the upper ones. Hence, if optical refinements are employed to bypass optical illusions due to perspective distortions, potential sculptured figures within the height U on the xy level should be appropriately designed, i.e. respectively corrected.

Furthermore, to avoid optical illusions, the dimensions in the z direction should also be corrected considering the dependencies presented in Pl. 3: 3, 4. Applying the previously described methodologies, for an observer to perceive the dimension t_1 as equal to t_n at the vertical distance U (see Pl. 3: 3, 4), the angles of observation ω_1 and ω_n must be equal. Hence, the dimension t_n must be corrected to t_n' using the following equation:

$$t_n' = (Y+U)(\tan(90-\varphi_{nr}+\omega_1)-\tan(90-\varphi_{nr}')) \quad (7)$$

whereas:

$$\varphi_{nr}' = \varphi_{nr} \quad (8)$$

$$\varphi_{nr} = \text{atan}(Y/(b-t_1)) \quad (9)$$

$$\omega_1 = \varphi_{1r} - \varphi_{1l} = \text{atan}(Y/(b-t_1)) - \text{atan}(Y/b) \quad (10)$$

According to the described analytical methods for defining optical corrections, although the volume V possesses a trapezoidal cross section, an observer perceives this volume as being orthogonal. In this way, an optical illusion due to perspective distortion is avoided.

Calculation of optical refinements adjusted to the west frieze data

The optical corrections depend on the position of the viewpoint. Hereupon, three regions could be considered as potential standing places to observe the west frieze of the Parthenon (Stillwell 1969; Ashmole 1972; Osborne 1987; Marconi 2009). A viewer could have been standing on the terrace outside the temple at the front of the *opisthonaos*, or between two columns of the *peristyle*, or even within the *peristyle* on the *stylobates*' level. On the one hand, an observer on the terrace could have seen the west frieze as a series of long panels framed on both sides by the *peristyle*'s columns and their capitals (Marconi 2009). Moreover, because of the long horizontal viewing distance of about 14m and the lower terrace level of approximately 2m compared to that of the *stylobates*' (Stillwell 1969; Orlandos 1978), the frieze background inclination would not have been perceivable due to restrictions set by the human eye acuity, as clarified in the following. On the other hand, a visitor would have not been able to enjoy a full view of the frieze within the *peristyle* since the relevant space is narrow and the observation angle too sharp. Therefore, in the frame of the present study, the most likely places for enabling an undisturbed view of west frieze regions were considered to be between the *peristyle*'s columns on the *stylobates*' level, as demonstrated in Pl. 4. From these places, an observer would look up more comfortably, at a less sharp angle compared to positions within the *peristyle*. However, because of the still sharp observation angle and the considerable distance from the eye due to the height of the frieze blocks on the architraves, the frieze reliefs appear distorted. Hence, it can be supposed that the sculptors were aware of this problem and the reliefs' tilt and the human figures' proportions were probably adjusted in order to avoid optical distortions.

For adjusting the previous parameters, the horizontal distance *b* between the viewpoint between two *peristyles*' columns and the relevant frieze

region is considered to be approximately 4m (Orlandos 1977). In order to define the vertical distance Y between the observer and the viewed object, an assumption regarding the height of an average man of that period was made. Taking the height to be 1.65m, his eyes (viewpoint) should be about 1.5m higher than the zero reference level. Moreover, considering that the height of the frieze U amounts approximately to 1m and that it is set roughly at 11.5m above the zero reference level associated with that of the *stylobates*, the relative vertical distance Y of the viewed object from the viewpoint is around 10m. These distances will be referred to in the following sections as ‘the west frieze data’.

The application of equations (1) to (6) for calculating the necessary optical refinements to avoid perspective distortions is demonstrated in Pl. 5. To the left, the displayed human body is divided into n =eight zones of equal length. Hereupon, the equation (5) was used for determining the individual height’s corrections u_1 to u_8 of the introduced eight sub-zones. The results of these calculations are graphically demonstrated on the right in Pl. 5. An observer perceives the eight sub-zones as equal in length from the indicated viewpoint if the higher zones are adequately stretched, and the lower ones are shrunk compared to their actual size. According to the table at the bottom of Pl. 5, the percentage increase in the upper top sub-zone u_8 ’ corresponding to the head height reaches roughly 7.5%, whereas the length of the lowest sub-zones u_1 ’+ u_2 ’ related to the shin length decreases at a percentage of 6.12% compared to the actual sizes of u_8 and u_1+u_2 respectively. These data remain almost constant if the distance b varies within a range of 3m to 4m. Furthermore, these data are considered for determining characteristic human body proportions optically corrected, as described in the next session.

The potential application of optical refinements, also in the perpendicular direction to the drawing surface of the human figure presented in the previous Pl. 5 may explain the inclination of the background level of the Parthenon frieze reliefs, as described in the publication (Bouzakis *et al.* 2016). The front plane of the reliefs is set at a right angle to both the upper and lower faces of the frieze blocks. The volume V , shown in Pl. 6, envelops the frieze reliefs and is associated with the sculptors’ working space (Bouzakis *et al.* 2016). It possesses a trapezoidal cross section with lengths of the short parallel lower and upper sides of 47mm and 55mm respectively (see the right side of Pl. 6). If these sides had a common length of 47mm, as exhibited in the left side of Pl. 6, the observation angle ω_n of the upper side would be smaller compared to the lower one ω_1 . In this way, an observer would perceive the width t of

the frieze relief enveloping volume as decreasing versus its height U . To avoid this optical illusion, the upper volume side t_n had to be larger compared to the lower t_l and associated with the same observation angle ω_n' as that of t_l , namely ω_l , which in the present case amounts to approximately 0.232° calculated by means of equation (10). Employing equation (7), considering that ω_n' is equal to ω_l , i.e. equal to 0.232° , the enveloping volume's upper width t_n' is determined to 50.5mm, i.e. slightly smaller compared to the actual width t_{na}' of 55mm determined on the frieze blocks (Bouzakis *et al.* 2016). The actual width t_{na}' corresponds to the observation angle ω_{na}' which can be calculated with the aid of the following equations:

$$\omega_{na}' = \varphi_{nr}' - \varphi_{nl}' \quad (11)$$

$$\varphi_{nr}' = \varphi_{nr} \quad (12)$$

$$\varphi_{nl}' = \text{atan}((Y+U)/(b-t_l+t_{na}')) \quad (13)$$

$$t_n' = (Y+U)(\tan(90-\varphi_{nr}+\omega_l) - \tan(90-\varphi_{nr}')) \quad (14)$$

It has to be taken into account that during the construction period of the Parthenon in order to determine t_n' , graphical and not analytical methods were available where the design of ω_n' with the value of ω_l was required. In this way, the developed slight deviation of 0.021° between $\omega_n' = 0.232^\circ$ and $\omega_{na}' = 0.253^\circ$ is reasonable and justified by the drawing's uncertainties. Hereupon, it can also be assumed that this deviation was intentionally introduced considering the visual acuity of the human eye. More specifically, the ability of the human eye to distinguish fine details is often quantified by minimum visual acuity. This metric is based on the smallest separation at which two parallel lines can be discriminated from one another by the human eye (Cameron *et al.* 1999). The most commonly cited value for the visual acuity of the human eye amounts to approximately a minimum observation angle of 0.017° . This value is highly influenced by the contrast and luminance level of both the target and its background. Since an observation angle of 0.016° associated with the difference between the ω_l and ω_n angles (see Pl. 6) is slightly lower than the previously mentioned minimum visual acuity angle and moreover, the frieze was not well-lit because it was positioned almost right under the coffered ceiling of the *ptermomata*, the reliefs' background inclination would not have been perceivable. Hence, the sculptors tried to avoid a visual obscurity concerning the reliefs' background inclination by empirically increasing the difference between the ω_l and ω_n angles up to 0.037° in order to become sufficiently larger than the minimum visual acuity.

Furthermore, applying the equation (11) for $U/Y/b$ equal to 1/12/14 m respectively (see Pl. 6), i.e. for the case of observing the frieze reliefs

from ground on the terrace, the difference between the relevant ω_1' and ω_{na}' angles is determined to be $c. 0.017^0$. In this way, due to the above-described reasons, the reliefs' tilt is not perceivable and would have been rendered superfluous if it was observed from the terrace. Taking into account the previous dependencies, the possibility of implementing optical refinements when adjusting the Parthenon frieze reliefs' background inclination cannot be excluded.

Anthropometric proportions and their optical refinements adjusted to the west frieze data

To enable a comparison between characteristic human body proportions as carved on the Parthenon frieze blocks with corresponding ones of an average human body, some basic human body proportions based on anthropometric measurements are introduced. Thus, the Golden Section, or 'Divine Proportion' of the human body, with reference to the Vitruvian Man of Leonardo da Vinci (Zwijnenberg 1999; Neufert 2000), and international standards regarding ergonomics and body dimensions of people (*DIN* 33402-2 2005) were applied. According to these references, characteristic proportions between parts of the human body exist. More specifically, if an average person's height is equal to a , as shown in the left part of Pl. 7, the length of the head is equal to $a/8$, or $a/7.95$ of the height according to Neufert (2000) and *DIN* 33402-2 (2005) respectively. Moreover, the proportion of the shin length to the human body height equals $1/4$ and $1/3.8$ respectively using the above references. Furthermore, for determining the necessary optical refinements in order for both the head and the shin of an average man to be perceived by an observer with physical proportions when viewed according to the Parthenon west frieze data, the calculated optical corrections presented in Pl. 5 were considered. The 'height/ head' and the 'height/shin' proportions, if the human body height a is equal to the height U of Pl. 5, are calculated by means of the following relations:

$$\text{height/head} = U/u_8' = 1/0.1250 = 7.44 \quad (15)$$

$$\text{height/shin} = U/(u_1' + u_2') = 1/(0.1162 + 0.1185) = 4.26 \quad (16)$$

The values of U , u_8' , u_1' and u_2' are taken from the table at the bottom of Pl. 5. Thus, for avoiding perspective distortions the upper regions of the human body should be stretched compared to their actual size, while the length of the lower ones should be reduced. In this way, it is inevitable that their relative human body proportions of 'height/head' and 'height/shin' should also vary from the physical ones. Considering the west frieze

data, the ratio ‘height/head’ diminishes compared to the physical one, while the ratio ‘height/shin’ increases, as presented on right of Pl. 7.

Determination of anthropometric proportions in human figures carved on the Parthenon west frieze blocks and their comparison to corresponding physical ones optically corrected

To investigate whether the human bodies depicted in the Parthenon west frieze were carved with optical refinements, their head and shin lengths were determined. This determination was performed by evaluating the digital database of the Parthenon west frieze blocks created by means of 3D laser scanning, as described in reference (Bouzakis *et al.* 2016). To avoid measurement divergences related to the positioning of the figures on the block reliefs, almost standing human figures were selected. More specifically, the standing human figures carved on the west frieze blocks WF_III, WF_V, WF_XII and WF_XVI were evaluated, as exhibited in Pl. 8. The selected human figures were the P4 (WF_III), P6 (WF_III), P9 (WF_V), P22 (WF_XII), P23 (WF_XII) and P30 (WF_XVI). The numbering of the blocks and the figures was conducted according to Jenkins (1994).

The determination of the head and shin dimensions, as well as their proportions to the standing human figures depicted in the west frieze reliefs, is elucidated in Pl. 9. The length of the head and shins of the individual human bodies was defined by evaluating the digital database of the 3D frieze reliefs (Bouzakis *et al.* 2016). Characteristic results of such an evaluation related to human figures P4 and P6 of the third west frieze block are displayed in Pl. 9: 1. The horizontal lines of the human body’s dimensions are indicative and refer to the relevant dimensions of the digital 3D models of the reliefs. The determination accuracy is estimated to be less than 1mm. The same procedure was followed for all selected human figures of the west frieze blocks. The attained results for the height, head- and shin-length are inserted in the corresponding columns of the table in Pl. 9: 2. Based on these results, the corresponding ratios ‘height/head’ and ‘height/shin’ were calculated. These are displayed in the last two columns on the right of the previous table.

A comparison between these ratios and the corresponding calculated ones, as described in Pl. 7, can be observed in Pl. 10: 1, 2 for the ‘height/head’ and ‘height/shin’ proportions respectively. It is obvious that the actual heights to head and shin proportions of the standing human figures in the west frieze reliefs converge sufficiently with the optically corrected ones

considering the west frieze data. This fact supports raising the hypothesis of the existence of analytically determined optical refinements in the human figures carved in the Parthenon west frieze blocks to achieve better perspective representations. Hereupon, it cannot be excluded that the initial human body proportions were deliberately differentiated from those derived from a real human body, following specific aesthetic rules and norms of the Parthenon construction period (Kokkorou-Alevra 1990). However, the exact conformity of the human figure's proportions and of the reliefs' background inclination to related calculated data strengthens the assertion that aspects of optical refinements were implemented in the Parthenon frieze.

Conclusions

The implementation of optical refinements for avoiding perspective distortions when the Parthenon frieze reliefs are observed from the *stylobate's* level was investigated. The presented results give reasons to assume that optical corrections were employed in the carved human figures in the Parthenon frieze reliefs and in adjusting their background inclination. The deviations from the physical anthropometric proportions of the carven human figures, which converge with the results of related calculations, offer support for the employment of optical corrections to avoid optical illusions due to perspective distortions. Moreover, the conformity of the frieze reliefs' inclination with the analytically determined one considering optical refinements, further ascertain the potential application of optical corrections. Although these findings may be elucidated according to aesthetic rules and norms of the Parthenon construction period, the compliance between actual and calculated frieze data for avoiding perspective distortions, as described in the paper, renders the implementation in antiquity of mathematically estimated optical refinements possible.

Acknowledgments

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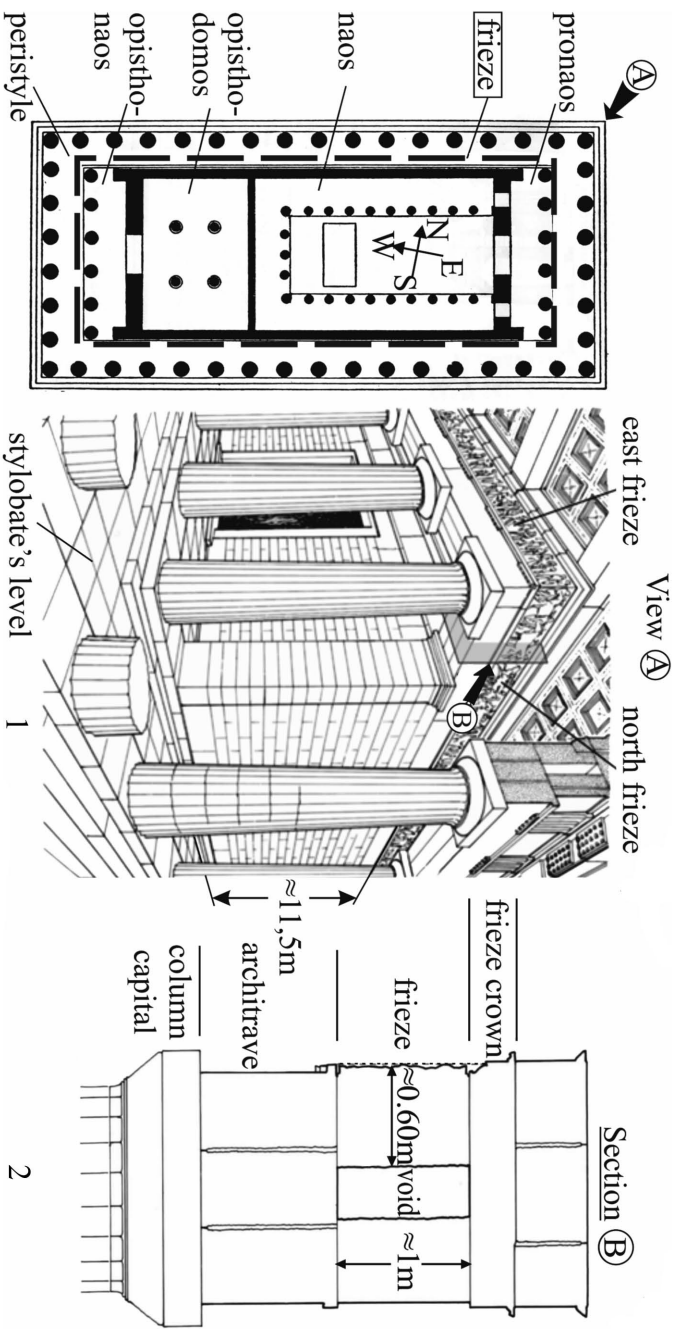
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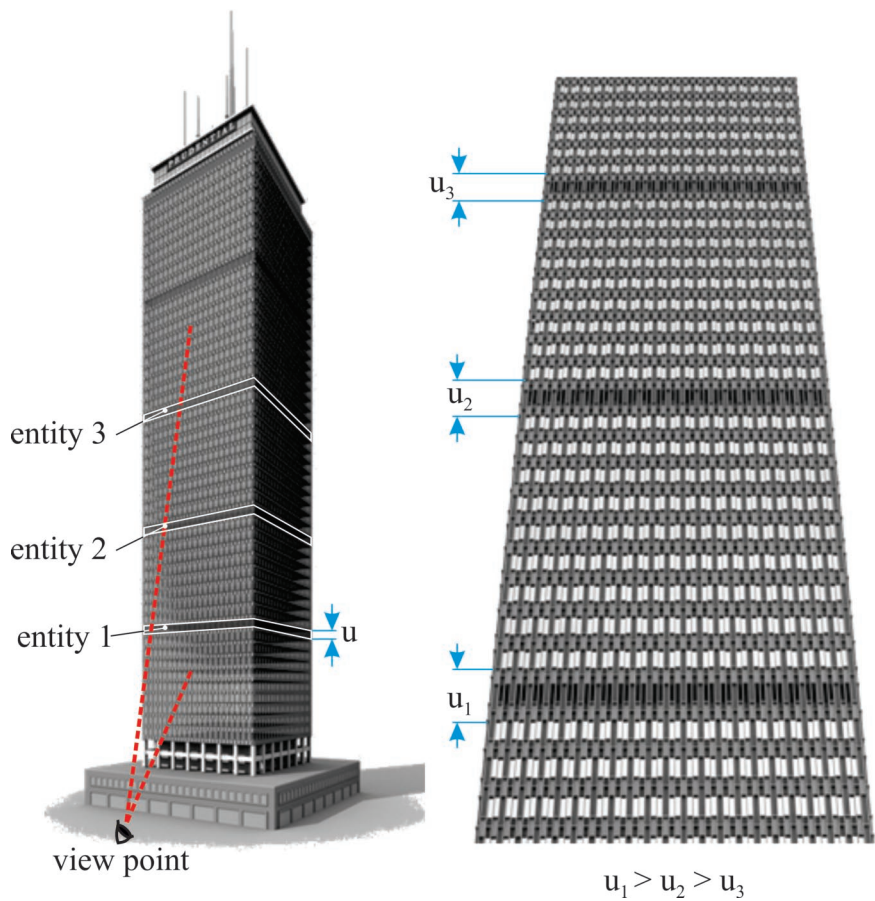
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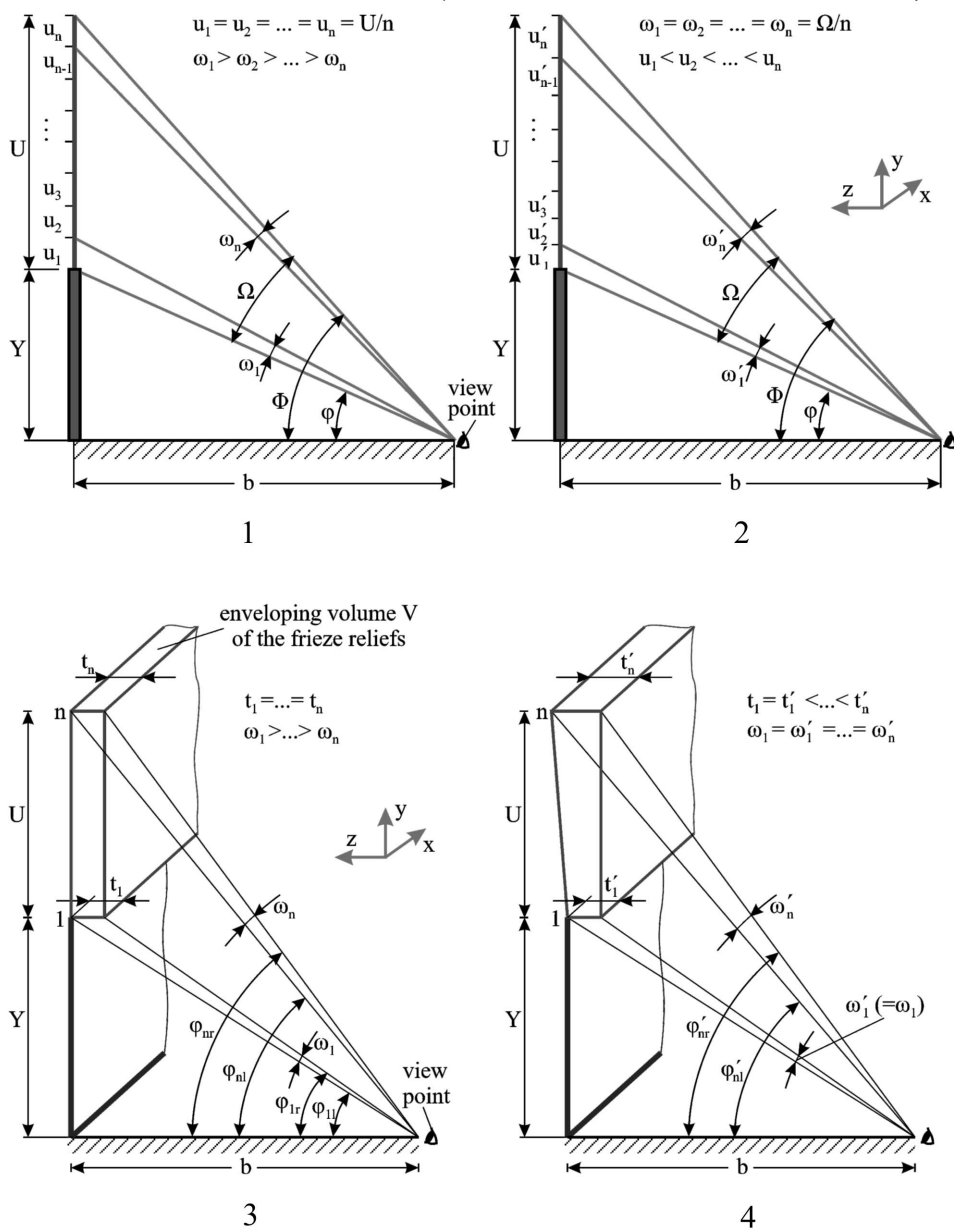
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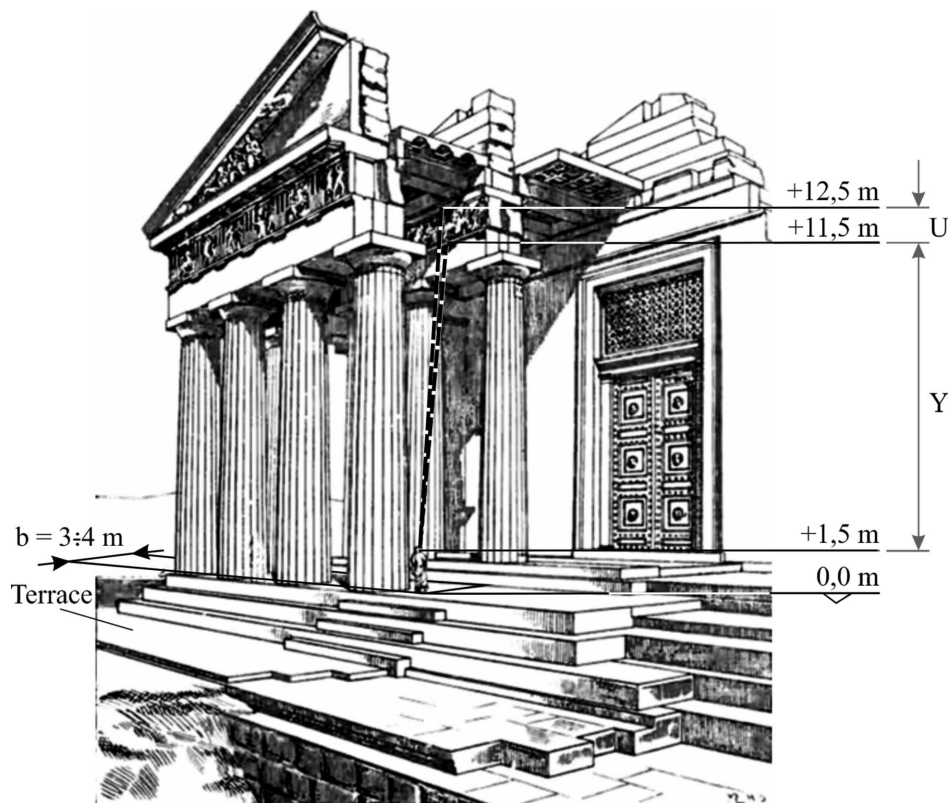
Pl. 1. 1 – The positioning of the frieze reliefs in the Parthenon temple;
2 – Main dimensions of the frieze blocks. Drawings by the authors based on figures of Orlando 1977



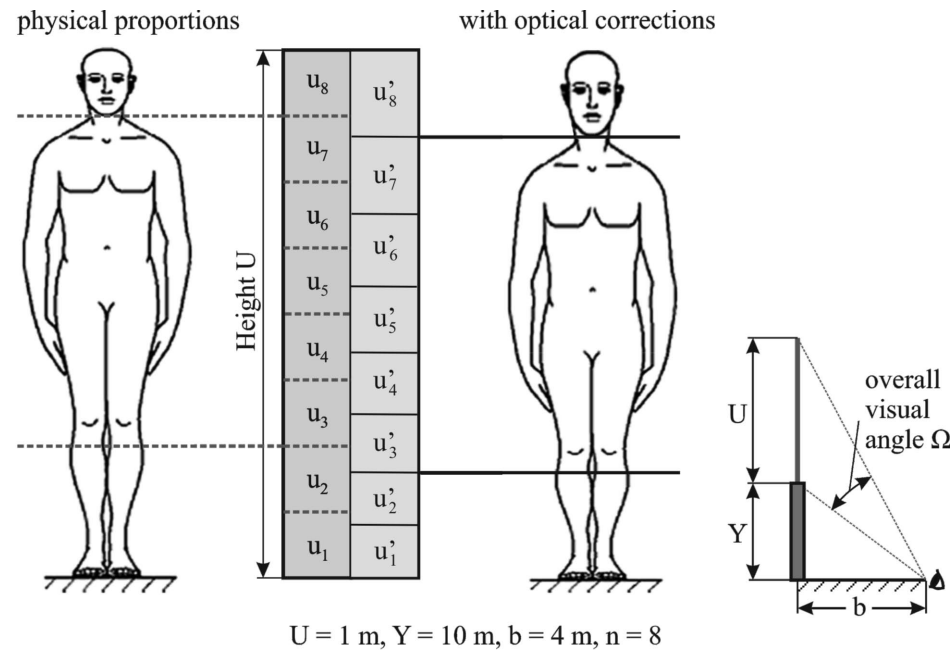
Pl. 2 – Optical illusions due to perspective distortions of equal dimensions at diverse distances from a certain viewpoint. Drawings by the authors



Pl. 3. 1 – Reduction of the observation angles ω_i of equal sized sub-zones u_i as their distances from the viewpoint increase; 2 – Optical corrections of the sub-zones sizes u_i to u'_i for attaining equal observation angles ω'_i ;
 3 – Visual perception of the side t_i of the frieze reliefs enveloping volume V as decreasing versus its height U due to diminishing of the relevant observation angle ω_i ;
 4 – Optical correction of the volume V sides t_i for equalizing the corresponding observation's angles ω'_i . Drawings by the authors

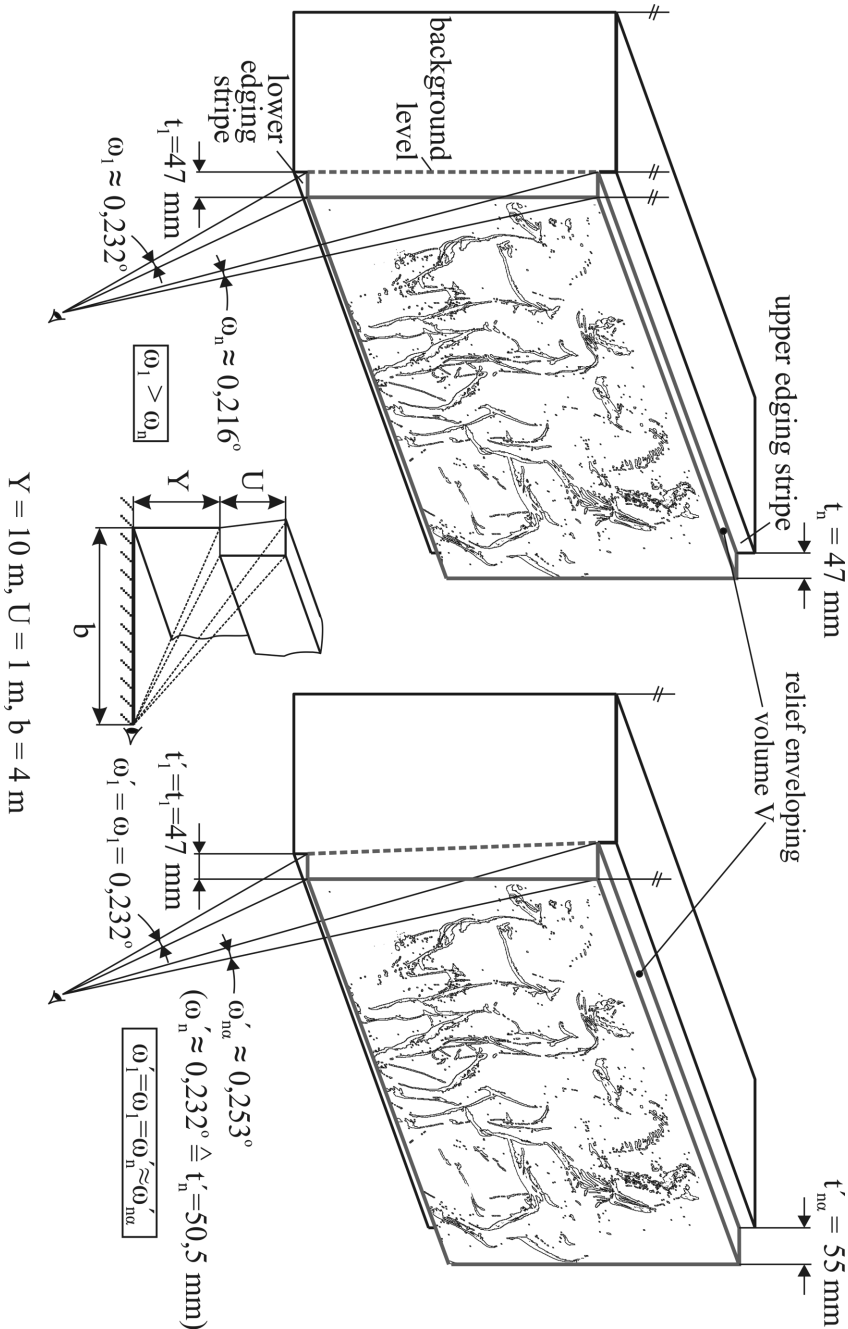


Pl. 4 – Geometrical data related to the most likely viewpoint of a west frieze relief region from the stylobates' level. Drawings by the authors



i	1	2	3	4	5	6	7	8
u_i [mm]	0,1250	0,1250	0,1250	0,1250	0,1250	0,1250	0,1250	0,1250
u'_i [mm]	0,1162	0,1185	0,1210	0,1235	0,1261	0,1288	0,1315	0,1344

Pl. 5 – Calculated optical corrections of a human body figure in the Parthenon frieze for observation from its most likely viewpoint without visual illusions due to perspective distortions. Drawings by the authors based on a figure of G. Niemann in Orlandos 1978



Pl. 6 – Calculation of the optically corrected upper side t'_n of the reliefs' enveloping volume V for equalizing the observation angle ω_l to ω_n . Comparisons of the upper side actual size t_n and observation angles ω_l to the determined ones t'_n and ω_n , respectively.

