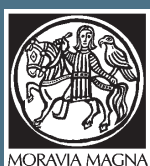
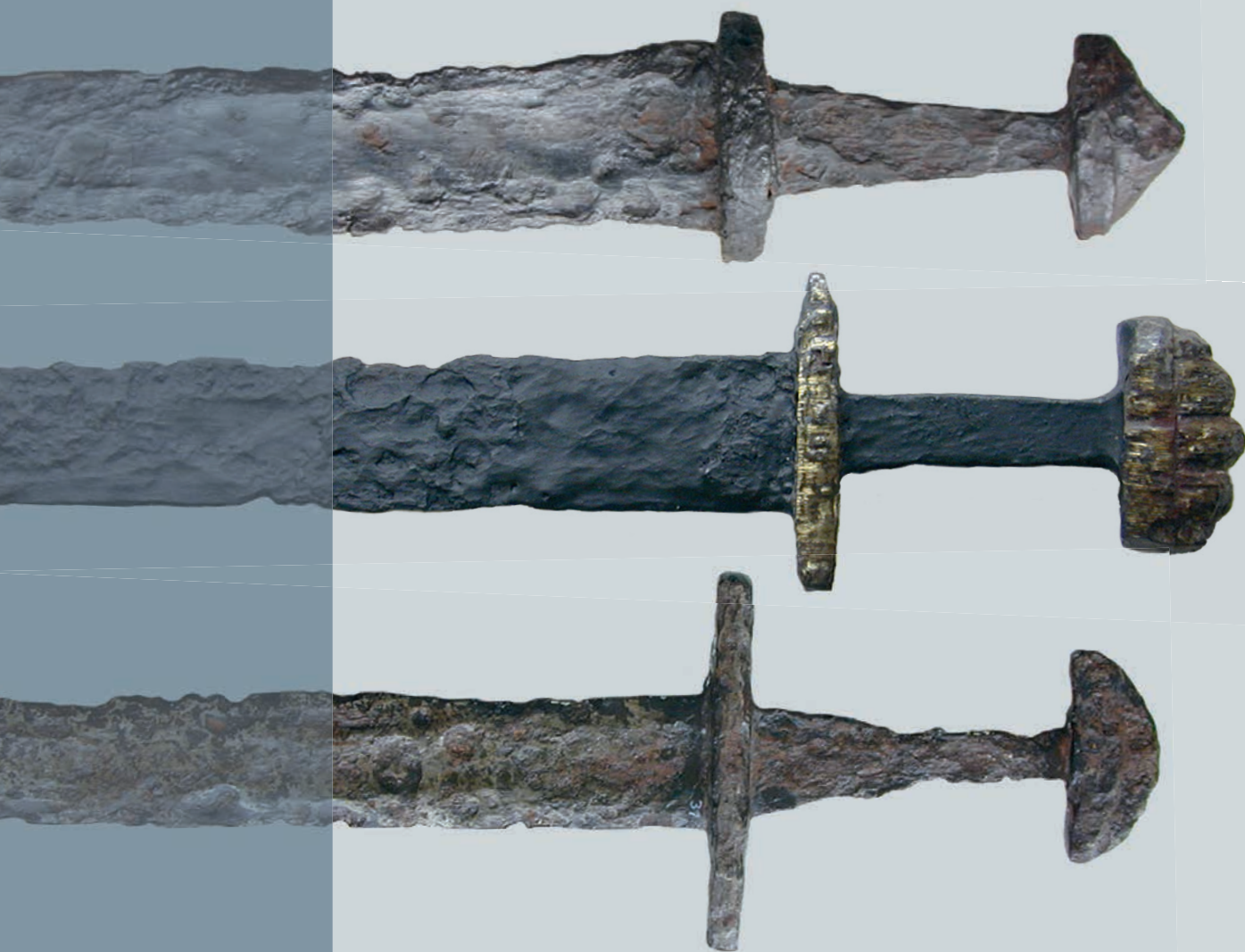


IX

INTERNATIONALE TAGUNGEN IN MIKULČICE



ARCHÄOLOGISCHES
INSTITUT AV ČR
BRNO 2019

BEWAFFNUNG UND REITERAUSRÜSTUNG
DES 8. BIS 10. JAHRHUNDERTS
IN MITTELEUROPA

Waffenform und Waffenbeigaben bei den
mährischen Slawen und in den Nachbarländern

Lumír Poláček – Pavel Kouřil (Hrsg.)

