



JAN JÍLEK, DAVID ROŽNOVSKÝ, EVA JAMRICHOVÁ

ROMAN BRONZE VESSELS FROM JAZOVICE IN THE DISTRICT OF ZNOJMO. A CONTRIBUTION TO THE INTERPRETATION OF SOLITARY FINDS OF ROMAN BRONZE VESSELS

ABSTRACT: *The aim of the article is to assess the significance of a solitary find of a Roman bronze barrel-shaped bucket and a handle from another bronze vessel. Besides a necessary artefactual analysis, the authors also pay attention to palynological findings and mainly to the interpretation of the find, whose location on a spur above the river Dyje is unusual, without any confirmed relations to the surrounding barbarian settlement from the Roman Period.*

KEY WORDS: *Bronze vessels – Roman Period – Palynology – Hoards – Offerings – South Moravia*

INTRODUCTION

The finds of Roman bronze vessels in the barbarian territory of Central Europe represent a standard part of Roman import and material culture of the Roman Period. The same is also the case with the Middle Danube region. However, this category of archaeological finds is mostly known from funerary and settlement contexts. Individual hoard components and solitary pieces are found only seldom (Tejral 1967, Jílek 2012, 2016a, 2016b, Hrnčiarik 2013, Stuppner 2016). Seen from this perspective, the bronze vessels from Jazovice

in the District of Znojmo (Czech Republic) (*Figures 1–2*) give an interesting impulse to interpretation.

The aim of this text is thus not only to inform about a new find of an Eggers type 40-41/42 bronze barrel-shaped bucket (*Figures 6–7*) and a bronze handle with attachment (*Figure 9: 1–5*), but above all to outline an interpretation, which would explain the unusual location of the assemblage. Palynological analyses of the fill of the bucket from Jazovice have yielded an important set of data for a comparison with palynological research results focused on a reconstruction of the plant spectrum in the barbarian territory at the Middle Danube. They

Received 24 March 2022; Accepted 29 April 2022. Available online 22 May 2022.

© 2022 Moravian Museum, Anthropos Institute, Brno. All rights reserved.

DOI: <https://doi.org/10.26720/anthro.22.05.17.1>

also help to reconstruct the species spectrum of that time.

From an archaeological point of view, the area around Bitov might be called a neglected region, where archaeological activities primarily concentrate on the medieval period. Finds of earlier dating come from excavations conducted several decades ago. Despite a pitiful state of research, we can suppose that this region was densely populated in prehistoric and protohistoric times and the find treated in the presented study completes our knowledge of early historic settlement in the region (*Figure 1*).

CIRCUMSTANCES OF FINDING

In the neighbourhood of the site (*Figure 1: 5*) we can find the medieval Cornštejn Castle ruin, relics of siege camps connected with a military event taking

place in 1464–1465 (Plaček 2001: 160) and many relics from the time of the Thirty Years' War (e.g. a still unpublished officer's rapier or a coin hoard, see Eckl, Hetflaiš 2018, Eckl 2019), which make the area extremely interesting for treasure hunters with metal detectors. One of these "wild" amateur metal detecting surveys in late October 2017 has yielded a barrel-shaped Östland bucket. Fortunately, the finders P. Bartes and B. Čermák notified the South Moravian Museum in Znojmo of the discovery. Due to extreme busyness of the archaeological department of the South Moravian Museum, the bucket was left on its original findspot and was covered with earth again by arrangement with the finders. The subsequent archaeological excavation, which was also attended by B. Čermák, was carried out by the museum employees on Saturday the 4 November 2017. After having reached the site, researchers cleared the located findspot and laid out an excavation trench sized 120 × 90 cm (*Figures 3–5*).

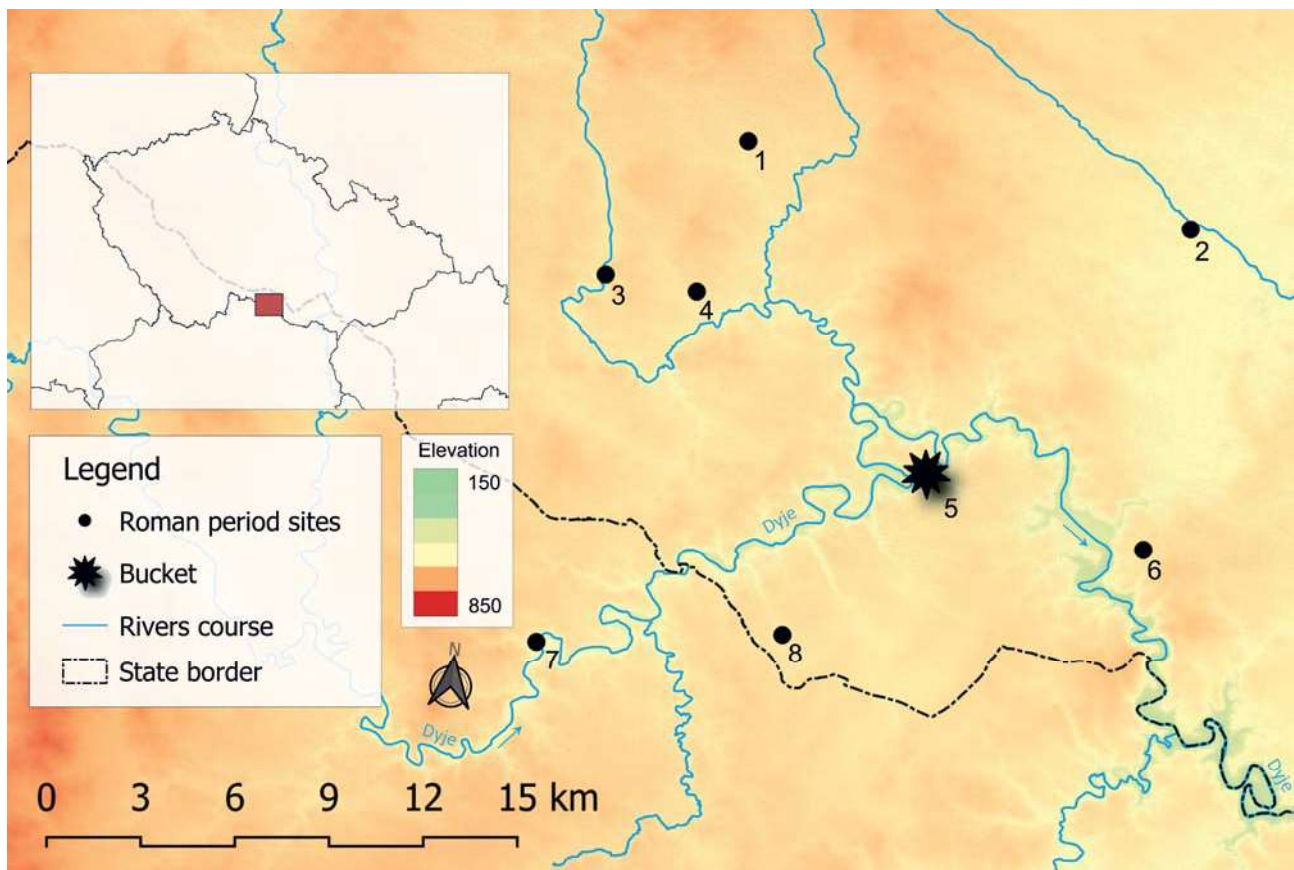


FIGURE 1: Jazovice, District of Znojmo, wider surroundings of the bucket find with Roman Period sites. 1 – Mladoňovice, 2 – Blížkovice, 3 – Bačkovice, 4 – Police, 5 – Jazovice, 6 – Onšov, 7 – Primmersdorf, 8 – Stálky (created by D. Rožnovský).

On the cleared surface they spotted the outline of a circular pit about 50 cm in diameter, which was originally dug out by the detectorists. After primary documentation, plant litter was removed from the whole area of the trench and the fill of the amateur shaft was taken out. Detectorists have exposed the bucket in its entirety, but, luckily enough, they did not retrieve it from the shaft. The find was located just above the bottom of the circular pit (stratigraphic unit SJ 500) (Figure 4). Maximum depth of the feature was 34 cm below the subsoil level and 50 cm below the present-day ground surface. The bronze bucket rested in the shaft bottom up in a slightly slant position (Figure 5: 2). Unfortunately, the finders were too eager and their spade made a hole in the bucket's base. After drawing and photographic documentation of the detected

context, subsoil was removed from the whole area of the trench down to the bottom of feature 500 in order to make detailed *in situ* photographs of the bucket. A small decorated bronze handle with attachment was found three metres away from the bucket, several centimetres below the ground surface (Rožnovský 2018).

LOCALISATION IN THE LANDSCAPE

The bucket was found in a forest stand on plot No. 63/1, which is located in the cadastral district of Jazovice, about 2.5 km northwest of the village Lančov and 2.2 km southeast of the Cornštejn Castle ruin, on a site called "Nad přehradou" at an elevation of 445 m