Drawings by the authors

W-III



P4

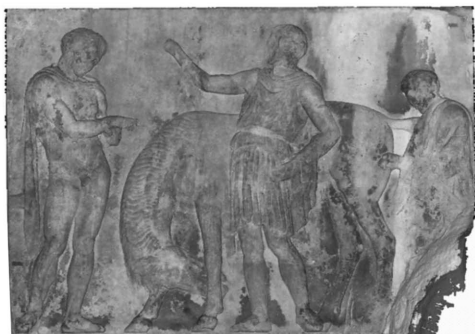
P6

W-V



P9

W-XII



P22

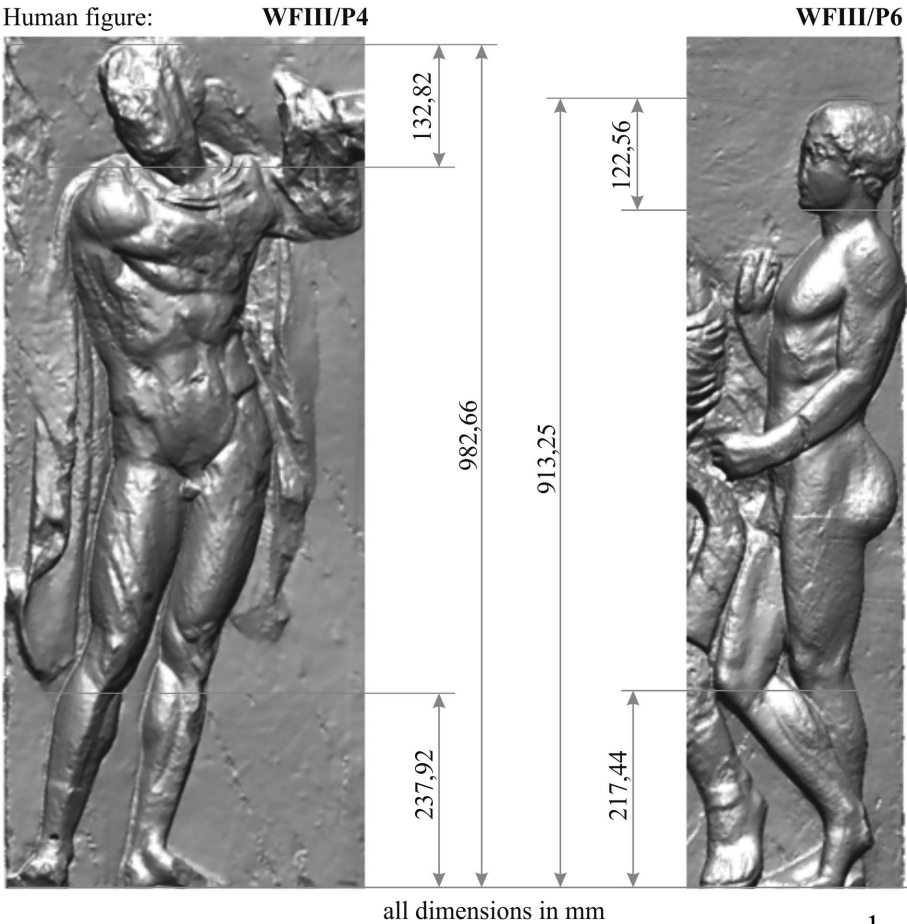
P23

W-XVI



P30

Pl. 8 – The human figures in standing position carved in the Parthenon west frieze. Numbering of human figures after Jenkins 1994. The digital surface models of the west frieze blocks were created based on numerical data attained by laser scanning (Bouzakis *et al.* 2016)

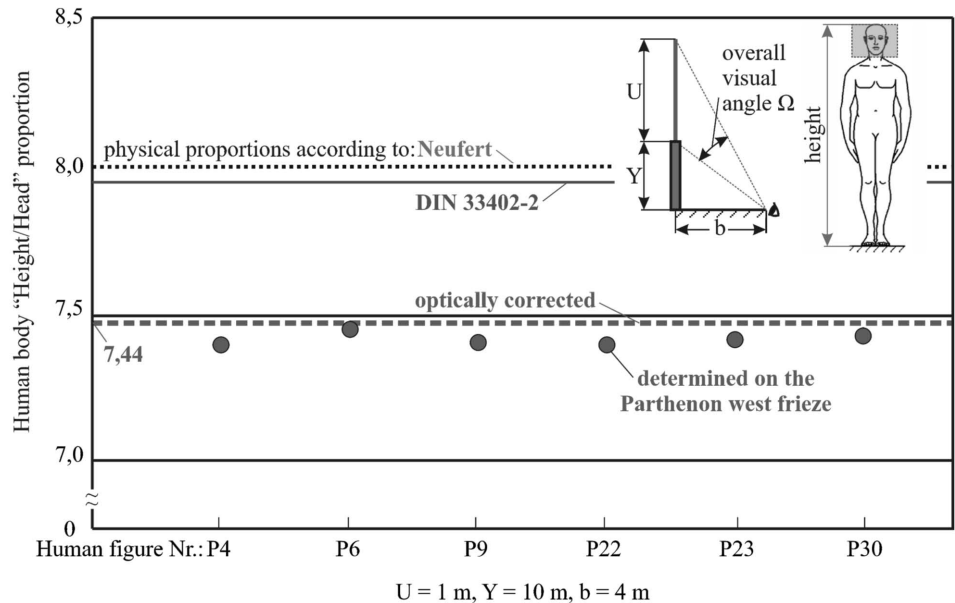


1

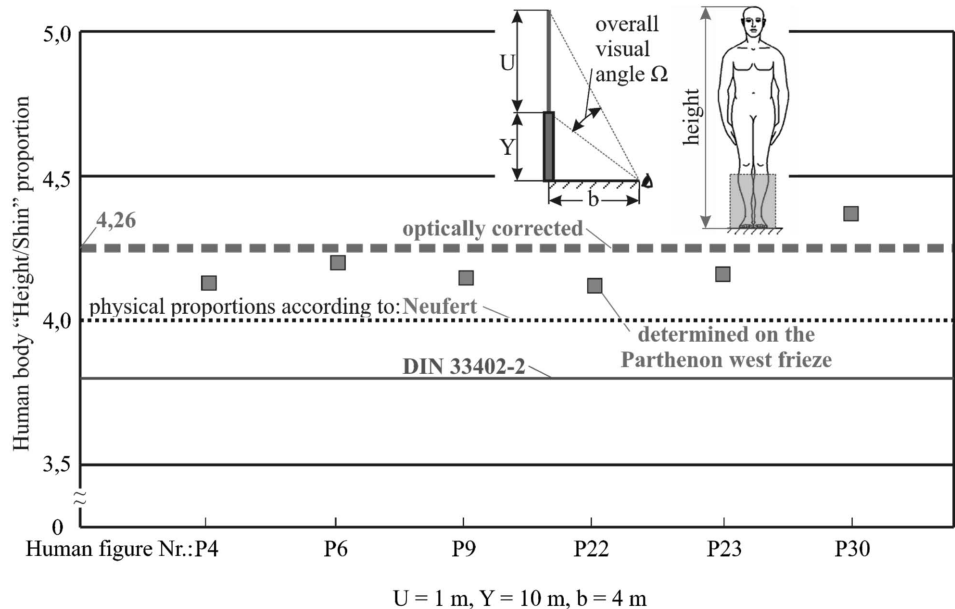
Numbering after Jenkins	Height	Head (mm)	Shin	Height/Head (-)	Height/Shin (-)
WF_III_P4	982,66	132,82	237,92	7,40	4,13
WF_III_P6	913,25	122,56	217,44	7,45	4,20
WF_V_P9	946,33	127,67	227,80	7,41	4,15
WF_XII_P22	935,65	126,41	227,09	7,40	4,12
WF_XII_P23	956,84	128,88	229,69	7,42	4,16
WF_XVI_P30	933,40	125,53	213,48	7,43	4,37

2

Pl. 9. 1 – Characteristic dimensions of standing human bodies carved in the Parthenon west frieze determined via evaluation of their digital data by 3D laser scanning; 2 – Calculated human body proportions based on the previous dimensions. By the authors



1



2

Pl. 10. 1 – Optically corrected ‘height/head’ proportion and its comparison to the corresponding ones of the standing human figures carved in the west frieze reliefs; 2 – Optically corrected ‘height/shin’ proportion and its comparison to the corresponding ones of the standing human figures carved in the west frieze reliefs. Drawings by the authors

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WHITE-GROUND LEKYTHOI
IN THE PRINCESS CZARTORYSKI
MUSEUM IN KRAKOW

Abstract: *In the collection of the Princes Czartoryski Museum there are three white-ground lekythoi originating from purchases made by Prince Władysław Czartoryski and Professor Marian Sokołowski. The article contains the results of chemical tests and an iconographic analysis of the scenes decorating these vases, leading to the confirmation that two of them were subject to thorough reconstruction of the layer of paint in 19th-century Athens.*

Keywords: *White-ground lekythoi; Greek vase painting; Painter of Munich 2335; 19th-century museum collection; chemical analysis of pigments*

The group of Greek vases kept at the Princes Czartoryski Museum includes three white-ground lekythoi, of which only one, decorated by the Painter of Munich 2335 about 430 BC (Pl. 1), was part of the acquisitions made by Prince Władysław Czartoryski (Bieńkowski 1919, 27–28, fig. 16, tab. 2; Bulas 1935, 16, pl. 13: 8; Beazley 1936, 66, pl. 28: 1; Beazley 1963, 1168, no. 127; Kurtz 1975, 56, n. 12; Sourvinou-Inwood 1986, 221, no. 12; Oakley 2004, 108, 117). Its provenance is not known, though it can be supposed it was bought in Paris, at an auction or on the antiquarian market. It was brought to Krakow only after the Prince's death in 1894. Its neck, handle and part of the shoulders had probably been glued, and repainted in this area, by then. The painting decoration of the vase is only locally preserved. In the remaining parts, we can see a barely visible contour

drawn with a delicate, precise line on a white background of the ground, locally yellowish at present. The composition of the scene consists of two groups of two figures. On the left-hand side, we can see Hermes with one foot resting on a stone. With his right hand, he lifts the folds of a chlamys, pinned at his shoulder; on his feet he is wearing high yellow boots on which, just like on his *pilos*, small wings are visible. Behind him stands a woman, shown in the right profile, wearing a long, finely pleated chiton and a red himation, partially covering her dark hair, done up. Her arms are bent at the breast; in her hands she holds a necklace with an oval pendant – part of her forearm and hand with the necklace, as well as the painterly elaboration of the robe covering her bust are of later reconstruction; originally, the woman might have held the edge of a cloak, an alabastron or a fillet. Both figures are almost completely devoid of a painting layer and are now almost invisible. Hermes has led the woman to Charon, who stands on the bow of a yellow boat. His left hand rests on an oar, and the right one on the edge of the boat. He wears a short red chiton – *exomis* – and a dark red leather cap. In the boat sits a dark-haired woman wearing a red himation. In a melancholic gesture, she inclines her head and props up her chin with her left hand. On both sides of the scene brown streaks depict cane growing by the water of Acheron. The ornamental decoration of the lekythos is composed of an egg-and-dart ornament circling the lower part of the neck, three red palmettes connected with a tendril on their stems, and a meander between double lines, framing the upper edge of the body. Aside from the above-mentioned reconstructions, the whole decoration, including the paint layer and the sketch of the figure, leave no doubt as to its authenticity.

Although Charon appears on almost 100 white-ground lekythoi, the Painter of Munich 2335 painted him in five of his works (Oakley 2004, 108, list 11: 11–15). The standard composition consists of two figures: Charon, standing in a boat, and a deceased woman holding objects like an *exaleiptron* and a small box, an alabastron (two lekythoi in the National Archaeological Museum of Athens 1946 and 1927, cf. Beazley 1963, 1168, nos. 129, 130; *BADB* 215481; *BADB* 215482) or fruit, as on the lekythos in the Mormino Fondazione 795 in Palermo (Genière 1971, pl. (2237) 7: 3–4; *BADB* 2699). The manner of representing Charon combines two areas of iconography. On the one hand, his appearance corresponds to representations of craftsmen belonging to the lower class of the society, especially fishermen wearing a short chiton, an *exomis* and a rustic *pilos* (Sourvinou-Inwood 1986, 221–223; Sourvinou-Inwood 1995, 327–353; Pipili 2000, 176–178), while striking a dignified pose, similar to the one on the lekythos from

the Mormimo Fondazione in Palermo 795 (Genière 1971, pl. 7: 3–4; Oakley 2004, 108, no. 15; *BADB* 2699) and another one from the Metropolitan Museum of Art in New York 09.221.44 (Beazley 1963, 1168, no. 128; Oakley 2004, 108, no. 12, fig. 76; *BADB* 215480). The iconographic models for the painter were probably contemporary to him: well-known sculptures of gods and athletes standing in contrapposto, also repeated in the representations of figures of dead warriors in vase painting, as on the white-ground lekythos by Thanatos Painter c. 440 BC from the Museum of Fine Arts in Boston 00.359 (Beazley 1963, 1229, no. 23; *BADB* 216364); about a dozen years later, Alcamenes created his statue of Hephaestus, represented in a craftsman's outfit analogous to Charon's, standing in the temple at Colonus Agoraios (Harrison 1977, 137–150). An explicit repetition of the representation of Demeter from the Parthenon frieze (Neils 2001, 107, fig. 77) can be found in the pose of the woman sitting in the boat, resting her head in a gesture of grief, mourning and expectation, replicated many times on white-ground lekythoi in the representations of the dead sitting by stelai on sepulchral reliefs (cf. Beazley 1963, 1385, no. 17, 1385, no. 19, 1386, no. 33; *BADB* 217839; *BADB* 217833; *BADB* 217858) and in the form of terracotta figures (Huber 2001, nos. 179, 213, 222, 225, 228, 243, 254).

The scene on the lekythos from Krakow is more complex than the widespread composition featuring Charon with a deceased woman, and includes also the figure of Hermes with another woman. Hermes is usually shown on white-ground lekythoi in a standing pose, guiding shades or sitting on a rock (Oakley 2004, 137–141). According to the Classical period concept, his task was to guide souls to Charon's boat (Sourvinou-Inwood 1995, 304–321). On the Krakow lekythos, he takes a rest, with a foot resting on the shore, like Dionysus on the calyx-krater by the same painter, Painter of Munich 2335, in the Cyprus Museum in Nicosia C430 (Beazley 1963, 1165, no. 75; *BADB* 215427) – in this case, however, the stylistic quality of the drawing is remarkably lower. Women's poses analogous to the representation of the standing woman, bearing various attributes in their hands, can be found on several other lekythoi decorated by this painter or his followers: lekythos from the Metropolitan Museum in New York GR608 features a woman standing by a stele and holding a fillet in her outstretched hands (Beazley 1963, 1169, no. 140; *BADB* 215515), a similar scene is to be found on a worse preserved lekythos from Edinburgh, the National Museum of Scotland, 1908.176 (Beazley 1963, 1170, no. 3; *BADB* 215525) and on a vessel from the Museum für Kunstwerk in Frankfurt 04 (Beazley 1963, 1170; *BADB* 215526). All these examples refer to the scene

of visiting a tomb to make offerings. However, analogous poses of women in the context of meeting with Charon appear on lekythoi contemporary to the Painter of Munich 2335, like the Bird Painter, who is credited with the lekythos from the collection of Johannes Gutenberg University in Mainz 21 with a scene involving Charon standing on a boat, a woman in a robe with her head covered and bent down, with an alabastron and a fruit basket in her hands, and a young child, preserved in fragments (Böhr 1993, Taf. 23: 5–8, Abb. 4; *BADB* 10215). Considering the aforementioned two-figured compositions depicting Charon with the souls holding objects associated with earthly life and evoking the social status of the deceased (Sourvinou-Inwood 1995, 323–335), we can assume that the woman on the Krakow lekythos is another soul who was brought by Hermes. Her appearance is much different than that of a servant accompanying the woman, as for example on the lekythos of Quadrate Painter from Musée Royaux in Brussels A903 (Sourvinou-Inwood 1986, 214, no. 25; *BADB* 216482). The simultaneous presence of two deceased is not common on white-ground lekythoi (type 2c, cf. Sourvinou-Inwood 1995, 323). However, the concept of a group crossing the Acheron has found its reflection in the oldest scenes showing the journey of Charon with a soul, namely on the black-figured eschar inv. no. 560 dated to *c.* 500 BC, from Liebieghaus in Frankfurt: here the souls were portrayed as winged eidola, coming to Charon's boat and sailing with him (Sourvinou-Inwood 1986, 212, no. 1; Sourvinou-Inwood 1995, 336–337; *BADB* 4966). Also worth considering is the hypothesis that in this image the painter introduced some elements of narration to enrich already established compositional schemes. Since the presence of Hermes and Charon corresponds to a two-stage journey to Hades, the female figure may be recognized as the representation of the same soul brought to the boat by Hermes, and then shown taking the next step in her journey, now assisted by Charon. This kind of sequence of events had already been depicted in vase painting, for example in the cycles illustrating the deeds of the heroes Hercules and Theseus, and in Homeric stories (Froning 1988, 177–199).

The two other lekythoi in the Princes Czartoryski collection were bought by art history Professor Marian Sokołowski, who held the position of museum director from 1884 to 1911. Sokołowski stayed in Athens during the expedition to Pamphylia and Pisidia undertaken in 1884 by Karol Lanckoroński (Sokołowski 1889, 47–52). He reportedly purchased eight pieces for the museum collection, including Greek vases, fragments of sculptures, and a terracotta figurine for a total amount of 862 fr, received from Prince Czartoryski. Did he buy them from one antiquities dealer? Two

white-ground lekythoi, reportedly coming from Lambros (Bieńkowski 1919, 20), did not get to the museum until 1912, after the death of Sokołowski, just like the third lekythos purchased for the collection of the Cabinet of Archaeology at the Jagiellonian University (Papuci-Władyka 2012, 139–142, pls. 81–83). The first lekythos (Bieńkowski 1919, 26–27, no. 16; Bieńkowski 1922, 12 n. 1; inv. no. MNK XI-1255, Pl. 2: 1–2) is adorned on the shoulders with three partially preserved palmettes outlined with a black and red contour, connected by a tendril. Along the top of the body runs a stopped meander interrupted by saltire squares; the lower edge of the scene is encircled by a brown line. The contour drawing is made with red-hued paint. In the middle of the representation there is a tomb stele with schematically marked fillets hung on it. From the left-hand side a woman dressed in a long chiton and a himation approaches the monument. Her right arm is covered with a coat, while the left arm is stretched ahead of her. The woman on the right-hand side stands facing the stele. She is wearing a brown himation, reaching down to her knees and revealing part of the torso. She holds it with her left – dropped – hand while touching her face with her right hand. On the side part of the vessel there is a crack along which losses in the paint layer are visible.

The other – intact – lekythos from Sokołowski is painted in a similar manner (Bieńkowski 1919, 24–26, no. 15; Bieńkowski 1922, 12 note 1; inv. no. MNK XI-1256, Pl. 2: 3): the shoulders are adorned with five palmettes connected by scrollwork, painted in black and red; the body is encircled at the upper edge by a meander stripe, disconnected below the handle. A short line constitutes the base of the representation – in the middle, there is a tomb stele with streaks depicting ribbons; on both sides, symmetrically shown, two women are walking away and turning towards the monument. They are dressed in long, voluminous, softly plying chitons. Their long, wavy hair falls loosely over their shoulders. The representation is framed by three tall canes, schematically depicted with brown paint.

An observation of all the three lekythoi in the collection reveals considerable differences in the state of preservation of both the representations and the original colour. On Czartoryski's lekythos the unfired paint layer has a matte, powdery texture and drops off easily, which is the cause of the poor preservation of the representations. On the other hand, the two Sokołowski lekythoi, remarkable because of the original form of the vessel itself, are distinguished by certain stylistic elements of drawing and technical characteristics which raise the suspicion of significant interference by 19th-century craftsmen because of their current appearance. In order to

compare the composition of the paints used in the decoration of the vessels, an analysis of the elemental composition of both paint and ground layers was carried out with an X-ray fluorescence spectrometer.¹ The pigments used in the pictorial decorations on the white-ground lekythoi were essentially common and cheap materials. The lekythos by the Painter of Munich 2335 (Pl. 1: 2) is primed with a ground containing kaolinite clay (Si, S, K, Ca, Ti, Mn, Fe – most likely loam, dolomite, gypsum, quartzite), the red parts contain pigment obtained from red ochre (Al, Si, S, K, Ca, Ti, Mn, Fe, Cu, Zn), and the yellow ones from yellow ochre (Si, S, K, Ca, Ti, Mn, Fe, Cu, Zn). The black contours and fillings are covered with paint containing black organic pigments (Al, Si, S, K, Ca, Ti, Mn, Fe, Cu, Zn) which, however, do not originate from burnt bone. These findings coincide with analyses carried out in relation to lekythoi in other museums (Wehgartner 1988, 640–651) and the data preserved in ancient sources (Theophr. *De Lapidibus*; Katsaros and Bassiakos 2002, 201–209).

Tests of Sokołowski's lekythoi have provided other data. In the first case (Pl. 2: 2) the walls of the vessel were primed with a white ground containing lead (Ca, Pb), onto which black paint made on the base of an unidentified organic black pigment was applied. The red colour contains cinnabar pigment with the addition of ferric pigment, as testified by traces of ochre (Ca, Mn, Fe, Hg, Pb). In addition, the presence of chalk was found, which might be a trace of the original primer applied onto the lekythos (Ca, Mn, Fe, Hg, Pb). The brown areas of the meander were painted with colour containing ochre (K, Ca, Ti, Mn, Fe, Pb). UV light shows a visible uniform surface of repainted decoration of the vessel, besides the fragment of more than half of the shoulders on the right-hand side of the neck and along the crack in the body, where there are losses of pictorial layer (cf. Vak 2013, 52–55). On the second lekythos the tested areas were two points from the palmette decoration on the shoulders, painted on a ground containing lead white; organic ingredients (Ca, Mn, Fe, Pb) were used for black, yet bone black was not found – the colour was probably obtained from charred wood or stems, and the red leaf was painted with paint containing cinnabar pigment (Ca, Mn, Fe, Hg, Pb). Although cinnabar was used as a pigment in antiquity, its bright red hue on the Krakow vases differs in intensity and purity from the contemporary appearance of ancient cinnabar, which darkens when

¹ An examination with the ARTAX 400 device from Bruker AXS equipped with an SDD detector cooled with the Peltier system, with the polycapillary optics system and a polycapillary Rh lamp as an excitation source, was carried out in 2015 in the Laboratory of Non-Destructive Analysis and Testing of Historic Objects of the National Museum in Krakow by Eng. Anna Klisińska-Kopacz, Sc.D.

exposed to light (Wehgartner 1988, 642; Wehgartner 2002, 93). Therefore, the composition of the ground and red paint differ from the composition used in ancient technique. Also, the paint surface is unusually firm, smooth and shiny, and the original ground is visible in many points where it chipped off, particularly at the crack on the body of the lekythos inv. no. MNK XI-1255. The style of the decoration also clearly indicates that the entire white-ground surface was repainted before introducing the items on the antiquarian market. On both lekythoi, arms and hands are disproportionate, large and incompatible with anatomy; the dance poses of the women with loose hair on the second vase are more reminiscent of representations of bacchantes than mourning Athenian women. To an inexperienced buyer, this type of repainted semi-counterfeit was indistinguishable from original white-ground lekythoi. On small, uncovered parts of the body there are no traces of its original decoration. The inspiration for the restoration of unpreserved scenes was probably provided by original vases with popular scenes of visits to the grave (Oakley 2004, 145–214). Several lekythoi by Tymbos Painter from c. 460 BC, e.g. in the collection of Ruprecht-Karls-Universität in Heidelberg, from Spink Auction House in London, and Antikenmuseum und Sammlung Ludwig, Basel Z344 (Beazley 1963, 755 no. 36, 755 no. 37; 755 no. 37bis; *BADB* 209313; *BADB* 209314; *BADB* 209315) showed women walking away from a tomb, with their heads turned backwards and with outstretched arms; similar figures were painted on the Krakow lekythoi with greater dynamism and freedom, which lets us assume that this type of scene became the inspiration for a 19th-century restorer. The form of the stele finial is more reminiscent of the acanthus-ornamented anthemion such as on the lekythos from the Musées Royaux in Brussels A904 (Nakayama 1982, 279, tab. 1: E; Beazley 1963, 1246 no. 1; *BADB* 216782) appearing in representations from 440–430 BC on.

An analogous style of drawing can be found on restored and repainted lekythoi acquired from the antiquarian market and kept in the collection of the Archaeological Museum of Rhodes (Iacopi 1934, pl. 2[500]1: 3) and at the Kunsthistorisches Museum in Vienna (Trinkl 2011, 128–129, pl. 82: 1–8; Kammerer *et al.* 2013, 191–192, inv. no. IV 3218). The latter was acquired in 1915 from Ludwig Hans Fischer (1848–1915), a Viennese painter specialising in oriental themes.² Fischer travelled in various countries of the Mediterranean. He also accompanied Lanckoroński at the turn of the years 1888–1889 in his trip around the world, reaching as far as India.

² Retrieved from <http://www.szaal.at/cms/index.php/kuenstler/art-classics/f/14-kuenstler/art-classics/f/98-fischer-hand-ludwig-biografie> (status as of Nov. 19th, 2015).

Previously, however, he had gone to Greece, as evidenced by the book by Rosa von Gerold with his illustrations *Ein Ausflug nach Athen und Corfu* (Vienna 1885). The Viennese salon of this author of several travel books was visited by many professors and artists, including Count Karol Lanckoroński and Ludwig Fischer himself. Their trip to Athens in 1883 preceded Sokołowski's visit to the Greek capital by a year. There is a high probability that the lekythoi from Krakow and Vienna come from the same source, i.e. from a well-known art dealer, Jean Paul Lambros (Bates 1910, 96), son of the first Athenian dealer in antiquities, Pavlos Lambros (Galanakis and Skaltsa 2012, 630 n. 50). Rosa von Gerold describes a visit to Lambros – besides archaeology professor Athanasios Rhousopoulos (1823–1898), mistakenly recorded by von Gerold as Rossopoulos, the most important antiquity collector and antiquarian in Athens – where the Viennese travellers were led by Baron B. Blum – in the following way: *‘So gingen wir zu Lambros und trafen da einen ebenfalls ganz feinen artigen Sohn des Hauser, der uns Wunderbares schauen liess an Vasen, Bronzen und ganz besonders an Tanagra-Figürchen, die ja seit einigen Jahren die Schoosskinder aller Sammler und Museen geworden. Es sind dies bekanntlich kleine, künstlerisch modellierte, fein und reizend ausgeführte Thonfigürchen welche Genrescenen und Frauen in allerei poetischen und häuslichen Beschäftigungen darstellen. Sie waren ursprünglich mit einem zarten Hauch von Farbe decorirt, die Haare röthlich, golden der Schmuck, mattblau, mattrosa die Gewänder, jetzt aber weisen sie nur wenig Spuren davon auf. Ob sie die Nipptische der lebenden schönen Griechinnen zierten, oder blos den todten in die Gräber mitgegeben wurden, ist ungewiss. Man fand sie bisher nur in solchen, hauptsächlich in Tanagra, einer kleinen Stadt in Böotien. Da muss diese Kunstindustrie besonders geblüht haben, denn als man vor zwei Jahren einen Reihe von Gräbern dort öffneten, standen die anmuthigen, so gebrechlichen Dinger in Menge neben den verwesten Leichen; man fand Hunderte davon, die gleich in alle Museen der Grossstädte wanderten. Auch in Wien im Antikencabinet sind gegen dreissig der allerzierlichsten aufgestellt. Herr Lambros hatte einen ganzen Schrank voll zu verkaufen, alle unnachahmlich schön! Z. B. eine Venus in der Muschel ruhend (sie kostete 4000 Francs!), eine Europa auf dem Stiere, auch zu diesem Preise, und eine weibliche Figur zu 3000 Francs, die na und mich so entzückte, dass wir uns gar nicht von ihrem Anblick losreissen konnten. Sie stellte eine athenische Dame vor in reicher faltiger Gewandung, mit zierlich geknotetem Haar, mit dem feinsten, lieblichsten Gesichtchen und entblössten, wunderbar modellirten Armen. Sie sitzt, stützt die rechte Hand leicht auf, blickt mit graziöser Kopfwendung nach der*

Seite, und hält in der Linken hoch erhoben einen blattartigen Fächer. Man kann nichts Entzückenderes sehen, als dies Miniaturfigürchen – ein grosser Künstler muss es modelliert haben!’ (von Gerold 1885, 151–152). It is not mentioned in the description that the visit to Lambros ended up with the purchase of any item. The description of the Tanagra figurines which so enchanted Rosa von Gerold dominates the entire report. We learn of white-ground lekythoi from another fragment of the book, describing the collection exhibited in the new building of the Technical University as *‘die seltensten und werthvollsten, welche nur in Attika gemacht wurden und von denen nur wenige ganz erhalten sind. Es sind dies die schlanken hohen Thongefässe mit dünnem Halse mit einem einzigen Henkel, und mit farbigen Bildern auf weissem Grunde. Man fand sie zumeist in Gräbern, sie wurden Todten mitgegeben und die Bilder, die sie schmückten, beziehen sich darauf, sind Abschiedsscenen oder stellen Götter der Unterwelt dar.’* (von Gerold 1885, 136). The vessel with a representation of two women at the sepulchral stele became part of the decoration of this chapter’s initial, designed by Ludwig Fischer. At the time the drawing was created the lekythos already belonged to Fischer; this is precisely the vessel which would be purchased for the collection of the Kunsthistorisches Museum in Vienna. Taking into account the vivid description of the visit to the antiquary shop of Lambros that Rosa von Gerold included in her travel diary, we can presume that the Viennese vessel was purchased directly from that art dealer. The fact that Lambros was selling white-ground lekythoi is confirmed by some acquisitions from the collections of other museums, such as two vessels from the Museum of Fine Arts in Boston – a lekythos by the Painter of London E342, 95.47, (Beazley 1963, 670 no. 17; *BADB* 207863), and another by the Painter of Athens 1943, 95.63, both purchased in 1895 (Beazley 1963, 1082 no. 3; *BADB* 214534).

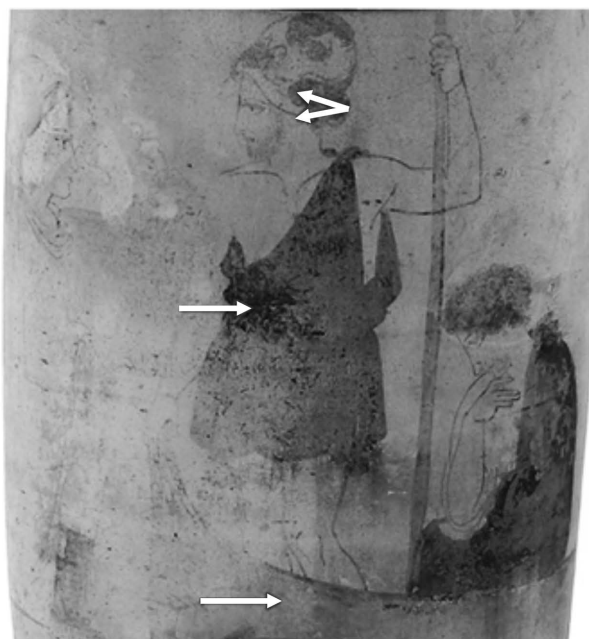
The charm of historic polychrome objects made them desirable pieces in collections of antiquities, but also tempted merchants to commission reconstructions to improve their appearance. The goal was maximum earnings for the findings, a large stream of which was coming in from amateur excavations, carried out in accordance with, but often against, the first Greek archaeological law of 1834, which allowed the circulation of antiquities found on private land (Galanakis and Skaltsa 2012, 638–643). In practice, the way of obtaining the object was irrelevant. Souvenirs from travel – like Fischer’s lekythos – or consciously acquired valuable ancient objects – like Sokołowski’s lekythoi – did not always prove to be original, as evidenced by the numerous counterfeits or semi-counterfeits which can be found in museum collections (Gorzalany 2012, 213–221).

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Pl. 1. 1 – Lekythos inv. no. MNK 1251 by the Munich painter 2335;
2 – Analysed points. Photos by M. Studnicki



Pl. 2. 1 – Lekythos inv. no. MNK XI-1255; 2 – Analysed points;
3 – Lekythos inv. no. MNK XI-1256. Photos by M. Studnicki

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ANALYSIS OF THE GREEK AMPHORAE
DISCOVERED IN THE BARROW NO. 7
AT CRIHANA VECHE
(REPUBLIC OF MOLDOVA)

Abstract: *The article presents an analysis of the amphora material from the excavation of grave no. 2 of the Scythian burial mound no. 7 near the village of Crihana Veche in the Republic of Moldova. In the burial mound of the local aristocrat, which was twice robbed in ancient times, along with the remnants of ornaments, weapons, and other objects used in the funeral ceremony, fragments of Greek amphorae were found (both in the burial and in the grave goods), which belonged to only one Greek center of production – Thasos. More than 27 Thasian amphorae in which expensive wine was brought in, as well as other ritual funerary objects, indicate that the man buried there had a special position in the local hierarchy. Also important for research are five amphora stamps on the handles of the Thasian amphorae, which confirm the dating of amphora fragments and indicate the exact sequence of activity of two Thasian magistrates, which previously did not have a basis of support. This funerary complex is singular for the fact that only Thasian amphorae of the same type were found in the burial (usually Heracleian amphorae were put in Scythian burials), which indicates the uniqueness of this complex in the territory between the Prut and Dniester Rivers, and the north-west Black Sea region as a whole.*

Keywords: *Barrow; amphorae; stamps; Thasos; magistrate; manufacturer*

In the autumn of 2014 a group of researchers from the Institute of Cultural Heritage of the Academy of Sciences of Moldova in collaboration with the National Archaeological Agency carried out archaeological investigations in the estate of Crihana Veche village, Cahul District (Ceban and Agulnicov 2015; Ceban *et al.* 2015), in an area where other burial mounds have also been found in the last 20 years (Pl. 1: 1).

Barrow no. 7 was built in the mid-4th century BC by Scythian culture bearers. It is located about 2.75km north of Cahul International Airport and 0.02km west of the Cahul-AIC L686 route. The mound of barrow no. 7 was plowed each year during agricultural work and to the beginning of research it had irregular circular configuration in plan (Pl. 2). The object was of a height of about 1.40m and had a diameter of about 48 x 42m. The village of Crihana Veche is located 50km from the Lower Danube (the village of Giurgiulești) (Pl. 1).

In the investigations two graves were found: one of a child and a central burial belonging to a man. The central grave, even though it was robbed in ancient times, contained artifacts of significant value. Among the archaeological remains discovered were 60 arrowheads (Pl. 3: 1), a Scythian sword handle plated with engraved bone plates with silver wires (Pl. 4), a *kiathos* (Pl. 3: 3), seven silver beads (Pl. 5: 2), two silver plaques representing heads of griffins (Pl. 5: 10–11), beads made of Egyptian faience (Pl. 5: 8–9), pieces of bone (Pl. 5: 1, 4, 6) and many fragmented iron plates of scale armor.

Grave 1

(Scythian culture?) Grave 1 was discovered in the process of excavation of the mound, 5.5m to the south-west from the central landmark of the barrow, at a depth of 0.60–0.65m (Pl. 2). The contour of the grave pit could not be detected. The deceased was deposited in the supine position with the head toward the west. At 10cm from the skull to the left, from the northern side, a small jar was placed. The preservation status of the skeleton was precarious. A few skull fragments and milk teeth were discovered. Under the deceased a thin layer of rotten wood was found, with a thickness of 0.1–0.2cm. Per anthropological measurements the skeleton belonged to a child aged 7–8 years (Pl. 6: 3).

Grave 2 (Scythian, principal)

It was found in the central part of the barrow at a distance of 2.35m north-east from the landmark, at a depth of 0.95m (Pl. 2).

The burial chamber has a rectangular shape with rounded corners. Dimensions: 6.2 x 2.6m; the depth from the level of the contour detection is 1.55m (Pl. 7). The burial chamber walls in some places were covered with a thin layer of chalky gray-white substance. The burial pit was located on the east-west axis, with a deviation of about 5° north. At a distance of 0.3m from the western end of the pit of grave 2, under the central control, and 1.5m north of the landmark a pit was discovered, which in the eastern part has an underground canal dug in sterile clay, which led to the burial chamber of the tomb (dromos?). The access pit dimensions were 2.45 x 0.8m, and the depth was 1m from the level of the pit contour detection and 0.9m from the ground level. We can say from the filling of the pit, the arrangement of human skeletal remains, and the grave goods that grave 2 was robbed at least twice. Because the skeletal remains of the deceased were scattered in different parts of the pit, the bones were discovered at different depths.

Multiple Greek amphorae fragments were discovered in Agglomeration 1, in the ditch with the remains of a funeral feast (Pl. 6: 1–2). Analysis of the fragments allowed affirming the presence of at least 27 Thasian amphorae in grave 2 of barrow 7. The vessels are attributed to the truncated biconical type based on the 13 amphorae feet with the base preserved, with a maximum diameter of bases of between 6.5 and 7.2cm, and a significant dent of a truncated conical shape inside (Pl. 9). Other fragments of bottoms and feet without bases confirm the above-mentioned number of amphorae. All fragments of lips both with and without handles (15) have a trapezoidal-triangular shape in profile. Analysis of the clay of the 27 amphorae of Thasos indicates their manufacture in various workshops on the island (currently there are known about 20 pottery workshops on Thasos) (Avram 1996, 33–38; Garlan 1999, 3–4). A single basic feature of the clay usually used to make Thasian amphorae, i.e. yellowish-reddish clay with multiple inclusions of golden mica, as well as morphological characteristics of vessels, indicate the vessels as Thasian. All the amphorae are of the same conical and truncated biconical type, the truncated biconical variant, series II-B-2, the production and dissemination of which took place between the second and third quarters of the 4th century BC, according to the classification and chronology of Monachov (2003, 144).

Further supporting this dating and classification of the amphorae fragments discovered in Crihana Veche are six amphora stamps executed in relief and located in the upper part of the handle (Pl. 10). Four of the stamps are made by the same matrix and belong to the magistrate with the *phiale* symbol, and to the manufacturer Πυλάδης, with a tripod as a second emblem. The fifth stamp belongs to the same magistrate with the *phiale* symbol; the second symbol – grape – is that of another manufacturer Λυσικλῆς. Both types of stamps have the same dating, F1 group, namely 355 BC (Garlan 1999, 212, nr. 597). The sixth stamp belongs to another magistrate, whose name remains unknown to us, as in the case of the five stamps mentioned above. It has the symbol – pellet – and, possibly, – torch. The third symbol on the sixth stamp – a star with six rays – belongs to the same manufacturer, Πυλάδης, whose name appears on the first four stamps. It is known that the magistrate with the *phiale* symbol worked temporally with the magistrate with the pellet symbol. The discovery of stamps in barrow 7 at Crihana Veche allow us to affirm that the activity of the latter took place a year earlier than that of the *phiale* magistrate.

Research of the fragments and stamps of Thasian amphorae discovered in the given site allows us to conclude that the entire batch of Greek amphora from grave 2 of barrow 7 from Crihana Veche is represented by one and the same amphora type II-B-2 of the Thasian amphorae and denotes the wholesale purchase of a large batch of wine from Thasos, which probably was made with a specific purpose (sic). The large number (about 27 amphorae) of Thasian vessels (Thasian wine is considered one of the most expensive on the local market in the 4th–3rd centuries BC) is an additional argument indicating the social position of the deceased (grave 2) from this barrow. The average capacity of Thasian amphorae of type II-B-2 is 8.2–11.76l (Monachov 2003, 144).

Usually, in the vast majority of Scythian funerary complexes from the north-west Black Sea region the wine in amphorae deposited in the grave or used in the funeral feast was, in most cases, Heracleian, because this wine was of good quality but cheaper than wine from Thasos, and (Saprykin 1986, 98) thus enjoyed great demand among the Scythians (the purchasing power of whom was lower than that of sedentary tribes of the northern Thracians, who preferred wine from Thasos) (Mateevici 2007, 117). In rare cases, the graves of wealthy individuals with a high social position in the Scythian world also included (along with amphorae from Heraclea Pontica) amphorae from other centers producing Greek wines that were more expensive than Heracleian, to emphasize the wealth and importance of the deceased

(along with various sacrificial objects made of precious metals, weapons, ornaments, etc.).