Bewaffnung und Reiterausrüstung des 8. bis 10. Jahrhunderts in Mitteleuropa
Waffenform und Waffenbeigaben bei den mährischen Slawen und in den Nachbarländern

SPIŠY ARCHEOLOGICKÉHO ÚSTAVU AV ČR BRNO

50

INTERNATIONALE TAGUNGEN IN MIKULČICE
(ITM)

herausgegeben von

Lumír Poláček

PROJET MORAVIA MAGNA



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**UNION ACADÉMIQUE INTERNATIONALE
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**UNION INTERNATIONALE DES SCIENCES PRÉHISTORIQUES
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(*C.I.P.S.H. - U.N.E.S.C.O*)**

ARCHEOLOGICKÝ ÚSTAV
AKADEMIE VĚD ČESKÉ REPUBLIKY, BRNO, v. v. i.
BRNO 2019

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Band IX

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ARCHÄOLOGISCHES INSTITUT
DER AKADEMIE DER WISSENSCHAFTEN
DER TSCHECHISCHEN REPUBLIK, BRNO, v. v. i.
BRNO 2019

Gedruckt mit Unterstützung des Editionsrates der Akademie der Wissenschaften
der Tschechischen Republik

Begutachtet von

Prof. dr hab. Krzysztof Jaworski und prof. PhDr. Alexander T. Ruttkey, DrSc.

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Archeologický ústav AV ČR, Brno, v. v. i.
ISBN 978-80-86023-59-5
ISSN 1804-1345

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VORWORT

Der vorliegende Band enthält Beiträge, die während der gleichnamigen Internationalen Tagung in Mikulčice im Mai 2011 vorgetragen wurden. Wie schon die vorausgegangenen ITM-Kolloquien so war auch diese Tagung einem ausgewählten aktuellen Aspekt der mitteleuropäischen Frühgeschichtsforschung gewidmet, und zwar dem Thema der Bewaffnung und Reiterausrüstung. Damit wurde ein breites Spektrum von Fragen behandelt, beginnend mit Typologie, Chronologie und Technologie einzelner Sorten von Artefakten über allgemeine Probleme der frühmittelalterlichen Bewaffnung und Reiterausrüstung bis hin zum archäologischen Experiment. Der gegebene Themenkreis wird im Buch nicht nur aus Sicht der Archäologie, sondern auch der historischen Wissenschaft erörtert, und zwar mit einer beträchtlichen Gelehrsamkeit und dem Streben nach einer komplexen oder analytischen Darstellung. Die vorliegenden 25 auf ganz unterschiedlichen Quellenbeständen fußenden, oft innovativen Beiträge von Forschern aus Polen, der Slowakei, Tschechien, Ungarn, Kroatien, Österreich und Deutschland bieten ein kompaktes Bild der Bewaffnung und Reiterausstattung der Westslawen und Teilen der Südslawen, aber auch der Awaren und Ungarn vor dem Hintergrund der gesellschaftlichen, kulturellen und politischen Entwicklung Ostmitteleuropas in den letzten drei Jahrhunderten des ersten Jahrtausends.

Leider erscheint die Sammelchrift mit beträchtlicher Verspätung, wofür wir die Autoren und Leser gleichermaßen um Entschuldigung bitten. Hauptursache der Verzögerung waren die nach dem tragischen Brand der Arbeitsstätte in Mikulčice 2007 zu bewältigenden Aufgaben: die Errichtung und Inbetriebnahme der neuen archäologischen Basis Mikulčice-Trapíkovo und die parallel hierzu gebotenen Sicherungsarbeiten

an dem umfangreichen, durch den Brand beschädigten Fundmaterial von der Fundstelle Mikulčice-Valy, das nach und nach konservatorisch behandelt und identifiziert werden musste.

Trotz der Verspätung erlauben wir uns, der wissenschaftlichen Fachwelt diesen Konferenzband zu unterbreiten, in der Überzeugung, dass alle Beiträge ihre Relevanz und Aktualität behalten haben. Mögen sie als nützliches Hilfsmittel und Studienmaterial für weitere Forschungen auf dem betreffenden Fachgebiet dienen! Ergänzt sei, dass die letzten Autorenkorrekturen der meisten Beiträge im Jahre 2016 erfolgten und der Inhalt seither nicht mehr aktualisiert wurde.