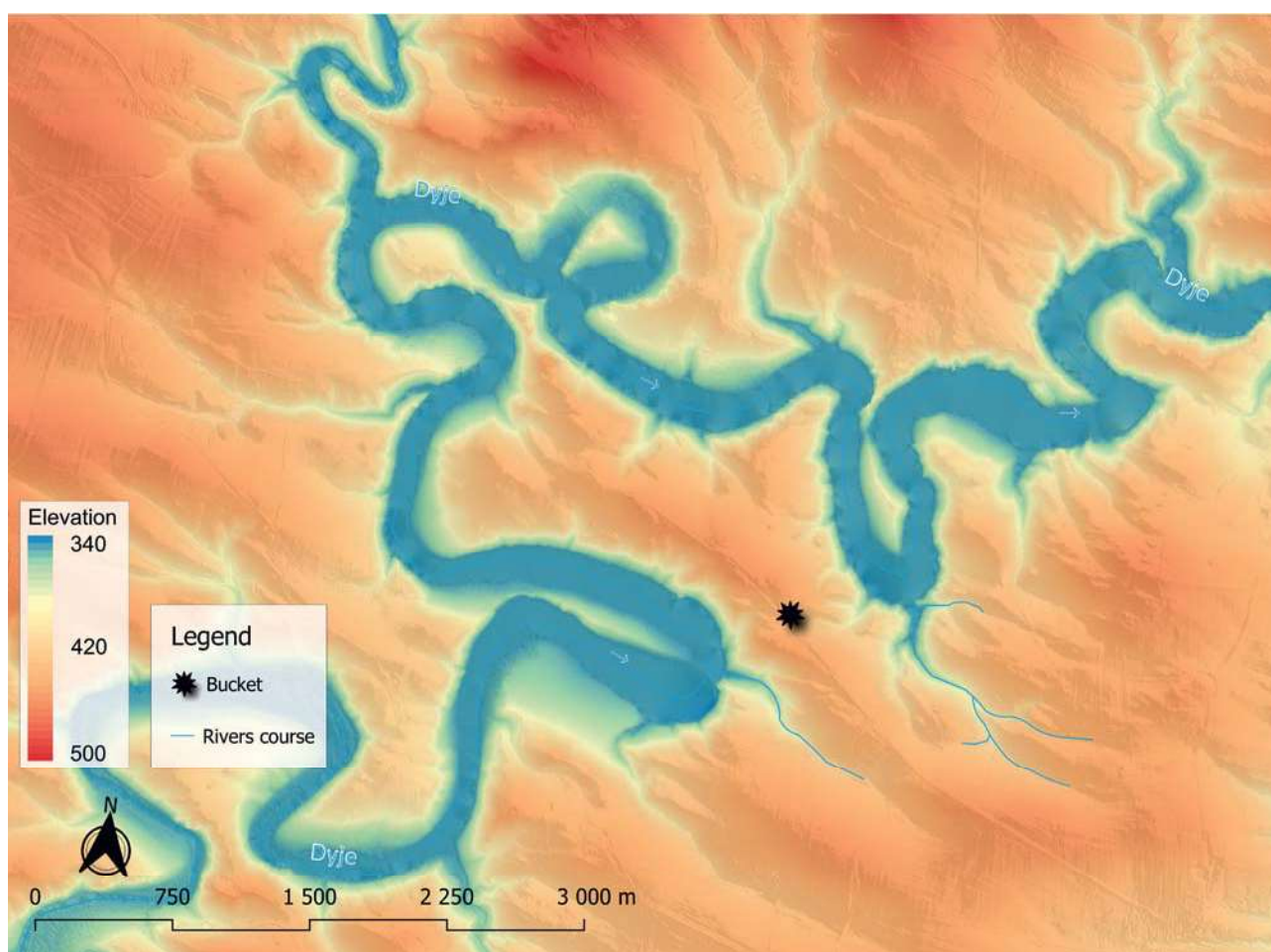


FIGURE 2: Jazovice, District of Znojmo, terrain map of one part of the meandering river Dyje and its spurs with marked location of the site (created by D. Rožnovský).



FIGURE 3: Jazovice, District of Znojmo, the findspot before (1) and after (2) clearing (photo: D. Rožnovský).

ASL (Figure 2). In terms of geomorphology, the studied site is located at the southern border of the Bohemian-Moravian Highlands, in the subunit of Bitov Foothills, which extends in the area between the villages Šafov in the south, Vratěnin in the west, Dědice in the north and Štítary in the east. Its height above sea level mostly varies between around 450 and 500 m ASL. The terrain shape is emphasized by relics of Miocene sediments and covers of Quaternary loesses and loess soils (Pavelková 2020: 3). The site is situated at the beginning of a large spur about 3.5 km long, on the right bank of the meandering river Dyje, which flows around the spur on three sides. The river meanders form deep valleys, which give the irregularly

shaped spur natural protection in the form of high and steep slopes. Their average height varies between 50 and 66 metres, but they can even reach up to hundred metres. The spur can be most easily accessed through the south-eastern neck, which is flanked by smaller valleys formed by nameless tributaries of the river Dyje. The barrel-shaped bucket and the handle with attachment were found in the narrowest place of the access neck bordered by two opposite meanders (Figure 2).

DESCRIPTION OF FINDS

1. Bronze barrel-shaped bucket Eggert type 40-41/42, which was several times repaired. The repairs are represented by rectangular pieces of sheet metal riveted to the bottom and to the rim near one of the two handle attachments. The arched iron handle, whose hooked ends are terminated by conical knobs, was suspended on an iron bar hoop fixed below the bucket's rim. Dimensions: rim diameter - 25.8 cm, base diameter - 18 cm, height - 18.7 cm, handle attachment diameter - 1.3 cm, rod thickness - 1.1 cm, maximum handle width-pitch - 31 cm, maximum handle width-thickness - 1.3 cm, stored in the South Moravian Museum in Znojmo, Inv. No. A 31 636/1 (Figures 6-7).
2. Bronze arc-shaped edged handle of rhombic profile with hooked ends and richly profiled terminals. One end of the handle is broken off. The terminals have the form of balusters composed of three ribs in the lower part, a belly in the middle, other two ribs and a conical finial on top. The edges of the handle are decorated with punched notches-dimples. The handle was stuck through the loop of a bronze handle attachment. The attachment is irregularly rectangular, the lower and upper parts are widened. The bar-shaped loop is out-turned. The middle part is decorated with three horizontal ribs. The lower part with a relic of a rivet hole is damaged, with remnants of vertical fluted decoration. Dimensions: handle width - ca. 11.5 cm, handle thickness - 0.3 to 0.7 cm, baluster height - 2.3 cm and 1.7 cm, preserved attachment height - 2.4 cm, attachment width - 0.9 cm, loop - 1.3 cm, stored in the South Moravian Museum in Znojmo, Inv. No. A 31 636/2 (Figure 9: 1-5).

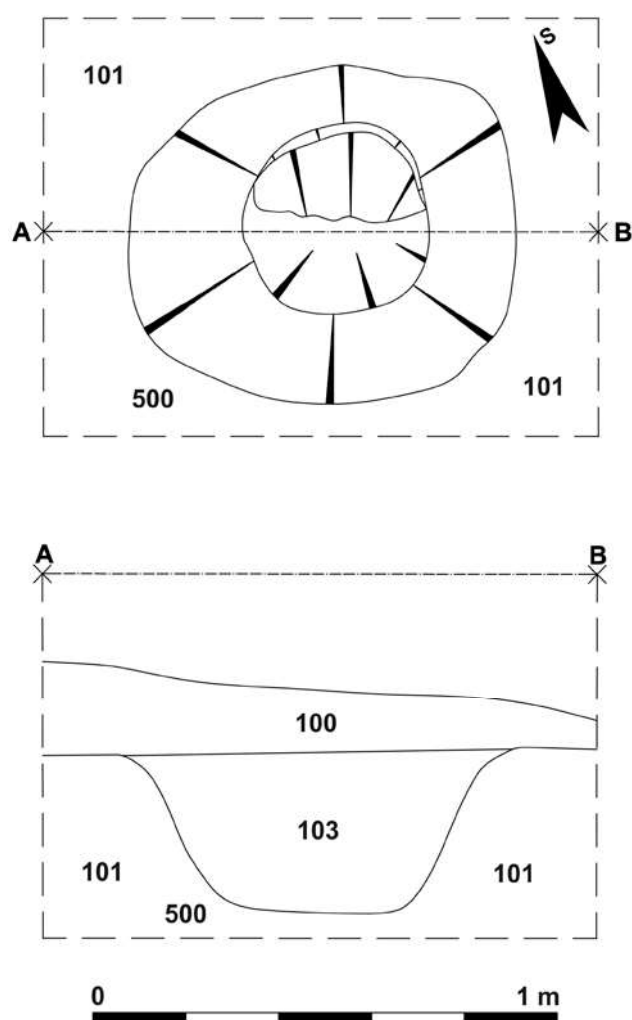


FIGURE 4: Jazovice, District of Znojmo, sunken feature, in which the bucket was found (created by D. Rožnovský).



FIGURE 5: Jazovice, District of Znojmo, trench 1/feature and bucket *in situ* (photo: D. Rožnovský and R. Hetflaiš).

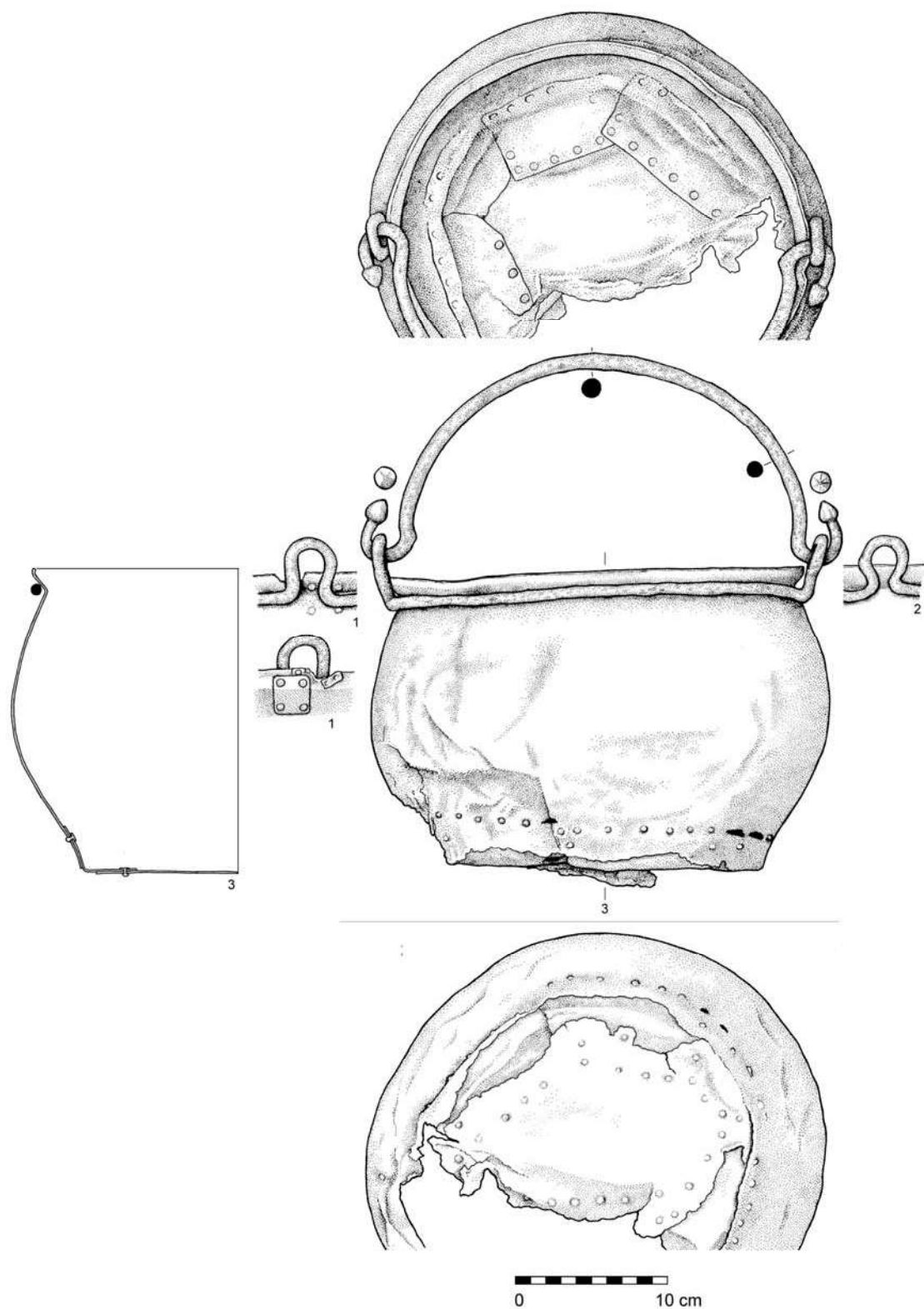


FIGURE 6: Jazovice, District of Znojmo, bronze barrel-shaped bucket Eggers type 40-41/42 (drawing: S. Plchová).