The fact that the five stamps of the magistrate with the phiale symbol and the manufacturers Πυλάδης and Λυσικλῆς belong to the same year of production according to Y. Garlan's timeline, namely 355 BC, confirms once again a wholesale purchase of amphorae with wine from Thasos and it was made, in our view, for a specific purpose. Thorough research of the small but very important group of Thasian stamps made it possible to date the period of activity of the magistrate with the pellet symbol one year earlier than the period of work of the other magistrate with the *phiale* symbol (which was still uncertain in publications of researchers who believed that these two magistrates, the *phiale* and the pellet, worked in close periods, but it was not clear which preceded the other (Garlan 1999, 14–15; Avram 2008, 39–42). We believe that the Scythian community which inhabited this area in the 50s of the 4th century BC purchased the Thasian wine before the event (the death of this high-ranking person), and it is quite possible that from this purchase there remained only one amphora, which was later placed in the tomb of the deceased (grave 2) or could have been used during the funeral feast, to increase the number of vessels with Thasian wine (which in this case, along with other objects made of precious metals, indicates the position of the deceased in the local community and social hierarchy). This assumption seems logical enough to us. There is no doubt that the deceased buried in the funerary complex of Crihana Veche was one of the leaders of this Scythian community, so in his burial not only multiple weapons and jewelry made of precious metals were used, but also a considerable number of amphorae with expensive wine. The findings of numerous Thasian amphorae in the rich Scythian burials (of local 'aristocrats') are also supported by the material found during the excavation of the Berdjanskij tumulus, where 20 Thasian amphorae of the same type were found (Monachov 1999, 284–289, Табл. 117–120). All this, taken together, serve as an indication of the importance and superiority of the deceased. In terms of quantity of Greek amphorae, grave 2 from barrow 7 of Crihana Veche is the second in the Prut-Dniester area after that of Parcani (Ternovca), where about 50 vessels were discovered. However, most of the amphorae found at Parcani were from Heraclea Pontica, and only a few were from Thasos and Chios (Manzura *et al.* 1992, 178; Mateevici 2007, 85). Based on this, it can be argued that tomb 2 of barrow 7 from Crihana Veche is unusual in the Scythian world of the north-western Black Sea coast thanks to the discovery of about 27 Thasian amphorae of the same type.

Catalogue

1. Θάσιον

Phiale, tripod →

Πυλάδ(ης)

Stamp of the magistrate whose symbol is indicated as the *phiale*. Manufacturer's name is indicated in the second line: Πυλάδης in the nominative, omitting the last two letters. In the spelling of the ethnicon, omicron is used instead of omega. Incidentally, in all stamps of this magistrate such a transcript of the ethnicon is used. The stamp dates to 360s–350s BC, Gr. F1 (355 BC according to the timeline of Y. Garlan 1999). V. Kats (2007, 415) dates the activity of this magistrate to the late 60s of the 4th century BC (cf. Bon and Bon 1957, no. 1504 [the same matrix]; Garlan 1999, no. 597 [the same matrix]) Pl. 11: 1.

2. [Θάσιον]

[Phiale], tripod ←

[Πυλάδ](ης)

Stamp of the magistrate whose symbol is indicated as the *phiale*. Manufacturer's name is indicated in the second line: Πυλάδης in the nominative, omitting the last two letters. Pl. 11: 2.

3. Θά[σ]ιον

Phiale, tripod ←

[Πυλ]άδ(ης)

Stamp of the magistrate whose symbol is indicated as the *phiale*. Manufacturer's name is indicated in the second line: Πυλάδης in the nominative, omitting the last two letters. Pl. 11: 3.

4. Θ[άσι]ον

Phiale, tripod ←

[Πυλάδ](ης)

Stamp of the magistrate whose symbol is indicated as the *phiale*. Manufacturer's name is indicated in the second line: Πυλάδης in the nominative, omitting the last two letters. In the spelling of the ethnicon, omicron is used instead of omega. The stamp dates to 360s–350s BC, Gr. F1 (355 BC according to the timeline of Y. Garlan 1999). Stamps nos. 3 and 4 are made by means of the same matrix. Pl. 11: 4.

5. Θά[σιον]

Phiale, grapes ←

[Λυσικλ](ης)

Stamp of the magistrate whose name is indicated as the *phiale*, and the second symbol – grape – is the symbol of manufacturer Λυσικλῆς.

As with other stamps of this magistrate, in the spelling of the ethnicon, omicron is used, not omega! The stamp dates to 360s–350s BC, Gr. F1 (355 BC according to the timeline of Y. Garlan 1999). The workshop from Kéramidi (cf. Bon and Bon 1957, no. 1107; Avram 1996, no. 60; Garlan 1999, no. 593). Pl. 11: 5.

6. Θάσιον

Pellet, torch ←

Πυλά(δης) six-rayed star

Stamp of the magistrate whose symbol is indicated as the pellet, it is likely that the torch symbol (which appears next to the name of the manufacturer using as symbol star with six rays) is also an emblem of magistrate. The activity of this magistrate predates the one with the symbol *phiale*, which could be about 354 BC. Pl. 11: 6.

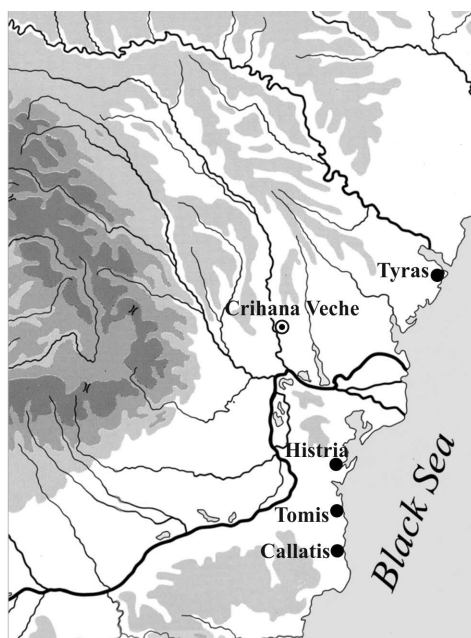
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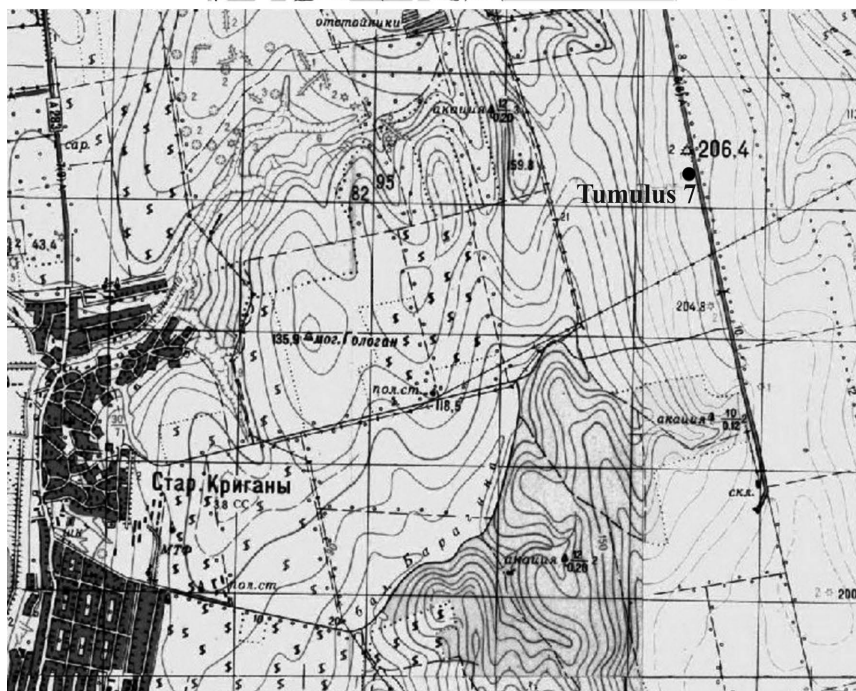
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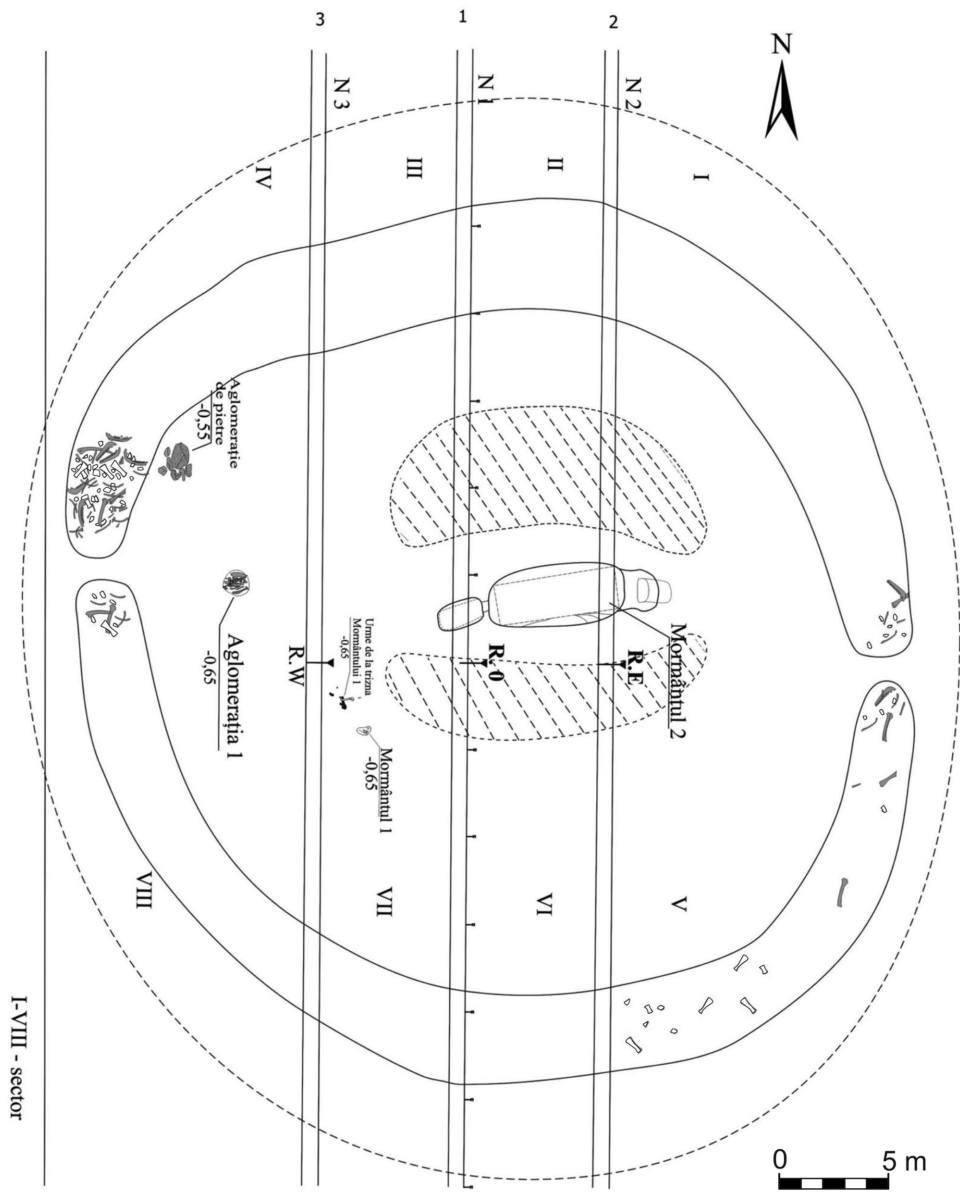


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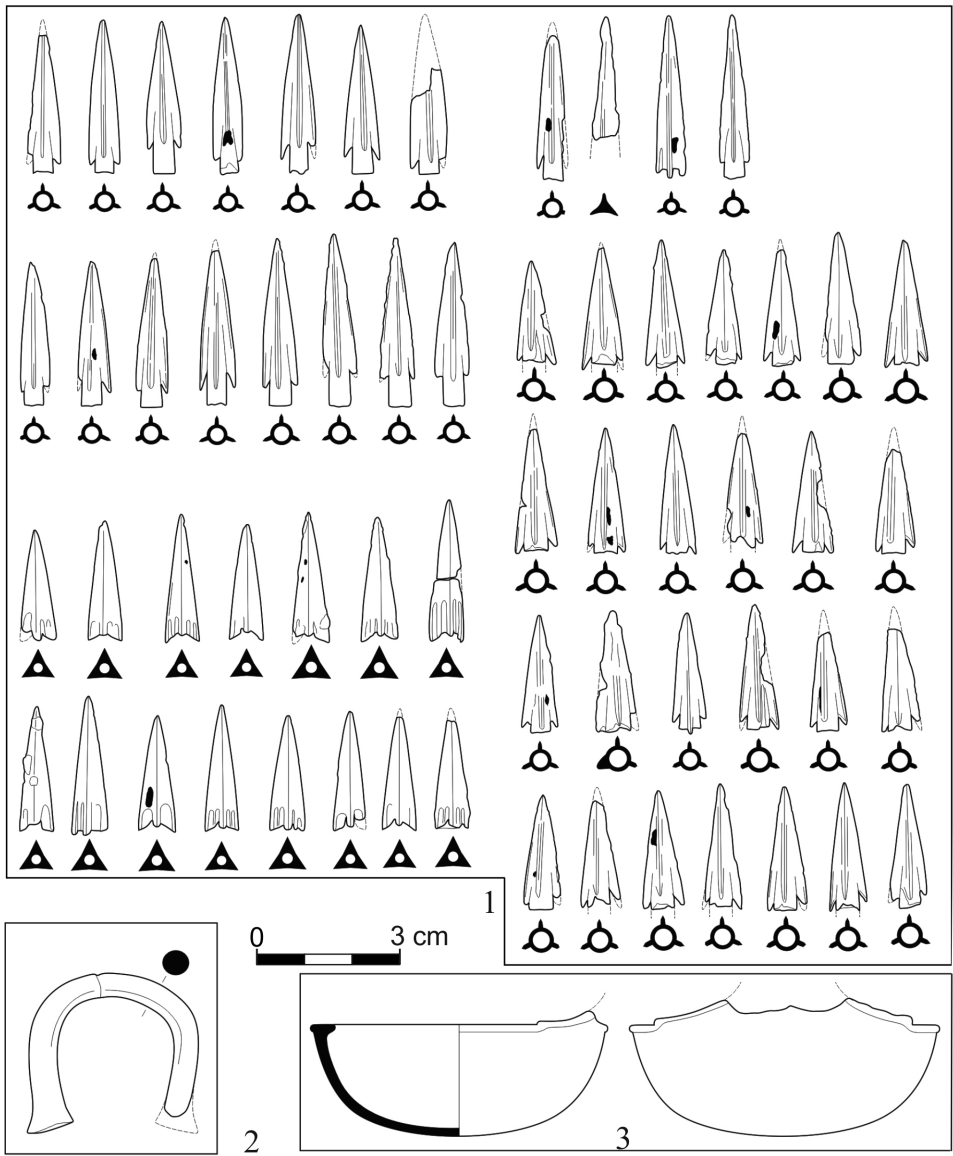


2

Pl. 1. 1 – Geographical position of the Crihana Veche village (Cahul); 2 – Geo-topographical map and location of the site within the village of Crihana Veche.



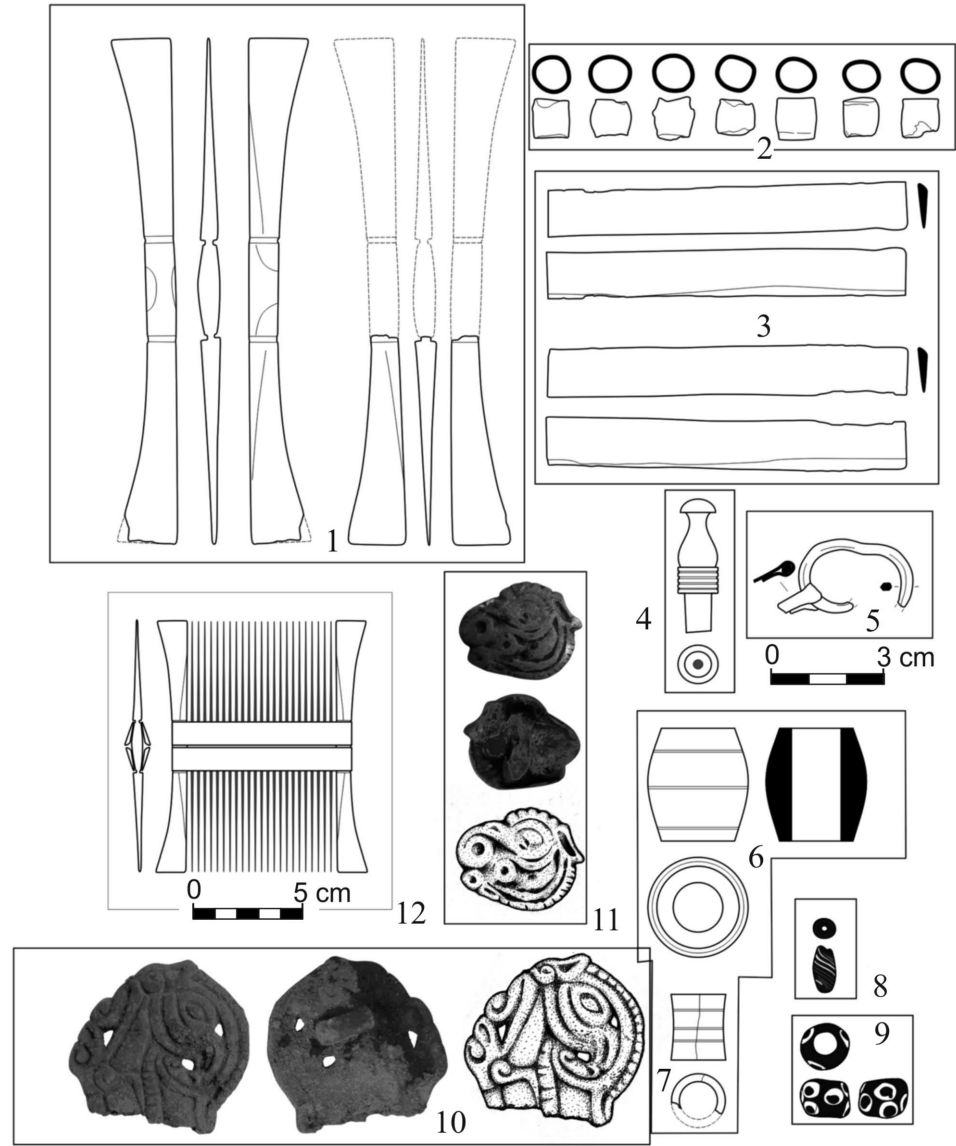
Pl. 2. Crihana Veche 2014. Barrow 7. General plan of the barrow 7.



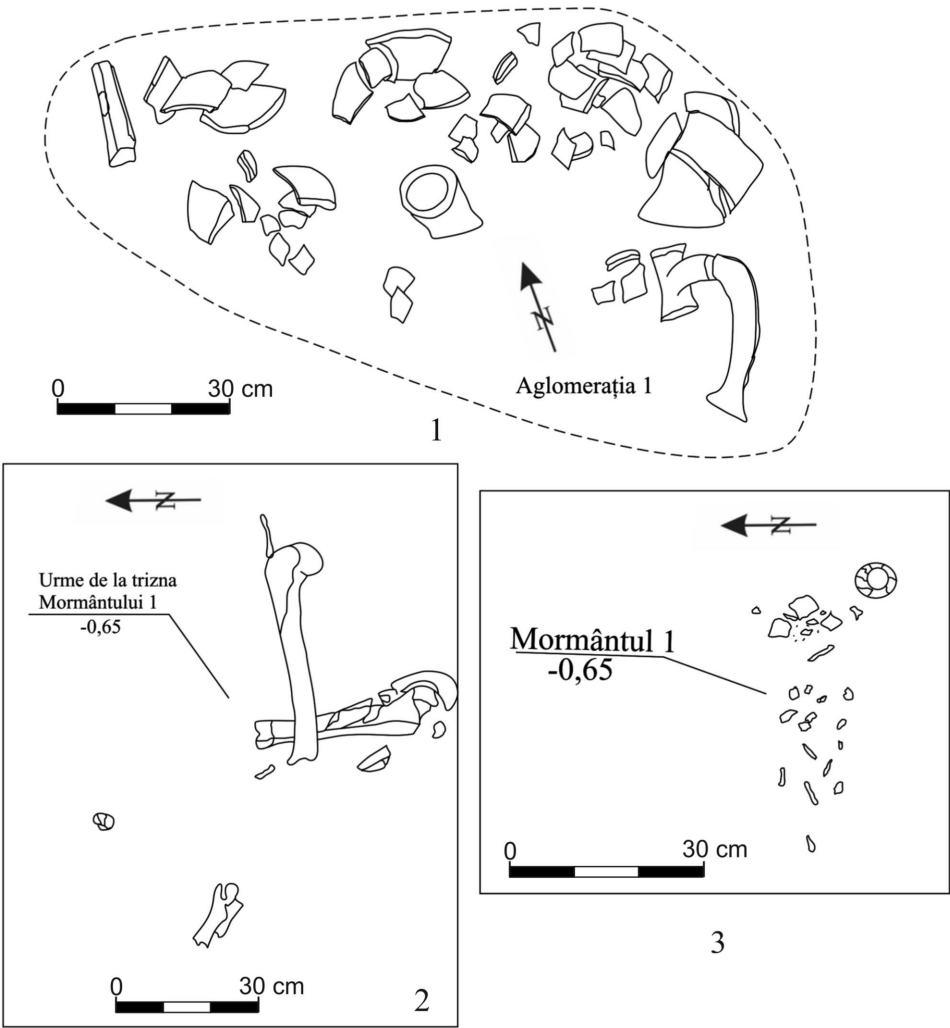
Pl. 3. Crihana Veche 2014. Barrow 7. Findings from the grave 2.



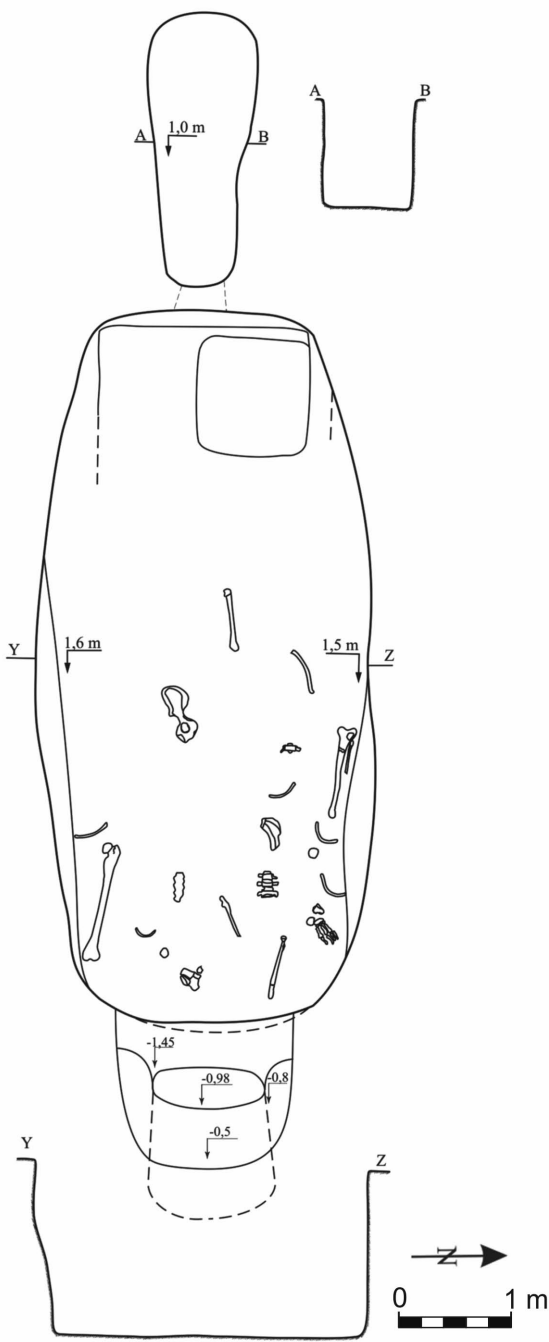
Pl. 4. Crihana Veche 2014. Barrow 7. Grave 2. Sword handle.



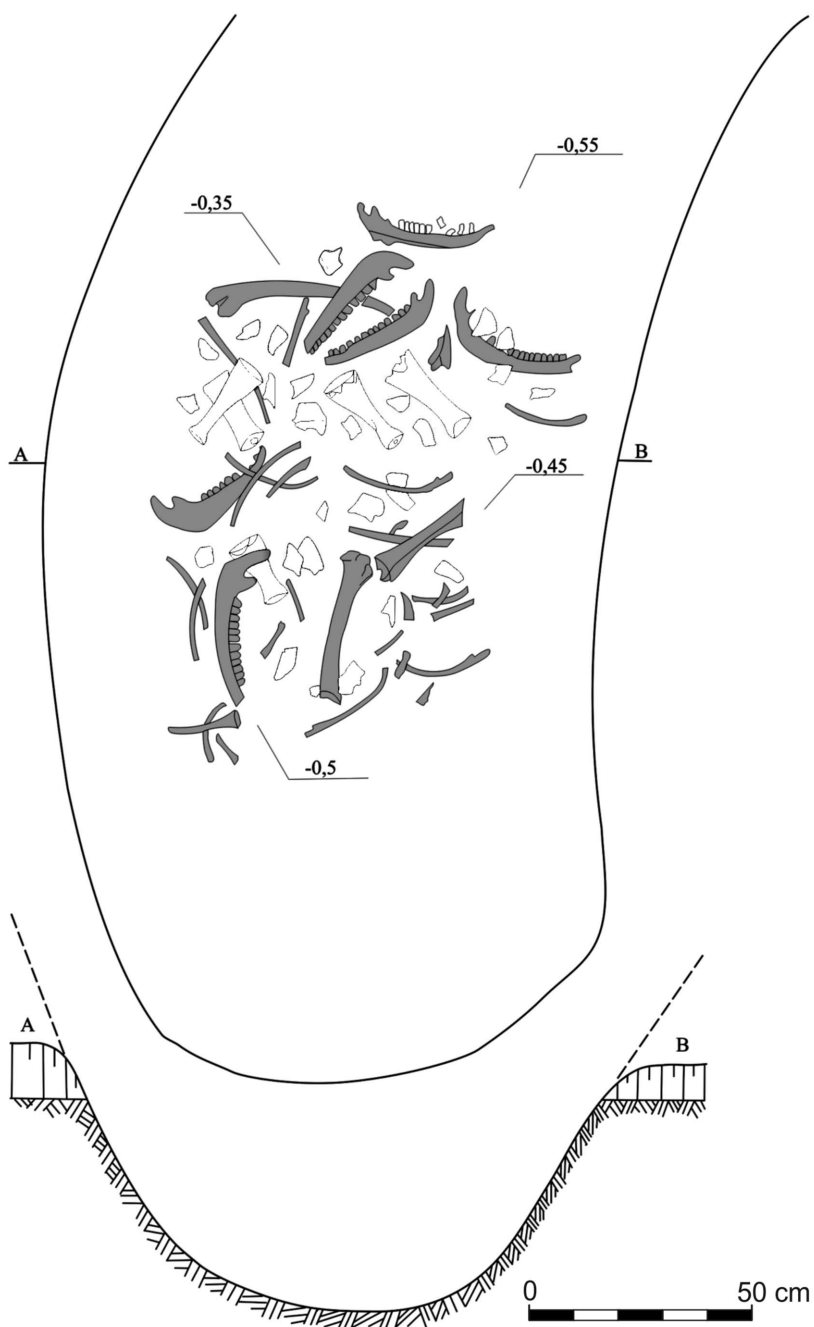
Pl. 5. Crihana Veche 2014. Barrow 7. Grave 2. Findings.



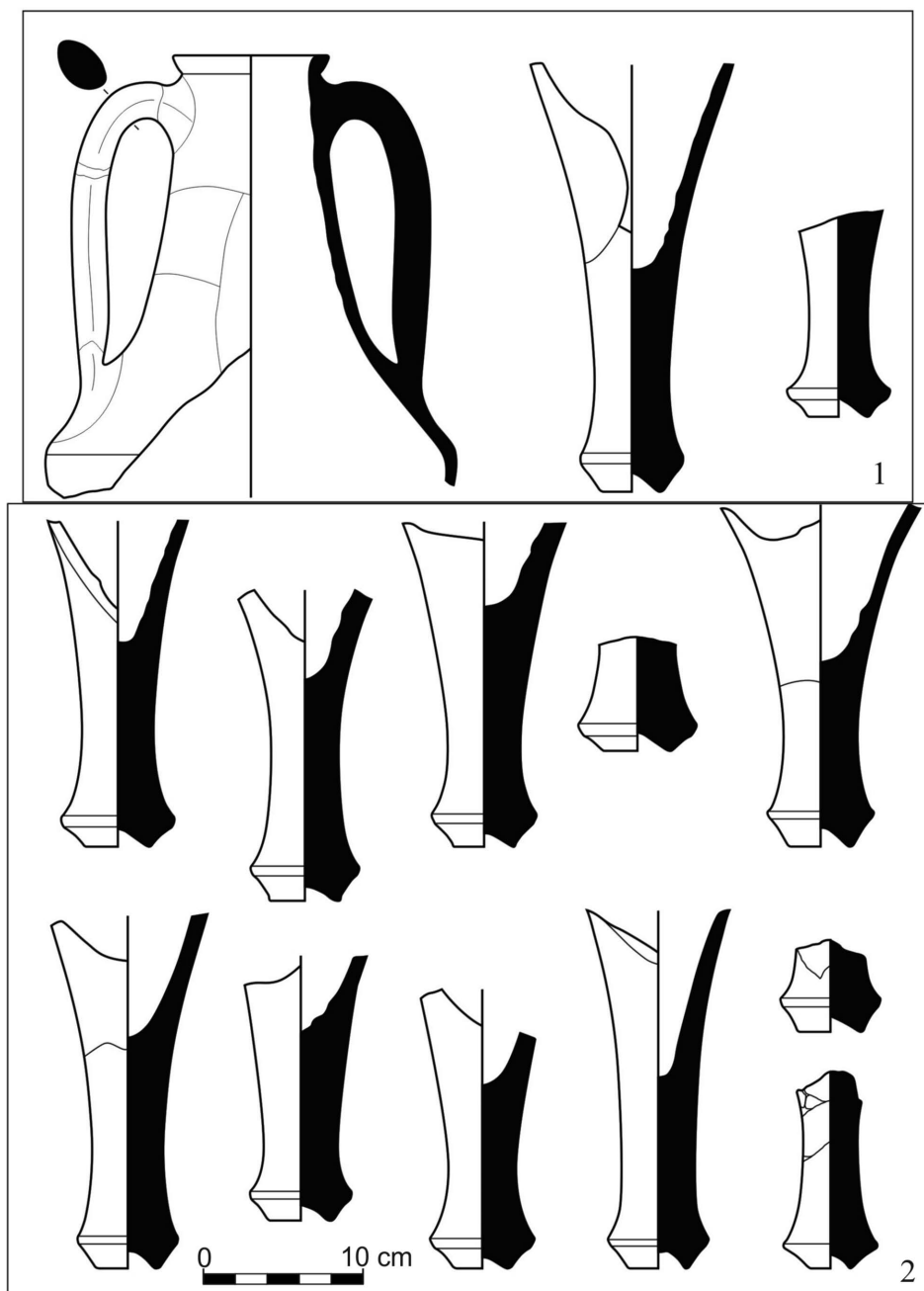
Pl. 6. Crihana Veche 2014. Barrow 7. Archaeological complexes within the barrow 7.



Pl. 7. Crihana Veche 2014. Barrow 7. Grave 2.



Pl. 8. Crihana Veche 2014. Barrow 7. Agglomeration of Greek amphorae mixed with animal bones in the western part of the excavation.



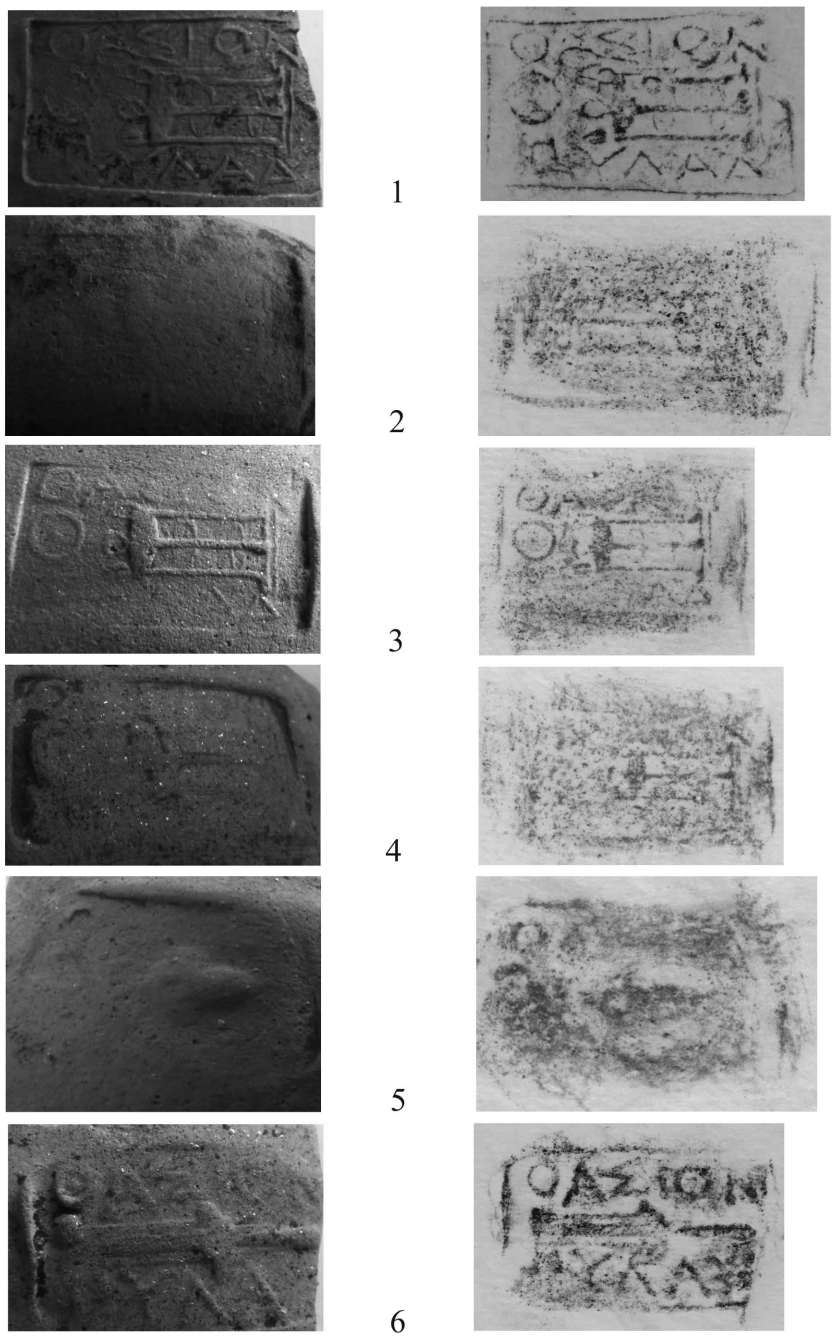
Pl. 9. Crihana Veche 2014. Barrow 7.

1 – Greek amphora fragments discovered in the agglomeration;

2 – Fragments of amphorae discovered on the western end of the northern trench.



Pl. 10. Crihana Veche 2014. Barrow 7. Stamped handles of amphorae.



Pl. 11. Crihana Veche 2014. Barrow 7. Amphora stamps.

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A HELLENISTIC BRAZIER FROM
THE JAGIELLONIAN UNIVERSITY
INSTITUTE OF ARCHAEOLOGY
COLLECTION OF ANTIQUITIES

Abstract: *In antiquity, a wide range of different types of heat sources were used. The most common were cooking stoves, portable braziers, cooking stands, and grills. In the collection of ancient artefacts of the Jagiellonian University (JU) Institute of Archaeology, there is a small group of objects dated to the Hellenistic period, among which a small brazier fragment can be found. The object was donated to the JU collection of antiquities gathered in the Archaeological Cabinet by Prince Władysław Czartoryski. Braziers are uncommon in Polish collections and the brazier fragment described in this article is the sole example from the JU IA assemblage. It will be described and analysed in full for the first time, and its possible production centre and a dating will be determined.*

Keywords: *Jagiellonian University Institute of Archaeology collection of antiquities; Hellenistic period; brazier; Knidos; Papposilenos type*

Introduction

The JU Institute of Archaeology collection of antiquities holds a large quantity of objects dating back to the Hellenistic period, a few of which were donated by Prince Władysław Czartoryski (Ostrowski 2007, 93; Papuci-Władyka 2007, 218). In 1872, at the explicit request of professor Józef Łebkowski, the Head of the JU Archaeological Cabinet, the prince bestowed a set of Greek and Cypriot vases, as well as oil lamps, small bronze

and terracotta objects, and others. The brazier fragment was part of a group of 20 terracottas donated during that time (Moczulska 1998, 96 with further literature; Ostrowski 2007, 93). Czartoryski's donation formed the basis of the JU Institute of Archaeology collection of antiquities (on the collection see Bernhard 1976; Śliwa 2007).