Es ist uns eine angenehme Pflicht, uns bei allen Autoren der in der Sammelchrift präsentierten Beiträge sowie bei dem Kollektiv der Mitarbeiter, die sich an der Vorbereitung dieses Bandes beteiligten, recht herzlich zu bedanken. Für Übersetzungen und sprachliche Korrekturen sind wir Frau Pavla Seitlová und Frau Tereza Bartošková und sowie den Herren Torsten Kempke und Paul Maddocks verbunden. Für Redaktionsarbeiten gebührt unser Dank Herrn Petr Luňák und Frau Zdeňka Pavková, die auch den Satz des Buches übernahm.

Das Buch erscheint in einem Jahr, in dem das Archäologische Institut der Akademie der Wissenschaften der Tschechischen Republik des 100. Gründungstags seines Vorgängers, des Staatlichen Archäologischen Instituts, gedenkt, der ersten professionellen archäologisch-wissenschaftlichen Arbeitsstätte in der damals eben erst gegründeten Tschechoslowakei.

Erscheinen konnte die Publikation dank der finanziellen Förderung seitens des Editionsrats der Akademie der Wissenschaften der Tschechischen Republik, dem dafür unser Dank gilt.

Lumír Poláček – Pavel Kouřil

Rectangular Embossed Fittings – Possible Armour Parts?

PETR LUŇÁK

Rectangular Embossed Fittings – Possible Armour Parts? *Finds of small fittings made of sheet metal are rarely encountered in Great Moravian material culture. These are rectangular shaped, with a raised boss in the centre and holes in the corners. Most of the finds come from Moravia and Slovakia. There are at least 50 known specimens and all are noticeably similar. They are usually interpreted as a decorative belt or horse harness fittings. Several pieces with small nails preserved in their holes lead to the assumption that they were also attached to wooden objects. The author presents his theory that these items might have been used as armour parts. This hypothesis is based on the uniform design, absence of decoration and traces of rather careless (mass) production – all contrary to the usual attributes of decorative items and, therefore, indicating a practical function. Closer examination of the preserved nails, the length and bent tips also suggests that they held the fittings on a leather or fabric base, rather than wood. The frequent absence of any nails could mean that the fittings were commonly stitched to the base. The author attempts to support his theory by testing the durability of such a fitting and by creating a reconstruction of this hypothetical armour. The test shows that the embossed fitting can withstand a direct axe hit; the armour itself proved to be effective in use. In addition, traces of wear and tear on it correspond to some atypical pieces, which may have been intended for the more stressed sections.*

Keywords: fittings – armour – experiment – reconstruction – Great Moravia – militaria

This artefact group is an interesting, distinctive, yet to date a relatively overlooked part of Great Moravian material culture. They are tiny rectangular fittings with an average size of 45 × 30 mm, made of thin iron sheet (with the exception of two bronze specimens from Bojná). They have a rectangular or oval-shaped boss raised in the middle and usually a hole in each corner (further holes along the sides tend to be rare). The edges (especially the long ones) of the fittings often curve inwards. The artefacts are generally considered to be decorative fittings. While a certain aesthetic appearance can be admitted, I believe that the real purpose of these items may have been much more prosaic and that their decorative appearance is more of a coincidence.

The first summary of known finds was written by D. BIALEKOVÁ (1989–1990, 41 and following), then updated by N. PROFANTOVÁ (1995, 99–101), with the list later revised by Z. MĚŘÍNSKÝ (2006, 201–202). The latest summary, creating a ground catalogue for this article, was provided by the author (LUŇÁK 2010, 119–126).

There are at least 50 currently known finds of these embossed fittings; all of them are more or less identical with the main differences in the details. They are found almost exclusively in the Moravian part of the Czech Republic and in Slovakia. There are seven specimens from Pobodim (Fig. 2:1–6; BIALEKOVÁ 1989–1990, 41–52), one from Vyšný Kubín (Fig. 2:7; ŽAKI 1965, 178–182), one from Trenčianské Teplice – Čertova Skala (Fig. 2:8; PIETA 2000, 131), seven from Mužla-Čenkov (Fig. 2:9–15; HANULIAK/KUZMA/ŠALKOVSKÝ 1993, 87–88), and at least fifteen specimens come from Bojná (Fig. 3:1–15; PIETA/RUTTKAY, A./RUTTKAY M. 2006, obr. 6:10, 13, PIETA ET AL. 2015, pic. 99:11; other finds mostly unpublished). At least three come from Dolné Vestenice – Hradová (Fig. 3:16–17).¹ At least three pieces are known to be from Pohansko u Břeclavi (Fig. 3:18–20; VIGNATIOVÁ 1992, Tab. 117:1,

¹ Special thanks to K. Pieta for making the finds from Bojná and Dolné Vestenice accessible for study and publishing.