ARTEFACTUAL ANALYSIS – SIGNIFICANCE OF THE FINDS IN THE IMPERIAL AND BARBARIAN TERRITORIES

The bronze barrel-shaped Östland bucket (*Figure 8: 1*) can be classified on the basis of its form as Eggers type 40-41/42 (Eggers 1951: Taf. 6: 40–42). Eggers type 40 is characterised by rounded biconical shape of the walls and out-turned and raised rim (*Figure 8: 2*) (cf. CRFB-D2: 33–37, Taf. 6: 1, XIII-07-1/1.1, CRFB-D4: 154, Taf. 47: 2, XXI-04-4/2.9, CRFB-D3: 32, Taf. 20, I-07-7/1.1, 60, Taf. 21: 1, II-04-9/1.23). The bottom of the bucket from Jazovice was damaged and repaired, so it cannot be excluded that it was originally slightly offset, which is significant for Eggers type 41. In the text below we therefore name some parallels of buckets, which are



FIGURE 7: Jazovice, District of Znojmo, bronze barrel-shaped bucket Eggers type 40-41/42 (photo: R. Hetflaiš).

classified with types E 40 and E 41. Repairs in the form of adjoining rectangular stripes, which were riveted to the bottom and to the walls, are also known from other sites. For example, we can name e.g. an Eggers type 38 bucket from the cemetery of Westerwanna in Lower Saxony (CRFB-D4: 140, Taf. 61: 2, XXI-02-27/1.41). Iron hoops, which were used to fasten the handle, are known across the whole typological spectrum of barrel-shaped buckets, but in the system by H. J. Eggers they belong to type 42. The use of iron bar hoops is already evidenced in the Early Roman Period (see e.g. Schlegel 2000: 54, 260, Taf. 106, Tassinari 1993: 110–111, X1522:24196, X1623:8410, Stefani ed. 2016: 85) and continues until its end (Jílek 2012: 34, also with older literature).

The vessel from Jazovice was made by hammering and its walls exhibit traces of hammer strokes, which are often arranged in rows (on this technique, see Willer 2006: 176). Barrel-shaped buckets were made using various technological procedures (Schlegel 2000: 55), such as hammering (CRFB-D3, 32, Taf. 20, I-07-7/1.1.), hammering with subsequent lathing (Mutz 1972: 147, Abb. 417, CRFB-D3, 60, Taf. 21: 1, II-04-9/1.23) and also casting and turning (CRFB-D3: 103, Taf. 22:1, III-01-5/1.2).

As regards analogies (*Figure 8: 3-4*) from the Middle Danube region, we must mention a bucket from the hoard of Blučina (feature I) (Droberjar 1994: 181, 186, Abb. 6), whose proportions already approach type E 41. Iron objects and their fragments were deposited inside the vessel. The hoard from pit house I can be dated with the help of ceramic finds to the 2nd half of the 2nd century. From a cultural-historical perspective, it is highly probable that the hoard might have been buried in the ground during the Marcomannic Wars (Droberjar 1994: 186, id. 1997: 129). Very similar is the shape of a bucket of type E 40/41 from the hoard of Dunajská Lužná in Southwest Slovakia (*Figure 8: 4*), which is dated by I. Bazovský (2010: 17, 24–25, obr. 2) to between the stage B2/C1 and phase C1a and is also hypothetically associated with the turbulent period of the Marcomannic Wars or with the time immediately after their end. As regards the finds from Bohemia, we should name a bucket of type E 41 from a cremation grave in Nepolisy in East Bohemia (*Figure 8: 5*), which is dated to stage B2/C1 (Koudelka 1904–1905: 137–140, Jílek 2009: 257, obr. 7). Other parallels were identified in the territory of Brandenburg. The funerary equipment of a cremation grave from Stradow in the District of Calau, which was deposited in a bucket of type E

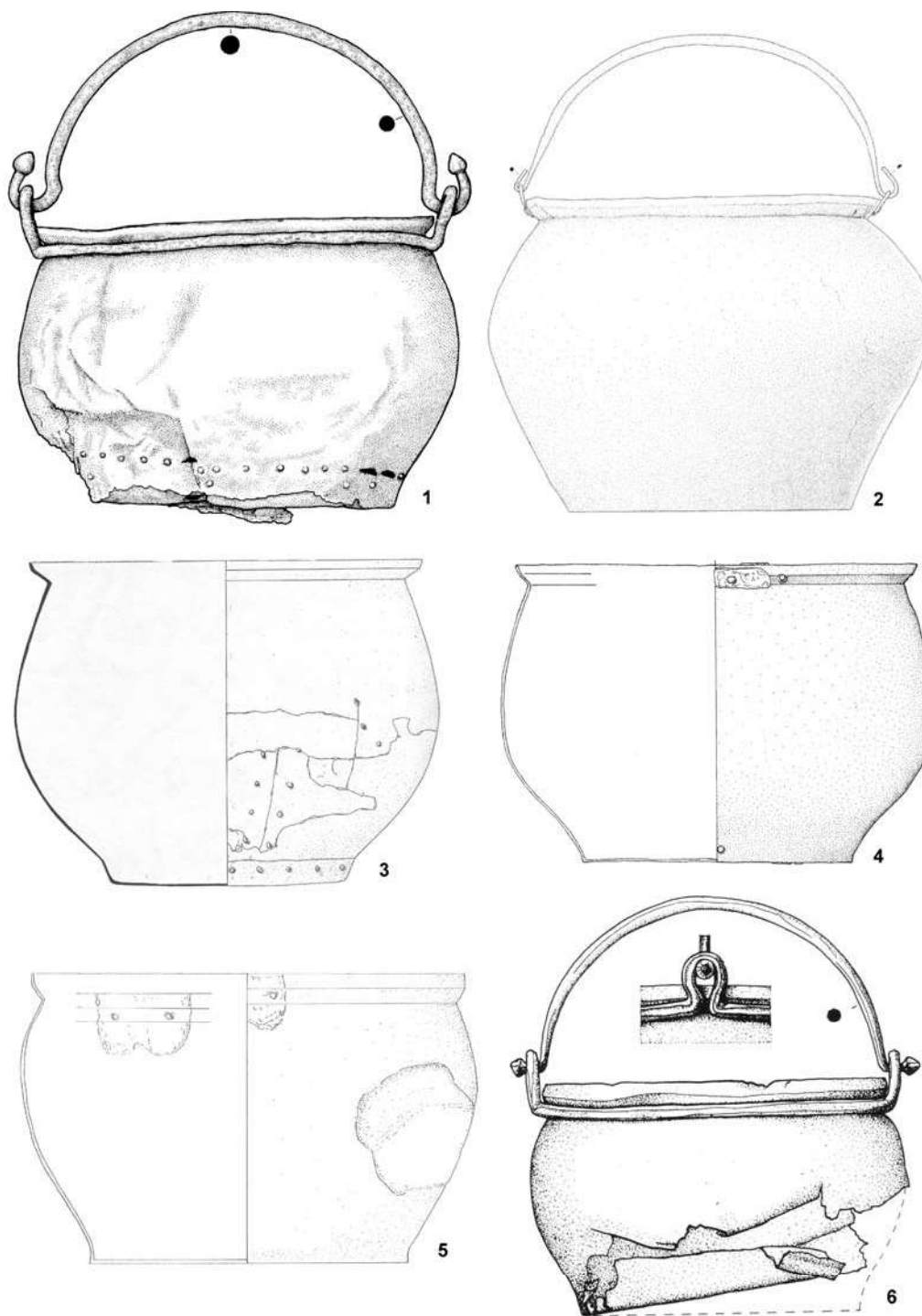


FIGURE 8: Bronze barrel-shaped bucket Eggers type 40-41/42 from Jazovice (1) and analogies: 2 - Eggers type 40 bucket from the inhumation grave 2 in Marwedel (after CRFB-D4: 154, Taf. 47: 2), 3 - Eggers type 40-41 bucket from the hoard of Blučina (feature I) (after Droberjar 1997), 4 - Eggers type 40-41 bucket from the hoard of Dunajská Lužná (after Bazovský 2010), 5 - Eggers type 41 bucket from a cremation grave in Napolisy (after Jílek 2009), 6 - Eggers type 40-41 bucket from a cremation grave in Stradow (after CRFB-D1: 93, Taf. 8:2), different scales.

40/41 (*Figure 8: 6*), is dated to stage C2 (CRFB-D1: 93, Taf. 8:2, VI-02-9/1.1, the bucket is classified here as E 43).

Buckets of type E 40 have already been used since the 1st century, more precisely since the Claudian period, and their popularity faded out at the end of the 3rd century. They can also sporadically occur in the first half of the 4th century (Kunow 1983: 19, Bienert 2007: 143–144). Chronological position of buckets E 41 is very similar, but the optimum of their occurrence falls within the 2nd and 3rd centuries (Kunow 1983: 19, Koster 1997: 66, Bienert 2007: 143). However, several authors theorize that these buckets already developed in the second half of the 1st century (Berke 1990: 22). The considerations about the places of production of these simple forms are mainly based on distribution maps. Older forms of barrel-shaped buckets are largely evidenced on sites under the Mount Vesuvius, so we can suppose their production in the Italian territory. Workshops are also predominantly sought in the Western and Central European provincial milieu (Künzl 1993: 238–240). The variability of shapes has been explained by a high number of local producers (Petrovsky 2006: 118).

Barrel-shaped buckets belong to kitchen utility vessels, which are known from the imperial territory both from civilian and from military contexts (Rehn 2000: 97–98, Schlegel 2000: 55–56, Bienert 2007). Buckets from Pompeii only rarely exhibit traces of fire, so we can suppose that they were mainly used for transport and short-time storage of water (Gorecki *et al.* 2017: 171, Abb. 1). We must also emphasize the popularity of buckets and other types of bronze vessels, e.g. saucepans, in the provincial frontier zone. Similar spectrum of vessels is also known from the barbarian territory. It seems that the barbarian communities preferred specific types of vessels (above all saucepans and buckets), which were also used by the Roman army (Gorecki 2011: 189–191, 193, Abb. 57–58, *id.* 2016: 204–205, Abb. 14–15). In the barbarian territory, barrel-shaped buckets count among the most frequent Roman metal vessels – we know them from settlements, hoards and mainly from graves, where they played the role of cinerary urns. Bronze vessels in general are rather connected with male burials (Kunow 1983: 108, 109, Abb. 22), but we know them also from female funerary equipment. E. Kreković (2008: 113–114, tab. 1), who analysed archaeological finds from the cemeteries in Kostolná pri Dunaji, Sládkovičovo and Abrahám, found out a relatively balanced proportion of bronze vessels in male and

female graves. Nevertheless, the number of bronze vessels in male burials was a little higher.