Braziers in the Hellenistic world

In antiquity, a wide range of different types of heat sources were used. The most common were cooking stoves, portable braziers, cooking stands and grills. Le Roy (1961, 476–477) and Siebert (1970, 267–276) distinguished three main types of Hellenistic braziers: low (*réchaud bas*), on the higher stand (*réchaud à pied élevé*), and a brazier with a shelf in the front and a chimney behind a fire bowl (*réchaud à sole*). The most frequent are the first two types, with a characteristic hemispherical bowl with a pierced bottom and three attachments – plain or mould-made (Pl. 1). The morphological variations of mould-made supports are more significant in terms of classification: 1. a portable stove with a representation of a theatre mask of a bearded head (wearing a conical cap, ivy-wreathed or with *onkos*); 2. an animal head: bull, ox, goat, lion, or others; 3. a rosette or amphorae (very rare).¹ The popularity of the bearded head can be explained by its function as a prop to hold up a cooking pot (Şahin 2001, 92; Rotroff 2006, 204). The bowl was located on a tall, cylindrical, upwardly tapered stand with a large vent (or vents) in the lower part. Two horizontal handles were attached under the bowl on the opposite side. The stand passes to a base with a deep surrounding groove. The bowl and stand were made separately and joined before firing. The stand was made from coarse and gritty clay, and was usually undecorated, although exceptions are known (Le Roy 1961, 490; Şahin 2001, 92; Şahin 2003, 2–3; Rotroff 2006, 204). These light, cheap (in the Classical period the maximum price was two obols – Amyx 1958, 279) and portable stoves were a source of warmth and heating. Charcoal was placed in the bowl as the main source of fuel (Didelot 2000, 141–142; Şahin 2001, 91; Tsakirgis 2007, 228–229; Scheffer 2014, 178). The production of portable ovens began at the beginning of the 3rd quarter of the 2nd century BC. They became increasingly popular, and production continued until the end of the 1st century BC (Didelot 1997, 376; Şahin 2003, 4; Şahin 2004, 294; Rotroff 2006, 203).

¹ More about the meaning of decorative motives see Şahin 2001, 126 and Rotroff 2006, 204 with further citations.

Braziers were widely distributed throughout the Mediterranean, but it seems that portable ovens were especially common in the Aegean and the eastern Mediterranean. Many of the examples were unearthed in Hellenistic houses or from household debris in Athens (Vogeikoff 1994, 45; Vogeikoff-Brogan 2000, 307–308; Rotroff 2006, 219), on Delos (close to 3000 examples) and in Alexandria (Didelot 1997, 377). They were also used in sanctuaries, probably functioning as movable altars and used for preparing religious meals (Şahin 2003, 103–113; Scheffer 2014, 178–180). A large number of brazier fragments were found within the Sanctuary of Apollo Karneios in Knidos (Şahin 2001, 103–113) and in the sanctuary of Demeter and Kore in Corinth (Bookidis *et al.* 1999, 26, 50). Similar artefacts have also been found in Cyprus (Nea Paphos² – Hayes 1991, 75, pls. 17–18; Papuci-Władyka 1995, 124–125, nr kat. 135, tabl. 22; Papuci-Władyka 2000, 735, il. 7: 5; Panayia Ematousa – Winther Jacobsen 2006, 243, fig. 130), Lebanon (Jiyeh – Wicienciak 2014, 121, fig. 15), Israel (Akko, Dor, Caesarea, Gaza, Samaria and other sites – Rahmani 1984, 225–230) and Egypt (Naukratis – Thomas 2015, 3).

In the past, many sites were believed to be production centres of Hellenistic portable ovens. Israel was excluded as a production centre after neutron activation analysis showed distinguishable differences in clay composition in comparison to the local wares (Gunnweg and Perlman 1984, 234–236). Leonard (1973, 21–22) and Didelot (1997, 380–382, 387) argued that braziers could have been manufactured in the Aegean region, with the Kos-Mykonos-Knidos area as most probable, including Knidian amphorae workshops. However, some braziers in other local wares have been recognised, such as ‘Schist cooking fabric’ from Athens (Rotroff 2006, 40–41). According to Didelot (1997, 380–382) and Şahin (2001, 128–129) three levels of production could have existed: main centres, branches and local workshops. Alexandria was ascertained as one site of manufacture but on a much smaller scale (Didelot 1998, 275–276). Nea Paphos could have played the same role (Hayes 1991, 75–77), or Naukratis (Thomas 2015, 4). Şahin (2001, 130; 2003, 4) in his studies of braziers from different collections, concluded that the area of Knidos is the most probable place as a main production centre.

² A few brazier fragments have been recently unearthed during the excavation on the Agora in Nea Paphos by an archaeological expedition of the Jagiellonian University directed by E. Papuci-Władyka (more about the project: www.paphos-agora.uj.edu.pl); this material will be published by the present author.

Currently, braziers are studied not only in terms of iconography or technology but also in the context of changes in diet and methods of food preparation and their location within the architecture of the household (to determine the place of domestic cult or place of food preparation) or sanctuary (Foxhall 2007, 235–236, 240; Tsakirgis 2007, 225, 228; Banducci 2015, 157).

The brazier fragment from JU IA collection

Methodology: The characteristic of the fabric is based on a system of macroscopic descriptions (Orton *et al.* 2013, 275–285). The colour of clay is given according to Munsell Soil-Color charts (Munsell 2013).

Inventory number: 541 (1305),³ (Pl. 2).

Dimensions and conditions: Ht. 10.2cm, rim diam. 32cm, thickness 0.7cm, width of field 7.2cm. Preserved fragment of the upper part of bowl of brazier with a mould-made attachment (one of three), added after the bowl was made. Surface is damaged in a few places, as well as a small part of the beard. Decoration well preserved. Wash on the external part of the attachment. Smoke-blackened on the interior (could be in use).

Technical features: The clay is characterized by the presence of ill-sorted inclusions: abundant very coarse dark red and white with sub angular edges and low sphericity; abundant coarse black and white/gray (quartz) with sub angular and sub rounded edges with low sphericity; abundant medium and fine silver mica with rounded edges and high sphericity. Colour of clay is between yellowish red (5YR 5/6) and red (2.5YR 4/8) and the external and internal surface is wet smoothed. On the external surface of the support a few elongated and rounded voids are present, although the fabric is generally compact. Clay is very hard (cannot be scratched by fingernail), well fired. Texture of fresh break is hackly, with large and angular irregularities. Rough feel. Oxidized firing core (organic admixtures may or may not have been originally presented, no core).

Description: fragmentarily preserved upper part of the hemispherical fire bowl (with small part of the plain rim) and one mould-made pot support. On the exterior, a wide projecting horizontal ridge with a shallow groove by the downturned rim. On the interior, mould-made decoration in a nearly rectangular panel (side edges slightly concave) separated by a double-ridged frame. Inside the panel, a head of a bearded satyr with a four-leaved (fourth

³ The brazier fragment is currently kept under inv. no. 541; in the oldest inventory it was listed as no. 1305.

hardly visible) ivy-wreath in low relief. No bunches of berries visible. Broadly open eyes with marked eyelids and prominent eyebrows. Above visible brow. Below in deep relief, strongly pointed, upturned nose and small triangular checks. No mouth is visible. Under the cheeks is a wooly, arched moustache surrounding and reaching the length of the nearly horizontal beard with three central ridges arranged in a triangle. No inscription above the ivy-wreath.

Bibliography: The object was published by K. Moczulska (Moczulska and Szymańska 1976, no. 264).

Provenance and dating: Knidos (?), late Hellenistic period, late 2nd to early 1st century BC.

Comments: The brazier fragment under consideration was published by K. Moczulska (above), who described the object as a typical product of the Hellenistic and Roman times, and cited the brazier from the Archaeological Institute in Leipzig (Paul 1959) and the braziers from the National Museum in Warsaw as analogies (Martens 1971). Neither photographs nor drawings were provided in the first publication. Nevertheless, 40 years after the first publication and after actual studies of braziers from the Mediterranean, it is necessary to re-examine the unique Krakow brazier.

In the opinion of the present author, the object under analysis belongs to braziers of the above-mentioned type 2: with a higher stand. The iconography of the attachment represents the Papposilenos category, interpreted as a theatrical satyr mask (Rotroff 2006, 204). It belongs to Conze's type II.A – *Silenkopf* (Conze 1890, 122–125) and Mayence's type IV.C – *têtes couronnées de lierre* (Mayence 1905, 388–390) but in both cases with no direct parallels. The detailed classification of brazier attachments was proposed by Rotroff (2006, 205–212). The iconography of the Krakow brazier fragment is related to the wreathed Papposilenos type Agora II.1. from the Athenian Agora. The closest similarities are to be found among examples nos. 754, 755, and 778, with no. 778 as the most suitable, made in Quartz Fabric with Aegean origin. Unfortunately, cited examples from the Athenian Agora come from imprecisely dated contexts, with broad chronology from Hellenistic or even Early Roman periods (Rotroff 2006, 324, 327, pls. 75, 80). The braziers with ivy-wreathed head supports were very popular and circulated widely in the Mediterranean. A very similar type was found in Maison de Comédiens on Delos (Siebert 1970, 272, no. D 393, pl. 51). Iconography details also correspond to Didelot's type I from Alexandria, with closest similarities to locally made type I.3 dated to the first half of the 2nd century BC (Didelot 1998, 285–287, fig. 3). Close analogies

are to be found in Caesarea (Rahmani 1984, 226, no. 7, pl. 30) and in Kyme (Ondrejova 1974, 85, pl. 20: 3). The Krakow brazier fragment represents Variant 1 *Hermophantos* from Knidos (Şahin 2001, 8–13, Taf. 2–5). There are also very good analogies in examples from the British Museum: nos. Ha8-Ha25 (Şahin 2001, 94–97, figs. 13–32). At least two parallels can be cited from the Bodrum Museum, with type IV.1 and IV.2. as most relevant. Both are dated to the Hellenistic period, but IV.2 is limited to the late 2nd – early 1st century BC (Şahin 1999, 62, 83, resim 9: 10).

Based on the macroscopical analyses of the Krakow brazier fabric, we can conclude that the clay, in terms of its colour, fabric and texture, is most similar to the clay of braziers produced in Asia Minor. Ephesus can be excluded despite the iconographical relation. Examples from Ephesus were made from clay containing gold mica and are dated to the third quarter of 2nd century BC (Gassner 1997, 229–230, Taf. 70: 956). The fabric of the brazier fragment from Caesarea belongs to the chemical group Ia, which probably has Aegean origins (Gunneweg and Perlman 1984, 234–236). The published brazier fragments from Maussolleion at Halikarnassos also mostly contain golden mica and in major proportion belong to the local Red Burnished Ware (Vaag *et al.* 2003, 45–46, 129). In our case, the most characteristic identification feature is the silver mica. Clay containing silver mica was a characteristic production feature of cooking, fine and plain wares in Knidian workshops during the Hellenistic and Roman times (Doksanalti and Tekocak 2014, 281). Also, other components of the clay like lime and sifted silt indicate a volcanic source, maybe the Datça peninsula (Şahin 2001, 130). Good analogies of brazier fragments with such clay components come from the region of Halikarnassos and Knidos (Şahin 1999, 62, type IV.1 is from Theangela, type IV.2 – from unknown place; Şahin 2001, 94–97; Şahin 2003, 8–12). Although, all the above-described analogies point to Knidos as the most probable production centre for the Krakow brazier. Because of the lack of an inscription, we can suggest with caution that our brazier fragment may have been manufactured in one of the Knidos producers workshops: Hekataios or Athenaios, who were active in the late 2nd and 1st centuries BC. Our suggestion is based on the iconographic analogies as well as macroscopical clay analysis. Nevertheless, to solve the question of production place of our object, petrographic analysis of the clay should be done.

Conclusion

The above-described fragment of a portable stove with a representation of a bearded head theatre mask belongs to the Papposilenos type. The production centre of this type was probably Asia Minor, most likely the area of Knidos and Halikarnassos. The best iconographical analogies for the Krakow brazier fragment can be found in objects of the same type from many museum collections (British Museum, Bodrum Archaeological Museum) and archaeological sites (Delos, Alexandria, Knidos and many others). The brazier from the JU Institute of Archaeology collection of antiquities may be added to the range of types manufactured somewhere around Knidos, and confirms the strength and importance of this region as a production centre in the Hellenistic period. It can be dated from the late 2nd to the early 1st century BC.

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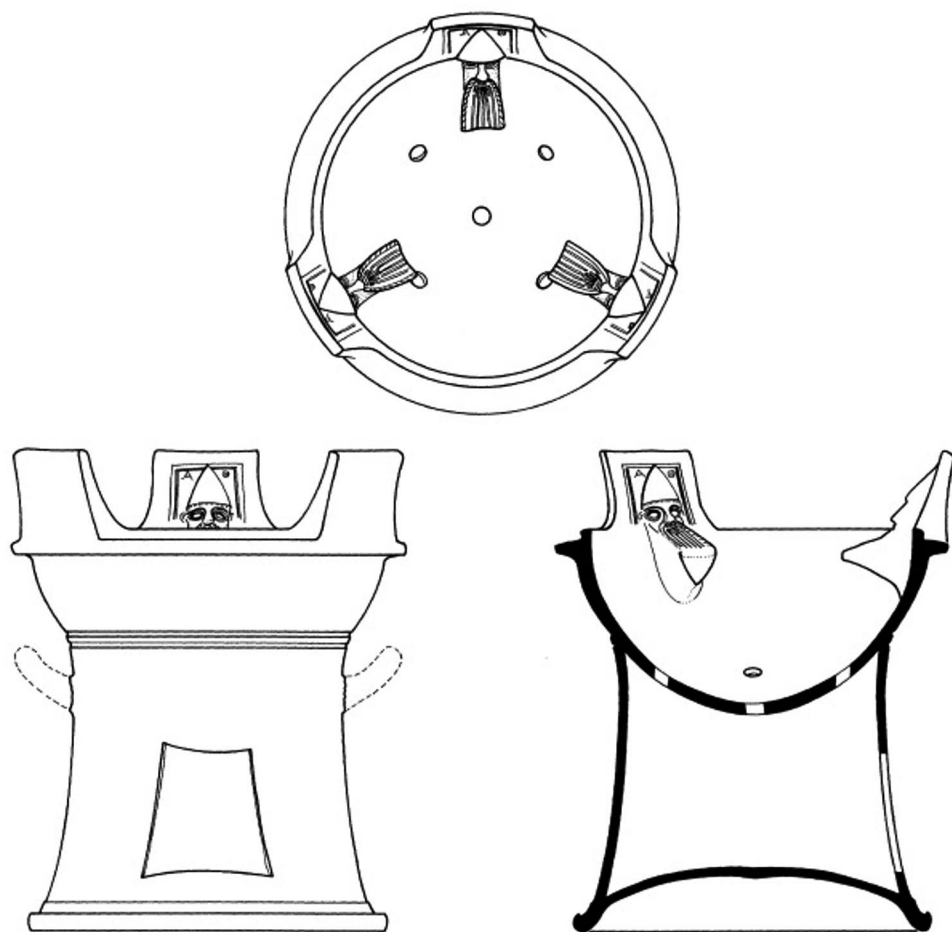
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Pl. 1. Brazier on stand with three mold-made supports.
Reproduced from Rotroff 2006, fig. 95, 750



Pl. 2. The brazier fragment of Papposilenos type. JU IA collection of antiquities, no. 541. Photo and digitalization by the author

Małgorzata Kajzer
Krakow

TO LIGHT ANTIQUITY. PERSPECTIVES
FOR RESEARCH ON CLAY OIL LAMPS
FROM THE AGORA IN NEA PAPHOS,
CYPRUS

Abstract: *Oil lamps as archaeological finds and in museum collections provide a wealth of information. Various types of studies may be applied to investigate their meaning in ancient times. When several methods are used simultaneously, the objects may be interpreted according to distinct aspects, enabling us to study this group of ceramic objects from a multidisciplinary, comprehensive perspective. Such aspects are described in this paper, supplemented by a case study concerning oil lamps from the Agora in Nea Paphos, Cyprus.*

Keywords: *Oil lamps; research methodology; Cyprus; Nea Paphos; Agora*

Introduction

Artificial light is one of the most basic human inventions, and access to it is a basic human need. Its great importance can be exemplified by simply considering the connection between the Latin words *lux* and *luxuria*, which is no accident. Oil lamps are one of the groups of archaeological objects that may be properly interpreted, as we know that they were used as a basic source of light in ancient times. Their form is so characteristic that usually, even if highly fragmented, it is possible to distinguish them from other categories of objects, although this is only the preliminary stage of analysis.

Studies into ancient lamps, recently becoming more and more popular,¹ are a great opportunity for interdisciplinary research and application of modern analytical methods. The first aim of this article is to show what kind of information may be obtained through an analysis of ancient oil lamps. This paper, a collection of that information, organises the data acquired so far and provides a vision for possible interdisciplinary research. The second purpose is to present the option of applying comprehensive methodology to research of a particular group of objects found in the area of the Agora of Nea Paphos in Cyprus.²

Lamps as archaeological finds – context

Oil lamps are found on various sites of both domestic and funeral character: in mines, military buildings, sanctuaries, cisterns and on cargo ships (Lapp 2004, 174). The variety of utility contexts indicates the popularity of this category of archaeological finds in ancient times. Proper interpretation of various functions of these small objects is undoubtedly valuable, but often not easy to define. Lamps could have been used for their most obvious utility, their basic function of supplying the light. Yet, they were often treated as symbolic or votive items. Lamps are well-attested in sanctuaries and places connected with cults, where they played an important role in some rituals that required light (Bailey 1972, 11–12; Fotiadi 2011; Dimakis 2015, 167). These lamps can be identified by their special size, form or decoration, such as the example of a multi-levelled, inscribed lamp from the Nymphaeum of Kafizin in Cyprus (Vessberg 1956, 187; Mitford 1980). In a necropolis, lamps could be used as grave goods or objects connected with burial customs. However, their presence in the vicinity of or inside the tomb could vary even within the same geographical and cultural area (Dimakis 2015, 165).

During late Hellenistic and Roman times, lamps gradually increased in importance. They came to be used not only for private or votive purposes but also to light public spaces such as streets, squares and theatres (Bailey 1972, 11). This could be explained by technological changes in their

¹ The state of lamp studies has changed recently. A major step was the creation of the Lychnological Association in 2003, <http://www.lychnology.org>.

² The Agora has been explored since 2011 by the Department of Classical Archaeology, Institute of Archaeology, Jagiellonian University Krakow under the license of the Department of Antiquities in Cyprus. The project is funded by the National Science Center, Poland, grant MAESTRO no. 2014/14/A/HS3/00283; for more information see <http://www.paphos-agora.archeo.uj.edu.pl>.

production and by the adoption of moulds from the end of the 3rd century BC onwards (Bailey 1972, 13; Fitch and Goldman 1994, 5). In the Roman period, lamps began to function as carriers of sophisticated iconographical motifs. A number of scenes on discs were associated with different aspects of ancient life. It is hardly possible to link directly depictions to the place of use (Bailey 1972, 13; Lund 1995). For instance, lamps with erotic scenes could be found in brothels but, at the same time, they were used in private houses (Bailey 1980, 64). Lamps with depictions of gods can be connected with sanctuaries or other sacred places, masks and drama topics with theatres, chariot races and gladiators with amphitheatres, but such iconography could also simply indicate the popularity of some types of scenes associated with religion or daily life (see below). Some objects may be associated with historical personages (Bailey 1980, 43–44) or with special occasions, like New Years' lamps with the depiction of a winged Victoria (Bailey 1980, 28). Contextual studies are significant when comparing different find patterns within the same city. In turn, spatial distribution analysis could provide information about the level of illumination in particular spaces (Petruț *et al.* 2014, 81). Thanks to the high variability of forms, the presence of lamps in certain archaeological contexts could be very helpful in determining the chronology of layers.

Lamps as chronology indicators

As mentioned above, oil lamps are quite precise date indicators. Some Roman types can be dated as precisely as *terra sigillata* or even coins. Clearly, it is troublesome to say how long such objects could last in their original context. We can easily imagine that some special items such as family heirlooms were used or kept for an extended period of time. Still, it is possible to create some chronological horizons and make compilations of parallel finds from different sites (Lund 1991). Despite that, it is essential for typological studies to be complemented by clay analysis, which is necessary because same forms were widely produced as imitations of distributed prototypes (see below). Nonetheless, the variety and the state of research on lamps from various parts of the Mediterranean provide chronological horizons of these objects and the database is still growing. We can refer to typologies from a number of sites or geographical regions (e.g. Loeschcke 1919; Broneer 1930; Vessberg 1956; Howland 1958; Bruneau 1965; Bussi re 2000; Sussman 2009; Sussman 2012). Thus, if the chronology of archaeological strata is uncertain, dating oil lamps and their context of finding based on comparative studies is possible.

Lamps as objects in daily use – the matter of effectiveness

Some studies concerning the problem of effectiveness of lamps have recently been published. Experiments were conducted to show how these objects were applied to light interior spaces. It has been proved that the light provided by one lamp was sufficient for a symposium or for comfortable reading (Wunderlich 2003, 255; Moullou and Topalis 2011, 65–66). Other case studies, however, have shown that the presence of even a few oil lamps could not supply enough light for activities demanding focus on details (reading or gaming) and that they were instead used only for orientation and movement in a room after nightfall (Petrut *et al.* 2014, 85–88).

Lamps as pieces of art

When thinking of Roman oil lamps, what comes to mind first is their rich iconography and variety of scenes on the discs. It is not surprising that 19th-century researchers and collectors focused mainly on these aspects of lamps, as they seem to be the most attractive. Such iconographical studies brought forth a wealth of information about daily life concerning religious aspects and mythological beliefs, as well as about ancient people and their domestic life, entertainment, professions and aesthetic preferences (Bailey 1980, 6–88). As mentioned above, the iconography could be sometimes connected with the place of use. The artistic level of many lamps was often very high, and the attention to details stunning. The repertoire of motifs and scenes characteristic for a particular region and place of production is also crucial, as it often helps to confirm the provenance. Many scenes were created in Italy and gained wide distribution along with the technology of production of relief mould-made lamps (Fitch and Goldman 1994, 44). Such imports often functioned as archetypes imitated in provincial workshops (Bailey 1965, 15) and their quality often suffered (Perlzweig 1963, 17).

Lamps as a pottery group

Aside from their decorative and utilitarian functions, lamps should also be considered an indicator of the place of production. They were often made of the same clay as pottery vessels, particularly in early times and the Hellenistic period. The popular term ‘terracotta lamps’ can be associated rather with the Roman period, when the great majority of lamps were mould-made objects and their clay indeed identical to that of terracotta figurines.

Clay analysis can provide important information about the composition of clay, firing conditions, quality of execution and, therefore, the provenance. Particular fabrics may be distinguished macroscopically on the basis of clay characteristics (Orton *et al.* 1993, 67–75). Moreover, it is possible to apply archaeometrical methods to ascertain the chemical composition of clay or to provide an accurate image of physical features. It should be noted that for a long time archaeometric methods were not very popular for use in lamp studies. But XRF has now been used to study some Roman clay objects (Schneider and Wirz 1992; Eramo *et al.* 2013) and chromatography, coupled with mass spectrometry, to analyse oil residuals (Kimpfe *et al.* 2001). Petrographic thin-section analysis can provide valuable data about fabric composition (Lapp 2004, 174). Most significantly, the results must be compared with reference data obtained from similar studies (including other categories of pottery).

Lamps as epigraphical source

Additional data collected during lamp studies refers to marks and inscriptions on lamps. The proportion of signed oil lamps varies depending on the area of provenance. For Italy, the percentage of such examples is rather high and includes about 30–40% of objects (Harris 1980, 128). However, in some provinces, like Cyprus, the first local marks appeared no earlier than the 4th century AD (type Vessberg 18). Signatures often indicate the name of the workshop owner or may be the mark of a particular place of production, like the signature ROMANESIS, which occurs on early Roman objects, probably produced in Knidos (Gordon and Cova 2010, 282–283). Yet, it is not always possible to make a simple connection between the place of manufacture and signature, a good example being the problem of FAVSTVS lamps, which are known from different parts of the Mediterranean and interpreted as produced in a few branches of the same workshop (Mikati 2003, 175).

Research on lamps from the Agora in Nea Paphos

All the aspects of lamp studies may be applied to the analysis of a certain assemblage. The specific context of the Agora of Nea Paphos – the heart of the ancient city – makes it possible to study objects coming from a central place of trade, social life and place of worship in the ancient city. It is crucial to have a proper attitude toward such research. It is necessary to be

interdisciplinary and comprehensive. Preliminary results show a great variety of lamps representing different areas of production, including examples of Cypriot manufacture, which have already been described but are still not well-recognised (Hayes 1980, 75; Młynarczyk 1978; Młynarczyk 1992; Młynarczyk 1995; Młynarczyk 1998). The importance of the city of Nea Paphos during the Hellenistic and Roman periods is unquestionable and is reflected, among other things, in the diversity of goods. That opens the door to perceiving another aspect of lychnological studies: lamps as evidence for trade contacts. Even though lamps may in general not be considered as basic trade objects, it is clear that some workshops, at least temporarily, distributed their products over great distances. It is obvious that the presence of lamps does not always implicate economic exchange, as they could have served various purposes such as personal items, souvenirs (Bruneau 1977, 262–265; Katsioti 2008, 191) or votive offerings. However, the large percentage of certain types indicates that there was a demand for those objects. For the Late Hellenistic period, Ephesian oil lamps, of a widely distributed and imitated type, are a solid example of this phenomenon (Nicolaou 1972, 315; Giuliani 2008; Kajzer 2013). Other non-Cypriote objects found in the Agora of Nea Paphos, datable to the Hellenistic period, came from Knidos, Phoenicia, Attica, Rhodes and probably the East Greek workshops. There is little evidence of Egyptian imports, which goes well with other categories of pottery.

In Roman times, there was a sophisticated way of exchanging goods, ideas and people and the circulation of lamps was also included in that system (Harris 1980, 132–137). The distribution patterns of lamps changed over time, which was clearly connected with the political situation of the island and general directions of exchange (Kajzer 2016). The importance of other production centres in Italy, Syro-Palestine or Cilicia becomes more prominent when compared to previous periods.

The lamps from the Agora are being studied and interpreted in terms of a number of factors connected with the technology of production and context of finding as described above. It is possible to define some tendencies towards decorative motifs in the local repertoire. Research on locally manufactured objects has identified a few fabrics used for the production (Młynarczyk 1995, 207–208), but the issue requires further studies.³

³ The author of this paper is planning to study samples by using XRF method, to confirm locally produced and imported oil lamps from the Agora. The analysis will be the part of the project granted by National Science Centre, Poland (grant PRELUDIUM 10, no. 2015/19/N/HS3/01810).

The importance of Cypriot production is clearly visible, particularly during the late Roman period (4th–5th century AD) when types characteristic for the island started to be produced and distributed (Bussi re and Malfitana 2009; Katsioti 2014).

Furthermore, it is possible to observe different spatial distribution patterns within a specific site. This matter, however, is in the preliminary stage of research and awaits more detailed studies.

Conclusion

A comprehensive view of studies of oil lamps opens the door for interdisciplinary research, which concerns typological, iconographical, epigraphical and contextual studies as well as macroscopic analysis and archaeometry. It is essential to note that each aspect might be equally important, so we should not disregard any of them or treat them as complementary elements. It is impossible to answer the archaeological questions in a definite way, but nonetheless we can always make well-informed speculations on these objects from the past.

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TEXTILE FRAGMENT FROM A WELL
IN THE NEA PAPHOS AGORA.
A PRELIMINARY REPORT

Abstract: *During the 2014 season a late Hellenistic well was explored as part of the excavations on the Nea Paphos Agora. Many special finds, including ceramic vessels, iron and bronze items, and lamps were found. Moreover, on the bottom of the well a piece of textile attached to metal application was discovered. In our paper, we would like to present preliminary examination of that artefact, which is very uncommon considering the rarity of such remains in Cyprus.*

Keywords: *Agora Nea Paphos; textile*

Introduction

Since 2011 the Department of Classical Archaeology of the Jagiellonian University, led by Prof. Ewdoksia Papuci-Władyka, has been excavating the Agora of Hellenistic-Roman Nea Paphos.¹ The city, approximately 1ha in area, is located on the west coast of Cyprus, on a peninsula convenient to ancient sea routes linking Greece, Egypt and the Near East.

Nea Paphos was founded in the late 4th or early 3rd century BC. However, despite many years of research, it has not yet been determined whether Nikokles, the last king of Palaipaphos, or Ptolemy I was the founder.

¹ Opus grant no. 2011/01/B/HS 3/01282 in 2011–2014 and Maestro grant no. 2014/14/A/HS 3/00283 in 2015–2019 with contributions by the Department of History of the Jagiellonian University in Krakow and private sponsors. Website: www.paphos-agora.archeo.uj.edu.

The latest archaeological evidence (Bekker-Nielsen 2000, 202; Balandier 2011, 376) has revealed that the town developed gradually throughout the 3rd century BC thanks to the policies that the Lagids followed on the island itself, and beyond its boundaries. In the late 3rd century BC, it became the administrative and economic centre of Cyprus as well as the home port for Ptolemy's main navy. After coming under Roman rule in 58 BC, Paphos retained its position until the mid-4th century AD, when an earthquake destroyed it. Despite rebuilding efforts, the city lost its dominant role on the island, to be finally abandoned in the mid-7th century AD (Megaw 1988, 150).

The Paphos Agora was probably erected with all the architectural features typical of a newly founded Hellenistic city: city walls, a port and a theatre (Młynarczyk 1990, 94–105; Barker 2015, 45; Pl. 1). It was designed as a square, which from around the 2nd/1st century BC was enclosed by porticoes on at least three sides: from the east, south and west (the boundaries of the northern portico have not been identified). Current excavation works are comprised of four trenches: I – in the Agora's centre, where the remains of a large building, possibly a temple, are being unearthed, II – in the eastern portico, III – at the southern entrance to the Agora, on the internal side, and IV – in the south-east corner of the Agora (Pl. 2) (Papuci-Władyka *et al.* forthcoming).

Excavations in the eastern portico have revealed a series of rooms, the construction of which is dated to Augustus's era when the building, and in fact the whole town, underwent a thorough reconstruction. The decision to undertake reconstruction was made following a catastrophic earthquake which struck Cyprus in 17 or 15 BC. At the current stage of the research, it appears that the part of the portico directly connected with the eastern entrance to the Agora was entirely reconstructed, as its Hellenistic remains are few. More Hellenistic structures, which must have been adapted to suit the new organizational layout of the building, survive in the southern part of the portico. One of them is a water well, whose framework remained intact despite it going out of use between the late 2nd century BC and the mid-1st century BC (Pl. 3). Most likely, the upper part of the curbing was converted to form part of the design of room 13 (Pl. 4). The condition of the preserved Hellenistic water infrastructure makes it impossible to precisely determine whether the well was an isolated one, providing a source of fresh groundwater only, or whether it also served as a reservoir. Siting water wells within agora porticoes was common architectural practice in the Hellenistic-Roman era (Papuci *et al.* forthcoming).

The well was 7m deep (Pl. 4). The current fresh water table is 6m below the ground. The over ground structure was built on a square plan with stone slabs forming the reservoir's opening. After reaching the bedrock, the builders dug into it, rendering the well oval in its lower part. At 5.5m below the ground, the shape of the well becomes irregular, which is because the builders encountered a clay deposit providing a natural path for water flow. Interestingly, although this is not the only identified attempt at digging a well in the Agora, it is the first one to have been proven successful. In 2012 a well located in the centre of the square was explored. It seems, however, that being unable to reach the water table, its builders had converted the dug structure into a cistern (Rosińska-Balik and Misk 2016).

The well in room 13 (S.173) was filled up at one point in time, which is evident from numerous potsherds that fit together even though they were often found at different depths. The well yielded an abundance of precious archaeological material: besides a piece of a lead ferrule with a preserved textile fragment, which is the main focus of this article, large quantities of pottery were discovered: tableware – complete shapes (Papuci *et al.* forthcoming), cooking ware – complete shapes (Nocoń 2016; Papuci *et al.* forthcoming), plain ware and amphorae – very large sherds preserved (Dobosz 2016; Papuci *et al.* forthcoming), almost 60 coins (Papuci *et al.* forthcoming), four oil lamps, a fragment of a mould for casting coin flans, lead sling-bullets, loom weights, sherds of metal pots (Wacławik 2016; Papuci *et al.* forthcoming), glass and other decorations. An analysis of this material, both ceramic and numismatic, made it possible to determine that the well had been filled up between the late 2nd century BC and the mid-1st century BC. Also, finds related with the use of the well itself were discovered at its very bottom, such as a fully preserved lead bucket, which must have been used for drawing water. Another interesting piece recovered is a bronze bracelet, likely simply lost by someone.

The well is an extremely important architectural structure. Its framework clearly comes from an earlier period than the portico, which suggests the Hellenistic chronology of the latter. It is one of rather few clues that the Agora may actually be older than the Roman period (Papuci *et al.* forthcoming).

The textile

The textile fragment was found in a layer of very wet sediment which filled the well. The sediment consisted of external material mixed with clay

in which the well had been dug. The textile itself is attached to a double-layer metal curved-shaped item (3 x 3cm), maybe part of a disc with a hole (0.5cm in diameter). It was probably a piece of a garment. pXRF examination of the metal revealed that the item was mainly made of lead with a large addition of iron.

The textile is preserved due to the presence of metal salts.

The size is *c.* 2.7cm along the warp and *c.* 4cm along the weft. It is made of shiny undyed medium single S-spun (anti-clockwise) linen identified by magnifying the photos, *c.* 13 threads per cm at the warp and *c.* 7 threads per cm at the weft. It seems that the same thread was used for both the warp and the weft. Although the edges were not preserved we could identify the warp and the weft because linen textiles usually have more warp threads. The technique is plain weave, known from the Neolithic period (Pl. 5: 1) (Shamir 2014; Shamir 2015). On the opposite side there is a thread with a knot at the edge (Pl. 5: 2). The quality is medium and the thickness of the threads is uneven.

The textile is probably part of a garment. It resembles linen textiles from the Hellenistic and Roman periods in, for example, the Land of Israel (Shamir 2013), which are plain weave with more threads along the warp than the weft (as opposed to wool).

Loom weights were found at the well. The textile could have been produced on a warp-weighted loom in use during this period and earlier in Cyprus (Barber 1991; Smith *et al.* 2015).

The textile remnant from Paphos is of importance because only a few archaeological textiles from Cyprus are known.