MACHÁČEK 2002; third unpublished). There are at least nine specimens from Mikulčice (Fig. 4:1–10; unpublished; inventory numbers: 1143/69, 1144/69, 1145/69, 599/70, 580/71, 932/76, 949/82, 2598/88, 5606/89, one non-inventoried piece from the latest excavations), one from Dolní Věstonice (Fig. 4:11; UNGERMAN 2007, 153) and one from Staré Zámky (Fig. 4:12)². The only find from the Bohemian part of the Czech Republic comes from the hillfort at Libědice (Fig. 4:13; PROFANTOVÁ 1995, 99; also mentions another uncertain piece from Šance u Březnice). The Gars-Thunau Austrian hillfort has provided one specimen in a regular style and another arguable piece (square shaped, with a circular-based central boss), which cannot be positively affiliated to the discussed group of artefacts, although it is technically similar.³

All the fittings are noticeably similarly crafted. Two leading types can be recognised, which differ by the boss shape. The first type, which appears to be more plentiful, has boss with an oval-shaped base while the top is either rounded or flat. The second type has a rectangular boss base and the boss body is more or less faceted. Generally speaking, the shape and style of the fittings are very similar, with anomalies being quite rare.

To date, I have only obtained two specimens made of non-ferrous material. Both come from Bojná (Fig. 3:5, 12) and are made of bronze or another copper alloy; one of which also bears slight traces of metal plating on its surface.⁴ The first of these two fittings (Inv. no. 91b/08) is very well preserved and can be undoubtedly identified as one of this artefact family. The base of its boss is long and almost rectangular, while the boss itself is almost smooth, with very rounded faceting. The boss was mechanically damaged at one end, being heavily dented. Aside from the unusual material, this specimen has yet another anomaly – it has an extra hole in each of the long edges. The other bronze fitting from Bojná (Inv. no. 502/08) has been severely damaged by corrosion; most of the rim is gone although the boss remains. Identifying the artefact as one of the discussed group is not entirely certain, although the shape of the boss is highly similar and the identification is likely correct. This find is also significant because it is made from very thin sheet metal. A third bronze find of this fitting that comes from Mikulčice (Inv. no. 434/67) could also be considered but this artefact is highly fragmented and cannot be positively identified.

2 Unpublished manuscript by Č. Staňa, in the Archive of The Czech Academy of Sciences, Institute of Archaeology, Brno.

3 Personal information by E. Nowotny.

4 According to personal information by K. Pieta, this could be silver or tin.

The anomaly of a higher amount of edge holes appears on two more pieces, both also from Bojná. One of these (Inv. no. 1121/07; Fig. 3:11) is also the largest specimen found (length approx. 60 mm). There was one extra hole in each of the short edges and likely four extra holes in the long edges; the long edges are badly corroded so the number of holes cannot be certain. The other fitting (Fig. 3:9; Inv. no. 992/07) is of regular size and shape with a deeply stretched faceted boss; both the long edges are corroded although an extra hole can be noticed in one of them.

The fittings could have been produced using two main techniques. The first and least difficult method would be swaging the boss in a pre-made mould. The second would be hand-hammering the boss against a soft support (such as lead or a wooden block). Both methods could likely be combined: the boss would first be roughly hand-hammered then given its final shape by using a swaging tool against a soft support. While some of the shallow oval bosses could be made by hand-hammering (being time-consuming, rather than too difficult), using some sort of mould and/or swaging punch seems to be the only reasonable process for rectangular-based, faceted bosses. The use of a hand-forged iron mould with a swaging punch was successfully verified by the experiment (see below).