The second find from the site is a bronze handle with attachment (*Figure 9: 1–5*), which was found three metres away from the bucket. Functional determination in this case is not easy because we do not know the exact shape of the artefact, to which the attachment and the handle were applied. Similarly shaped handles with decorated baluster ends can be identified among components of Roman boxes (*Figure 9: 6*, see e.g. Mansel 1941: 147–148, Abb. 16, Gáspár 1986: 299–300, Taf. CCCIII:1588), but these handles lack the profiled attachment with loop.

The handle from Jazovice bears small punched notches on its edged surface. This type of decoration is typical of Roman products and we can observe it on handles of Roman boxes (Gáspár 1986: 235, Taf. CCCIII: 962). The *in situ* find (*Figure 9: 5*) has proved for certain that the handle was stuck through the loop of the attachment, so that we can suppose that both parts served for handling a vessel. But did the attachment and the handle form a single homogenous unit? This question cannot be reliably answered today, so that we can speculate that both objects might have been joined secondarily or that both artefacts originally belonged to different types of objects.

Regarding the dimensions of both artefacts and the inclination of the attachment and the loop, it might have been a) a small globular to ovoid vessel – aryballic balsamarium (*Figure 9: 8–9*, e.g. Nenova-Merdjanova 1995: 52–54, Fig. 2, Koster 1997: 82–84, Nenova, Angelov 1999: 53–54, Fig. 6, Braun 2001: 133, 144–155, Höpken, Liesen 2013: 385, 532, Abb. 116: E/1), or b) an unspecified wooden vessel, or c) a miniature bucket (*Figure 9: 7*, cf. CRFB-D2: 22, Taf. 2:2, XII-07-9/1.1). During the study of globular vessels, we did not find any parallel to the handle attachment. Moreover, the identification is complicated by the fragmentary preservation state of the loop. Handles of globular vessels, similarly as box handles, are decorated with baluster-shaped ends (*Figure 9: 9*, cf. Szabó 1984: Fig. 4, Greiner 2008: 85, Abb. 118–119, Humer *ed.* 2009: 322–323, Abb. 1217) but they are usually more massive than our specimen. Baluster terminals have also decorated some bucket handles, both those from the Late Republican/Early Imperial Period (Bolla, Boube, Guillaumet 1991: Fig. 6, 8) and those from the following periods (Mustăţă 2017: 143–144, Pl. XXXIX: 75).

How to date the two objects? Considering the lack of parallels from discrete assemblages and well-dated

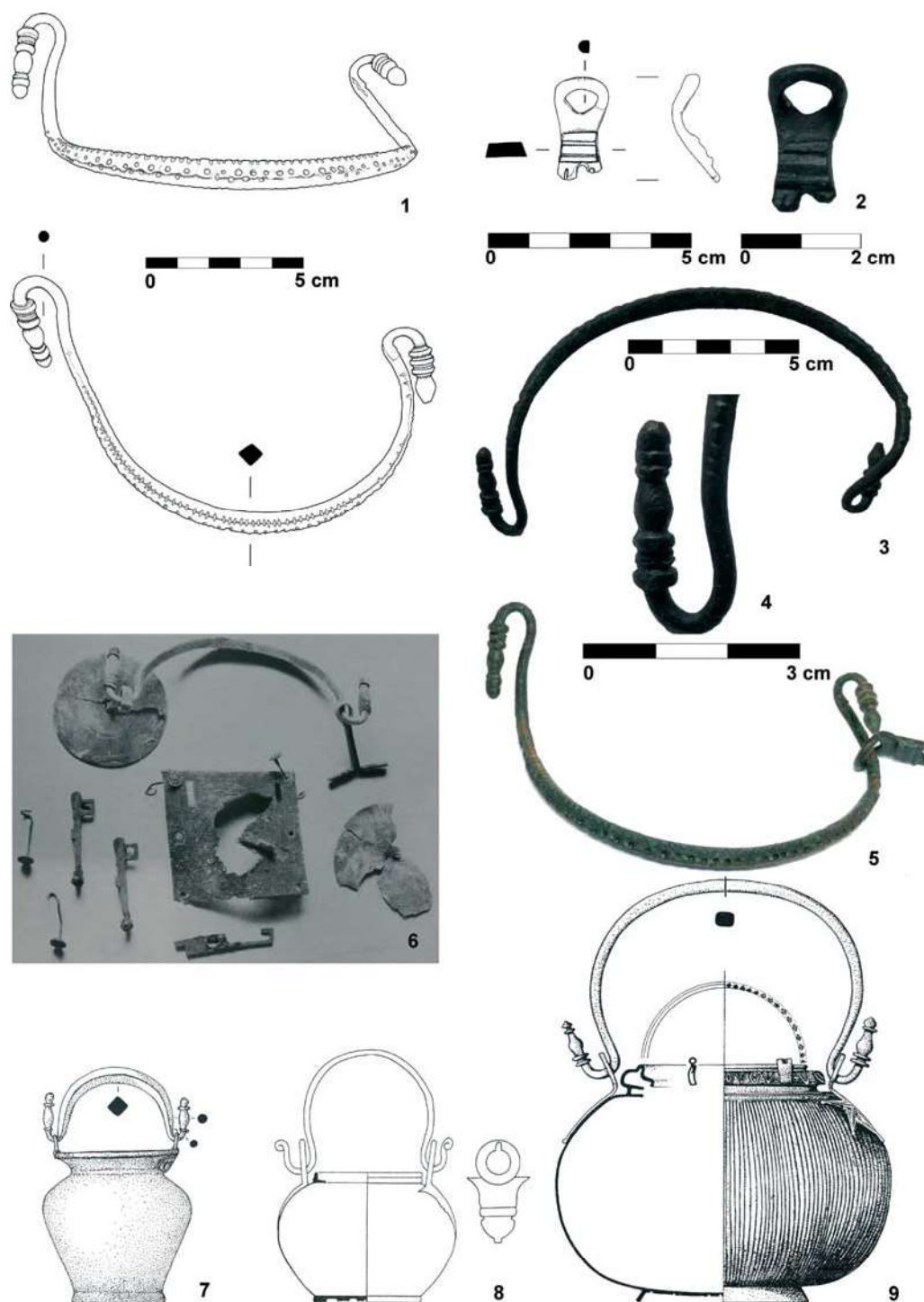


FIGURE 9: Jazovice, District of Znojmo, bronze handle with attachment (1-5) (drawing: A. Pukanczová, photo: A. Komendová and J. Jilek) and other handles and attachments of similar shape: 6 – bronze handle and box fitting from grave II in Lüleburgaz, Turkey (after Mansel 1941), 7 – miniature bucket from Großenhain (after CRFB-D2: 22, Taf. 2: 2), 8 – globular vessel – aryballic balsamarium from a cremation grave in Devnya/Marcianopolis (after Nenova, Angelov 1999), 9 – globular vessel – aryballic balsamarium from a sarcophagus from Dunapentele/Intercisa (after Szabó 1984), different scales.

contexts, the handle and the attachment can be preliminarily dated to the 1st to 3rd centuries. This chronological determination is mainly based on the dating of buckets and globular vessels.

PALYNOLOGICAL ANALYSIS - INFORMATION POSSIBILITIES OF THE FIND

The pollen analysis was made with a total of seven samples – four from the fill of the bucket (No. 1–4), one from the surface of the bucket (No. 5) and two from remnants of the residue (No. 6) and rivet cleaning (No.7) (Figure 10).

For the purpose of pollen analysis, ca. 1 cm³ of sediment was taken and then treated using the acetylation method. It was modified with hydrofluoric acid (HF) in order to remove silicates from the sediment (Faegri, Iversen 1989). Acids and bases were used to eliminate inorganic and organic fractions from the sediment to isolate the pollen grains. This enabled their identification under a light microscope with 400× magnification.

In samples 1–5 we counted and determined at least 300 pollen grains. Samples 6 and 7 contained a low concentration of pollen and we identified all

palynomorphs on three microscope glass slides. The detected palynomorphs were determined with the help of available key and pollen atlases (Punt, Clark 1984, Beug 2004,) and then divided into groups: AP (arboreal pollen) = pollen grains of woody plants and shrubs, NAP (non arboreal pollen) = pollen grains of herbs. Total sum of terrestrial pollen grains TS was calculated by adding AP and NAP together ($TS = AP + NAP$). At the same time, spores and non-pollen palynomorphs were also identified. Their percentage values were calculated based on the sum of all pollen grains counted in the sample. The pollen diagram was created in the Tilia v.1.7.16 programme (Grimm 2011). Afterwards we identified the flowering period of producers of individual pollen types in order to at least roughly determine the season in which the vessel was filled in.

The objectives of pollen analysis were:

- to reconstruct the environment around the vessel
- to identify the content of the vessel
- to determine the time when the vessel was filled in.

All analysed samples contained a pollen grains predominantly from woody plants (AP 80 %). The pollen spectrum is relatively similar in all samples. Differences

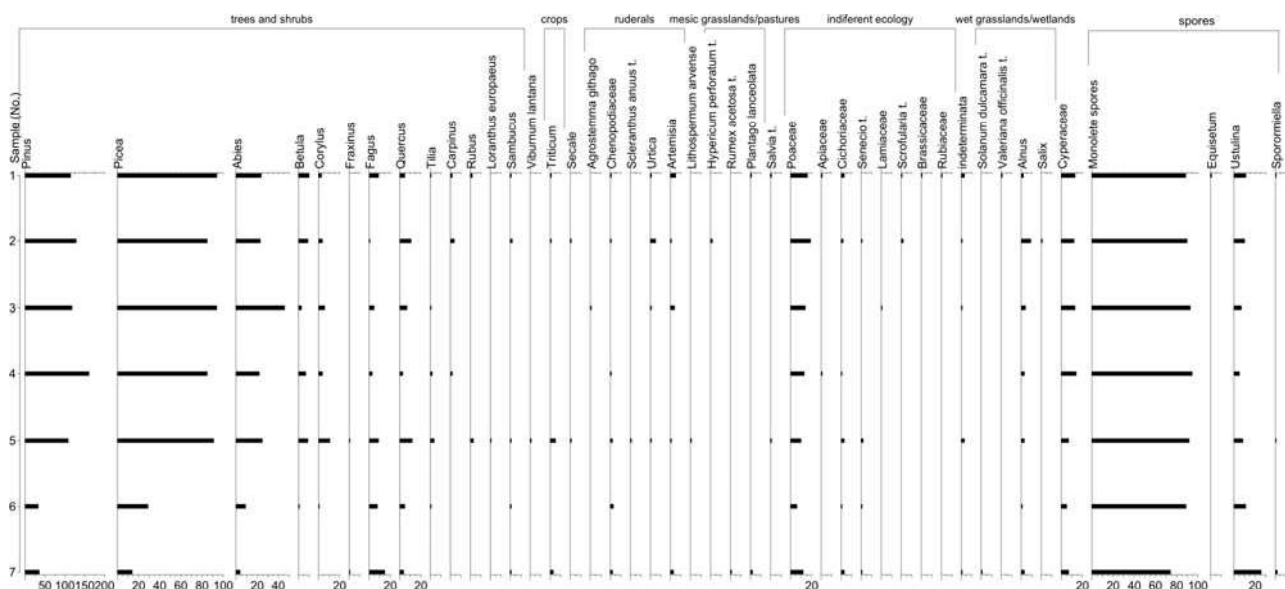


FIGURE 10: Percentage pollen diagram of identified palynomorphs (pollen grains and spores) from the infill of the Roman bucket. Marking of samples: 1 – fill; 2 – fill 1; 3 – fill 2; 4 – fill 4; 5 – surface of the bucket; 6 – residue; 7 – under the hoop (created by E. Jamrichová).

were observed in the amount of identified herbaceous pollen types and the amount of woody plants.