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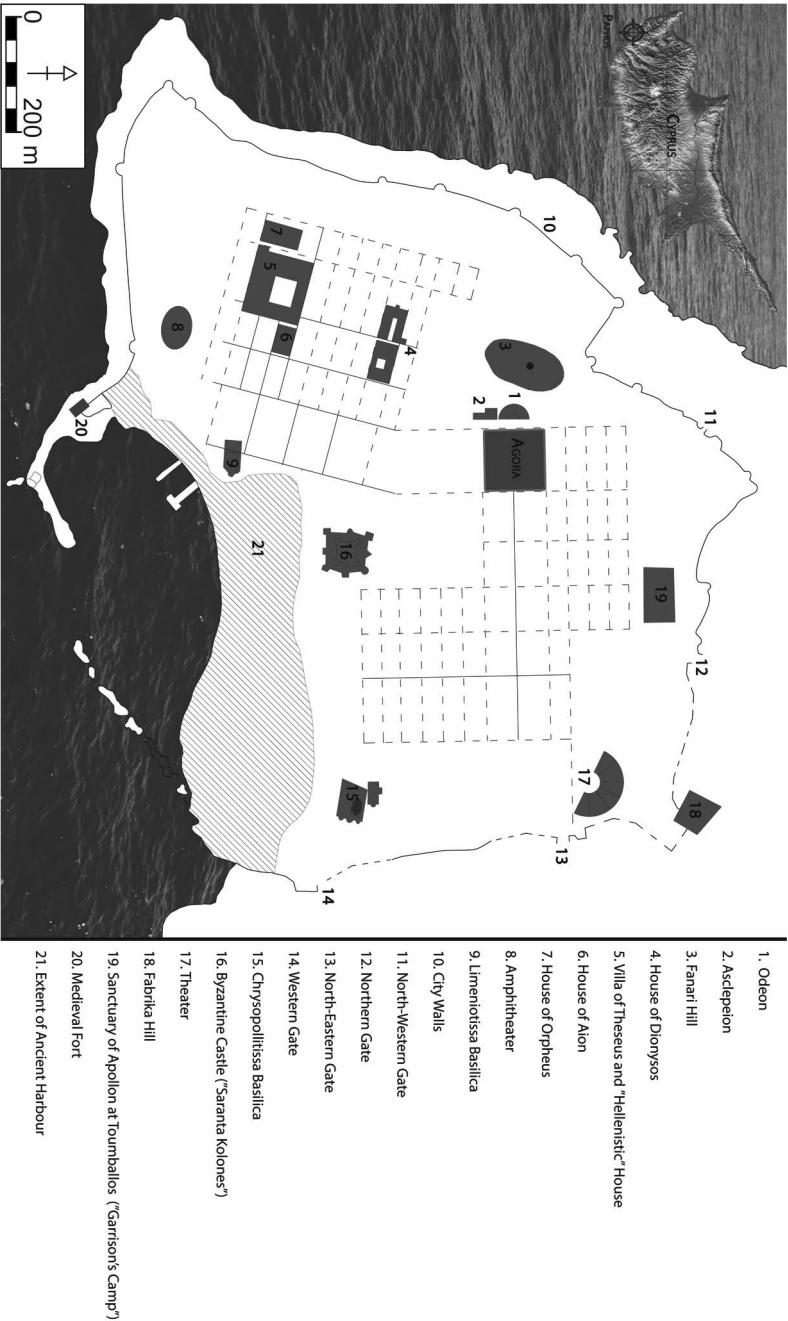
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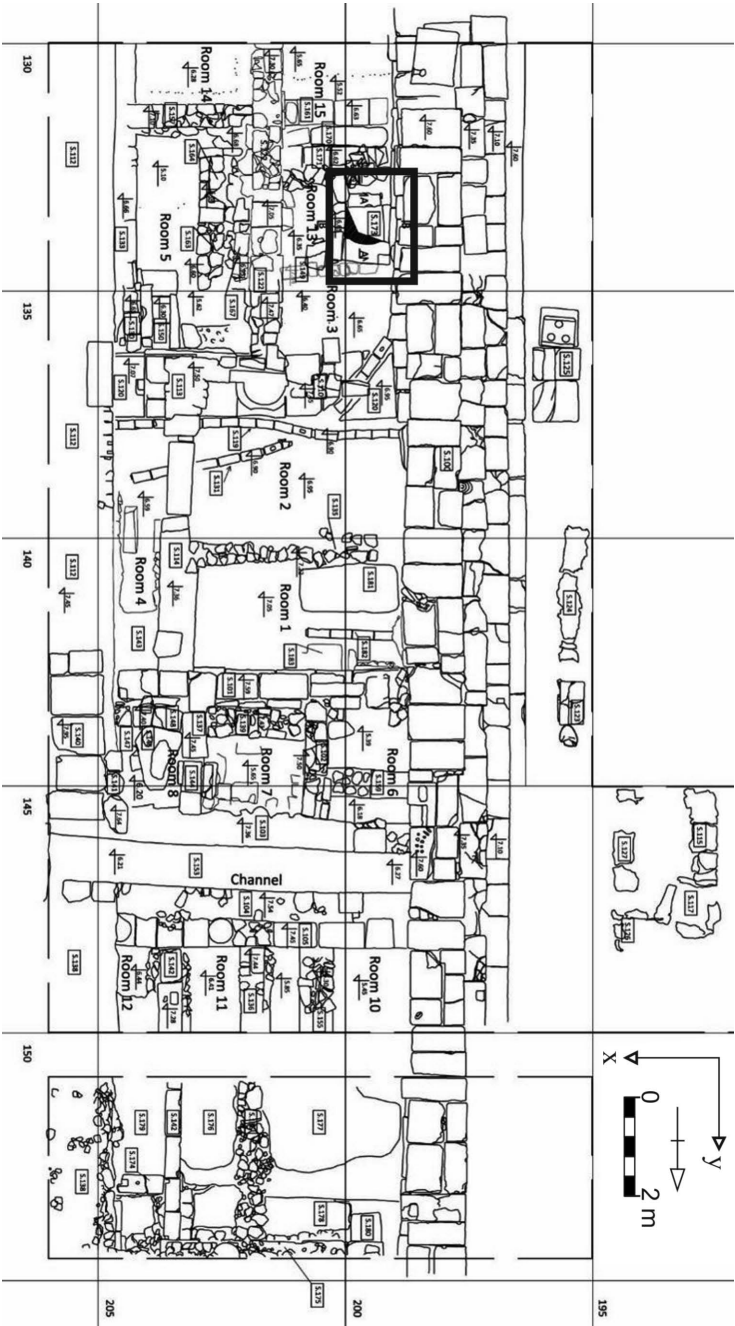


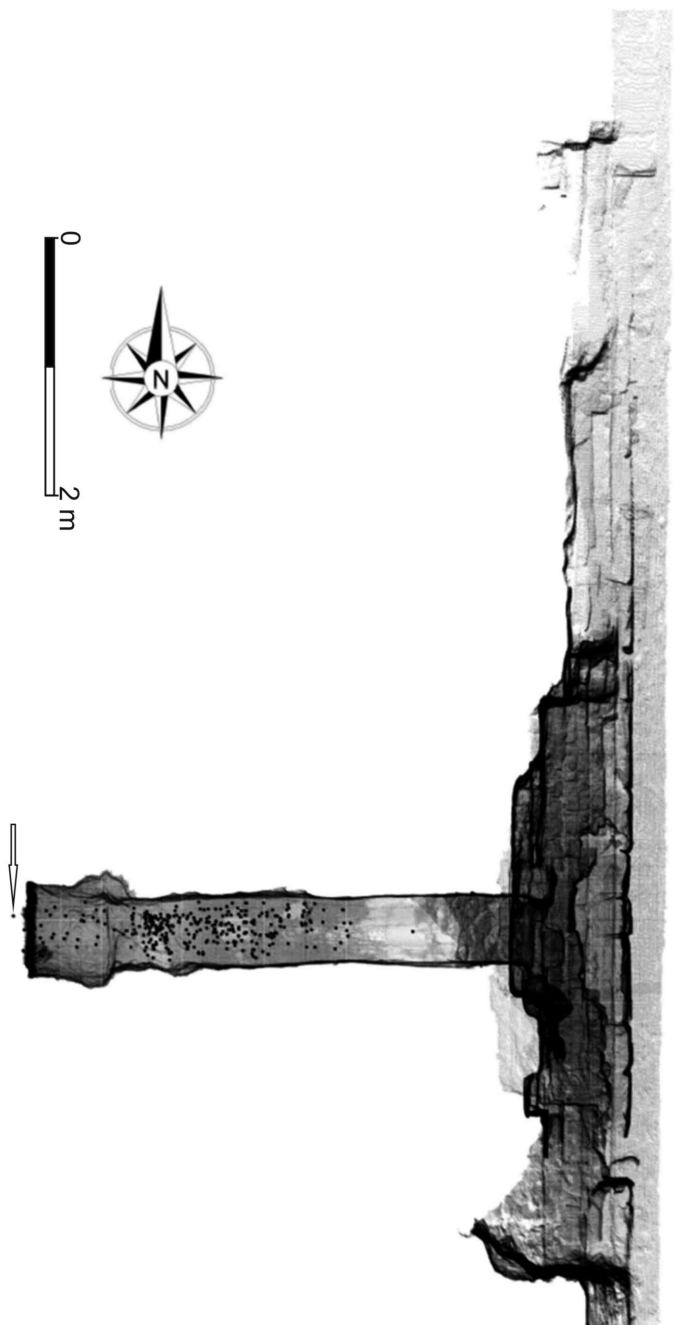
Pl. 1. Plan of ancient Nea Paphos. Reproduced from Młynarczyk 1990, fig. 16, with modification by Paphos Agora Project



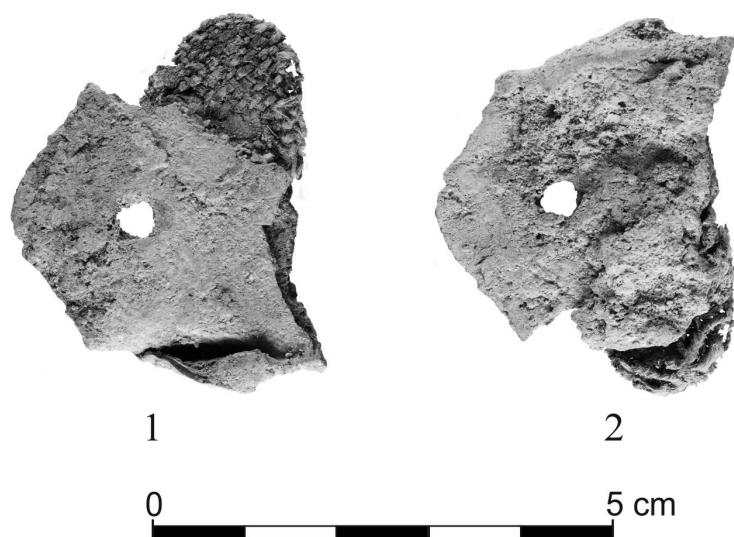
Pl. 2. Orthophoto map coupled with architectural plan of the Nea Paphos Agora. Trench II is located in the middle of the eastern stoa. Created by K. Rosińska-Balik

Pl. 3. Trench II with marked well S.173. Drawn by K. Rosińska-Balik





Pl. 4. Cross section of the eastern stylobate and well (S. 173) with special finds and textile itself (arrow points it).
Created by P. Ćwiakata, K. Matwij, W. Matwij and W. Winiarska



Pl. 5. 1 – Plain weave tabby; 2 – Athread with a knot at the edge. Photo by A. Oleksiak

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A BRONZE STEELYARD
WITH AN ACORN-SHAPED
COUNTERWEIGHT FROM
THE PAPHOS AGORA

Abstract: *Steelyards were commonly used by sellers at agorae and fora during the Roman and Byzantine periods. They are based on the principle of the lever, mentioned by Aristotle and probably well-known even earlier. One steelyard made of bronze has been found, together with an acorn-shaped counterweight, at the agora of Nea Paphos during an excavation conducted by the Department of Classical Archaeology, Institute of Archaeology, Jagiellonian University. Also preserved were fragments of chain and two hooks that were used to hang the weighted objects, as well as fragment of a third hook. The device represents the Pompeian type of steelyard and can be dated by analogy to other examples from the 1st century AD. The Paphos balance may be evidence of the use of a local island weighting system based on an operating unit other than the Roman pound (libra).*

Keywords: *Steelyard; acorn-shaped counterweight; Cypriot pound; Paphian pound; weighing systems*

Introduction

In 2011 an archaeological expedition from the Jagiellonian University in Krakow (JU) joined numerous archaeological missions operating in the ancient city of Nea Paphos on Cyprus. The excavation works are being carried out by the Department of Classical Archaeology of the JU Institute

of Archaeology within Paphos Agora Project and directed by Professor Ewdoksia Papuci-Władyka.¹ The main objective of the mission is to examine the agora of the ancient city, verify the time of its existence, restore the functioning of its public space, and particularly to determine whether the Roman agora had been preceded by a Hellenistic one hidden underneath it (see Papuci-Władyka *et al.* forthcoming).

The first season of the research work has already resulted in great findings, not only in the form of numerous architectural remains, but also many portable, sometimes very valuable, objects. The latter include a small bronze balance discovered in July 2011, belonging to the type known as a Roman balance or a steelyard.² The balance along with an acorn-shaped weight (Pl. 1: 1) was discovered within context 103 of Room 2 in Trench II, which from the east adhered to the *crepidoma* of the east portico of the agora (Papuci-Władyka and Machowski 2016). It is noteworthy that in 2012 a rectangular lead weight was found in Room 3 (adjacent to Room 2 from the south), which contained an inscription mentioning *agoranomos* Seleukos, the son of Ioulios Bathylos (Papuci-Władyka and Machowski 2016).³ This fact may be proof of the existence of an agora in the researched site. The ceramic material from the mentioned context 103 was very abundant with prevailing Early Roman pottery and few contamination of earlier and later periods. On extraction, both the balance and the acorn-shaped weight were in very good condition, and were both moved to the Paphos District Museum and labelled with the following inventory numbers: PAP/FR3/2011 (steelyard) and PAP/FR5/2011 (weight). The maintenance work performed by Associate Professor M. Biborski made it possible to acquire much more information, previously concealed under a layer of corrosion and contamination.

¹ The project is financed by the Narodowe Centrum Nauki (NCN – National Science Centre, Poland) grant OPUS NCN 2011/01/B/HS3/01282 (years 2011–2014) and MAESTRO NCN 2014/14/A/HS 3/00283 (years 2015–2019).

² M. Wacławik conducts the larger project on *Weighing systems in the Mediterranean in the Roman and Early Byzantine Periods* financed by NCN grant PRELUDIUM 2014/15/N/HS3/0136.

³ This weight will be published by A. Twardecki from the Warsaw National Museum (Twardecki forthcoming).

Description of the steelyard from Paphos Agora

The steelyard from Nea Paphos consists of: 1. an arm with two hooks, 2. fragments of a chain and a third hook, 3. an acorn-shaped weight (Pls. 1: 2, 2: 1).

1. The bronze arm of the balance is quadrate in section. The total length of the entire device is 15.8cm and its total weight 66.3g. The arm is divided into two parts: the longer one is 12cm long, 0.72cm wide and is terminated with a spherical knob. The other part of the arm is flattened at the length of 3.8cm and thereby expanded by 0.848cm. It is terminated with an annular opening whose outer and inner diameters are 1.77cm and 0.7cm, respectively. The larger opening adheres to another smaller opening with diameters of 1.3cm and 0.6cm, respectively. It also adheres to an annular aperture through which the hook hanger is threaded. On the other side of the arm, in the place where the second opening terminates, there is a third opening with diameters of 1.4cm and 0.7cm to which another hook was attached. At present, its mounting is damaged to the extent that it is impossible to attach the hook to the arm of the steelyard without prior reconstruction work. Where the quadrate part of the arm meets the flattened part of the arm, there is a rim made of wire entwined around the arm, and on which the weight was probably suspended. The quadrate part of the arm has engraved markings of two scales, both read from left to right. The order of grooves on the first scale referred it to the opening that was located further on the arm and on which the weighed goods were suspended. This scale was used for weighing lighter loads. The other scale, located on the other side of the arm and connected to the opening more proximal to the end, was used to determine the weight of heavier goods (see calculations below). The smaller hook (5.2cm long) is made of a single piece of quadrate wire, flattened and bent into a suitable shape. On the mounting site, it is only wrapped into a loop and otherwise left in its original shape. The other hook (7.3cm long) is of a slightly different construction. It is made of a more defined original wire that is quadrate in cross-section and the curve of its arc is notably bent and not smooth, as the first hook is. Nothing certain can be said about the mounting of the hook. Most likely the tip passing through the rim was wrapped around the base of the hook, as evidenced by coils of wire running around it spirally. On the other hand, it cannot be ruled out that they could have been merely a decorative element and not an essential part of the construction.

2. In the immediate vicinity of the steelyard arm, fragments of a chain (approx. 16cm long) and a hook which was used to suspend weighted

objects and originally situated at the end of the chain have been found. Due to the fragmentary nature of the finding it is not possible to reconstruct its original length, but by analogy (see below), it seems that two chains came out of the handle and were finished with hooks on which the weighted goods were hung. The weave of the chain resembles a doubled loop-in-loop chain (Higgins 1980, 17). The hook (4.9cm long) crowning the entire chain was made of a piece of quadrate wire, bent in the shape of letter U. In the place of its mounting to the chain, there is a ring on which fragments of the chain are preserved.

3. The weight has a height of 6.919cm, its maximum diameter is 3.853cm, and it weighs 405.5g. It has the shape of an acorn with a cup-shaped cupule.⁴ On top, there is a rectangular-shaped handle with a circular opening used to suspend the weight. The cupule is decorated with ten horizontal grooves. The pericarp is oval-shaped and at the bottom it has a plastic ring that separates it from the lower narrower section which survived only in fragments (at the height of 5mm). The analogies discussed below indicate that this part ended in a point – remains of style.

History of the steelyard

In the Roman world, a pair of scales was called a *trutina* and the term referred to both the pan scale – *libra*, and the steelyard – *statera*. Pan scales were invented much earlier than the steelyard and were widely used in Egypt, Greece and later in Rome (Yates 1875). According to Isidore of Seville (*Etym.* 16.25.6) the steelyard was invented in Campania, and to be distinguished from other scales it was called *trutina campana*. Consistent with this remark, there have been numerous findings of such balances among the ruins of Herculaneum and Pompeii (Michon 1918, 125). The steelyard is often simply referred to as the Roman balance. Because of this, most researchers (e.g. Zahn 1913, 3; Richter 1924, 70; Karydas 1998, 45⁵) consider it to be a Roman invention. However, as claimed by N. Karydas (1998, 45), the very operational mechanism of the steelyard based on the principle of the bilateral lever (counterweight) was already known in the Hellenistic period, if not before, and information about it can be found in Aristotle's *Mechanics* (853b.25). It is interesting that over a century ago R. Zahn (1913, 4) pointed out the far-eastern origin of the idea of a steelyard,

⁴ More about the symbolism of this type of weight see Waclawik 2015.

⁵ We are deeply indebted to Dr. E. Raptou for drawing our attention to this article and other help.

citing wooden beams mentioned by Bols-Reymond, the length of which corresponded to the height of a man. Under Babylonian and Achaemenid influences, the idea could have then reached the Greeks of southern Italy, and from there, the Romans. This route can be confirmed by findings from the mentioned period, the purpose of which has not yet been fully identified. One of these findings is a bronze rod from the period of Lars found in the company of a few female figurines, from work in Dur-Samsu-iluna (Smith 1938, 139). One ending of the rod is rectangular and has a groove; the other is adorned with a ram's head. The entire length of the rod has a number of grooves that could have served as a measuring scale, with figurines found nearby acting as weights (Smith 1938, 140). Similar ram-like rods have been ascribed to the Achaemenid times, including a 49.5cm-long iron rod whose one end fits the figurine of a sitting ram. A bronze hook attached to its arm may have served to suspend the device itself, or weighed products (Burnett and Curtis 1973, 135 n. 44). Later, as the Persian Empire expanded, the idea of the steelyard could have reached the Greek merchants unhindered, and from them, the Romans. Unfortunately, there is no evidence of such a route in the archaeological material. Examples of scales that appeared after the Achaemenid period include only those dated back to the period around the turn of the era – so there is a continuity gap that stretches over about five centuries. There is a quite likely valid – though still unproven – hypothesis about the discovery of the steelyard in Europe as early as Hellenistic times, regardless of its eastern predecessors.

Principles of the operation of the steelyard

The Roman balance is based on the very simple principle of bilateral leverage (counterweight) that was described in antiquity, among others, by Aristotle in his aforementioned work and by Vitruvius (*De arch.* 10.3.4). Its straight-beam is divided into two arms of unequal length which flank the suspension point, called the *fulcrum*. On the shorter arm, which ends with an opening, weighed items were attached to the chain. The second, longer arm had marked scales, and a weight was attached to it that acted as a counterweight to the load being weighed. The mounting of the counterweight was movable, allowing it to slide along the arm. This solution made it possible to find a point where the balance was in equilibrium. Next, on the basis of the conversion of the equation $EP=DW$,⁶ it was possible to read

⁶ E = the weight of the counterweight, P = the distance between the weight and the axis, D = the distance from the axis of the weighted object, W = the weight of the object.

the mass of the weighed object from the scale. The mass of the weighed object can be calculated according to the equation $W=EP/D$. In practice, it is much simpler, because the scale engraved on the arm reflects the result which can be read once the weight has been correctly positioned (Tarbell 1909, 139; Zahn 1913, 5; Richter 1915, 445; *BM Guide* 1920, 161; Hill 1952, 51; Karydas 1998, 44; Waclawik 2016a, 118 and Pl. 1). The second hook, which constitutes the other axis of gravity, correlates to the other scale etched on the arm. By shifting the center of gravity, objects whose mass went beyond the first scale could be weighed without additional complications, such as changes in the mass of the counterweight (weight) or other modifications (Hill 1952, 52).

As mentioned above, the balance found has two scales that use the Latin measuring system. On the first scale, which is related to a further located mounting hole, the engraved characters indicate the following: vertical lines for units; punched S (from Latin *semis*) for half units; and V (where the arms have no tangent point) for fives. Each value is additionally marked by a short cut on the arm that ranges from one to seven and a half operating units. Values higher than five are indicated only by a single vertical line, probably due to lack of sufficient space. The other scale, related to the mounting hole proximal to the end, has all the indications mentioned above except for S. However, it has X for the value of ten, doubled for its multiplicity. Subsequent weight indicators are marked only by short cuts on the arm of the balance (due to the lack of space), and more rounded values are indicated by X and V for easier reading. This scale was used to read the mass of loads weighing between eight and 28 operating units. It was therefore an excellent continuation of the first scale, which is relatively rare among known balances. Indeed, in most cases the scales either overlap in certain sections, or bypass some fragments of the weighing sequence. The fact that the scales perfectly complement each other in the Paphos balance results from the appropriate location of the openings on the arm and is proof of the high precision and accuracy of the craftsman who made the device.

Analogies and chronology

Many steelyards are known to be stored in museums and collections. Unfortunately, a considerable number of them have never been described. They are usually mentioned in excavation reports, information about purchases made by museums or in exhibition catalogues, where relatively

little space is devoted to individual artefacts (Wacławik 2015, 257). There are relatively many steelyards like the one found by our expedition, i.e. ones with two scales and two hooks for hanging weighed goods (Michon 1918, 1227–1228, n. 1) and they were once just as popular as one-scale balances. According to the typology proposed by Franken (1993, 77), the steelyard found under the Paphos Agora Project should be classified as a Pompeian type and dated to the 1st century AD. Especially close analogies are those devices that have counterweight in the shape of an acorn, as one discovered in Pompeii (Quaranta 1832, fig. 2; = Overbeck 1884, 439; = (?) Michon 1918, fig. 4476 [= here Pl. 2: 2]; Richardson 1988, 27; Corti 2001, 185; *Museo Archeologico Nazionale* 2014) and another one from the British Museum collection (inv. no. GR 1858,1226.887)⁷. The last object, which was donated by Sir William Temple, is on display at the museum exhibition where it is described as Roman and dating back to the 1st century AD. Its shape is almost identical to the Nea Paphos Agora exemplar, with the location of the mounting holes the same as in our steelyard. The only difference is that it has a slightly larger knob at the end of the arm. The British Museum weight is also shaped like an acorn and there are ten grooves on the cupule. The undamaged ending and a well-preserved mounting of the weight to the balance allow for better understanding of the function and appearance of the artefact discovered during the Krakow excavations, as well as its various details, for example the ways of hanging the chains. The British Museum steelyard, though available to a wide range of visitors, unfortunately has not yet been the subject of any publications.

Interestingly, the Paphos Agora steelyard seems to be the first device of the Pompeian type discovered in the eastern part of the Mediterranean.⁸ Most of the findings are known from Italy (Franken 1993, fig. 5) but it is probably the result of the state of research. Another, presumably Pompeian type steelyard (which is hard to establish because of the state of preservation) found in this region, is stored in the Studium Biblicum Franciscanum Jerusalem Archaeological Museum (Wacławik 2016b).

⁷ We are deeply indebted to Dr. Thomas Kiely and Dr. Alex Truscott from the British Museum for their help and assistance.

⁸ In this context the lack of a publication on a steelyard purchased by the Cyprus Museum in Nicosia in 1957 (Megaw 1957, 50) is particularly discernible; there is also a ‘handle and tongue of a balance’ in the same museum (cf. Myres and Ohnefalsch-Richter 1899, 182, B.5, no. 3695), but this object is undated.

Ratio Operandi

It would be difficult to understand the ancient weighing system without understanding how the mass of one pound (*libra* = lb), which is the module for the operation of the balance, converts to grams. An object weighing one pound causes the levelling of the arm of the steelyard while the counterbalance (weight) is set at a distance indicated by the scale as I. Using the above-mentioned equation we can calculate the mass of weight E. Substituting appropriate values into the equation,⁹ we obtain the result of 283.85g for the module of the Paphos steelyard (Waclawik 2016a, 119). However, the Roman pound was heavier and weighed – as is commonly believed – 327.45g (Michon 1918, 1231 n. 15). With the passage of time, during the late Roman and Byzantine periods, the pound became lighter (Karydas 1998, 44–45). A value close to the value obtained in our calculations (285g) was to be found in a very light Byzantine pound mentioned by Ballance *et al.* (1989, 134). It cannot be ruled out that the value we calculated should be increased to 285g due to a small loss of the tip of the counterweight coating, and because numbers were rounded off in the calculations. In light of our study the following question arises: what weight system was used in Cyprus in the early Roman period? Perhaps it was a local system different from those used in other parts of the empire, as was suggested by Qedar (2001, 24), who speculates that in the newly conquered territories of the East other local systems could have been used alongside the state system of measurement. If this is proved in future research, we would speak of a ‘Cypriot’ or ‘Paphian’ pound.

Conclusions

To sum up all the above, it can be concluded that the Paphos steelyard represents a very common type of simple Roman balance known in Latin as *statera* or *trutina campana* and widespread from the 1st century AD to the late Roman and Byzantine times. It represents the Pompeian type in Franken’s classification. It is a small balance with two scales, two hooks for hanging the loads and an acorn-shaped weight. It was used for weighing goods of up to 28 pounds (approx. 8kg) using an operating unit of about

⁹ In this calculation the weight of the fragments of the chain and hooks has not been taken into consideration, because the steelyards were calibrated in such way that their components did not influence the weighing mechanism.

285g. Based on strict analogies with Pompeian type steelyards, it can be dated back to the 1st century AD.

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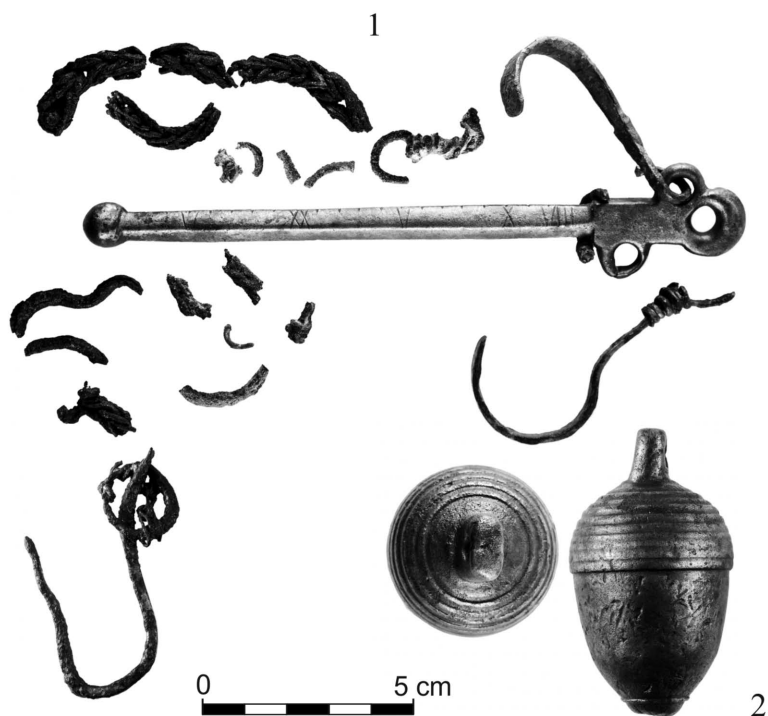
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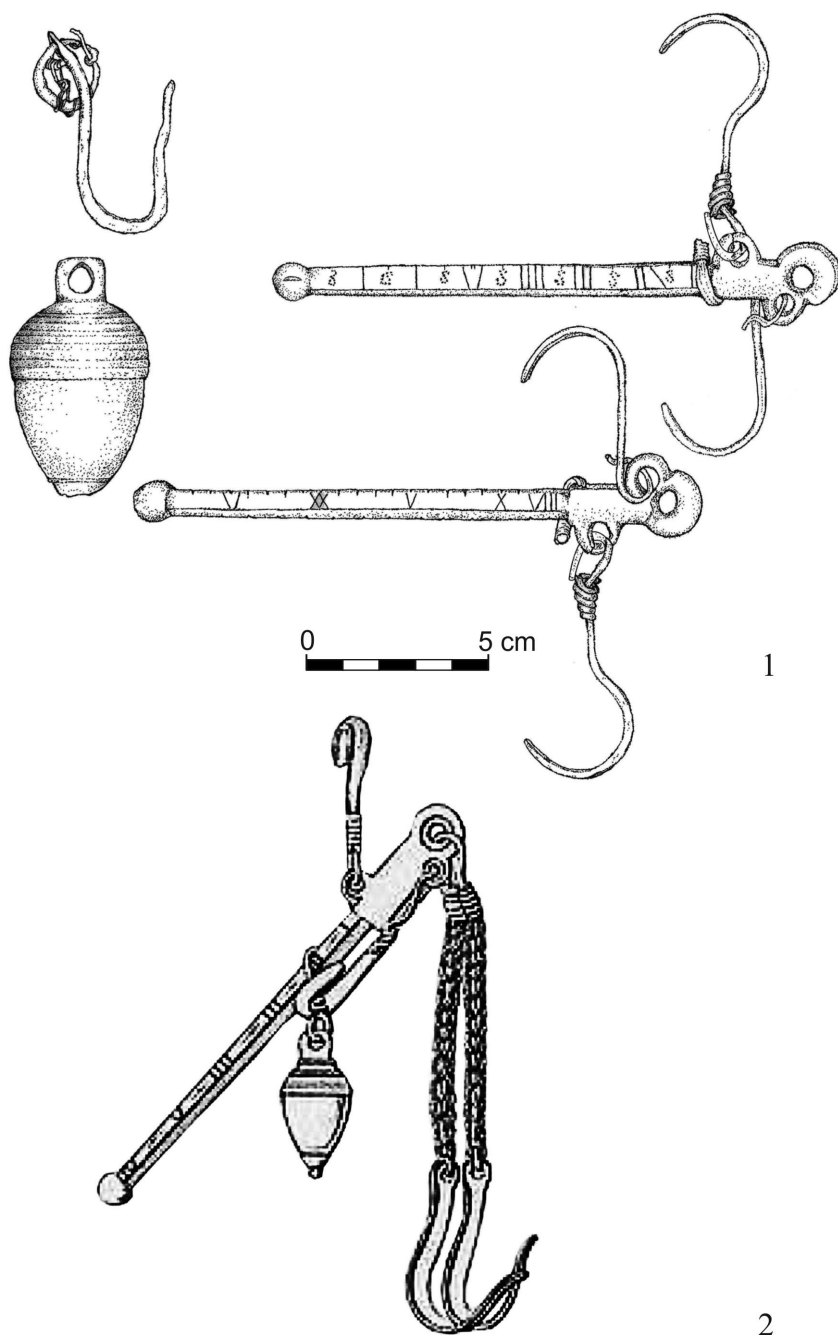
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Pl. 1. 1 – Steelyard and weight *in situ*. Photo by W. Machowski;
2 – Steelyard and acorn-shaped weight after the conservation process. Photo by M. Iwan



Pl. 2. 1 – Steelyard and weight. Drawing by M. Droste, digitization and reconstruction of one of the suspending hooks attachments by U. Socha; 2 – Steelyard from Pompeii. Based on the drawing from Michon 1918, fig. 4476, digitization by U. Socha

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RECONSTRUCTION OF A FAÇADE
OF THE HOUSE OF AION,
NEA PAPHOS, CYPRUS

Abstract: *The subject of this paper is a reconstruction of the architectural decoration of a façade of the House of Aion in Nea Paphos. During an excavation carried out in 1997 several pieces of decorated architectural elements were uncovered in room 19, among others the fragments of an arch, a lintel, an engaged column, an impost and two consoles. Those blocks served as a base for the reconstruction of the architectural frame of the main gateway. It took the form of a cantilevered, blind arcade of five spans erected above the main gate. Each span consisted of two engaged columns supporting an arch with a shallow niche underneath it, probably for a kind of decorative element. The reconstruction was based on similar architectural details known from the main room of the House of Aion, the Porta Aurea at the palace of Diocletian in Split, and the western façade of the Felix Romuliana Palace in Gamzigrad.*

Keywords: *Nea Paphos; House of Aion; façade; architectural decoration; blind arcade*

The subject of this paper is a reconstruction of the architectural decoration of a wall whose relics were uncovered in the House of Aion in Nea Paphos, an ancient city on the south-west coast of Cyprus (Pl. 1: 1). The excavations of the house carried out by the Polish Archaeological Mission of the University of Warsaw in Kato Paphos started in 1982 under the supervision of Professor Wiktor A. Daszewski. The richly embellished building was most probably erected in the 4th century AD (Daszewski 1985; Daszewski 1998a, 12–15).

In 1997, apart from rubble scattered on the late floor, a pit filled with blocks, many of which were decorated, was uncovered in room 19 in the eastern part of the edifice (Pls. 1: 2, 2: 1). The position and mutual configuration of the decorated pieces did not bring any information about their original location except for their relation to the House of Aion. Other finds from that room (e.g. coins) proved that this part of the building was erected in the late Constantinian period at the earliest, probably even slightly later (Daszewski 1998b, 127–129, figs. 6, 7; Daszewski *apud* Hadjisavvas 1998, 691–692; Daszewski 1999, 172–173, fig. 10; Lichocka and Meyza 2001, 168, 201–202, fig. 7).

Members of architectural decoration from room 19 of the House of Aion

13 fragments of architectural elements were found in room 19 of the House of Aion (Pl. 2). They were all carved out of a local stone, calcarenite, and have on their surface very dilapidated remains of a thin layer of whitewash or fine-grained plaster. They are pieces of five types of architectural elements: a lintel, an arch, an impost, an engaged column and a console. The commensurate size of the elements indicates their belonging to the same ‘unit’ of decoration.

Lintel

Among the uncovered material there were four blocks constituting a fragment of a lintel (Pl. 2: 2). Two blocks originally belonged to the central part of the beam while the other two were corner blocks. The front side of the blocks is decorated with a moulding (fillet, egg and dart, hollow tongue with crescent base separated by reels, bead and reel, fillet). The lateral sides of the corner blocks received a simpler decoration (fillet, *ovolo*, *cyma recta*, *ovolo*, fillet). The top and bottom surfaces of blocks are flat and horizontal; the back one is vertical. The total length of the lintel remains unknown because the side surfaces of the blocks from its central part are destroyed, and most probably the four blocks did not originally create the whole beam.

Arch

Four voussoirs have been preserved constituting less than half of the arch (Pl. 2: 3). Their front side was decorated with mouldings (fillet, *ovolo*, *cyma recta*, fillet, fillet) protruding significantly from the elements. The moulding on one of the blocks is broken: it runs along the arch and

in the lower part of the block the whole profile turns at about a 100^0 angle (an angle between the turned moulding and the lateral side of the blocks is about 5^0). The bottom and side surfaces are flat. The upper one is flat only above the moulding, the rest of it is very irregular and convex – most probably it was embedded in the wall.

Two voussoirs with ‘regular’ decoration were originally in the middle part of the vault. One, with a broken moulding, was placed in the lower part of the arch, probably lying on the impost.

Column

Two pieces remained from a three-quarter column joined with blocks from the wall: a capital and the upper part of the shaft (Pl. 2: 4). The capital is characterized by a simplified form. In its lower part, there are only two wide plain leaves (only the main nerve is underlined) with a single *cauliculus* between them. In the central part of the capital it divides into two sprouts creating corner volutes above the leaves. A two-fasciae abacus is decorated in the middle with a fleuron/shell.

Consoles

Two consoles of similar size, shape and decoration were found among other pieces of the architectural detail (Pl. 2: 5). The blocks comprise the following parts: one with decoration, being the outer bracket; and another of a roughly rectangular shape which originally was embedded into the wall. Their geometric decoration consists of several fasciae and cyma recta.

Impost

One block found in room 19 took a very interesting although rather modest form without any kind of decoration (Pl. 2: 6). It was characterized by flat surfaces: vertical sides and a horizontal bottom; the upper part was broken in the middle with two surfaces falling outside. The block outline was therefore shaped like a symmetrical pentagon.

The fragments described above were theoretically and temporarily reassembled by Prof. Wiktor A. Daszewski, creating an anastylosis of a single, vaulted niche crowning a lintel presumably above a gateway (Daszewski 1998b, 128; Daszewski 1999, 172–173, fig. 10).

The late Prof. Stanisław Medeksza presented a different idea based on the impost block, which was not taken into account in Prof. Daszewski’s proposition. Prof. Medeksza assumed that the impost constituted a base for springers of two adjacent arches and therefore the preserved fragments

originally belonged to a multi-arched arcade consisting of at least two vaults. Unfortunately, his premature death prevented Prof. Medeksza from carrying out a complete reconstruction of the architectural decoration. Dr. Henryk Meyza, present director of the Polish Mission, asked me to continue his study. Thus, the first step I undertook was to investigate the analogies with the decoration from the House of Aion which could have been helpful in recreating the whole design.

Analogies to the architectural decoration from the House of Aion

Niche from the main room of the House of Aion

The niche from room 1 of the House of Aion constitutes an obvious and nearest analogy to the pieces of architectural decoration found in room 19 (Daszewski 1998b, 128; Daszewski *apud* Hadjisavvas 1998, 691–692). They were found in 1982 within rubble lying on the so-called ‘Late Roman Street’ between the Villa of Theseus and the House of Aion and belonged to the main room of the latter (Daszewski 1984, 294–314). The number of blocks and their arrangement in the rubble allowed a theoretical anastylosis (Mikocki 1992, 135–150) and its subsequent physical reconstruction (Pl. 3: 1) (Medeksza 1987, 227–230).