Only one of the iron specimens bears any trace of decoration – the find from Čertova Skala by Trenčianske Teplice (Fig. 2:8). The fitting is of regular shape and size, the long edges are curved inwards and the boss is a regular rounded type. The edges of the fitting are decorated with a row of tiny bosses. These were likely made with a round-tipped punch, struck from the reverse side of the piece against a soft support. This decoration technique is so far unique among the whole collection and (aside of the aforementioned metal-plated piece from Bojná) is also the only evidence of decoration. The find from Gars-Thunau, which has several notches in one (the better preserved) of the long edges also deserves a mention. Since the notches are quite irregular, they cannot conclusively be identified as decoration. All other fittings known so far are smooth, with no decorating techniques applied. Darina Bialeková points out their general decorative appearance provided by the inwards-curved edges on some of them (BIALEKOVÁ 1989–1990, 43) although this curve is usually a result of forming the boss – corresponding with general metalworking processes, as I have also verified by experiments. When the boss is stretched out of the plain sheet, the material is “pulled-in” the mould and the edges of the sheet curve unintentionally. The corners can be further pulled out when the sheet edges are straightened (after swaging, the edges are usually slightly warped) and when the holes are

punched. As can be observed on some of the well-preserved finds, the holes were made rather sloppily. They were punched from the outer side, often leaving burrs on the reverse surface. This could provide evidence of the fittings being produced in haste and possibly in larger quantities. It is worth mentioning that even the bronze, metal-plated find from Bojná has holes made in a similar careless fashion.

As for the practical function, D. Bialeková considers these fittings to be humble belt or horse harness decorations or even decorative fittings for wooden chests, caskets and other items. She finds the latter option more probable because of two specimens from Pobedim, with tiny nails preserved in their holes. Unlike rivets, which would tend to correspond with attaching to leather, nails suggest that the fittings were applied to wood (BIALEKOVÁ 1989–1990, 49). Naďa PROFANTOVÁ (1995, 101) considers that they might have been attached to a sword scabbard or belt. While the theories have some logical arguments, I think that none of them fully match the whole context of these items.

First, the aforementioned nails can be considered. On one fitting from Pobedim (Fig. 2:3), the preserved nail was quite short and irregularly bent – this may suggest that it was used as emergency replacement for a missing rivet; the nail also could have been intentionally used instead of a rivet – being bent after passing through the material – and its current condition was caused by tearing the fitting away from its base. The other fitting from Pobedim (Fig. 2:2) should have two short, sharp nails (BIALEKOVÁ 1989–1990, 49) although the picture shows that their ends were rather dull – possibly being remains of rivets with the lower part consumed by corrosion. A fitting from Mikulčice (Fig. 4:4; Inv. no. 1144/69) also has a nail preserved in one of the holes, which is sharply perpendicularly bent on the reverse side and resembles what is often done with nail tips sticking out of the material. The straight section of the nail between the fitting and the bend is only a few millimetres long according to the drawing. Similarly, one of the finds from Dolné Vestenice (Fig. 3:16; Inv. no. 2015/40) has three nails completely preserved and bent as well; the thickness of material they went through was 5–6 mm.⁵ The fitting from Gars-Thunau has two rivets or nail heads preserved. Judging solely by the drawing, these are most likely short rivets, peened on the reverse side. Their length also suggests that they were holding the fitting on very thin material. Therefore, it can be concluded that the few specimens with preserved nails or rivets suggest that the fittings were attached to leather or a fabric base, rather than wooden. Wood that is only a few millimetres thick would be

highly prone to splitting when the nails were being bent (especially if the fitting's edges were oriented parallel to the grain as there would always be two nails in one line and the risk of splitting would increase even further). Using nails to attach the fitting on a leather/fabric base would have yet another advantage: unlike with riveting, these would not require the use of a washer on the reverse side. Rivets, especially thin enough to fit the holes, are very hard to peen in soft material and become easily deformed and askew. On well-preserved finds, it can be observed that washers were applied when riveting spur ends or belt fittings on a leather base. Sometimes, these were a separate piece and sometimes a thin sheet metal was part of the fitting (especially on belt ends). Therefore, if the embossed fittings were riveted on a soft base, the craftsmen would likely be forced to use some kind of washer. If the fittings were to be attached in larger quantities, the number of washers needed would naturally increase accordingly. On the other hand, a bent nail would not require a washer and if the bent tip was carefully tapped into the base material, it would hold the fitting sufficiently and cause no trouble on the reverse side.

Furthermore, it cannot be overlooked that most of the embossed fittings completely lack rivets or nails. However, if they were to be attached to a leather or fabric base, they could have been stitched to it, which is supported by the distinct lack of rivets/nails.