Woody plants were most frequently represented by pollen of pine (*Pinus*) and spruce (*Picea*). Among the other detected woody plants were beech (*Fagus*), fir (*Abies*), oak (*Quercus*), birch (*Betula*) and hazel (*Corylus*). Also identified were pollen of alder (*Alnus*) and ruderal shrubs of the genera *Sambucus* and *Rubus*.

Herbaceous pollen types are distinctly dominated by grasses (Poaceae), sedges (Cyperaceae), genus *Artemisia* and composite family Cichoriaceae. Their ecological specification is very manifold because these types comprise many species with different ecological requirements. Similar is the case with pollen types from the families Apiaceae, Brassicaceae, Silenaceae, Lamiaceae and genus *Senecio* t. However, their presence is a proof of the existence of woodless/open biotopes in the vicinity of the vessel. Also identified were pollen types which indicate the presence of wet grassland (*Valeriana officinalis* t., *Solanum dulcamara* t.) or mesic grassland, which may have been grazed (*Plantago lanceolata*, *Hypericum perforatum* t.).

The pollen of cereals, above all wheat (*Triticum*), were found in a large amount on the surface of the bucket (No. 5), in samples fill (No. 1) and fill 2 (No. 3) and in the residue under the rivet (No. 6). Rye (*Secale*) pollen occurs sporadically, the largest amount was present in the sample from the surface of the vessel (together with ruderal types – *Urtica* and *Sambucus*). Also identified were the pollen of *Agrostemma githago*, which is a common weed in grain fields, and pollen of ruderal stands: nettle (*Urtica*), elder (*Sambucus*), annual knawel (*Scleranthus annuus*), field gromwell (*Lithospermum arvense*) and goosefoots (Chenopodiaceae). Apart from pollen grains we also identified spores of coprophilous fungi (*Sporormiella*), occurring on the dung of large herbivores (both domestic and wild).

Reconstruction of the environment around the vessel

Basing ourselves on the results of pollen spectrum (Figure 10), we suppose that the environment around the vessel was mostly wooded, with occurrence of anthropogenically determined biotopes and wet/waterlogged biotopes in the vicinity of watercourses.

Although the pollen spectrum predominantly contains pollen of conifers, they did not necessarily dominate the surrounding forests. Pine tree is an excellent pollen producer and its pollen spreads over large distances (Sugita 2007). Spruce also is a big pollen producer and, when growing in the neighbourhood of

the analysed site, its pollen can overshadow the pollen fall of other species. On the other hand, spruce can grow in the vicinity of waterlogged and wet areas. If so, its presence in the pollen spectrum indicates its local occurrence as a dominant in the landscape (Hájková *et al.* 2019). Another distinctly represented species is fir (*Abies*), whose pollen does not spread easily, so that its occurrence indicates the presence of fir in the landscape. In the given period, fir was a common tree in lowlands (Kozáková *et al.* 2011).

When we compare the pollen spectrum from Jazovice with the near palynologically analysed sites (Dvůr Anšov, Olbramovice, Svobodová 1997 and Těšice – Kyjovice site, Petřík *et al.*, 2015), we can see that the pollen spectrum of woody plants is in general very similar. Dominant tree on these sites is pine, less frequent are spruce, fir, oak and hazel. Unlike our site, they represent an open landscape but regarding the fact that it is a record from a natural sediment (marsh, peat bog), the pollen spectrum reflects a more regional picture of the landscape. Similar picture is also visible in the pollen diagram from the former Lake Vracov (Kuneš *et al.* 2015), where the landscape in that period (turn of the eras) was distinctly deforested (drop in the curve of woody plants *Pinus* and *Picea*). It is possible that the landscape was deforested at regional level, as indicated by the AP:NAP ratio in all profiles from South Moravia (Svobodová 1997, Kuneš *et al.* 2015, Petřík *et al.* 2015). Wood was used as construction material and fuel, which together with a population growth resulted in deforestation of large areas (Poschold 2015). Pollen analysis of flood sediments of the river Dyje at Pohansko (Petřík *et al.* 2019) points to a wooded landscape dominated by pine, spruce, fir and beech. However, these sediments were influenced by the sedimentation environment of the river Dyje, so that their reconstruction is limited to local level. The pollen analysis from sediments outside of the floodplain of river Dyje revealed landscape covered by mixed oak-lime-hornbeam forest with higher amount of pine during the pre-Great Moravian period (Doláková *et al.* 2010). But, at the same time, the pollen spectrum from flood sediments reminds most of our findings. The pollen spectrum from the bucket from Jazovice has a distinctly local character. The vessel was probably filled nearby a forest, but the presence of pollen from herbs with various different ecological requirements also indicates the presence of woodless (dry but also wet) and anthropogenically influenced biotopes – fields, grazed grassland, waterlogged biotopes. It is possible that the

landscape in the surroundings of the vessel was variable and to a large extent anthropogenically used.

Anthropogenic indicators point to the presence of wheat fields, although barbarian fields were mostly cultivated with barley (*Hordeum*), less frequently with wheat (*Triticum dicoccum*, *T. aestivum/turgidum*), millet (*Panicum miliaceum*), rye (*Secale*) and oat (*Avena*) (Hlavatá, Varsík 2019, Hajnalová, Varsík 2010, Dreslerová, Kočár 2013). Our record contained only pollen grains of wheat (*Triticum*) and two pollen grains of rye (*Secale*).

Besides cereal pollen we also identified weeds like *Agrostemma githago*, *Lithospermum arvense* and *Scleranthus annuus*, which are linked to grain fields (Hajnalová, Varsík 2010). Among herbaceous pollen types which might point to human activities are also secondary anthropogenic indicators (Behre 1981, Kozáková *et al.* 2015): *Urtica*, *Sambucus*, *Chenopodiaceae*, *Chenopodium album* (*Chenopodiaceae*) and *Sambucus ebulus* are ruderal species linked to fields (Hajnalová, Varsík 2010), but because the pollen analysis cannot clearly determine these species, they fall within the group of ruderal indicators. The detected pollen of *Plantago lanceolata*, *Artemisia*, *Rumex acetosa* *t.* and *Hypericum perforatum* *t.* are considered indicators of pasture (Behre 1981). Wet grassland (*Solanum dulcamara* and *Valeriana officinalis*) may have been grazed, too.

The presence of wet biotopes or watercourses is indicated by the occurrence of pollen of sedges (*Cyperaceae*), alder (*Alnus*) and willow (*Salix*).

Content of the vessel

Judging from archaeological sources, the vessel may have been used for transport of water. Pollen analysis neither confirmed this assumption nor identified any other purpose which the vessel might have served. Since the pollen spectrum is very variable, it is well possible that it reflects the surrounding landscape rather than the content of the vessel. The presence of pollen of cereals and field weeds might indicate that the vessel was used to transport grain, but the detected pollen of woody plants and wild plant species disproves this hypothesis. If the vessel was indeed used to transport some specific commodity, the pollen analysis is not able to prove that.

The time when the vessel was filled in

Basing ourselves on the identified pollen types, we have identified possible pollen producers and the flowering period of individual species which may have grown in the given area (<https://pladias.cz>).

The flowering phenology of individual pollen producers comprises the interval from early spring to late autumn (*Table 1*). From this follows the inability to determine in which time period the vessel was filled in. It is well possible that it has been a gradual process.

DISCUSSION

The untypical location of the two finds outside the known barbarian settlement territory in the Roman Period (*Figure 2*) brings us to hypothesize and to search for interpretations. However, before we outline individual scenarios, we must analyse in detail the circumstances of finding and a wider spatial context.

First of all, we need to mention that from the cadastral district of Jazovice in the District of Znojmo we do not know any Roman Period archaeological contexts and finds. Similar is the case with the neighbouring cadastral districts (*Figure 1*). We know of only two other objects in the closest neighbourhood, dating from the first centuries of common era. The nearest evidence of human presence from the given period is a coin of Emperor Antoninus Pius, minted in 151–152. The Denarius was found 1935 in the cadastral district of the village Stálky (*Figure 1: 8*) at the border between Moravia and Austria (Červinka 1946: 173) about seven kilometres southwest of the site in question. Another Roman Period relic is a silver coin of Emperor Gordian III, minted in 238¹ and found 2015 in Onšov, eight kilometres away as the crow flies (*Figure 1: 6*). Several sites are located in the cadastral district of the village Bližkovice (*Figure 1: 2*), which is situated about 11 km northeast of our find. For example, a cremation grave of a barbarian warrior with sword, axe and shield boss from the 2nd half of the 2nd century was disturbed on the plot of A. Dvořák at the end of the 1890s (Červinka 1936: 113, Tejral 1971: 74, Podborský, Vildomec 1972: 150). The nearest settlement in the north-western direction is located in the cadastral district of the village Police (*Figure 1: 4*), less than 9.5 km away. L. Meduna discovered Roman Period settlements in three locations: U dubu, Pastviště² and Belka. One more settlement was detected west of Police, in the cadastral district of the neighbouring village Bačkovice (*Figure 1: 3*). Another settlement site was detected near Mladoňovice (*Figure 1: 1*, Košťurík 1986: 138), which is situated less than 12 km north of the bucket find. The situation in this part of Southwest Moravia is similar to the adjacent Austrian territory (Stuppner 2016: 855, Abb. 1). One of the nearest Roman Period sites is

TABLE 1: Flowering phenology of producers of identified pollen types (created by E. Jamrichová).