The whole element was integrated into the middle part of the inner western wall of the main room and placed on a low socle. It consisted of the central vaulted semicircular niche framed with a pair of engaged columns crowned with a protruding broken lintel (Pl. 3: 1). Most probably a statue or another kind of decorative element was placed in the niche (Mikocki 1992, 149).

The bases (Pl. 3: 3) of engaged columns are composed of the plinth, the torus, the trochilus and another torus separated from each other by narrow *taenias* (Mikocki 1992, 147).

The capitals have a very specific shape of a convex calyx topped with an abacus having the shape of two-fasciae with a fleuron in its central part (Pl. 3: 2). The calyx consists of five plain broad leaves with sprouts growing between them and creating sets of two volutes. All the capitals from the House of Aion share a close resemblance, although the one found in room 19 is smaller and simpler than those from the main room. The similarity especially concerns the plain form of leaves creating the lower part of the capitals and the shape of the abacus.

Due to the highly characteristic shape of the capital leaves (large, fleshy and divided only by the main nerve without any pattern imitating the natural

structure of the leaf), the capitals can be associated with others of a similar decoration, called *Kapitelle mit vollen Blättern* (Capitals with solid leaves) or Egyptian-Corinthian capitals known from Rome, Syria and Egypt. The genesis of such capitals lies most probably in Egypt – one of the oldest examples of a capital derived from the Corinthian order mixed with the Egyptian lotus motive (simplified leaves) can be found in the Temple of Augustus on Philae (Pl. 3: 4) dated to 13–12 BC (Mikocki 1992, 147–149; McKenzie 2007, 166–167, pls. 286–289; Czerner 2009, 7, 58, fig. 11). In the case of Cyprus, the link with Egypt and north Africa is the most important. Capitals of a comparable form dated at c. AD 300 are known from Alexandria or Luxor (Pl. 3: 5) (McKenzie 2007, 223–227, pls. 389c, 394, 395) and from other Greco-Roman cities along the African coast of the Mediterranean Sea, e.g. in Ptolemais (House of Leukaktios, first half of the 3rd century AD [Rekowska 2012, 173–175, pl. 8.5A]).

Generally, capitals of that type appeared before the end of the 3rd century; they were very popular in the second half of the 4th century and disappeared at the beginning of the 5th century (Mikocki 1992, 147–149). This dating matches the time of the erection of the House of Aion in Nea Paphos, i.e. 4th century (Daszewski 1998a, 12–15; Daszewski 1998b, 127–129; Daszewski *apud* Hadjisavvas 1998, 691–692; Daszewski 1999, 172–173; Lichocka and Meyza 2001, 168, 201–202).

The lintel resting on the engaged columns was found only in few pieces in a poor condition, but they allowed recreation of the original pediment. It consisted of a broken, plain cornice topped with a crowning cornice of a more decorative character (*fascia, cavetto, fascia, row of consoles, cymatium* and *corona*). Similar mouldings, without any special, unique features, are known from many monuments in the Greco-Roman world (Mikocki 1992, 149).

The analogies with the design of the architectural decoration from the Aion House can be found in two palaces erected in the area of the Balkans: in Split (Pl. 4: 1) and in Gamzigrad (Pl. 4: 2). They were both built in the late 3rd and early 4th century, in the epoch of Tetrarchy (Ćurčić 1993, 70; Breitner 2011, 145). The first one was the palace of Diocletian, a complex which combined an imperial palace and a *castrum romanum*. After Diocletian's abdication (in AD 305), the palace served as the Emperor's mansion (Ward-Perkins 1994, 454–459; Nikšić 2011, 187). The second one was erected by Galerius in AD 298 and named *Felix Romuliana* after the Emperor's mother Romula (Nikšić 2011, 191).

From the point of view of this article, their architectural decoration constitutes one of the most important features. The usage of niches and arcades as the leading idea of the design may be observed e.g. in the interior of the Mausoleum of Diocletian or in façades of both palaces (Mikocki 1992, 145). Many similarities concern the composition of the façades with the main, monumental gates leading to the palaces. In both cases, they were adorned with very rich architectural decoration. An arched, wide gate with two lateral niches beside it is the main element of the composition. Above the gate there are cantilevered arcades supported by columns with capitals made of Proconnesian marble. The style of decorative elements (capitals, consoles, cornices, string courses, etc.) confirms the same origin in one of the imperial workshops. The degree of similarity in both the plan and details might even prove that the same architect or workshop was involved in the erection of those two palaces (Marasović and Marasović 1968, 26; Čanak-Medić 1978, 118; Nikšić 2011, 192).

The pieces of architectural decoration found in room 19 of the House of Aion in Nea Paphos strongly resemble the details from the main façades of those palaces.

Porta Aurea at the palace of Diocletian in Split

In the centre of the main façade (Pl. 4: 1), between two lateral towers, there is a wide gateway closed with a horizontal flat arch, composed of carefully fitted blocks, crowned with a cornice of a rich moulding. Above the lintel there is a relieving arch made of a set of voussoirs decorated with an archivolt. Two semicircular niches were placed symmetrically on both sides of the gate. Their architectural frame consists of a massive, moulded sill, and two side consoles supporting Corinthian pilasters. They bear the conchs separated from the niches by small delicate string courses (McNally 1996, 41).

A massive string course connects the façade with the two lateral towers. It is boldly marked on the wall between the towers and the side niches, taking the form of either a plain or a patterned moulding. Then it fades above the conchs of the lateral niches, probably due to the lack of space for the frame of the conchs¹ (possibly never executed) and reappears

¹ There are certain features of the main façade composition which prove imperfections and haste at the stage of design and construction: the interruption of the string course by the consoles of the arcade, the arch of the gateway and vaults of the side niches. That is why they most probably never received a classical arched or pedimented termination (Nikšić 2004, 167; Nikšić 2011, 196).

in the central part to reach the archivolt above the gate. However, in this part it presents a much more modest form (McNally 1996, 41; Nikšić 2011, 196).

Above the string course there is a blind arcade – an ornamental architectural element having no load-bearing function, protruding significantly from the façade. It consists of seven spans. The central one, above the gate, is shallow and rectangular. Next to it, there are two plain spans, and further two of a semicircular, concave shape. The external spans, next to the towers, are plain as well. The width of the spans changes also in relation to their shape – the central rectangular and the two semicircular are narrower than the flat ones.

The arcade is characterized by a very rich architectural frame. Six consoles with parts of the string course between them constitute its base. Their bottom surfaces are the most interesting parts of the brackets: the four outer consoles are provided with acanthus leaves, and the two innermost with horned humanoid heads – satyrs. The consoles originally supported columns that are now missing (McNally 1996, 42). However, they are presented in the 18th century illustrations (Adam 1764, pl. XII): Corinthian columns with smooth shafts creating a cantilevered colonnade bearing the imposts and arches. Their lack resulted in changing the structure of the upper part of the façade, because the once-supported elements (imposts and arches) now constitute a row of brackets.² Above the imposts there is a string course of a very decorative character underlining the depth and shape of each span. The arches above the spans creating niches (rectangular or semicircular) are a bit shorter than in the case of plane spans. Their decoration consists of three fasciae and a raking cornice, which connect above each impost, the fasciae by a straight line, while the cornices meet at a point (McNally 1996, 42).

The top of the façade is closed with a crown moulding, on which four pedestals are placed. Their original number and position is unknown (McNally 1996, 42).

The niches in the façade (those next to the gateway and those in the arcade) as well as the pedestals were prepared for the statues most probably representing the gods-protectors of the Tetrarchy (Cambi 2005, 166–167). The shallow central niche of the arcade could have been arranged for a stone slab with a relief or inscription. However, there are no traces

² The cantilevered arcade eccentrically loaded the upper part of the wall. Disassembly of the colonnade weakened the structure and caused the wall to lean outward and destroy the voussoirs (Nikšić 2004, 167; Nikšić 2011, 196).

of any kind of a mounting either in the niches or on the pedestals, which might prove that the statues were never installed there (Nikšić 2004, 167; Nikšić 2011, 196).

West Gate of the Felix Romuliana Palace in Gamzigrad

The general composition of the main, western façade in the palace of *Felix Romuliana* (Pl. 4: 2) strongly resembled the north façade of Diocletian Palace in Split – in both cases the arcade is one of the major elements of the design. In Gamzigrad, however, the project was in many ways more complex. The façade (from the second phase of erecting the fortification walls), flanked by polygonal towers (just as in Split), had an outline of a very flat arch, slightly concave in the central part. It was composed of three levels: the bottom one with the gateway and two lateral niches; the central one with a gallery consisting of five spans; and the top one with another gallery of seven spans.³ Both galleries were arcaded and formed a row of windows and not a blind arcade, which is the first and biggest difference in comparison with the palace in Split. The second one concerns the materials used to erect the edifices. In Split the whole building was made of one type of stone. In Gamzigrad three materials were used: red brick, grey sandstone and white limestone (Breitner 2011, 144–146). Such a solution brought a new factor to the design – the colour. Brick and sandstone were mostly used to create walls,⁴ while limestone was generally applied in the decorative elements.

The main façade of the *Felix Romuliana* palace was characterised by a very rich architectural frame. A sandstone socle constituted the base of the building. A massive string course consisting of several *fasciae* separated it from the upper part of the wall erected in the *opus mixtum* technique (one course of stone alternates with three rows in brick). The main monumental gateway was located in the middle of the façade. It was closed with a wide semicircular arch (five wide *fasciae*) based on the string course. Originally there was probably a rectangular stone slab installed above the arch, now missing. Two semicircular niches for sculptures symmetrically flanked the main gate. They stood directly on the string course crowning

³ The upper part of the façade is reconstructed on the basis of numerous pieces of architectural decoration found during excavations: columns, pilasters, window sills, consoles, *voussoirs*, etc. (Čanak-Medić 1978, 78, fig. 60; Ćurčić 1993, 70, 85, fig. 11; *Nomination* 2005; Breitner 2011, 143–146).

⁴ *Nomination* 2005.

the socle and were made in the same *opus mixtum* technique, except for conchs built entirely of brick.

A massive sandstone string course separated the bottom level of the façade from the middle one: the first gallery of a complex structure. It was designed as an arcade of five spans, each containing a window closed with a semicircular arch. Its rich architectural frame, made of sandstone and limestone, partly projected from the surface of the wall (*opus mixtum*). The consoles bearing the outer part of the gallery were incorporated in the string course that created a wide platform on which supports separating the arcade spans were erected. They received a complex form of a window pillar strengthened with two sandstone Corinthian pilasters with a column in front of it protruding from the façade. The columns (Corinthian with fluted shafts) were supported by brackets placed in front of the window pillars. A cornice, characterized by a very rich moulding, rested on these complex supports protruding forward over the columns. Vaults closing the arcade were erected above the cornice: semicircular arches made of brick were carried by the window pilasters. Above the brick arches there were two kinds of vaults termination made of stone: the central and the external spans received a triangular pediment, the other two (between the triangular ones) were closed with another semicircular concentric vault. The triangular pediments received very complex decoration consisting of several parts (the first, semicircular, was placed around the brick arch and made of sandstone; the outer, triangular, was composed of two layers: the inner sandstone and the outer limestone [Breitner 2011, 144]). The round pediments were decorated with archivolts strongly resembling the decoration of the arcade from the *Porta Aurea* in Split (three fasciae and a raking cornice, which connect above each impost, the fasciae by a straight line, while the cornices meet at a point). The whole arcade consisted, therefore, of five spans closed with the cornice supporting either triangular or round open pediments.

The openings of the windows were in the lower parts blocked with stone slabs creating a balustrade. The outer surface of the slabs was decorated with an ornament along the circumference (Breitner 2011, 145).

The next string course running along the façade above the first gallery separated it from the top level – the second gallery. Its structure was similar to the middle one – a row of seven windows. The architectural frame of the top arcade was, however, a bit simpler. The consoles bearing the colonnade (eight smooth-shafted Ionic columns) were placed under the string course also constituting window sills. They were decorated with

alternating motives, among others heads of Medusa (McNally 1996, 42; Breitner 2011, 144). The window pillars were not equipped with additional side pilasters. The cornice resting on pillars and columns was also more modest than in the case of the lower gallery. The arcade termination consisted of semicircular arches composed, like in the first arcade, of two parts: the lower, inner made of bricks, and the upper, outer made of limestone. The decoration of the stone vaults was similar to the round pediments from the first gallery. The line of the arches was extended beyond the arcade by incorporating them in another string course. Similarly to the windows of the first gallery, those from the second one were also blocked in the lower part with stone balustrades.

Reconstruction of the main façade of the House of Aion

The general idea for the reconstruction incorporating pieces of architectural decoration found in room 19 assumes that they originally constituted fragments of the main, monumental façade, like in the examples from Split and Gamzigrad. The location of the House of Aion – next to the main street leading from Maloutena (a residential area in Paphos) to the city harbour – may indicate the usage of a special architectural frame around the main gateway to the edifice which had to be placed in the south façade open to the street. The arrangement of the façade takes into account the gate, above which a multi-span arcade could have been placed – this idea, introduced by Prof. Medeksza, was based upon the impost block, pieces of the arc and the engaged column corresponding with the decoration of the main façades from the Balkan palaces described above.

If we use the two façades as the base for recreating the main façade of the house of Aion, the symmetrical and axial composition should be the first and most important assumption. The axis of symmetry should most probably run through the gateway, making the two sides of the façade mirror reflections.

The lowest level of the façades in Split and Gamzigrad consisted of a main vaulted gateway and two lateral semicircular niches. In the case of House of Aion we have pieces of richly decorated lintel described above which could have originally constituted the architectural termination for the gateway. The lintel was composed of a set of blocks and therefore it had to rest on some kind of a girder, e.g. a beam or an arch like in *Porta Aurea* in Split. As we did not find any massive voussoirs, we assumed that the lintel was supported by wooden beams which have not been preserved until our

times. Neither do we have any traces of small side niches, so we presumed that there were no such elements in the main façade of the House of Aion (Pl. 5).

In the palaces of Diocletian and Galerius there were multi-span arcades above the gateway: one level of blind arcade in Split, and two levels of window galleries in Gamzigrad. In both cases the axis of symmetry ran through the gateway and through the central spans of the arcades above, so the total number of their spans was uneven: one in the middle and two or three on both sides. The same composition, a gateway with an arcade of an uneven number of spans above, could have been arranged in the House of Aion (Pl. 5). The position and the width of the gate (149cm) as well as the fragments of the lintel described above remain the only known elements of the door. Obviously, we do not know the height of the gate and the exact relation between it and the arcade above. The proportion of the door opening was recreated basing on Vitruvius' indications (Vitr. *De arch.* 4.6). The level of the arcade remains purely hypothetical, as the analogies from Split and Gamzigrad bring divergent solutions. The specific feature of the arrangement of the arcade requires detailed examination of each piece of the architectural detail found in room 19.

The size of all preserved elements of the arcade, i.e. the column, the arch and the consoles, indicates that once they all created one structure; it means that the columns supported the arch and were not placed outside it, as in the case of the decoration from room 1, where the columns are much bigger than the niche inside them.

The consoles were embedded into the wall by halves of their volume. They acted as the cantilevers carrying engaged columns. The range of the protruding part of the consoles shows the original position of the columns in relation to the wall and to the consoles themselves. The outer surface of the *cyma recta* of the consoles also indicates the outermost position of the column base (Pl. 6: 3).

The original height of the engaged columns and the form of their bases remain unknown due to a lack of fully preserved elements. Since the columns from the niche constitute the closest analogy (Pls. 3: 1, 2, 3, 6: 2), the missing features of the columns from the façade were reconstructed on the basis of the internal supports (their height equals 9.8 modules [Mikocki 1992, 141]).

The capitals of the engaged columns supported the arcade by the impost blocks that formed the two-side base for the springers (Pls. 2: 3, 6, 6: 3). Out of three preserved voussoirs, the one with broken moulding most

probably rested on the impost connecting with the same springer from another arch of the arcade. Together their broken mouldings created a straight, horizontal line above the impost which turned upwards on both sides of the block. The difference between the upper and the bottom surfaces of the voussoirs (the first is crude and the second is smooth) proves that the face of the wall, in which the vault was incorporated, was in a diverse position in relation to the arch: inside the arcade the wall face was set back further than the façade above it. If we correlate it with the position of the consoles and engaged columns, their mutual relation proves unequivocally that under the arch there was a shallow niche. It was framed with three-quarter columns protruding from the wall (engaged with a kind of a lesene having a width equal to the impost) bearing an arch.

Assuming that the bottom of the niche recreated in such a way equals the level of the upper surfaces of the consoles (where the bases of the engaged columns once stood), the proportion of the niche (the width to the height) does not correspond with any example described above (Pl. 6: 1).

In the case of the House of Aion, the comparison of the proportions between both niches: from the main façade and from the main room, shows that the first one is much slimmer than the second one (Pl. 6: 1).

In *Porta Aurea* we had to consider three cases: the side niches next to the gateway, the narrower and wider span of the blind gallery (Pl. 6: 1). In the first one, the niches are quite wide. In the second, we compared the proportion of the semicircular niche underneath the arch, which measures about $7/8$ of the whole height of the arcade (the arch with the columns). It turned out that this niche was much slimmer than the niche from the façade of the House of Aion. The wider span of the blind arcade without an internal niche constitutes the third case. It is, however, a specific situation, because the examined shape is created by the inner outline of the columns and arch. The proportions of this circumference are very close to those from the recreated span, but it is a bit lower.

A similar situation occurred in the case of the niche from the main façade of *Felix Romuliana* palace – we studied three types of niches/galleries (Pl. 6: 1). The first ones were the lateral niches next to the gateway, then the first gallery and the second one (the openings were examined). The lateral niches had almost the same shape as the reconstructed span, although they are a bit lower. The windows of the first gallery and the second gallery were much lower than the span in question.

Such a variety of solutions in analogous edifices allows many different reconstructions. However, the example from Diocletian Palace of narrow

spans with smaller niches inside seemed the most accurate proposition, used in the final reconstruction as a general indication. The proportions for the reconstructed niche were taken from the closest analogy – the niche from the main room of the House of Aion. The niche, like in Split, was placed in the upper part of the span, right underneath the arch (Pl. 6: 3).

In Diocletian's Palace the arrangement of the blind arcade consisted of two kinds of spans: the narrower with the semicircular/rectangular niche and the wider without it. A similar design could have been used in the House of Aion, but there are no traces of such a solution applied in the main façade. Neither do we have evidence of the arcade being a gallery with windows or of alternating decoration of spans (triangular or semicircular pediment) like in Gamzigrad. That leads us to the idea of the axial composition of the main façade with a blind multi-span arcade and a gateway below (Pl. 5). The axis of symmetry would have had to run through the gate and the arcade central span with an equal number of identical spans on both sides. The exact number of spans remains unknown. For the purposes of the reconstruction we assumed that the minimum must have been five. The main gateway to the House of Aion is not in the middle of the façade, but shifted to the left side. That may indicate that only part of the south wall was originally equipped with a rich architectural frame in the form of a blind arcade described above. The 76cm-wide wall, in our opinion, was capable of bearing the significant burden of the cantilevered arcade (the columns protruding from the façade) which eccentrically loaded the wall.

Apart from the unidentified number of the arcade spans, neither do we know the kind of their termination. In Split outer spans were limited by two lateral towers. In Gamzigrad the galleries were not terminated in any special way, but parts of their decoration (arches or consoles) were incorporated into string courses running along the façade. In the case of the House of Aion, many fragments of cornices have been uncovered during excavation. However, their decoration does not match the mouldings of the pieces of architectural detail found in room 19. Such a situation indicates that there were no string courses running along the main façade of the House of Aion. The architectural frame of the gateway could have been limited in a different way. The meticulous analysis of the pieces of decoration points to the possibility of setting back the part of the wall with the arcade and the main gate in relation to the rest of the façade. If this design is accepted, the outer spans would be terminated by the edge of the recessed part of the wall (Pl. 5).

The differentiation of the wall face position combined with the rich architectural frame gives the façade of the House of Aion three-dimensional spaciousness and a *chiaroscuro* effect, which is especially important and suitable in southern Europe, where sharp light and shade underline all the decorations. This aspect of the design is characteristic of the architecture of the eastern Roman provinces in the late antiquity. Margaret Lyttelton (1974) defined and described this phenomenon as the baroque style in the antique architecture. Monumental edifices, like Temples at Baalbek or Khasne at Petra, are the best examples of this tendency, but, as the House of Aion shows, it may also be observed on a smaller scale. Several other aspects of this trend may be readily used to depict the reconstructed façade of the House of Aion, such as: ‘an impression of movement is also given to the façades by the breaking up of the plane of the wall with the introduction of the projections and recessions...’; ‘curved pediments are commonly used to crown niches...’; a-tectonic use of the structural elements: ‘...columns and pediments are not fulfilling the function for which they were intended but are used merely as decoration’ (Lyttelton 1974, 11–13).

The main façade of a richly ornamented edifice was usually equipped with a kind of sculptural decoration combined with an architectural frame, e.g. a set of niches with statues or slabs with a relief or an inscription. The niches and the arcade from *Porta Aurea* were almost certainly designed for larger than life-sized statues placed in semicircular niches and decorative stone slabs in the shallow central niche (Nikšić 2004, 167; Cambi 2005, 166–167; Nikšić 2011, 196). Niches flanking the main gateway in *Felix Romuliana* palace served an analogous function. Similarly, the niche from the main room of the House of Aion was most probably intended for a life-sized statue (Mikocki 1992, 149). In the case of the reconstructed arcade from the main façade, the niches were rectangular and rather shallow, which indicates most probably placing stone slabs with some relief decoration. Unfortunately, we do not have any preserved fragments of such elements.

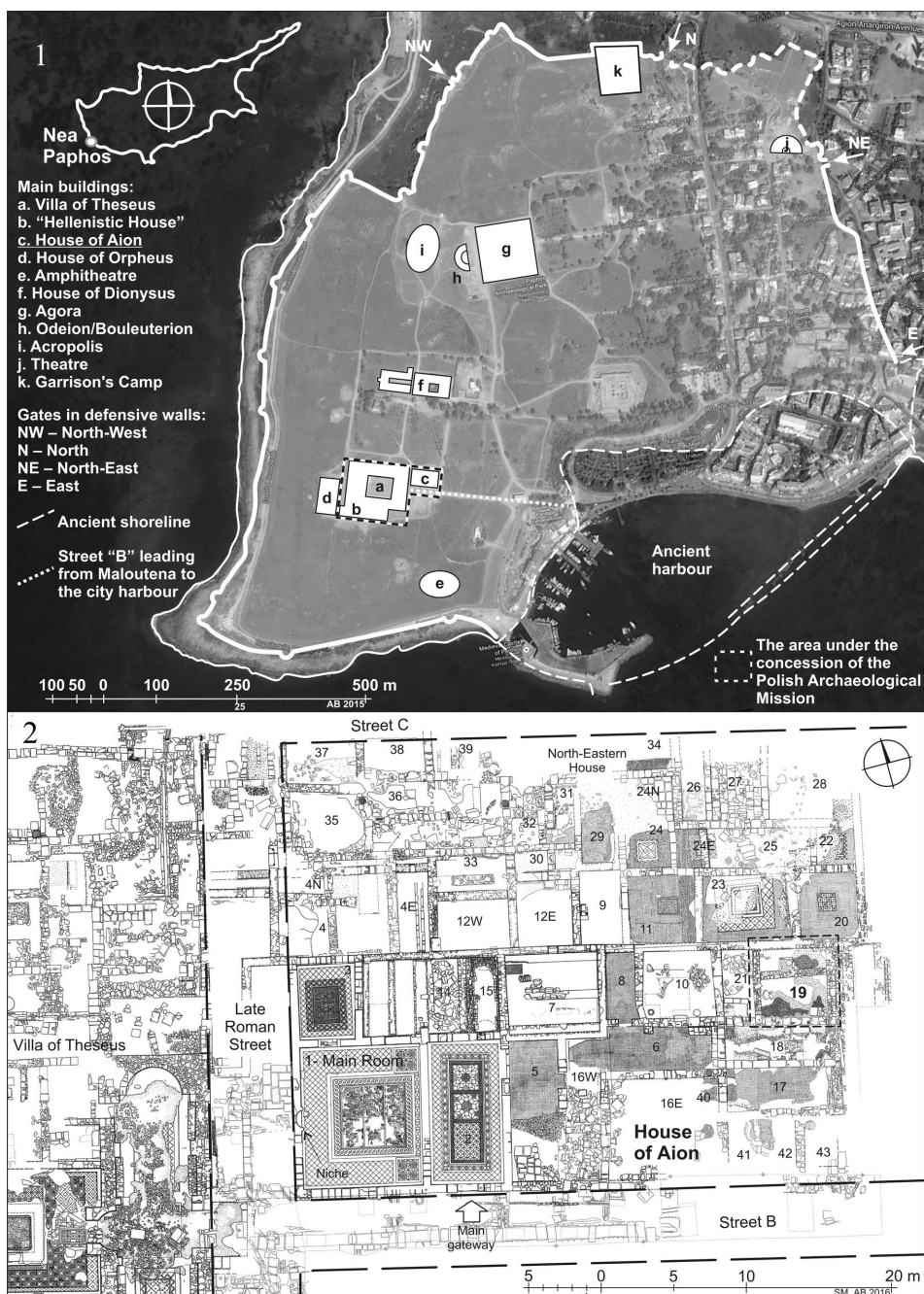
The hypothetical reconstruction of the decoration from the façade of the House of Aion is based on a relatively small number of preserved fragments of the architectural detail. Therefore, it may be considered as too audacious. The analysis of these pieces may also lead to different conclusions and in consequence to another reconstruction. However, the one presented in the paper seems to take into account all the specific features of the House of Aion: the character of the rich building, its location next to the main street connecting the residential area with the city harbour, and the necessity of emphasizing its main façade with suitable architectural decoration.

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Pl. 1. 1 – Plan of Nea Paphos during Hellenistic and Roman times. Based on S. Medeksza 1998, 37, fig.1; Google Earth (status as of Oct. 5th, 2014);

2 – Map of the House of Aion. Processing by S. Medeksza, M. Słowińska and A. Brzozowska-Jawornicka



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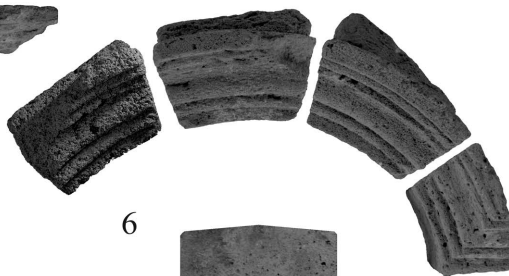


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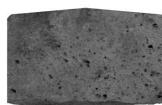
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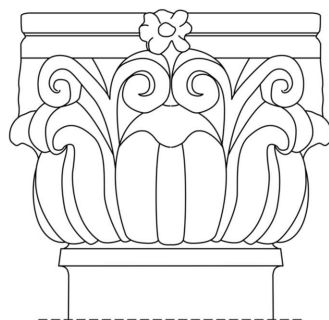


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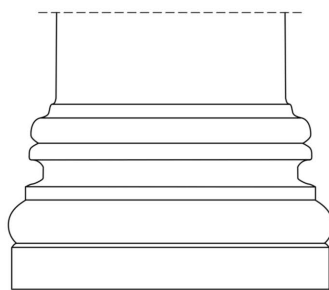
Pl. 2. 1 – Room 19 of the House of Aion during excavations: the rubble with pieces of architectural details. Photo by H. Meyza; 2 – Lintel; 3 – Consoles; 4 – Arch; 5 – Engaged Column; 6 – Impost. Photo by K. Woszczyńska



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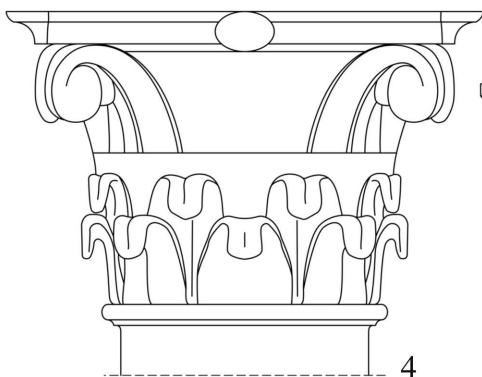


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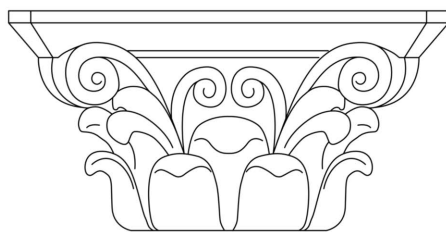


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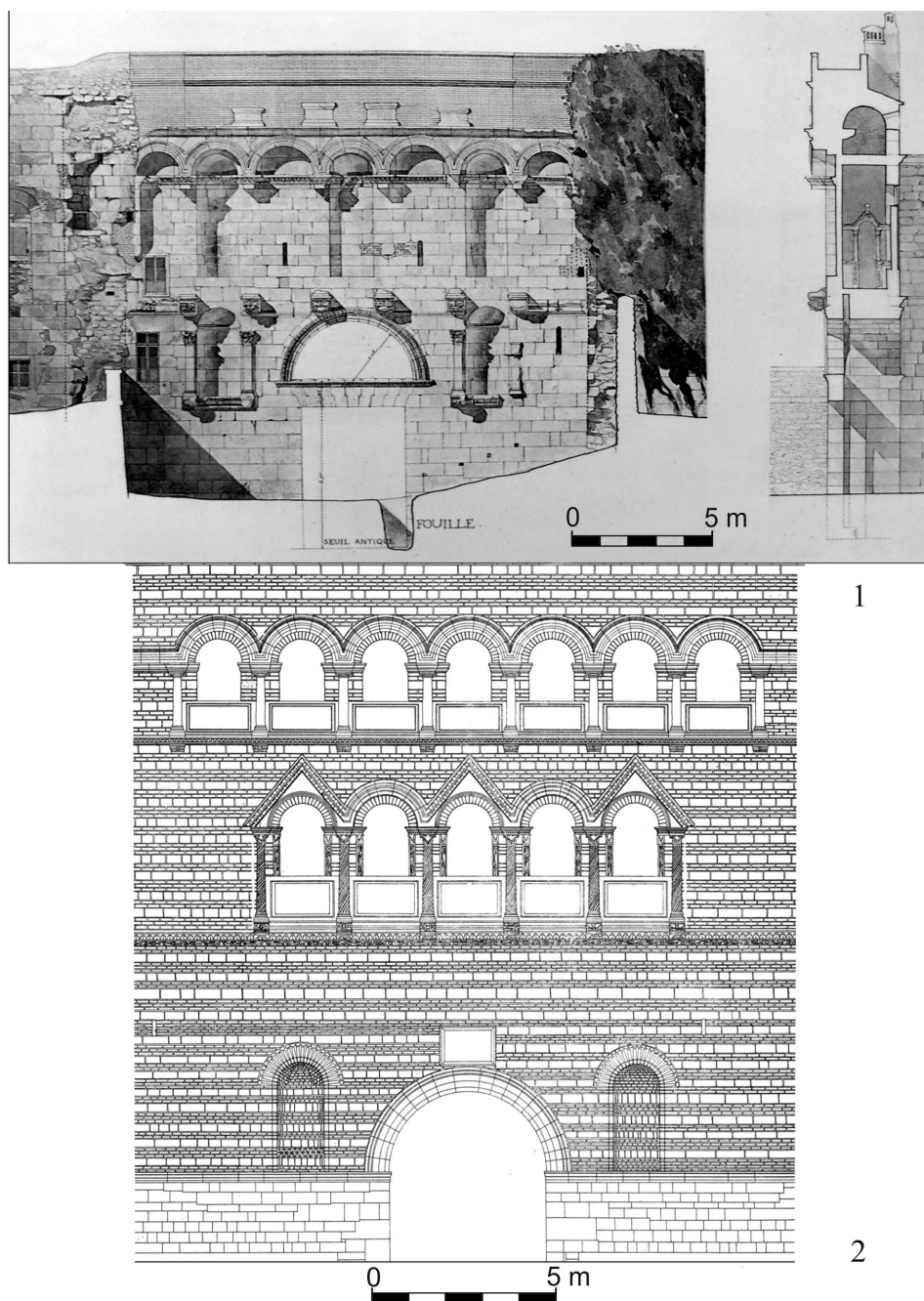


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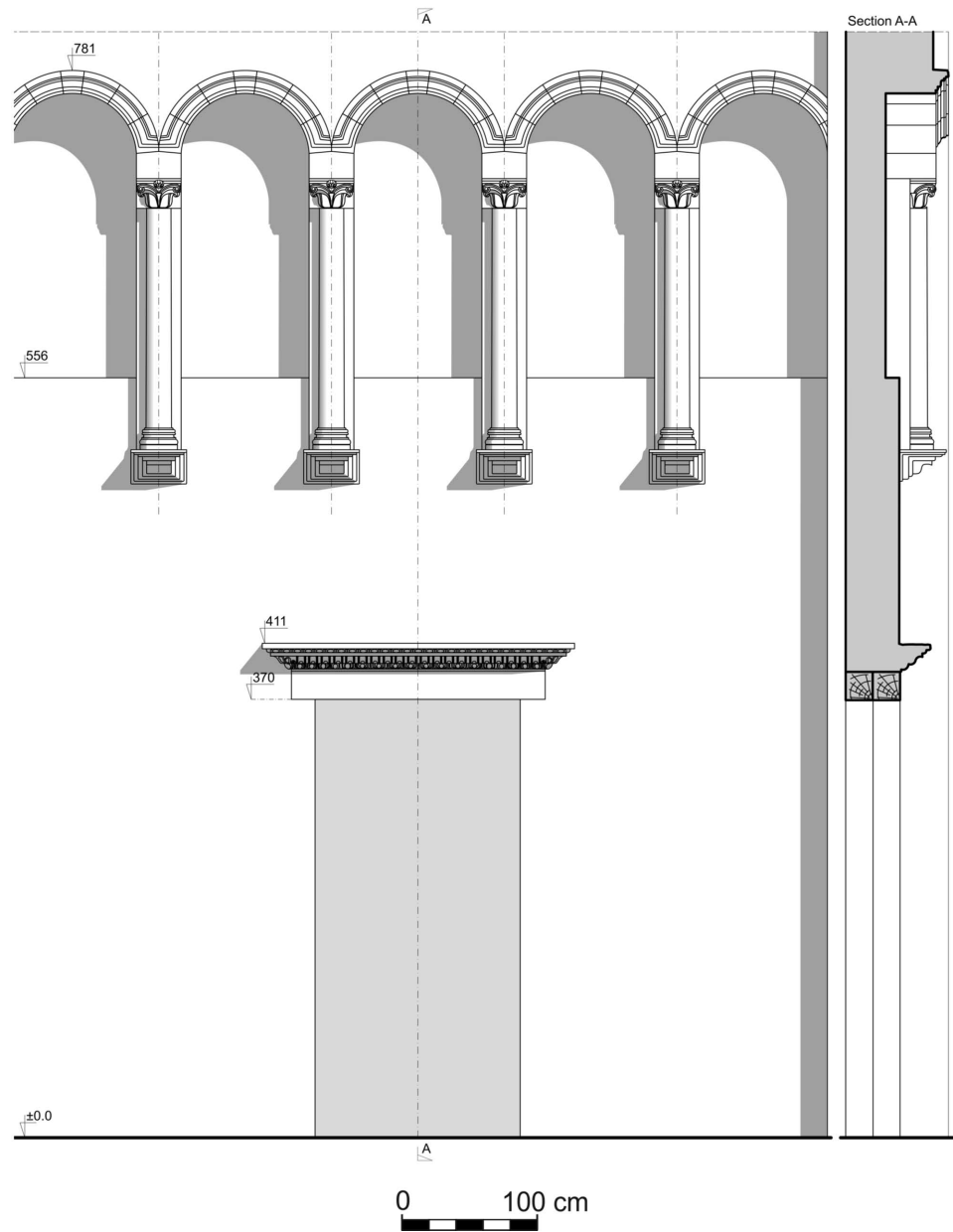