Pollen types	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Trees and shrubs												
Abies				x	x							
Alnus		x	x	x								
Betula			x	x	x							
Carpinus				x	x							
Corylus		x	x	x								
Fagus				x	x							
Fraxinus				x	x							
Loranthus europaeus					x	x						
Picea					x	x						
Pinus					x	x						
Quercus				x	x							
Rubus						x	x					
Salix			x	x								
Sambucus						x	x					
Tilia					x	x	x					
Viburnum lantana				x	x							
herbs												
Agrostemma githago						x	x	x				
Apiaceae				x	x	x	x	x	x	x		
Artemisia							x	x	x	x		
Brassicaceae				x	x	x	x	x	x	x		
Cichoriaceae			x	x	x	x	x	x	x	x		
Cyperaceae						x	x	x				
Hypericum perforatum t.					x	x	x	x	x			
Chenopodiaceae						x	x	x	x			
Lamiaceae			x	x	x	x	x	x	x			
Lithospermum arvense					x	x	x	x				
Plantago lanceolata					x	x	x	x	x	x		
Poaceae					x	x	x	x	x			
Rubiaceae					x	x	x	x	x			
Rumex acetosa t.				x	x	x	x	x	x			
Salvia t.					x	x	x	x				
Scleranthus annuus t.					x	x	x	x				
Scrofularia t.				x	x	x	x	x				
Secale						x	x					
Senecio t.					x	x	x	x	x	x		
Solanum dulcamara t.						x	x	x	x			
Triticum						x	x					
Urtica			x	x	x	x	x	x	x	x		
Valeriana officinalis t.						x	x	x				

Primmersdorf (*Figure 1: 7*) from the end of the 3rd century, located 13.5 km to the southwest. One crossbow brooch with onion-shaped knobs was found on the shore of the river Dyje (Pollak 1980: 102). The settlement on the brook bank near the village Prutzendorf lies already 17.5 km away. Archaeological finds from this site comprised besides common pottery from the Early and Late Roman Periods also a knee brooch and several coins (Pollak 1980: 102, Taf. 94).

Interesting facts arose from the pollen analysis, whose results showed that the landscape probably was not unpopulated. We can thus suppose that the present state of settlement might correspond to archaeological detections. The pollen spectrum from the vessel is similar to the pollen spectrum from natural sediments on the sites of Dvůr Anšov and Olbramovice from the turn of the eras. The only difference is that the vessel contained more pollen of woody plants, probably due to proximity of a forest, and the information value of the pollen record is rather local. We can exclude a contamination with distinctly younger sediments (e.g. medieval), where cereal pollen would be probably accompanied by typical medieval segetal species, such as *Centaurea cyanus* or the cultivated buckwheat (*Fagopyrum*).

The find of a Roman barrel-shaped bucket and a bronze handle outside the contemporaneous settlement territory (the conclusion is based on the present state of archaeological knowledge) is interesting in several regards. First of all, it is necessary to emphasize the spatial proximity of both objects, which were located 3 m from one another. Another aspect is the provenance of both artefacts – they are Roman products. The bucket is a common utility/kitchen vessel but the morphology of the other object is difficult to specify: it is most probably a part of a globular balsamarium/tiny bucket. The barrel-shaped bucket was preserved in its entirety, whereas from the other vessel only a handle with attachment was found. Barrel-shaped buckets or their fragments are known from settlements and partly also from cemeteries of the Roman Period. The fragment of the other bronze vessel is rather rare in the barbarian territory (on the finds of bronze balsamarii in Moravia and in Lower Austria north of the Danube, see Jílek 2012: 82–85, tiny miniature buckets are not known from this region).

The fundamental piece of knowledge which opens a way to interpretation is the topography of the site (see the chapter on location in the landscape). The location of both artefacts in a narrow flatland area about 200 m wide (*Figure 2*) between the slopes of a spur does not

represent a typical location of barbarian settlements and cemeteries in the studied region.

INTERPRETATION OF THE ASSEMBLAGE

From the above text follows that the localisation of the assemblage is atypical and the objects probably represent isolated finds in the landscape. So, how to explain the whole situation? The first theory is a practical interpretation of the objects as lost items. However, the bucket is large and it is hard to imagine that it would be lost negligently. The situation with the handle and attachment is less clear because they are small. But why would the two objects be lost by chance on a spur above the river Dyje? And why so close to one another? These questions cannot be reliably answered with the "story of an accidental loss".

Another popular practical scenario is the hoarding of valuables/home equipment in case of danger. Nevertheless, in our situation we know nothing about any settlement in the surroundings (although palynological analysis does not exclude it), to which this activity would be linked. The find context does not yield any supports to classify the assemblage as equipment, which was buried in the ground for fear of danger (on limitations of this interpretation in the case of the Bronze Age, see Fontijn 2002: 13–15). And further, why would anyone choose a place so far away from a settlement and why particularly on a spur above the river?

The explanation with regard to ritual behaviour offers more space for considerations. The described assemblage is situated on the flat top of a spur, which is surrounded by the river Dyje on three sides (*Figure 2*). The slopes of the spur fall steeply down to the river or to the Vranov Reservoir, with no cliffs and distinct rocks on the site. Two insignificant watercourses flow into the river from the southwest and southeast. The terrain is now altered by the construction of the dam, but it is well possible that the valley of the river Dyje was steeper in the past. When we compare the findspot with the localisation of hoards and assemblages of artefacts from the Roman Period in the Czech Republic, we do not find any close parallels (cf. Korený *et al.* 2021: Abb. 1, 16, 30, Vich, Jílek *et al.* 2020: obr. 2). As a faintly similar example within the Central European barbarian territory we can name the find of horse gear from the site of Borinka in Southwest Slovakia, where a bridle was found on the plateau of a distinct terrain projection rising above two brooks (Bazovský *et al.*

2020: 351, Abb. 1). More similar landscape features were identified in locations of several Bronze Age hoards, in particular on spurs and projections which are spatially delimited on three sides and are usually accessible only from one side (Vachta 2016: 156). Even though hoards were already relatively common in the Early Bronze Age hilltop settlements, we also know situations where a spur can represent a non-residential non-pottery site, which was chosen purely for the deposition of hoards due to its geomorphological properties (Salaš 2015: 409). From the Urnfield Period (Late-Final Bronze Age) we know several examples of hoards situated in hill forts, where the local settlement is dated to older phases than the hoarded objects (Chvojka *et al.* 2017: 205, Salaš 2005: 195–197, id. 2018: 142, obr. 32). The localisation of hoards nearby watercourses in the Middle through Late Bronze Age is confirmed from several English regions and from Sweden (Bradley 2017: 27). In Bohemia and Moravia, we also know examples of irreversible hoards deposited on the shores or directly in the beds of watercourses or in small springs and marshes (Chvojka *et al.* 2017: 205, Salaš 2005: 198–201). The site of Jazovice is interesting not only with its location on a spur above a meander of the river Dyje, but also due to proximity of two insignificant watercourses in the southwest and southeast.³

The find from Jazovice reminds of Bronze Age contexts mainly due to its localisation. The absence of settlement and funerary activities on the site (according to the present state of knowledge) would support a ritual interpretation associated with offerings. The authors are fully aware of the interpretation fragility of this assumption. Our consideration might be verified by other findings, not only from the Roman Period.

Another issue is the time of deposition of both artefacts. On the basis of present knowledge we can neither prove nor disprove their mutual relationship. In the case of the handle and attachment we lack any direct chronological support (see above). Therefore we must take into consideration both possibilities, i.e. contemporaneity or a certain time interval between depositions of the two objects. The fact that the bucket is complete while the other vessel is only preserved in the form of a handle with attachment is in no way surprising. If we would accept the theory of ritual significance of both finds, then the handle with attachment may represent the *pars pro toto* custom – offering one part of an object instead of a whole specimen (in more detail for the Bronze Age, see Bradley 2017: 134).

CONCLUSIONS

The bronze barrel-shaped bucket and the handle with attachment represent the first Roman Period finds in the cadastral district of the village Jazovice and its closest neighbourhood. The bucket is dated to the interval from phase B1c to the end of stage C2, the handle with attachment are dated so far only generally to the Early through Late Roman Period. The interpretation of the finds still remains not completely solved, among other things also due to devalued find context. The finders may have e.g. speculatively destroyed the evidence of cremation when they dug around the bucket. However, this variant seems to be unlikely with regard to barbarian funerary customs in the Roman Period. One of possible interpretations is a votive irreversible deposition of the described finds.

Very promising for the future are the results of palynological analysis. They pointed to a possible – still unidentified – settlement (from the Roman Period?), which is mainly indicated by the pollen spectrum detected in the infill of the bucket. However, this assumption must still be verified by further intensive research work in the region.

The example of Jazovice might thus indicate a sensed continuity of ritual beliefs from the Bronze Age to the Roman Period. Nevertheless, this conclusion is presently too brave and must be further verified.

FOOTNOTES

1. Roman Empire, Gordian III (238–244), Rome Mint, silver Antoninianus n. y. (minted June–December 238), Obverse: bust of Gordian III, radiate, right, inscription IMP IMP CAES M ANT GORDIANVS AVG, Reverse: Pax, standing front, head left, holding branch in extended right hand and sceptre in left hand, inscription PAX AVGVSTI, silver, diameter 21.6 mm, weight 4.47 g. Stored in the numismatic sub-collection of the South Moravian Museum in Znojmo.
2. Settlement sites Pastviště and U dubu most probably originally belonged to the same village.
3. However, we cannot exclude their regulation in later periods.

REFERENCES

- BAZOVSKÝ I., 2010: Depot z doby rímskej z Dunajskej Lužnej. In: J. Beljak, G. Březinová, V. Varsík (Eds.): *Archeológia barbarov 2009*. Archaeologica Slovaca Monographiae. Communicationes X. Pp. 13–32. AÚ SAV Nitra, Nitra.