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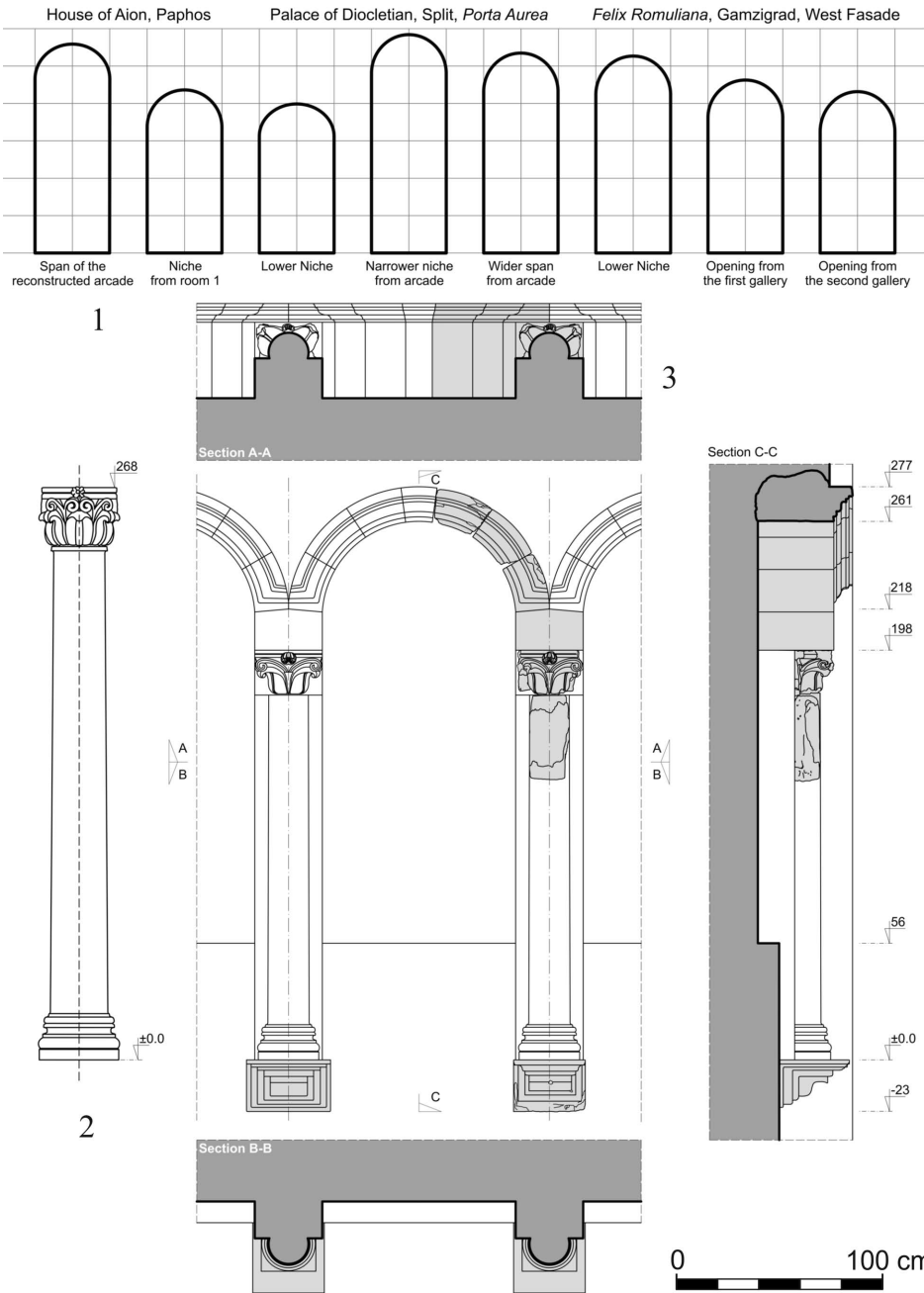
Pl. 3. 1 – Niche from the main room of House of Aion. Photo by the author; 2 – Capital of the engaged column; 3 – Base of the engaged column. Drawings from the archives of the expedition; 4 – Capital from the Temple of Augustus on Philae; 5 – Capital from the ‘Imperial Chamber’ (Temple of Amun, Thebes). Drawing by A. Brzozowska-Jawornicka based on McKenzie 2007, 166, pl. 287 and 223, pl. 389c



Pl. 4. 1 – *Porta Aurea* at the Palace of Diocletian in Split. Reproduced from Hébrard and Zeiller 1912; 2 – West Gate of the *Felix Romuliana* Palace in Gamzigrad. Reproduced from Nikšić 2011, 197, fig. 8



Pl. 5. Reconstruction of the recessed part of the main façade of the House of Aion.
Drawing by A. Brzozowska-Jawornicka



Pl. 6. 1 – Comparison of the shapes and proportions of the niches from the House of Aion, the Palace of Diocletian in Split and the *Felix Romuliana* Palace in Gamzigrad; 2 – Engaged column from the main room of the House of Aion. Drawings from the archives of the expedition; 3 – Reconstruction of the span from the arcade from the main façade of the House of Aion. Drawing by A. Brzozowska-Jawornicka

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THE IMPACT OF THE PONIATOWSKI GEMS ON LATER GEM ENGRAVING

Abstract: *In the first half of the 19th century, the Prince Stanislas Poniatowski (1754–1833) collection of engraved gems was considered to be one of the most outstanding known assemblages. However, its sale at Christie's in 1839 was a disaster, as the cabinet turned out to include almost only neo-classical specimens and, thus, half of the gems did not go under the hammer. But these intaglios and cameos, and especially the themes they bear, portray in their beauty an effort to re-create a lost neo-classical world as reflected in the texts of Homer, Vergil, and other ancient authors. In contrary to other works on the Poniatowski gems, this paper focuses not on the collection itself, but on its impact on the later gem engraving. It presents two intaglios from the collection of the National Museum in Krakow. The first presents a scene of Hebe pouring out nectar for Jupiter (with an eagle behind him). The second depicts a crowned snake-god with the incorrect Latin inscription: VOT•SOL•CER. They are faithful copies of two Poniatowski gems. In fact, the first gem testifies to the great contribution of the Poniatowski collection to the reception of Classical culture, while the other is a falsification of the original which reflects a later collector's aim to possess a 'Poniatowski gem'.*

Keywords: *Gems; intaglios; neo-classical; Poniatowski; reception*

Introduction

Edmund Bulanda (1882–1951) is said to be the first person to have found some famous Poniatowski gems amongst the extensive collection

of intaglios and cameos housed in the National Museum in Krakow (Bulanda 1947, 38–39). He suggested they might have come to Krakow within the extraordinary cabinet of Constantine Schmidt-Ciążyński (Śliwa 1989, 2014; Gołyźniak *et al.* 2016; Gołyźniak forthcoming a). In fact, new research has proved only one Poniatowski intaglio having been kept in Krakow. Indeed, it once belonged to Schmidt-Ciążyński, but was not sold with his other gems in 1886 as Bulanda presumed (Gołyźniak forthcoming b). However, two other objects can be found which, at first glance, appear to be the lost Poniatowski gems. There was little knowledge about them because they were catalogued in the late 19th century and nobody was interested in them in the end. According to the museum's documentation, they both were considered to be ancient works of Greek or Roman engravers, but for the author, it was all too clear that they were in fact neo-classical intaglios and that they conceal an intriguing history.

An intaglio of Jupiter and Hebe

The first specimen to be presented here is an intaglio made of double-layered agate, brown on white (27.1 x 19.7 x 4.5mm), representing a scene of a young woman standing in front of an old, bearded man and pouring a liquid into his cup (Pl. 1: 1).¹ This gem entered the collection of the National Museum in Krakow in 1886 when the museum purchased a magnificent group of engraved stones from Constantine Schmidt-Ciążyński (1818–1889) (Fredro-Boniecka 1939, 278–292; Fredro-Boniecka 1949, 53–84; Kaim-Małecka 1993, 59–95; Myśliński 2001, 49–54; Myśliński 2006, 229–233; Gołyźniak 2013, 217–226; Gołyźniak 2013, 191–202; Śliwa 2014, 17–44; Gołyźniak *et al.* 2016; Gołyźniak forthcoming a).

The woman, dressed in a long chiton and short himation tied at her waist, is Hebe. The folds of her robe are flowing behind her. She has a calm, idealized face and her hair is tied in a bun at the top of her head. In her right, raised hand, she is holding an oinochoe – a Greek wine jug. The old man is Jupiter. He is half-naked with only a mantle or short tunic wrapped around his loins and covering his legs. The god has an aquiline nose and a curly beard. His hair is corrugated around the head across which is a fillet. In his left outstretched hand he is holding a cup, and his right hand is resting on the head of an eagle standing beside him. The whole scene is set among clouds engraved beneath the figures. Hebe, the daughter of Zeus and Hera, was a cupbearer for the gods and goddesses of Mount Olympus,

¹ Inv. no. MNK-Ew-IV-Zł-2038.

serving them with nectar and ambrosia, until she was married to Heracles. The clouds beneath the figures on this intaglio suggest that the scene is arranged on a mountaintop.

The composition of the scene is dynamic and vivid. Hebe's robe is flowing in the blowing wind. It is so thick that the slender body of the goddess, her long legs, and female attributes can be admired. This corresponds very well with her calm facial expression, highlighted by the smooth engraving of the cheek, slightly upturned nose and small lips. In contrast, Jupiter is depicted as a majestic figure with a broad chest and strong arms, and the coiffure is similar to that in his portrait on ancient gems (Furtwängler 1896, 197, no. 4952, pl. 36; Boardman and Scarisbrick 1977, 37, no. 65; Pannuti 1983, 6, no. 4; Maaskant-Kleibrink 1978, 162, no. 300, pl. 58; Spier 1992, 107, no. 267; Platz-Horster 1994, 112, no. 111, pl. 20; Weiß 1996, 71–72, no. 88, pl. 12; Gesztelyi 2001, 36, 69, no. 5; Henig and McGregor 2004, 105, no. 10.26). However, it is impossible to label this gem a genuine ancient piece. The head of Jupiter should be decorated with a laurel wreath, not a diadem. The mantle or robe he is wearing is undulating and flowing behind, similarly to Hebe's. The presence of clouds under the figures' feet is puzzling, because in ancient times ground level was usually indicated simply with a single line. As well, the large dimensions of the stone, which is perfectly sanded, and the style indicate that the intaglio is a neo-classical work.

The Poniatowski gems

Prince Stanislas Poniatowski (1754–1833) was a nephew of the last king and grand-duke of the Polish-Lithuanian Commonwealth, Stanislas August Poniatowski (1732–1798) (Korzeniowski 1895, 481–535; Busiri Vici 1971; Michalski 1983, 481–487; Mikocki 1988, 68–70; Brandys 2009; Kagan 2010, 227). An avid collector of art, he was once considered the richest man in Europe. He found himself driven into a passion for engraved gems, 2,601 of which he assembled and published (Poniatowski 1830; Poniatowski 1830–1833). However, from the very beginning, his astonishing collection, including 1,737 specimens signed with the names of 'ancient' engravers, aroused many controversies. Shortly after the publication of the collection's catalogue, some scholars pointed out that the vast majority of the Prince's gems were neo-classical works, and such a great number of signed specimens could not possibly exist (Raoul-Rochette 1831, 338; Raoul-Rochette 1834, 148–149; Toelken 1832, 309–320). The gems were auctioned at Christie's

in 1839, and it was a fiasco, as half of the objects remained unsold (Auction, Christie and Manson 29 April – 21 May 1839). However, the 5th Lord Monson did purchase many of the Poniatowski gems (although they were later dispersed in 1851), and Colonel John Tyrrell acquired 1,140 objects, still having faith in the prince's honesty, or more likely, hoping to make a profit in the future (Reinach 1895, 154; Kagan 2010, 228; Wagner 2013, 148). He desperately tried to maintain his great esteem for the collection by publishing catalogues illustrated with early photographs of the gems' impressions (early catalogues: Prendeville 1841; Prendeville and Maginn 1841 republished with 471 pieces illustrated in Prendeville and Maginn 1857 and Prendeville and Maginn 1859), and managed to resell a greater part of his assemblage to Colonel Rickerts, but eventually failed in maintaining a good reputation for the Poniatowski gems (Kagan 2010, 228–229).

Over the next few years, the great Poniatowski collection was dispersed. Interest in the Poniatowski gems dropped dramatically, along with their value (King 1885, 193–197; Reinach 1895, 151–155; Bulanda 1913, 181–184; Neverov 1981, 47–78; Kolendo 1981, 81–99; Laska 2001a, 109). The scandal surrounding the collection had even worse consequences for the entire gem trade. It is believed to have had a hand in the considerable decrease in gem production, and in the number of auctions: collectors became much warier of new acquisitions and less interested in investing in such a risky business (Osborne 1912, VI–VII; Zwierlein-Diehl 2007, 302–304; Gołyźniak *et al.* 2016, 10). Recently, the Prince Poniatowski collection of engraved gems has raised newfound interest, which has led to an effort to completely reconstruct the set and resolve some problems.²

The collection of Prince Stanislas Poniatowski was full of extraordinary objects, and we wonder if the intaglio described above – so obviously neo-classical – might not have previously belonged to it. At present, almost half of the collection is thought to be lost. The famous Poniatowski gems seem to have vanished among the vast number of other neo-classical pieces (Laska 2001a, 109). However, it has been observed that a plethora of them may be

² Dr. Claudia Wagner from the Beazley Archive in Oxford has been conducting a project aimed at reconstructing the entire Poniatowski collection. The preliminary results can be found in: Wagner 2008, 565–572 and Wagner 2013, 145–150 and on the website: <http://www.beazley.ox.ac.uk/gems/poniatowski/default.htm> (status as of June 23rd, 2015). Hadrien Rambach has just published an important article about two rediscovered Poniatowski intaglios from the American Numismatic Society collection, which also touches some of the interesting issues related to the history of the collection. He also mentions work on a more extensive study of the Prince Poniatowski set, which we look forward to reading see: Rambach 2014, 35–49.

distinguished, thanks to a few particular features. They are usually made of stones that were perfectly prepared beforehand, with highly polished surfaces. They have large dimensions, fitting very well in the exceedingly elaborated mounts, of the ‘medallion type’ (many of which survived). The final distinguishable features are found in the subject matter: scenes from Vergil’s *Aeneid* and Homer’s *Iliad* and *Odyssey* are common, as are figures depicted in the midst of a violent action or another dynamic composition (King 1885, 193–197; Osborne 1912, VI–VII; Rudoe 1993, 25; Seidmann 1999, 267; Wagner 2013, 145–148; Rambach 2014, 35). Both of these features are evident in our intaglio.

Is it a Poniatowski gem?

Is the intaglio with Jupiter and Hebe from Krakow really a lost Poniatowski gem? The subject of Jupiter and Hebe/Zeus and Nemesis was widely popular in 19th-century glyptic art (Tassinari 1996, 162–163). A number of gems were carved: at least three by Giuseppe Girometti (1780–1851) (Pl. 1: 2, 3) (Rambach forthcoming), and one by Giovanni Settari (1773–1833?) (Lippold 1922, 183, pl. CI.5). According to the Poniatowski catalogues, there were three intaglios presenting Hebe pouring nectar for Jupiter in the collection: one was executed in *Cornaline orientale*, signed ARGÉE and set in a ring (Poniatowski 1830, 1830–1833, no. I.41 [with erroneous cat. no. 31]); the second was made of *Sardoine orientale*, signed ΚΡΩΜΟΥ, and set in a mount (Poniatowski 1830, 1830–1833, no. I.42; Predeville 1841, 14, no. 28; Predeville and Maginn 1841; Predeville and Maginn 1857, 14, no. 28); and the third was cut in *Cornaline orientale*, signed CHROMIOS (or rather ΚΡΩΜΟΥ), and set in a mount (Poniatowski 1830, 1830–1833, no. I.43).³ The description of the second gem appears to best fit the intaglio from Krakow and one might have wished to identify it with the lost Poniatowski intaglio. However, thanks to the photograph of the impression of the original Poniatowski gem in the book by Predeville and Maginn (1857, 14, no. 28) and the plaster-impression from the Beazley Archive in Oxford (Pl. 2: 1), one precisely knows what it looked like and one can make comparisons.

When carefully compared, the intaglio from the Krakow collection and the impression from the Beazley Archive exhibit some differences. First of

³ Actually, in the Prince Poniatowski collection, there were 268 pieces with this signature. It originates from a true ancient, famous Greek gem-engraver named Cronius (ΚΡΩΜΟΥ). He is mentioned by Pliny (*NH* 37.4), see also Forrer 1907, 225.

all, there is no artist's signature on the gem from Krakow. There are much fewer clouds (only on the bottom part) than on the impression, where they cover almost half the field. There are also some differences in the figures. The Hebe on our intaglio is too tall and too slim. In comparison to the figure from the impression, she is much more stiff and static. The body of Hebe from the impression seems to be fuller and her gestures are more gentle. The Jupiter of the impression is lying more horizontally on the throne and his mantle is wrapped not only around his hips and legs, but also around his left arm. The eagle from the impression seems to be better engraved as well. In conclusion, these two gems were certainly executed by different engravers and the intaglio from Krakow is only a later copy of the original Poniatowski gem, without the high quality of engraving. Thus, one wonders what is the explanation for its existence?

Gertrud Seidmann (1999, 263–270) published a paper on an unusual Poniatowski intaglio engraved, perhaps, by the hand of Giovanni Calandrelli (1784–1852), bearing the figure of the Greek hero Jason modelled after the sculpture by Bertel Thorvaldsen (1770–1844). She suggested that some gems which surely once belonged to Prince Poniatowski were not included in his catalogue (Seidmann 1999, 268). Following this intriguing observation, it would be tempting to claim that our intaglio might be one of those specimens that ‘got away’ from the collection, maybe handed out as gifts. However, as the analysis above revealed, the object from Krakow is not characterised by the superb quality so typical of Poniatowski gems. Besides, it is not just a repetition of the same subject or its reinterpretation: it is clearly a copy of one of the gems already existing in the cabinet.

Therefore, the intentions of the maker of the Krakow gem, or potentially his commissioner, are intriguing. The material used may speak badly of him. The maker used the same type of stone as the original gem, with similar dimensions, and imitated the style of the original engraver, indicating that the object was intended to be taken as one of the original Poniatowski gems. Taking those points into consideration, is it possible this gem is a fake? Maybe even Prince Stanislas Poniatowski himself commissioned this intaglio? In order to understand the purpose of our piece properly, one should first examine the intentions of Prince Poniatowski himself in creating such an extensive collection of neo-classical gems and whether or not it should be regarded as one of the greatest frauds in gem engraving history.

Seidmann (1999, 269) suspected that the prince commissioned these great many gems from contemporary artists on purpose. In order to raise their

value, he may have decided to add signatures of both historical and fictional engravers. He might have done so out of concern for his family, wanting to leave his descendants a real treasure. Moreover, Andrzej Laska (2001a, 108–112) analysed the names of the engravers appearing on a majority of the Poniatowski gems. He concluded the prince had been unaware of the effect which the introduction of such a vast number of signed pieces could have had on the market. As such, he blames him for the whole mess and the fraud, but there is some evidence suggesting a different view.

It appears that the prince was completely fascinated by Classical culture and this passion drove him to create one of the most comprehensive collections of Classical legacy illustrations. Thus, among the subjects carved on his stones, various mythological themes dominate, alongside some historical events and a number of portraits of Greek and Roman historical figures (Wagner 2008; Wagner 2013). There is usually no ancient equivalent for the subject-matter, as if the devices are products of the imaginations of the prince and his engravers. For instance, the study of Giovanni Caladrelli's (1784–1852) amazing collection of sketches from Berlin conducted by Gertrud Platz-Horster (2003; 2005) revealed that the works of this engraver are illustrations for Karl Philip Moritz's *Götterlehre*. Another issue is that some of the Poniatowski gems were based on other works of neo-classical art. Regarding only the gems with the scene of Hebe and Jupiter, they were directly inspired by two reliefs by Bertel Thorvaldsen, of 1808 (bearing Hercules and Hebe) and 1810 (presenting Zeus and Nemesis), both preserved at the Thorvaldsen Museum (inv. no. A317, see: Grandesso 2010, 95, fig. 108, and inv. no. A324, see Hartmann 1979, pl. 107.2). The idea of falsification in terms of glyptic art is often exaggerated and, thus, misleading. Not all the neo-classical gems bearing motifs related to ancient Greece and Rome were intended to be sold or considered genuine ancient pieces by their makers. Like the Poniatowski gems, they were a result of great admiration and appreciation of Classical art and culture. Overall, this would be a perfect explanation, but the fact that the prince decided to put so many false signatures on his gems shows how blurred the definition of forgery is when it comes to glyptic art.

With regards to the gem from the Krakow collection, it proves the Poniatowski gems to be quite influential. Although they quickly lost their value on the market, they had a major impact on contemporary gem engraving. The motif on our gem of Hebe pouring nectar for Jupiter must have been copied from the plaster impression, as it is a mirror image of the original. The object could not have been intended to imitate the

real Poniatowski gem to gain more value on the art market. The first sale of Poniatowski gems in 1839 had already ended in an unfortunate manner. As Charles William King (1885, 270) wrote, even the famous, truly ancient cornelian with bust of Io by Dioscurides was affected by the scandal and sold for a song. John Tyrrell spent a fortune on promoting the bulk of the Poniatowski gems that he acquired, but could not improve their general reputation.⁴ Still, the high level of artistic value of these remarkably beautiful stones and the themes with original interpretations of Classical mythology moved other engravers to obtain some of them as a source of inspiration. This is exactly the reason why our gem was created. The artist was attempting to reach the same level of Classical spirit and artistic virtuosity that he found on the original Poniatowski gem with Hebe and Jupiter. As already observed, the cutter of the gem from Krakow must have used a plaster impression of the original. Some of them had already been made in the early 1830s and sent to Frederick William III (1797–1840), king of Prussia (Toelken 1832, 309–320). This dactyliotheca did not include the impression of the intaglio with Hebe pouring nectar for Jupiter. However, there were other sets of impressions available, so the engraver must have had access to one of them (Wagner 2013, 148–149). Judging from the style of the intaglio from Krakow, it can be dated *c.* the middle of the 19th century.

Surprisingly, there is more evidence that the Poniatowski gems were quite influential. A late 19th century cameo, made of shell and once registered on eBay, bears an exact copy of the original motif of Hebe pouring nectar for Jupiter, in imitation of the original style (Pl. 2: 2). In fact, it is even more similar to the original than the intaglio from Krakow. Many years after the scandal related to the Poniatowski collection, the prince's gems remained a source of inspiration for the next generations of gem engravers.

Another Poniatowski gem?

The National Museum in Krakow preserves another interesting piece related to the Poniatowski gems, also once belonging to the Constantine

⁴ However, he managed to resell many of his Poniatowski gems to Colonel Rickerts (Kagan 2010, 228–229). Regarding Tyrrell's efforts see the publications including the gems he had purchased: Prendeville 1841; Prendeville and Maginn 1841 republished with 471 pieces illustrated in Prendeville and Maginn 1857 and Prendeville and Maginn 1859. Concerning the others, see the sale catalogues where the Poniatowski gems appear, for instance: Sotheby, Wilkinson and Hodge 1883 where they are described as '(...) selected medallions, from the celebrated cabinet of the Prince Poniatowski'. Seidmann (1999, 269) noticed that these catalogue titles have been less and less elaborated in the course of time.

Schmidt-Ciążyński collection. It is a bronze ring (bezel 10.5 x 7.5mm; hoop 18.6 x 18.9mm; weight: 2.25g) with a magical gem made of red jasper (10.5 x 7.5 x 1.6mm) showing a lion-headed snake to the right with three rays around the head and the letters: VOT•SOL• above it and CER beneath (Pl 3. 1, 2).⁵ The lion-headed serpent creature with rays is Chnoubis, an Egyptian Gnostic solar icon, found most often on magical/gnostic gems and amulets for protection against poison and disease as well as to facilitate digestion and prevent stomach problems (Śliwa 1999, 25–30). The gems with its depictions were usually made of chalcedony, chromium bearing chalcedony, moss agate, serpentine and only occasionally jaspers (usually red-spotted green jasper, known as ‘bloodstone’) (Bonner 1950, 54–60, nos. 81–97; Delatte and Derchain 1964, 54–72, nos. 52–81; Scherf *et al.* 1970, 237–240, nos. 162–171, pls. 106–108; Philipp 1986, 88–92, nos. 126–135; Kiss 1986, 272–273; Henig *et al.* 1994, 227–228, no. 501; Śliwa 1999, 25–30; Śliwa 2014, 85–87, nos. 53–55).

In all certainty, the gem and the ring are not ancient. Firstly, the red jasper is a rather unusual material for a magical gem of this kind. Green jasper was commonly used for magical gems presenting solar deities instead. Secondly, the serpent is engraved schematically and in an awkward position; usually the creature is much bigger and it has a larger lion’s head surrounded by seven rays. Moreover, inscriptions in Latin may occur on ancient magical gems, but rarely. The abbreviations incised on this intaglio are incorrect, as a Roman would not have inscribed VOT•SOL•CER but V•S•L•M• (*Votum Solvit Libens Merito*).⁶

Out of habit, even though the style of this intaglio is quite different from that of the very attractive Poniatowski gems, we checked the plaster casts preserved in Oxford at the Beazley Archive. And there it was: an identical gem – depicting the same crowned serpent with the Latin inscription VOT•SOL•CER – which belonged to Prince Poniatowski (Pl. 3: 3). It was sold at the 1839 auction, as lot no. 1935, and had never been traced since. At first, we had hoped that the gem in Krakow was the lost Poniatowski stone. In the Poniatowski catalogue, the gem is reported to be in hyacinth, but the gemological meaning of this vague term is uncertain, and it happens that the catalogue is mistaken about materials (Poniatowski 1830, 1830–1833, no. XIII.6). But then, we realised that the device is engraved in the wrong direction, with the letters facing the same way as the impression

⁵ Inv. no. MNK-Ew-IV-Z-69/zl-2239.

⁶ Here I would like to thank Dr. Claudia Wagner, who drew my attention to this Latin inscription and helped me to understand it correctly.

of the Poniatowski stone, which was engraved in negative. The device from the intaglio from Krakow was, therefore, copied from an impression of the original Poniatowski gem.

The original Poniatowski gem with such a motif was unusual amongst the corpus of stones belonging to the Prince. Rather than an elegant neo-classical iconography, the type is indeed a real imitation of an ancient piece, a real forgery. This, however, cannot prove Stanislas Poniatowski had ill intentions while creating his vast assemblage. He inherited a small collection of engraved gems from his uncle, Stanislas August Poniatowski (1732–1798), the last king of Poland (Visconti 1829; Reinach 1895, 151–152; Laska 2001a, 105–108; Laska 2001b, 235–242; Rambach 2014, 38). Perhaps this stone originally belonged to this set and as one cannot judge it on any terms, the Prince cannot be blamed for possessing it. Besides, this item could have entered his collection at the very beginning of his gem-fascination when he had little knowledge about the genuine ancient gems and their later copies (Laska 2001a, 108–109).

Another issue is that if Schmidt-Ciążyński was actually deceived and purchased the ring with a fake gem, since his connoisseurship in glyptic art, especially in terms of magical gems and amulets (Śliwa 2014) was considerable? Perhaps it is just a coincidence, but one might suspect that this intaglio in red jasper was deliberately commissioned by Schmidt-Ciążyński or any other collector to copy a real Poniatowski gem after its plaster impression. This is difficult to judge. In his brief inventory of the gems presented to the National Museum in Krakow in 1886, Schmidt-Ciążyński informs that he considered the ring and the intaglio to be ancient (Śliwa 2014, 30–31; Gołyźniak forthcoming a).⁷ This suggests that he was not aware of its real poor value, but maybe, he just wanted to make a camouflage.

In any case, this gem cutter's intentions were far different than those of the one who executed the intaglio with Hebe and Jupiter (see above). Here, we are dealing with a standard forgery with the purpose of imitating an ancient gem or perhaps even the Poniatowski one exactly. The plaster impression from one of the dactyliothecae of the Prince's objects was just the source of inspiration for the engraver.

⁷ The inventory book of the Constantine Schmidt-Ciążyński is now kept at the Archive of the National Museum in Krakow.

Conclusions

Although Constantine Schmidt-Ciążyński acquired one authentic Poniatowski gem (an intaglio bearing the motif of Euryclea recognising Ulysses by the scar on his knee), there seems to have been no patriotic incentives in the research of his compatriot's gems (Gołyźniak forthcoming b). The two objects from the National Museum in Krakow collection of engraved gems presented here illustrate the impact of the Prince Stanislas Poniatowski collection on later gem engraving. Simultaneously, they touch on an important and very complex problem of 19th century glyptic art: the falsification of originals. In terms of glyptics, this issue has many facets. Based on this research, one sees that on the one hand, the Poniatowski gems clearly were a source of inspiration for later gem-engravers. This is evidenced by both the intaglio from the Krakow collection representing Hebe pouring out nectar to Jupiter and the shell cameo discussed above. Both are examples of great appreciation of the Poniatowski collection and the masterfully cut stone that belonged to it. On the other hand, creating fakes that were meant to be taken as ancient pieces was a highly common phenomenon in those days (Kagan 2010, 229–230). The second object from the Krakow collection discussed here is a good example of this practice. But the forgers were not only focused on imitating ancient objects and putting them on the art market. Faking of objects executed by the most prominent neo-classical artists was also common. A good example of this are copies of the works of Giovanni Pichler (1734–1791) (Tassinari 2013, 456–531). Sometimes, the researcher may be misled by the impression that one or more gems are copies of another, while they are all simply based on the very same source outside of the glyptic art, like the ancient wall paintings from Herculaneum or works of famous sculptors such as Bertel Thorvaldsen (Pirzio Biroli Stefanelli 1991; Tassinari 1993, 243–272; Tassinari 1996, 147–176; Seidmann 1999, 263; Tassinari 2015). Regarding the Poniatowski gems, as one sees, the scandal caused the loss of much of their value on the market, but they were influential and appreciated for their absolutely finest compositions and exceptional style. As they were created by the best artists of the day, they stimulated the next generations of gem-engravers who tried to approach the earlier masters.

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Pl. 1. 1 – Intaglio, a copy of the original Prince Poniatowski gem, chalcedony (agate), 27.1 x 19.7 x 4.5mm. Hebe pouring out nectar to Jupiter (the eagle behind him). The National Museum, Krakow, inv. no. MNK-Ew-IV-zł-2038. Photo by the Photographic Studio of the National Museum, Krakow; 2 – Cameo by Giuseppe Girometti (1780–1851), set in an 18th-century gold box. Photo: courtesy of H. J. Rambach; 3 – The same as Pl. 1: 2, but focused on the cameo. Photo: courtesy of H. J. Rambach



1



2

Pl. 2. 1 – Impression of the original, lost intaglio from the collection of Prince Poniatowski, the Beazley Archive (the Classical Art Research Centre), Oxford University. Photo by C. Wagner; 2 – Cameo, a copy after the original Prince Poniatowski gem. Found on eBay, source: <http://www.beazley.ox.ac.uk/XDB/ASP/recordDetailsLarge.asp?recordCount=13&id={35A646E9-EB86-4CAE-AA8FCE2C1E5D04C3}&fileName=PONIATOWSKI%2FT28%2EA%2F&returnPage=&start=0> (status as of June 23rd, 2015)



1



2



3

Pl. 3. 1 – Intaglio mounted in a bronze ring, a copy of the original Prince Poniatowski gem, red jasper, the ring: bezel 10.5 x 7.5mm; hoop 18.6 x 18.9mm; weight: 2.25g, the gem 10.5 x 7.5 x 1.6mm. A lion-headed snake to the right with three rays around the head (Chnoubis) and the letters: VOT · SOL · above it and CER beneath. The National Museum, Krakow, inv. no. MNK-Ew-IV-Z-69; 2 – As above, but in profile. Photos by Photographic Studio of the National Museum, Krakow; 3 – Impression of the original, lost intaglio from the collection of Prince Poniatowski, the Beazley Archive (the Classical Art Research Centre), Oxford University. Photo by C. Wagner

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WŁADYSŁAW SZCZEPAŃSKI'S
JOURNEY THROUGH ARABIA
PETRAEA IN 1905 AND 1906

Abstract: *This paper presents the figure of Władysław Szczepański – a Polish Jesuit and a world-renowned biblical scholar interested mainly in biblical archaeology and philology, whose journey through Arabia Petraea has been forgotten and is rarely mentioned nowadays. The first part of Szczepański's journey of 1905 was focused on the eastern part of Arabia Petraea, the Jordanian and Galilean regions. Szczepański was accompanied then by Henri Lammens, Louis Jalabert and Urban Holzmeister. In 1906 Szczepański and Franz Fellingner became the first people to enter the area of the Sinai Peninsula after the border between Egypt and the Ottoman Empire was established anew. This time the scholars concentrated on the western part of Arabia Petraea, which is according to Szczepański, after Israel, the most informative area for every biblical scholar. When Szczepański returned from his expeditions he published two volumes: 'In Arabia Petraea. On the Basis of a Journey of 1905' and 'In Sinai. On the Basis of a Journey of 1906'. Those two publications shed light on the unknown and forgotten Arabia Petraea – they picture its geography, climate, and ancient history with references to biblical records and the present-day life of its inhabitants.*

Keywords: *Władysław Szczepański; Arabia Petraea; Sinai; Serabit el-Khadim; Wadi Maghara*

The area of the Sinai Peninsula lies within what is known as Arabia Petraea. The peninsula is the only land bridge not only between two continents, but also between two important cultural spheres along the Mediterranean Sea coast – Egypt and Levant. Naturally it has always been the place where

those two different cultures meet and mingle. The desire to gain control over the peninsula stemmed from its geopolitical location and the need for territorial expansion, but mostly from its position as the main copper mining region for ancient Egypt. The rich deposits of copper and turquoise put Sinai in a position of a mainspring of the conflict between the two cultural convergences. For these reasons, Sinai is a unique place, where the Egyptian and Levantine cultures mixed, influenced each other, and combined in a way which bore cultural fruit, such as the Proto-Sinaitic script, which developed in the most important site in Sinai, Serabit el-Khadim.

The first person to mention Serabit el-Khadim was Carsten Niebuhr (1772), who reported visiting the site in his book published after his campaign in 1762. It took a longer time to rediscover Wadi Maghara – in 1809 the German traveller Ulrich Seetzen arrived at this ancient mining site. In 1845, Serabit el-Khadim and Wadi Maghara were investigated by Richard Lepsius' (1852) expedition, followed by Major C. K. Macdonald's survey in 1845–1846 and 1867, and even his stay in Maghara between 1854 and 1866. The British Ordnance Survey of Wadi Maghara and Serabit el-Khadim was made by Charles William Wilson and H. Spencer Palmer in 1868–1869. The 'father of Egyptology' Sir William F. Petrie (1906) was aware of the significance of Sinai. In 1904–1905 he organised an expedition to the peninsula and published the results. Petrie drew the attention of other scholars who decided to follow in his steps, writing more and more books on this topic. At that point the figure of the Polish Jesuit appears.¹

¹ After Szczepański's journey to Sinai the peninsula was visited by many other great scholars: in 1929 an expedition to Serabit el-Khadim was led by Arthur Hjelt; in 1927, 1930 and 1935 Kirsopp Lake directed other expeditions; in 1936 Serabit el-Khadim was surveyed by Richard Starr and Romain Butin; and in 1947–1948 William F. Albright took part in an expedition held by the University of California. Between 1967 and 1982 many surveys were undertaken within the Sinai Peninsula by Israeli scholars, but unfortunately most of the results were not published. In 1978 and 1979 excavations at Serabit el-Khadim were conducted by Itzhak Beit-Arieh. In 1956–1957 and 1967–1973 the site was also explored by Beno Rothenberg, who didn't hesitate to also visit Wadi Maghara in 1968. In 1996 both sites were investigated within the South Sinai Survey project by Dominique Valbelle, who concentrated her research on Hathor's temple – as a result an ongoing program of excavations and restoration of the temple started in 1993. In 2000 the Survey and Excavation Project in Egypt (SEPE) began, a long term project focused on the mining actions in ancient Sinai and the interactions between Egypt and South Sinai, conducted by Gregory Mumford. Since 2014 a project held by Ludwig D. Morenz has been working in Serabit el-Khadim – the latest results have been already published within the new series *Studia Sinaitica* (2014).

Władysław Szczepański² was born on the 21st of May 1877 in Biała in the Silesian Beskidy mountains. He began to study philosophy at the Jesuit College in Nowy Sącz in 1898 and theology at the Jesuit College in Krakow in 1900. He was ordained in Krakow in 1903. His interest in biblical archaeology and aptitude for learning languages led to his delegation to St. Joseph's University in Beirut in 1904,³ where he studied eastern languages, geography, history and biblical archaeology. On graduating from the university he made his way through Istanbul to Crete, then took a journey around Greece to finally arrive in Rome. From October 1907 to mid-1908 he continued studies at the University of Innsbruck, where he lectured on the Assyrian language. In 1909 he became a professor of Palestinology, biblical archaeology and the Hebrew language at the Pontifical Biblical Institute in Rome. During this period of his life Szczepański published a very important book, *Geographia Palaestinae antiquae* (1912) and started work on a new Polish translation of the New Testament, done not with the help of the Vulgate, but on the basis of the original Greek text. While doing that he also took into consideration the results of archaeological excavations. This episode in his scholarly activity was very meaningful and pioneering, because his research preceded the agreements of the Second Vatican Council, in the Dogmatic Constitution on Divine Revelation called *Dei verbum*, recommended preparing new translations of the Bible on the basis of original texts. Szczepański took part in organising the theological faculty at Warsaw University. Apart from lecturing in Biblical and Oriental Studies, he held biblical seminars and meetings for those interested in biblical archaeology. With financial support from Pope Pius XI, Szczepański managed to travel to the Near East once again: between March and August 1922 he visited Egypt, Sinai, Palestine and Syria. The outcome of his

² Biographical information about Władysław Szczepański was obtained from: Klawek 1926; Ejsmont 1967; Nowak 1983; Śródka 1998; Cieślak 2011.