- BAZOVSKÝ I., MAJEROVÁ H., SZABÓOVÁ D., ARNDT D., 2020: Zaumzeug mit Zügelketten aus Borinka, Kreis Malacky (SW Slowakei). *Zborník Slovenského Národného Múzea CXIV, Archeológia* 30: 251–272.
- BEHRE K. E., 1981: The interpretation of anthropogenic indicators in pollen diagrams. *Pollen et Spores* 23: 225–245.
- BERKE S., 1990: *Römische Bronzegefäße und Terra Sigillata in der Germania Libera*. Boreas-Beiheft 7. Archäologisches Seminar der Universität Münster, Münster.
- BEUG H. J., 2004: *Leitfaden der Pollenbestimmung für Mitteleuropa und angrenzende Gebiete*. Verlag Dr. Friedrich Pfeil, München.
- BIENERT B., 2007: *Die römischen Bronzegefäße im Rheinischen Landesmuseum Trier*. Trierer Zeitschrift Beiheft 31. Rheinisches Landesmuseum Trier, Trier.
- BOLLA M., BOUBE CH., GUILLAUMET J. P., 1991: 2 Les sites. In: M. Feugère, C. Rolley (Eds.): *La Vaiselle tardorépublicaine*. Actes de la table-ronde CNRS organisée à Lattes du 26 au 28 avril 1990 par l'UPR 290 (Lattes) et le GDR 125 (Dijon). Publications du CRTGR, 13. Pp. 10–22. Université de Bourgogne, Centre de recherches sur les techniques greco-romaines, Dijon.
- BRAUN C., 2001: *Römische Bronzefasern mit Reliefdekoration*. BAR Internat. Ser. 917. Archaeopress, Hadrian Books Ltd, Oxford.
- BRADLEY R., 2017: *A Geography of Offerings: Deposits of Valuables in the Landscapes of Ancient Europe*. Oxbow Insights in Archaeology. Oxbow Books, Oxford-Philadelphia.
- CRFB, D1 – LASER R., VOSS, H. U., (Bearb.) 1994: *Corpus der römischen Funde im europäischen Barbaricum*. Deutschland Bd. 1. Bundesländer Brandenburg und Berlin. RGK DAI, Dr. Rudolf Habelt GmbH, Bonn.
- CRFB, D2 – LASER R., SCHULTZE E., (Bearb.) 1995: *Corpus der römischen Funde im europäischen Barbaricum*. Deutschland Bd. 2. Freistaat Sachsen. RGK DAI, Dr. Rudolf Habelt GmbH, Bonn.
- CRFB, D3 – VOSS H. U., ERDRICH, M., (Bearb.): *Corpus der römischen Funde im europäischen Barbaricum*. Deutschland Bd. 3. Bundesland Mecklenburg-Vorpommern. RGK DAI, Dr. Rudolf Habelt GmbH, Bonn.
- CRFB, D4 – ERDRICH M., (Bearb.) 2002: *Corpus der römischen Funde im europäischen Barbaricum*. Deutschland Bd. 4. Hansestadt Bremen und Bundesland Niedersachsen. RGK DAI, Dr. Rudolf Habelt GmbH, Bonn.
- ČERVINKA I. L., 1936: Germáni na Moravě (Archeologický přehled k otázce o původu deformovaných lebek ve střední Evropě). *Anthropologie* XIV, 2–4: 107–146.
- ČERVINKA I. L., 1946: Římské mince z nálezů na Moravě. *Časopis Vlasteneckého spolku musejního v Olomouci* 55,2: 142–181.
- DOLÁKOVÁ N., ROZSKOVÁ A., PŘICHYSTAL A., 2010: Palynology and natural environment in the Pannonian to Holocene sediments of the Early Medieval centre Pohansko near Břeclav (Czech Republic). *Journal of Archaeological Science* 37: 2538–2550. DOI: 10.1016/j.jas.2010.05.014
- DRESLEROVÁ D., KOČÁR P., 2013: Trends in cereal cultivation in the Czech Republic from the Neolithic to the Migration period (5500 B. C.–A. D. 580). *Vegetation History and Archaeobotany* 22: 257–268. DOI: 10.1007/s00334-012-0377-8
- DROBERJAR E., 1994: Der Niederschlag der Markomannenkriege auf den kaiserzeitlichen Siedlungen in Südmähren und die Frage der Übergangsstufe B2/C1. In: H. Friesinger, J. Tejral, A. Stuppner (Eds.): *Markomannenkriege: Ursachen und Wirkungen*. Spisy Archeologického ústavu AV ČR Brno sv. 1. Pp. 179–201. AÚ AVČR Brno, Brno.
- DROBERJAR E., 1997: *Studien zu den germanischen Siedlungen der älteren römischen Kaiserzeit in Mähren*. Fontes Archaeologici Pragenses 21. Národní Muzeum, Praha.
- ECKL P., 2019: Nález mincí z Jazovic (Starý Petřín) v kontextu numizmatické sbírky Jihomoravského muzea ve Znojmě. In: K. Maráz, (Ed.): *Mikulovské kolejni kabinetů pomocných věd historických II*. Pp. 68–85. PhDr. Ivo Sperát, Brno.
- ECKL P., HETFLAIŠ R., 2018: Starý Petřín (k. ú. Jazovice, okr. Znojmo). *Přehled výzkumů* 59, 2: 241.
- EGGERS H. J., 1951: *Der römische Import im freien Germanien*. Hamburgisches Museum für Völkerkunde und Vorgeschichte, Hamburg.
- FAEGRI K., IVERSEN J., 1989: *Textbook of pollen analysis*. Ed. 4. John Wiley, Chichester.
- FONTIJN D. R., 2002: *Sacrificial Landscapes. Cultural Biographies of Persons, Objects and "Natural" Places in the Bronze Age of the Southern Netherlands, C. 2300–600 BC*. *Analecta Praehistorica Leidensia* 33/34. University of Leiden, Leiden.
- GÁSPÁR D., 1986: *Römische Kästchen aus Pannonien I, II*. Anteus. Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften 15. AI UAW, Budapest.
- GORECKI J., 2011: 15. Die römischen Metallgefäße. In: Der frühvölkerwanderungszeitliche Hortfund aus Ljubiana, Kreis Kościerzyna (Pommern). *Bericht Der Römisch-Germanischen Kommission* Bd. 90/2009: 154–194.
- GORECKI J., 2016: Römische Metallgefäßspektren aus ausgewählten militärischen Fundkomplexen diesseits und jenseits von Rhein und Donau von der Zeit der späten Republik bis zum Beginn des 2. Jahrhunderts n. Ch. In: H. U. Voss, N. M. Scheessel (Eds.): *Archäologie zwischen Römern und Barbaren. Zur Datierung und Verbreitung römischer Metallarbeiten des 2. und 3. Jahrhunderts n. Ch. im Reich und im Barbaricum - ausgewählte Beispiele (Gefäße, Fibeln, Bestandteile militärischer Ausrüstung, Kleingerät, Münzen)*. Teil I. Kolloquien zur Vor- und Frühgeschichte Bd. 22/1. Pp. 177–214. DAI RGK, Dr. Rudolf Habelt GmbH, Frankfurt a. M., Bonn.
- GORECKI J., KLEIN S., BOLLINGBERG H., BREY G., PEARSON G., 2017: Metallkundliche und analytische Untersuchungen an den in Deposito Archeologico der Soprintendenza Archeologica di Pompei aufbewahrten Metallgefäßen. *Bericht Der Römisch-Germanischen Kommission* Bd. 95/2014: 161–336.
- GREINER B. A., 2008: *Rainau-Buch II. Der römische Kastellvicus von Rainau-Buch (Ostalbkreis). Die archäologischen Ausgrabungen von 1976 bis 1979*. Bd. 1 – Text. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg Bd. 106.

- Landesamt für Denkmalpflege, Konrad Theiss Verlag GmbH, Stuttgart.
- GRIMME C., 2011: *Tilia software v.1.7.16*. Illinois State Museum, Springfield IL.
- HÁJKOVÁ P., JAMRICHOVÁ E., WIEZIK M., PETERKA T., PETR L., SINGH P., MÁLIŠ F., FAJMONOVÁ Z., HÁJEK M., 2019: Spruce representation in zonal woodlands may be overestimated when using pollen spectra from peatlands. *Review of Palaeobotany and Palynology* 271: 104. DOI: 10.1016/j.revpalbo.2019.104104
- HAJNALOVÁ M., VARSÍK V., 2010: Kvádské roľníctvo na Slovensku z pohľadu archeológie a archeobotaniky. In: J. Beljak, G. Březinová, Varsík V. (Eds.): *Archeológia Barbarov 2009*. Archaeologica Slovaca Monographiae, Communicationes, Tomus X. Pp. 181–224. AÚ SAV Nitra, Nitra.
- HLAVATÁ J., VARSÍK V., 2019: Sídliisko autochtónnej panónskej populácie v Rusovciach. Prvé výsledky archeobotanických analýz. *Studia Historica Nitriensis* 23: 427–448. DOI 10.17846/SHN.2019.23.S.427–448
- HÖPKEN C., LIESEN B., 2013: Römische Gräber im Kölner Süden II, Von der Nekropole um St. Severin bis zum Zugweg. *Kölner Jahrbuch* 46: 369–571.
- HRNČIARIK E., 2013: *Römisches Kulturgut in der Slowakei. Herstellung, Funktion, und Export römischer Manufakturzeugnisse aus den Provinzen in der Slowakei*. Universitätsforschungen zur Prähistorischen Archäologie 222, Truni, Dr. Rudolf Habelt GmbH, Bonn.
- HUMER F., (Ed.) 2009: *Von Kaisern und Bürgern. Antike Kostbarkeiten aus Carnuntum*. Amt der NÖ Landesregierung, Wien.
- CHVOJKA O., JIRÁŇ L., METLIČKA M., 2017: *Nové české depoty doby bronzové. Hromadné nálezy kovových předmětů učiněné do roku 2013*. Díl 1. Episteme nakladatelství JČU, České Budějovice, Praha, Plzeň.
- JÍLEK J., 2009: Doklady kontaktů mezi polabskými Germány, przeworskou a wielbarskou kulturou ve východních Čechách. In: M. Karwowski, E. Droberjar (Eds.): *Archeologia Barbarzyńców 2008: powiązania i kontakty w świecie barbarzyńskim*. Collectio Archaeologica Ressoiviensis XIII, Pp. 249–283. Fundacja Rzeszowskiego Ośrodka Archeologicznego, Instytut Archeologii Uniwersytetu Rzeszowskiego, Rzeszów.
- JÍLEK J., 2012: *Bronzové nádoby z doby římské z Moravy a naddunajské části Dolního Rakouska. Roman Period Bronze Vessels in Moravia and in Lower Austria North of the Danube*. Univerzita Pardubice, Pardubice.
- JÍLEK J., 2016a: Roman Metal Vessels in the Milieu of Germanic Elites in the Middle Danube Region. *Studia Hercynia* XIX, 1–2: 169–188.
- JÍLEK J., 2016b: Bronzegefäße aus der Römischen Kaiserzeit in Mähren: kritische Revision und chronologische Übersicht – Forschungsstand bis zum Jahr 2009. In: H. U. Voss, N. M. Scheessel (Eds.): *Archäologie zwischen Römern und Barbaren. Zur Datierung und Verbreitung römischer Metallarbeiten des 2. und 3. Jahrhunderts n. Ch. im Reich und im Barbaricum – ausgewählte Beispiele (Gefäße, Fibeln, Bestandteile militärischer Ausrüstung, Kleingerät, Münzen)*. Teil I. Kolloquien zur Vor- und Frühgeschichte Bd. 22/1. Pp. 399–418. DAI RGK, Dr. Rudolf Habelt GmbH, Frankfurt a. M., Bonn.
- KORENÝ R., JÁNSKÁ P., HOŠEK J., JÍLEK J., 2021: Metallhorte der jüngeren und späten römischen Kaiserzeit in Böhmen. *Študijné Zvesti AÚ SAV* 68,2: 283–342. DOI: <https://doi.org/10.31577/szasav.2021.68.13>
- KOSTER A., 1997: *The Bronze Vessels 2*. Description of the Collections in the Provinciaal Museum G. M. Kam at Nijmegen XIII. Acquisitions 1954–1996 (including vessels of pewter and iron). Provinciaal Museum G. M. Kam at Nijmegen, Nijmegen.
- KOŠTUŘÍK P., 1986: Doba římská. In: P. Košťurík, J. Kovárník, Z. Měřinský, M. Oliva: *Pravěk Třebíčska*. Pp. 135–140. Muzejní a vlastivědná společnost v Brně, Brno.
- KOUDELKA J., 1904–1905: Archeologický nálezy u Nov. Bydžova. *Památky archeologické* XXI: 137–140.
- KOZÁKOVÁ R., ŠAMONIL P., KUNEŠ P., NOVÁ J., KOČÁR P., KOČÁROVÁ R. 2011: Contrasting local and regional Holocene histories of *Abies alba* in the Czech Republic in relation to human impact: Evidence from forestry, pollen and anthracological data. *The Holocene* 21,3: 431–444. DOI: <https://doi.org/10.1177/0959683610385721>
- KOZÁKOVÁ R., POKORNÝ P., PEŠA V., DANIELISOVÁ A., KAPUSTKA K., SVITAVSKÁ-SVOBODOVÁ H., 2015: Prehistoric human impact in the mountains of Bohemia. Do pollen and archaeological data support the traditional scenario of a prehistoric "wilderness"? *Review of Paleobotany and Palynology* 220: 29–43. DOI: <https://doi.org/10.1016/j.revpalbo.2015.04.008>
- KREKOVIC E., 2008: Vín, ženy a bronzové nádoby. *Acta Arch. Opaviensia* 3: 113–116.
- KUNEŠ P., SVOBODOVÁ-SVITAVSKÁ H., KOLÁŘ J., HAJNALOVÁ M., ABRAHAM V., MACEK M., TKÁČ P., SZABÓ P., 2015: The origin of grasslands in the temperate forest zone of east-central Europe: long-term legacy of climate and human impact. *Quaternary Science Reviews* 116: 15–27. DOI: 10.1016/j.quascirev.2015.03.014
- KUNOW J., 1983: *Der römische Import in der Germania Libera bis zu den Markomannenkriegen*. Studien zu Bronze- und Glasgefäßen. Karl Wachholtz Verlag Neumünster, Neumünster.
- KÜNZL E., 1993: *Die Alamannenbeute aus dem Rhein bei Neupotz. Plünderungsgut aus dem römischen Gallien*. Monographien RGZM Bd. 34/1–4. RGZM, Mainz.
- MANSEL A., 1941: Grabhügelforschung im östlichen Thracien. *Archäologischer Anzeiger, Beiblatt zum Jahrbuch des DAI* 1941: 119–187.
- MUSTAȚĂ S., 2017: *The Roman Metal Vessels from Dacia Porolissensis*. Patrimonium Archaeologicum Transylvanicum vol. 12. Mega Publishing House, Cluj-Napoca.
- MUTZ A., 1972: *Die Kunst des Metalledens bei den Römern. Interpretationen antiker Arbeitsverfahren auf Grund von Werkspuren*. Birkhäuser Verlag, Basel, Stuttgart.
- NENOVA-MERDJANOVA R., 1995: Typology and Chronology of the Bronze Vessels in the Palaestra and in the Baths from Roman Provinces Thrace and Moesia. In: S. T. A. M. Mols,

- A. M. Gerhartl-Witteveen, H. Kars (Eds.): *Acta of the 12th International Congress on Ancient Bronzes Nijmegen 1992*. Nederlandse Archeologische Rapporten 18. Pp. 51–58. Provinciaal Museum G. M. Kam at Nijmegen, Nijmegen.
- NENOVA R., ANGELOV A., 1999: A rich Thracian's Grave from Marcianopolis. *Archaeologia Bulgarica* III, 2: 49–59.
- PAVELKOVÁ T., 2020: Přírodní prostředí. In: D. Rožnovský: *Jazovice – římské vědro*. NZ č. j. 12-2017 uložena v archivu archeologie JMM ve Znojme. Pp. 3–4, Znojmo.
- PETROVSZKY R., 2006: Das Küchengeschirr. In: R. Petrovszky, B. Hanemann, M. Kolb (Eds.): *Geraubt und im Rhein versunken*. Der Barbarenschatz. Pp. 199–201. Historisches Museum der Pfalz Speyer, Konrad Theiss Verlag GmbH, Speyer.
- PETRÍK J., PETR L., ADAMEKOVÁ K., PRIŠTÁKOVÁ M., POTUČKOVÁ A., LENÁKOVÁ Z., FRACZEK M., DRESLER P., MACHÁČEK J., KALICKIT., LISÁ L., 2019: Disruption in an alluvial landscape: Settlement and environment dynamics on the alluvium of the river Dyje at the Pohansko archaeological site (Czech Republic). *Quaternary International* 511,30: 124–139. DOI: 10.1016/j.quaint.2018.04.013
- PETRÍK J., PETR L., ŠABATOVÁ K., DOLÁKOVÁ N., LUKŠÍKOVÁ H., DOHNALOVÁ A., KOPTÍKOVÁ L., BLÁSKO D., MILO P., 2015: Reflections of Prehistoric and Medieval human activities in floodplain deposits of the Únanovka stream, south Moravia, Czech Republic. *Zeitschrift für Geomorphologie* 59: 393–412. DOI: 10.1127/zfg/2015/0167
- PLÁČEK M., 2001: *Ilustrovaná encyklopedie moravských hradů, hrádků a tvrzí*. Libri, Praha.
- PODBORSKÝ V., VILDOMEC V., 1972: *Pravěk Znojemska*. Jihomoravské muzeum ve Znojme, Brno.
- POLLAK M., 1980: *Die germanischen Bodenfunde des 1.–4. Jahrhunderts n. Chr. im nördlichen Niederösterreich*. Denkschriften (Österreichische Akademie der Wissenschaften. Philosophisch-Historische Klasse) 147. Österreichische Akademie, Wien.
- POSCHOLD P., 2015: The origin and development of the Central European man-made landscape, habitat and species diversity as affected by climate and its change – a review. *IANSA* 2: 197–221.
- PUNT W., CLARKE G. C. S., Eds. 1984: *The Northwest European Pollen Flora*, IV. Elsevier, Amsterdam.
- REHN K., 2000: Ein Bronzeimer vom Östland-Typ aus dem Rhein bei Andernach. In: H. Roth, H. E. Joachim (Eds.): *Certamina Archaeologica: Festschrift für Heinrich Schnitzler*. Beiträge zur vor- und frühgeschichtlichen Archäologie. Band I. Pp. 95–100. Universität Bonn, Bonn.
- ROŽNOVSKÝ D., 2018: Starý Petřín (k. ú. Jazovice, okr. Znojmo). *Přehled výzkumů* 59, 2: 213.
- SALAŠ M., 2005: *Bronzové depoty střední až pozdní doby bronzové na Moravě a ve Slezsku, díl I*. MZM, Brno.
- SALAŠ M., 2015: Kovová depozita únětické kultury z výšinné polohy u Rešic (okr. Znojmo). In: J. Batora, P. Tóth (Eds.): *Keď bronz vystriedal med'*. Archaeologica Slovaca Monographiae, Tom. XVIII. Pp. 391–414. AÚ SAV, Nitra, Bratislava.
- SALAŠ M., 2018: *Kovová depozita mladší doby bronzové z hradiska Réna u Ivančic*. MZM, Brno.
- SCHLEGEL O., 2000: *Germanen im Quadrat. Die Neckarsweben im Gebiet von Mannheim, Ladenburg und Heidelberg während der frühen römischen Kaiserzeit*. Internationale Archäologie Band 34. Verlag Marie Leidorf GmbH, Rahden/Westf.
- STEFANI G., Ed. 2016: *Man and the Environment in the territory of Vesuvius. The Antiquarium of Boscoreale*. Ser. Archeologia Vesuviana. Flavius Edizioni Pompeii, Pompeii.
- STUPPNER A., 2016: Fundspektren römischer Metallsachgüter in kaiserzeitlichen Siedlungen und Gräberfeldern Niederösterreichs. In: H. U. Voss, N. M. Scheessel (Eds.): *Archäologie zwischen Römern und Barbaren. Zur Datierung und Verbreitung römischer Metallarbeiten des 2. und 3. Jahrhunderts n. Ch. im Reich und im Barbaricum – ausgewählte Beispiele (Gefäße, Fibeln, Bestandteile militärischer Ausrüstung, Kleingerät, Münzen)*. Teil II. Kolloquien zur Vor- und Frühgeschichte Bd. 22, 2. Pp. 855–885. DAI RKG, Dr. Rudolf Habelt GmbH, Frankfurt a. M., Bonn.
- SUGITA S., 2007: Theory of quantitative reconstruction of vegetation II: all you need is LOVE. *The Holocene* 17: 243–257.
- SVOBODOVÁ H., 1997: Die Entwicklung der Vegetation in Südmähren (Tschechien) während des Spätglazials und Holozäns – eine palynologische Studie. *Verh. Zool.-Bot. Ges. Österreich* 134: 317–356.
- SZABÓ K., 1984: Balsamares en bronze provenant de la Pannonie. *Alba Regia* 21: 99–113.
- TASSINARI S., 1993: *Il Vasellame bronzo di Pompei*. Cataloghi 5. L'ERMA di Bretschneider, Roma.
- TEJRAL J., 1967: K otázce importu bronzových nádob na Moravu ve starší době římské. *Památky archeologické* 58: 81–134.
- TEJRAL J., 1971: Příspěvek k datování moravských hrobových nálezů ze sklonku starší doby římské a počátku mladší doby římské. *Slovenská archeológia* XIX: 27–93.
- VACHTA T., 2016: *Bronzezeitliche Hortfunde und ihre Fundorte in Böhmen*. Berlin Studies of the ancient world 33. Edition Topoi, Berlin.
- VÍCH D., JÍLEK J., KMOŠEK J., BIBORSKI, M. J., BIBORSKI, M. R., MARTÍNEK, J., 2020: Soubor kovových předmětů z doby římské z Boršova na Moravskotřebovsku. *Památky archeologické* CXI: 159–192.
- WILLER F., 2006: Beobachtungen zur antiken Herstellungstechnik. In: R. Petrovszky, B. Hanemann, M. Kolb (Eds.): *Geraubt und im Rhein versunken. Der Barbarenschatz*. Pp. 176–181. Historisches Museum der Pfalz Speyer, Konrad Theiss Verlag GmbH, Speyer.

INTERNET SOURCES

<https://pladias.cz>

Jan Jílek*
Department of Archaeology and
Museology,
Faculty of Arts, Masaryk University
Section of Classical Archaeology
Arna Nováka 1/1
602 00 Brno-CZ

Archaeological Department
East Bohemian Museum in Pardubice
Zámek 2, CZ-530 02 Pardubice
E-mail: mitridates@post.cz

David Rožnovský
South Moravian Museum in Znojmo,
p.o.
Přemyslovců 129/8
669 02 Znojmo - CZ
E-mail: archeolog@muzeumznojmo.cz
E-mail: cujo@email.cz

Eva Jamrichová
Department of Paleoecology,
Institute of Botany of the CAS, v.v.i.,
Lidická 25/27
602 00 Brno - CZ
E-mail: eva.jamrichova@ibot.cas.cz

*Corresponding author.