³ St. Joseph's University in Beirut was initiated and organised in 1836 by another Polish Jesuit – Father Maksymilian Ryłło. He was born in 1802 in Podorosc. After he was banished with the Belarussian Jesuits from Russia, he went to Rome and joined the convent. He was well known as a missionary who entered into communication with the representatives of the Eastern Church. Apart from the Jesuite missions in Syria, Malta and along the Nile (especially in Egypt and Sudan), he conducted some archaeological researches. In 1838 Ryłło introduced Pope Gregory XVI to his project, whose aim was the creation of an academy in Beirut or Aleppo. Despite some unfavorable reactions to this idea, the Pope decided to support Ryłło's idea and founded St. Joseph's University in Beirut – known at that time as Collegium Asiaticum. Ryłło died in 1848 in Khartoum, but in 1900 he was transported and interred at the cemetery in Al-Matariyyah, which lies today within the northern district in Cairo (Grzebień 1992, 504–506; Fedirko 2009, 24–27).

fourth journey was a three-volume series: *Najstarsze cywilizacje Wschodu klasycznego: Egipt* (1922), *Babilon* (1923), *Egea i Hatti* (1923) (*The oldest civilisations of the classical East: Egypt, Babylon, Aegea and Hatti*) and also *Palestyna po wojnie światowej* (1923) (*Palestine after the World War*), in which he described how the Near East had been influenced by the World War I. Unfortunately, Szczepański was in declining health, and when he was to take over the custody at a newly created branch of the Pontifical Biblical Institute in Jerusalem, he was unable. On his way to Jerusalem, he took a break in Innsbruck, where he died from complications after kidney surgery, on the 30th of May 1927.

The year 1904 was when Szczepański first came into contact with archaeology, and he decided to pursue the archaeological path, which led him to Sinai. When he crossed the threshold of the Jesuit Saint Joseph University in Beirut, he quickly discovered that Beirut would be a great starting point for scientific journeys to Palestine, Egypt, Syria, Arab and Sinai. Despite the significant archaeological and historical meaning of the Sinai Peninsula, Szczepański's journey through Arabia Petraea has been forgotten and is rarely mentioned. His journey is all the more remarkable as this Polish Jesuit was the first person to cross the desert of Sinai after the boundary between Egypt and the Ottoman Empire was restored in 1906. The reports from his travels were printed in *Przegląd Powszechny*, at that time published by Jesuits in Lviv. His notes and stored data were so comprehensive that in 1907 Szczepański decided to publish a book, *W Arabii Skalistej. Na podstawie podróży odbytej w r. 1905* (*In Arabia Petraea. On the basis of a journey of 1905*) and a year later the second part titled: *Na Synaju. Na podstawie podróży z r. 1906* (*In Sinai. On the basis of a journey of 1906*). This article is mostly based on those two books.⁴ Szczepański's publications are a very reliable and precise source of knowledge about the Arabia Petraea region. After more than a 100 years the maps of Sinai he created with the help of Bedouins and his topographical descriptions are still a valuable source for scholars. These two books won him renown in the academic world, and the volumes were translated into other languages. Even if Szczepański did not conduct any archaeological excavations on his own, he devoted most of his life to archaeology, and so became a famous and appreciated biblical scholar. The majority of his publications were archaeological dissertations.

⁴ Later on, the cumulated version of both books was also published in German: *Nach Petra und zum Sinai: zwei Reiseberichte nebst Beiträgen zur biblischen Geographie und Geschichte* (Innsbruck 1908) and some chapters were even translated to Arabic and Italian.

He is also known as the author of a hypothesis about the topographical location of the battle of Rephidim and the place where the Israelites crossed the Red Sea – both are still mentioned in discussions on those topics. It is very important to Polish archaeology that Szczepański was aware of the significance of the work of foreign scholars, and also focused on introducing their thoughts and research results on Polish soil.

As mentioned above, Szczepański had the good fortune to be the first man to visit the Sinai Peninsula after the so-called setting of the Southern Border in 1906, established between Taba and Rafiah. His two main publications about this are a kind of popular-science journal written by the traveller, who simply wanted to shed some light on the forgotten and mysterious Arabia Petraea, the province south of Palestine, on both sides of Wadi Arabah. His reports are a broad source of information about this region, about its geography, history, climate and the living conditions of its inhabitants. Following his interests, Szczepański emphasized references to stories and figures from the Bible. Thanks to that he took notes about archaeological places and artefacts. This is how he reached his main goal: his books were now fresh reasons for renewed interest in biblical archaeology both for researchers and the interested layperson.

The first expedition to Arabia Petraea (8th July–17th July 1905)

The first expedition set off on the 8th of July 1905, focused on the eastern part of Arabia Petraea, the Jordanian and Galilean regions, led by geographer and historian Professor Henri Lammens. Professor Louis Jalabert was responsible for archaeological and epigraphical observations. First-hand information about the climate, landscape, inhabitants and antiquities, mainly those with biblical backgrounds, was collected by Professor Urban Holzmeister and Władysław Szczepański himself. The journey started in Beirut, from where the professors of Saint Joseph University took a train to 'the city of gardens', Damascus. One place they visited there was the Umayyad Mosque, where the head of John the Baptist is kept.⁵

The researchers travelled with the help of the Hejaz Railway, which was still under construction at that time.⁶ Starting at El-Kadem railway

⁵ The information about the first expedition to Arabia was obtained from Szczepański 1907.

⁶ This huge venture was started in 1900 at the behest of the Ottoman Sultan Abdul Hamid II and was built mostly by the Ottomans, with German support. The railway, which according

station they took a two-day ride to Ma'an, about 480km from Damascus. The train was full of people and the corridors were crowded with baskets of food and bags of water. The researchers reconsidered why Nazim Pasha (the Governor of Damascus) had been reluctant to give them his permission and tried to dissuade them from this trip. While moving 30km/h and passing by the caravans they had enough time to think whether the journey was really such a risky one. Through the carriage's window they admired the never-ending plain of red hot volcanic rocks, which along with the incredibly high temperature had all the travelers seeing mirages. After a six-hour trip over a distance of 123km, the biblical land of Bashan (today Hauran Plateau) ruled by king Og, who was defeated by Moses, led them to the junction in Dera. Professor Lammens there had the chance to introduce to the other expedition members his friend and the chief engineer of Hejaz Railway, Heinrich Meissner. There, for the first time, the researchers saw proof that Pasha had made some efforts to make their journey safe. Almost as soon as they arrived at Dera, the local *Kaymakam* with gendarmerie turned up on their way. Szczepański (1907, 65) mentioned that leaving Dera was like leaving civilisation behind, as suddenly 'everything seemed to be dead'. The stations didn't manage to change this impression – they consisted of the rails and a linen tent, and the only sign of life were few soldiers guarding the station. Not so far from Nasib the train broke down and the passengers had to wait for a new one to be brought in from Dera. Another obstacle awaited them outside Amman – it was the most difficult part of the way, going uphill at the edge of a precipice. To the travellers' horror the first try going up was unsuccessful, and the locomotive was forced to go back

to the plan was heading to Mecca, was supposed to be the manifestation of the Sultan's respect for the Islamic World. In fact it was a way to placate the rebellious Bedouins, who more often stood up for their freedom and independence. The railway made it easier not only to transport the army, but also to settle the fortresses. It was a very clever move to make the Islamic World pay for this enormous project. The 'Holy Railway' was funded mainly by Muslims, not only thanks to their goodwill gesture, but also thanks to compulsory offerings (they were even asked to give away the rams' and sheep's hides, which were sacrificed during the Festival of Sacrifice called Kurban Bayrami). The works progressed very slowly – after two years only 61km were finished. The robbery and murder of 400 pilgrims committed by the Bedouins near Mecca and a plague of cholera, allegedly caused by the water poisoned by Bedouins (it killed few thousand pilgrims and tens of thousands people in Egypt and Syria), sped up the workers. Engineers from all over Europe (except England) were asked for help and the needed stuff was transported from Europe to Beirut by boats. Still, the building of the Hejaz Railway was difficult: lack of water, incredible heat, diseases, and attacks by Bedouins caused the death of many workers. Szczepański was right that the railway's end station was after all in Medina, not Mecca, but he didn't foresee the reason for that – the outbreak of World War I (Szczepański 1907, 37–49).

down to the plain, where the engineer worked up enough speed to make it up the hill this time. Just about 30km south of Amman, Szczepański and his companions saw the remarkable Mshatta Palace, or what remained of this masterpiece, as Szczepański called it.⁷ The train reached Qatrana, a station with stocks of water stored in Roman cisterns guarded by a great number of soldiers. Unfortunately, the expedition did not have the chance to visit the crusaders' Kerak Castle, located about seven hours on horseback from the station, as the train crew replenished the water supply and carried on with the journey. Along the western side of the rails ran an old road used by caravans and pilgrims heading to Mecca.

This is how the expedition entered Arabia. The so-called 'Arabic Island' is a place where Africa and Asia mingle. The southern, western and eastern border is quite obvious as it is marked by the Indian Ocean, but it is hard to draw the geographical border of Arabia to the north. However, Szczepański agreed that it embraces the whole peninsula with the border line from Gaza to Beersheba, the south coast of the Dead Sea, further to Kerak, Hauran, Palmyra and ending in Euphrat; it also includes the Sinaitic foothills. When the Polish scholar visited Arabia, it was sparsely inhabited by politically independent Arabic tribes and its central part was rather unknown. Szczepański drew his information about the peninsula's geography from, among others, the works of Carsten Niebuhr (1772), Johann L. Burckhardt (1829), and William G. Palgrave (1865–1866). Claudius Ptolemy in his *Geography* (...) had already divided the western coast of Arabia into two parts: Arabia Felix, so the happy one (the southern part) and Arabia Petraea, the rocky one (the northern part). Arabia Petraea includes the Sinai, Negev, the coastal areas to the south of the Red Sea, and the Moab plateau.

Heading south the landscape changed gradually, the sandy desert giving way to black rocks, a sign that the train was reaching Ma'an. It is only about 480km from Damascus to Ma'an, but the journey took 30 hours. In Ma'an the station's chief officer and a military policeman were waiting for the researchers. Professor Lammens requested four horses to be prepared for the next day, and although that was not a problem it turned out that

⁷ Mshatta palace was discovered in 1903, and the Germans insisted so long on transporting it to Germany that the Turks finally agreed. The beautiful facade of the palace was announced to be a gift from Ottoman Sultan Abdul Hamid II to Emperor Wilhelm II and can be admired today in the Pergamon Museum in Berlin. When Szczepański's expedition reached Mshatta it was still unclear who had built the palace. Professor Lammens stated that it was erected by Sasanians in 5th century, while others attributed it to Persian people or Arabs. Today it is known that Qasr Mshatta was a winter residence during the Umayyad period (8th century) (Szczepański 1907, 65; Enderlein 1996).

there were no saddles, as Bedouins do not use them. Szczepański was lucky enough to have his own saddle he had brought with him from Beirut. The other members of the expedition eventually obtained some old saddles from an Italian trader who was working in Ma'an. Ma'an was the last town on the expedition's way – to the south from Ma'an there was no single permanently inhabited village until Aqaba.

The scholars were approaching the destination of this part of the trip. The expedition and its escort were heading towards Petra, the deserted Nabatean capital. The temperature was nearly 50 degrees in the shade and as Szczepański (1907, 79) said, 'in this dazzling atmosphere everything was taking on the colour of incandescent fire: the soil, rocks, sand and the thorny bushes. At the village of Elji (today Wadi Musa), before entering the 'city of the dead', the expedition took a rest and was hosted by the Bedouins, who are considered to be the direct descendants of the Nabateans. Petra itself was rediscovered by Burckhardt in 1812 and had been thoroughly searched by Rudolf-Ernst Brünnow and Alfred von Domaszewski (1904), who dedicated almost the whole first volume of their publication to Petra.⁸ That was convenient for Szczepański and his companions, as they could focus only on the missing spots and on making up their minds about its contentious thesis. For two days, they admired the elaborated rock-curved architecture, such as El Khazneh ('The Treasury'), Ad Deir ('The Monastery'), Qasr al-Bint Firaun ('The Castle of Pharaoh's Daughter') and many others.

After visiting Petra, the expedition returned to Ma'an, from where on the 17th of July 1905 the scholars took a return train with the Hejaz Railway.

The second expedition to Arabia Petraea (18th July–7th August 1906)

In July and August 1906 Szczepański and Franz Fellingner,⁹ a professor of biblical studies in Linz, went around the western part of Arabia Petraea. This time the expedition was focused on familiarizing people with the Sinai Peninsula – the area which Szczepański considered to be the most informative

⁸ A thorough publication on Petra site was published recently by Wojciech Machowski (2015). Unfortunately the figure of Władysław Szczepański is not mentioned in this work and perhaps it would be worth completing the book with a few words about the Polish Jesuite.

⁹ It's worth mentioning that thanks to the photos taken by Fellingner Szczepański got the chance to enrich his publication about Sinai with illustrations.

to every biblical scholar, along with Israel. That is why Biblical references are more common in his publication about the second journey.¹⁰

On the 4th of July Szczepański arrived in Cairo from Beirut, and was called for a meeting in the War Office. As mentioned earlier, the English Government had forbidden travel to Sinai during the conflict concentrated around the Gulf of Aqaba. Szczepański was supposed to be the first person to visit this area after the armistice, so additional meetings in the War Office, although inconvenient, came as no surprise.

As Fellingner had a delay in his arrival, Szczepański spent some time getting to know the local biblical locations. He went to the place where it is said the Holy Family found shelter while escaping capture by Herod's soldiers. Szczepański was willing to compromise the two known theses that the Holy Family had stayed either in Heliopolis or in old Cairo: he mentioned that it is possible that the Virgin Mary, Saint Joseph and Jesus spent some time in both places, especially as the Coptic scripts seem to prove that. Thus he decided to take a trip to Heliopolis – Al-Matariyyah, located in the north-eastern area of Cairo. The visitors would look for the house of Holy Family in vain, although according to historical records we should find the miraculous spring and the tree of the Virgin Mary under which the Holy Family sheltered. In fact, the spring had disappeared under the Nile sludge and the tree died, but the Franciscans managed to plant a new one in its place in the 17th century. In 1883 on the spot where according to tradition the Holy Family rested the Jesuits built the Chapel of the Virgin Mary, next to which the above-mentioned Polish missionary Maksymilian Ryłło is buried. After returning to Cairo, Szczepański went to Abu Serga Church, which had been visited by the Holy Family at the end of their journey to Egypt. It was located then within the Babylon fortress. In this oldest church in Cairo Szczepański saw the three niches reputed to be the sleeping places of the Virgin Mary, Joseph and Jesus.

While in the Coptic district of Cairo he met Porphyrios II, the Archbishop of Sinai, and the only person to give him permission to visit the Sinai Library. Obtaining permission wasn't easy, and after the unsuccessful attempts of some representatives Szczepański decided to try again on his own, which turned out to be a good decision. He also had a plan to do some sightseeing in the company of Tadeusz Smoleński,¹¹ but unfortunately they failed

¹⁰ The information about the second expedition was obtained from Szczepański 1908.

¹¹ Tadeusz Smoleński was a historian and the first Polish Egyptologist. Because of some health problems he was forced to go to Egypt, which happened to be a turning point in his career. In Cairo he started studying Egyptology. under the guidance of a famous

to meet as he wasn't in Cairo at that time. In the meantime Szczepański visited Memphis and Sakkara, spending long hours in museums and libraries. After making final arrangements at the War Office he headed to Suez, where his journey actually should have begun.

On the 12th of July Szczepański travelled by train to Suez, where he waited for Fellingner until the 18th of July, when, after collecting enough food for about 20 days, they boarded the steamship to El-Tor in Sinai.

In the 19th century Sinai was a poorly known area. In encyclopedias or even in expert geographical books the description of Sinai was limited to a couple of lines, although in 1856 a valuable map of Sinai and Arabia Petraea was drawn by the classical scholar and cartographer Heinrich Kiepert, who based the map on the journey of Edward Robinson and Eli Smith of 1838 (Robinson and Smith 1856). Szczepański mentions the division of the peninsula into three areas: Badiet et-Tih, the desert of the north; Jebel el-Tor, the granite mountains of the south and east; and the desert el-Ka'a on the south-western coast.

The steamboat they took was rather small, going only eight nautical miles per hour, so it took about 14 hours to traverse the 230km separating Suez and el-Tor. Just before the ship made land a few officers, a doctor and a government representative came to welcome them in a lifeboat. The scholars arrived at the monastery, a branch of the main monastery of St. Catherine built on the spot of the old Orthodox church and monastery. They gathered the companions of their caravan, which consisted of only three camels and three Bedouins. As they still had a free afternoon, they visited the quarantine camp for pilgrims returning from Mecca, which was built to prevent the spread of cholera in Egypt and Europe.

In the middle of the night on the 20th of July, after celebrating Mass, Szczepański set off with Fellingner and the three Bedouins. They decided to take the eastern way to Jebel Musa, the first important stop of their journey. The sunrise depicted 'a lack of landscape' (Szczepański 1908, 94). Indeed, there was no tree, not even a hill. It doomed the caravan to sleepiness, and the hot sand made it impossible to even go for walk to revive. The heat was so unbearable that it 'closed even the mouths of the Bedouins' (Szczepański 1908, 94). After six hours, they finally reached Wadi Sle and entered the valley, bordered by almost perpendicular mountain walls. Afterwards they passed Wadi Tarfa overgrown with tamarisk, Wadi Rahabe, Wadi Rutik, Wadi Gurerat, and Wadi es-Seba'ije, where the Israelites' camp may have

French archaeologist Gaston Maspero and shortly Smoleński earned the acceptance and appreciation of the other scholars (Śliwa 2008, 196–200; Śliwa and Zinkow 2011).

been located, and arrived at last at Wadi ed-Der, above which Jebel Musa towers. At the Eastern Orthodox Sacred Monastery of the God-Trodden Mount Sinai, commonly known as Saint Catherine's Monastery, they were welcomed by the sound of bells calling for vesper service.

During their stay at the monastery they spent one day sightseeing, two days doing research in the library, and four taking the topography of the area. Szczepański briefly described in his book the labyrinth of buildings and alleys: Basilica of Transfiguration (located in the middle of the fortress, on the spot of the burning bush), the well in which Moses watered Jethro's drove of sheep, the chapels, the mosque (built to gain favour of the Arabs), little monks' cells scattered all over within the fortress' walls, other monastic buildings, the cemetery, and the beautiful garden. Szczepański spent most of his time within the walls in the library, next to the basilica. He was allowed to spend two hours a day in the library, but as he preferred to go there twice and stay longer, the monks agreed to let him study the manuscripts for two whole days, so 14 hours, instead of sitting there every day.

After spending hours in the library Szczepański and Fellingner set off on a trip to Mount Moses – Jebel Musa, which they felt to be the highlight of their journey. They couldn't wait to climb the mountain where God gave to Moses the Ten Commandments. The monotonous path led them to the chapel dedicated to the Virgin Mary and then through two stone arches (at the first one the pilgrims would confess their sins, and at the second they gave the 'confession sheet' to one of the monks). They entered the glade on which seventy of Israel's elders bowed down in front of God (*Ex* 24.9). The next stop was the little Chapel of Elijah, built above the cave in which Elijah stayed for some time and where he met God. Finally, they reached the peak of the mountain. Here both traditions, Christian and Muslim, meet: the Christian chapel on the east is next to the little mosque built on the west, right above Moses' cave. After celebrating a Mass, they went back to Elijah's chapel and climbed the north peak of Jebel Musa – Ras es-Safsaf, biblical Horeb. They went down and after visiting the Monastery of the Forty Martyrs in Wadi el Arbain, they went towards Mount Catherine. They spent the night at the top of the highest mountain in Sinai Peninsula and with the sunrise went back to the monastery through Wadi Lega.

The last stop before leaving Wadi ed-Der for good was the Rephidim battlefield and er-Raha plain – the place of the Israelite camp. The scholars passed through Wadi et-Tla'a, Wadi Genab, Wadi el-Frang, Wadi Medame and arrived at Wadi Erfaid – the valley of Rephidim. Afterwards, through Nakb el-Hawa they went to the er-Raha plain.

After returning to the monastery Szczepański and Fellingner started preparing for the 10-day journey ahead of them. They decided to take two commonly used trails, which lengthened the trip from seven, eight days to 10. The plan was to go through Wadi es-Seih to the valley of Firan, climbing Serbal, passing through the Mokatteb Valley to Maghara and Serabit el-Khadim, farther through the valleys of Suwik, Nasb, and Baba to the el-Marha Desert and along the Red Sea coast to the Cape Ras Abu Zenime and then following the Tajjibe and Sebeke Valleys and the Ujun Musa Desert straight to Suez.

On the 29th of July, they left Saint Catherine's Monastery behind and entered Wadi es-Seih – one of the longest, widest and most comfortable valleys to travel within the whole peninsula. Already on the next day they reached Wadi Firan, the largest of the Sinai's valleys, from where they enjoyed the most magnificent scenery – the view of Mount Serbal. The surface of the valley is scattered with limestone moraines which also create interesting geological forms. Between the palms, the little stone cottages inhabited by Bedouins caught the travellers' eyes, as Firan Oasis is the most fertile place on Sinai and the most welcome for Bedouins to live in. All around the oasis the old hermits' huts can be seen, and on the slopes of the mountains surrounding the valley the tombs carved in the stone are visible. The narrow path leading to Serbal's peak disappeared once for a time, making it even harder to climb the mountain. However, Szczepański admitted that it was worth it because of the beautiful view from the top of Serbal.

Granite and porphyry slowly gave way to chalk and sandstone, the sign that the expedition was entering Wadi Mukatteb, also known as Inscriptions Valley. The inscriptions had been already discovered by the first pilgrims – for example Cosmas Indicopleustes (2010), a 6th-century monk, mentioned in his *Christian Topography* that the Hebrew letters were engraved by the Israelites during the Exodus. Even 13 centuries later an Englishman, Charles Forster (1852), considered that Cosmas was correct. He claimed that the inscriptions were the journal of Exodus, telling the stories of crossing the Red Sea, defeating the Amalekites and many others. As Szczepański (...) mentioned, Forster's lies and mystifications came to light thanks to books published on this topic by, among others, Pierre Victor Lottin De Laval (1859), Karl Richard Lepsius (1868) and Julius Euting (1891).

Szczepański and Fellingner were planning to take accommodation in major C. K. McDonald's house, which was built in Wadi Maghara, when McDonald made some efforts to mine turquoise between 1854 and 1866. His efforts were unsuccessful, because it turned out that the turquoise from

Maghara loses its beautiful tinge after some years in the sunlight. What they found were only some remains of McDonald's residence, but still they were enthusiastic about visiting the valley and hoped to see mines and steles covered with inscriptions untouched by time. Instead, they were devastated by what they saw. The steles were gone – it was even hard to recognise where they had stood and the mines had collapsed – and everything was ruined. The two scholars were happy to discover that indeed not everything was lost. In 1903 the Englishmen and the Bedouins started to extract turquoise from the Maghara mines. *Mafkat*,¹² as the area of Maghara valley and Serabit el-Khadim was also called, turned out to be an interesting and valuable place also for present-day miners who, unfortunately, didn't care about the old mines or the steles and destroyed many of them. Luckily, in 1905 Sir William Flinders Petrie visited Maghara valley during his journey to Sinai and reported the destruction of the site to the Egyptian government. In May 1906 (shortly before Szczepański's visit), the preserved monuments were transported to the Egyptian Museum in Cairo. This is why Szczepański's book filled in the gaps about Maghara's artefacts from what Petrie (1906) published after his own expedition.

Szczepański focused on preparing a topographical description of the area where the turquoise was mined. Having for tools only a compass, watch and pencil didn't make it easier for him – time measuring was his way of calculating distances in drawing the map. Two routes link Maghara with Serabit el-Khadim: the western one (through Wadi Sellal, Wadi Ba'ba and Wadi Suwik) and the eastern one (through Wadi Sidr and Wadi Umm Agraf). Szczepański and Fellinger chose the latter. Wadi Umm Agraf turned out to be too difficult for the camels, so the travellers had to deviate from the path a little bit and to go through Wadi Mugderah. Eventually, the new trail also became too steep and they had to get off the camels and traverse the path carefully on foot. It took them nine hours to cover the 40km-distance from Maghara to Serabit el-Khadim.

At the moment of arriving at Serabit el-Khadim, Szczepański understood why this site had been forgotten for such a long time. He was standing at the bottom of a mountain and couldn't see any single object which would show that from the ancient Egyptians' point of view they were in the most important place in Sinai. It also occurred to him why Carsten Niebuhr¹³

¹² According to Adolf Erman (1904, II) brak w references the term *Mafkat* means 'the green stone'.

¹³ In 1762 C. Niebuhr (1772; 1774; 1778) during his journey insisted that Bedouins to lead him to the place with some stone monuments. The Bedouins thought he was referring

discovered Serabit el-Khadim simply by accident. Lepsius (1876) was the first person to deliberately state that Serabit el-Khadim was mainly a mining site.

There are eight valleys leading to the Serabit el-Khadim plateau, but all of them are very steep and rather dangerous. After the exhausting climb Szczepański concluded that the ancient Egyptians must have had a different, more accessible way to the plateau. Here he faced disappointment again – he was expecting to see a temple comparable with the ones in Luxor or Karnak, but the magnificent Hathor temple had been ruined. Thus Szczepański and Fellingner didn't spend much time in Serabit, only taking a short walk around.

The expedition set off and passed through Wadi Suwik to Wadi Nasb, where the heaps of greenish and brown slag lie as evidence of ancient Egyptian copper extraction. Unfortunately, the scholars got sick and were so tired that they found it reasonable to give up on visiting the mines and take a rest instead – even that was hard as it was 40 degrees in the shade. The next valley, Wadi Ba'ba, helped Szczepański and Fellingner to recover. The Polish Jesuit came to the conclusion that the last valley, which was like a gate to the desert, was the most beautiful one and regretted that its walls were so high that the sun could not illuminate the canyon.

Leaving Wadi Ba'ba was like leaving the granite core of Sinai. The expedition started the next phase of the journey with crossing the el-Marha desert, a northern continuation of el-Ka'a desert which spreads between the Red Sea and the western range of the Sinai mountains. The telegraph poles on the horizon were a sign that they were about 150km from Suez, about 35 hours of riding, a three-and-a-half-day journey. The strong wind blew up the sand, making it more and more difficult to travel, and impossible to observe the region. After nine hours, the travellers found shelter at Wadi Tadjibe and after a short rest decided to continue the ride. They passed Wadi Sebekeh and entered Wadi et-Tal, where they spent the night. On the next day, they carried on and among others passed by the Jebel Hammam Fir'aun – the mountain at the bottom of which according to the Bedouins' tradition the pharaoh sank after following the Israelites, who crossed the Red Sea here. After few hours of monotonous riding, the expedition arrived at Wadi Gharandel, which abounds in water. In this oasis in the shadow of the palm trees the scholars and Bedouins tried to rest, but the temperature was an intolerable 50 degrees. On the following morning,

to Serabit el-Khadim and took him there. In fact, he was amused with the site, but wasn't aware of what he found – he was sure he had discovered an Egyptian necropolis.

they went through Wadi Werdan and watched the landscape changing. The sand gave way to hard yellow-white bedrock, covered also with limestone and flint. When they entered Wadi Sudur and came nearer to Jebel Sudur, Szczepański and Fellingner recalled the history of Edward H. Palmer,¹⁴ who had died there. They traversed other valleys: Wadi Matahnise, Wadi Marazi, Wadi Useilat and Wadi Ri'ene and finally came to the longed-for oasis Ujun Musa. Not only the scholars, but even the Bedouins were happy to reach the oasis and draw closer to civilisation after this exhausting 20-day-journey. All members of the expedition sighed with relief that they made it safe and sound. They spent the last night of their tour in the oasis of Moses' springs, as the Ujun Musa is called, and headed north for Arsinoe. There they crossed the Suez Canal by a kind of a moving platform. On the African side of the Suez Canal it turned out that the camels need to stay in a 2-day-quarantine.

It was time to say goodbye to the Bedouins, which was with difficulty and regret as the European scholars had grown fond of their Arabic companions. After it all, Szczepański and Fellingner called for a carriage and went back to Suez. This is how they finished their research, and at the same time, their great adventure. After leaving Sinai, Szczepański sat down to his notes, drawings and fresh memories and started writing the book about the first expedition to visit Sinai after the re-establishment of the boundary between Egypt and the Ottoman Empire. Szczepański's journey was an inspiration to other scholars, for example the Dominican monk father Urban Atanazy Fic (1929), who became a biblical archaeologist and also visited the lands of Arabia Petraea, and Józef Milik (2013), a significant researcher and translator of the Nabatean inscriptions.

¹⁴ In August 1882 the English orientalist and explorer along with his companions was surrounded by the Bedouins. There are two versions of what happened next: one says that Palmer didn't want to be caught, so he decided to take a leap from the mountain and the other says that all members of the expedition were murdered in revenge to death of a couple of Bedouins, who had been killed by the Englishmen.

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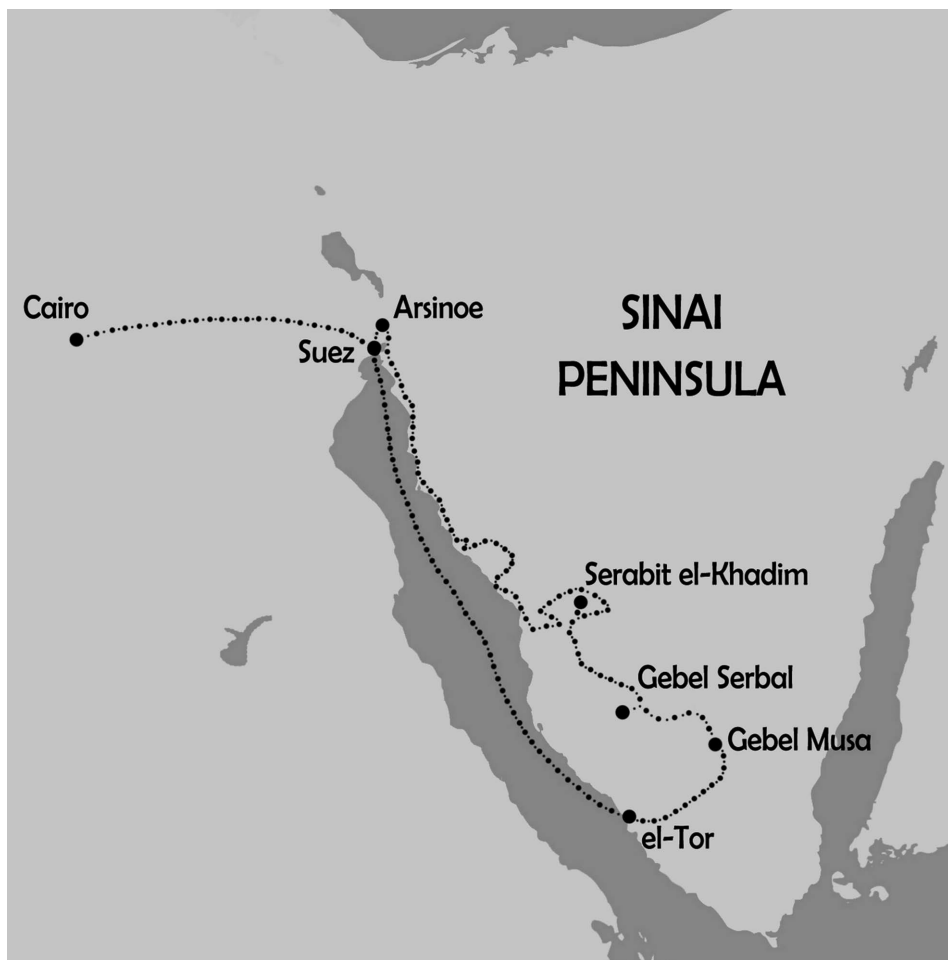
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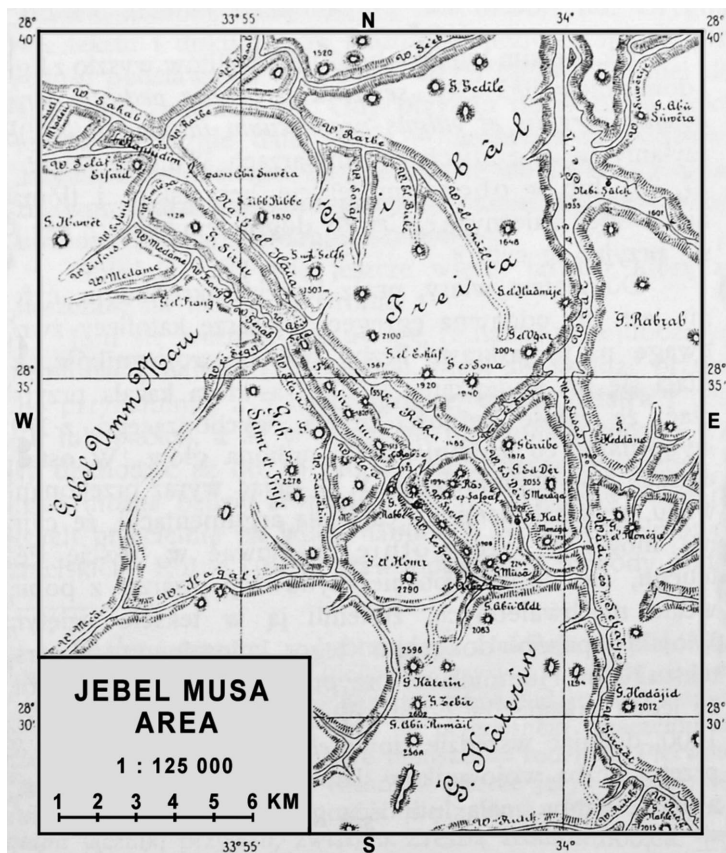
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Pl. 1. Portrait of Władysław Szczepański. Reproduced from Śródka 1998, 255



Pl. 2. Map showing the route of Szczepański's second expedition to Arabia Petraea. Designed by the author based on H. Kiepert's *Map of the Peninsula of Mount Sinai and Arabia Petraea* from the itineraries of E. Robinson and E. Smith retrieved from <http://www.geographicus.com/P/AntiqueMap/Sinai-kiepert-1856>



Pl. 3. Map of the Jebel Musa area created by Władysław Szczepański.
Reproduced from Szczepański 1908, 201

EDITORIAL NOTE

Since volume 14 of the *Studies in Ancient Art And Civilization*, published in 2010, the design of our periodical has slightly changed, and we also started to use the so-called Harvard referencing (or parenthetical) system, all due to the fact that *SAAC* was listed in the reference index of reviewed journals of the Polish Ministry of Science and Higher Education (List B).

Since 2011 (vol. 15) the publisher has been Księgarnia Akademicka Ltd. in Krakow. Starting with volume 16 (2012) an external review procedure has been introduced, compliant with the double-blind review process (anonymity of both the reviewed author and the reviewer). The referees include both members of the Editorial Board and others. The list of referees is published on the journal's website and in the hard copy. The primary version of the journal is the electronic format. As far as the names of the towns in Poland are concerned, these are given in their original form (e.g. Poznań, Gołuchów etc.), with the exception of the well established English ones such as Warsaw and Krakow (but in the title pages the original name Kraków is used).

With the 2011 issue we also introduced the following abbreviations, apart from those used in the *American Journal of Archaeology* and *Lexikon der Ägyptologie*:

PAM – *Polish Archaeology in the Mediterranean*, Warsaw

RechACrac SN – *Recherches Archéologiques. Serie Nouvelle*, Krakow

SAAC – *Studies in Ancient Art and Civilization*, Krakow

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SAAC volumes nos. 1-13 are available on the library exchange base. Recent issues starting from vol. 14 (2010) can be purchased from the Księgarnia Akademicka, also in e-book format
<http://www.akademicka.pl/saac/>

Studies in Ancient Art and Civilization was created in 1991 by Professor Joachim Śliwa as an occasional series and since vol. 10 (2007) has become a regular annual journal edited by the Jagiellonian University Institute of Archaeology. Księgarnia Akademicka S. A. has been the publisher since 2011.

Nineteen volumes have been published to date, among them two monographs, two conference proceedings and three festschrifts for distinguished researchers from our Institute.

SAAC publishes papers in the fields of the archaeology, art and civilization of ancient Egypt, the Near East, Greece and its colonies, Cyprus and Rome, as well as other, non-Mediterranean ancient civilizations; also in the history of archaeology, antiquities collecting and the reception of ancient culture in modern Europe. Special attention is given to topics concerning predynastic and early-dynastic Egypt, the Greek and Roman periods in the Black Sea region, and the archaeology of Cyprus, thanks to excavations conducted by researchers from our Institute in these areas. Material from these excavations is published in SAAC.

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