Therefore, if the theory that the fittings were attached to leather or fabric base is to be accepted then naturally it must be considered what that base actually was, and of course, what practical function did the fittings have on it. As previously mentioned, D. Bialeková suggests a belt or horse harness. Both would be technically suitable as a base for attaching by stitching or riveting, as well as by using a bent nail. However, there are some facts that contradict this interpretation. First, consider the general circumstances of the individual artefact finds. Most of the fittings come from hillforts and were usually found in open terrain or within object filling. Their finds in graves are very rare: two pieces were excavated from a female grave filling at Pobedim (which was most likely a random secondary placement; BIALEKOVÁ 1989–1990, 44) and the second grave find is from Dolní Věstonice. It was in a male adult's grave, lying close to the waist of the body, along with a knife and firesteel (UNGERMAN 2007, 153). This is the only case that I am aware of where the embossed fitting could be considered as a grave good. However, solely its occurrence in a grave does not yet prove the purpose of this artefact as a belt part (see below).

All the circumstances of the finds, particularly their general absence in graves, appear to strongly contradict the theory of belt fittings, as several types of belt

⁵ I thank Z. Robak for this information.

fittings are relatively common among the grave goods. It can also be noticed that the embossed fittings would likely have little practical use on a belt. Solely being a decoration does not correspond to their relatively humble and simple appearance, careless fabrication and the almost complete lack of decoration, the very low count of non-ferrous specimens and the general uniformity of the items. Fittings for a purely decorative purpose usually show much more diversity. It can also be pointed out the bent nail attaching technique – if these items were belt fittings, they would be expected to be attached more carefully, likely with a proper rivet and possibly fitted with a washer. The number of fittings on a belt, even if it was to be completely covered with them, would not exceed several dozen pieces, so there would have been no need to use a simplified attaching technique. Therefore, I believe that the embossed fittings were not used as belt parts.

As for their possible use as a horse harness, again consider their practical purpose – there appears to be none, except for a possible protective effect against outer abrasion, which does not appear likely. This interpretation also lacks any significant support by the find circumstances. A possible exception is the finds from Mužla-Čenkov, where five specimens were found in one object, along with a cross-shaped fitting fragment, belt end and spur fragments. However, this object contained several other items that had nothing to do with riding equipment.

The hypothesis of horse harness application leads to a similar conclusion as the belt theory – if the fittings were only meant to be decorations, they would be expected to show more diversity, better crafting or perhaps more specimens of non-ferrous metals, which were often preferred for decorative items. The evidence of using bent nails to attach them does not match the usual technique – most harness fittings were usually riveted, as opposed to the number of embossed fittings with preserved rivets.

If rejecting the theory of fittings being nailed down onto a wooden object and the theory of being belt or harness parts, another possibility needs to be considered – one that does not contradict the find circumstances and the common attributes of this artefact group; one that is supported by those facts. What is being looked for is a role where the fittings are applied to something that is not usually found in graves and where there is a way to attach them by sewing (assuming that the lack of nails and rivets is not a coincidence). Furthermore, there must be no need for decorativeness or diversity (as all fittings look similar and most of them are made of iron with no decorations). This item should also be somehow connected with hillforts and power centres and should be needed there in large quantities

(considering frequent finds of several specimens at one site and manufacturing traces that suggest mass-production). Finally, looking at the simple and humble appearance of these artefacts, an interpretation should be found that gives these fittings a practical role.

All the requirements appear to be fulfilled by interpreting the fittings as parts of protective armour. Armour is not usually found in graves from the Great Moravian period (with the exception of isolated fragments of ring mail etc.). Such armour could have consisted of a thick (multi-layered?), strong item of clothing, made of leather, fabric (possibly also felt or any combination of these materials), providing a base layer on which the fittings were fixed. This construction would easily allow the fittings to be stitched onto the base, which would ease both production and possible field repairs to the armour. A decorative appearance would naturally not be required (or at least would not be particularly important) and the similar size and shape would be well suited to arranging them to cover a large surface. Such an interpretation also explains the higher counts at the hillforts.

When considering their practical function, then to cover the surface of the armour base, they would undoubtedly work very well and the holes in the corners make the fittings suitable to easily attach. Their small size would allow the armour to remain flexible, providing ease of movement for the wearer. However, there is also the question of whether the relatively thin metal sheet they are made of could effectively stop weapon hits. This is where the boss comes in use – due to the raised profile, the whole fitting becomes very durable. To test this, I conducted a simple experiment. I made two rectangles of the same 1 mm thick sheet iron, one was left flat, while the other was embossed. Both were placed on a wooden stump and each was struck by a vertical blow with an axe, doing my best to strike them both with equal strength. While the flat sheet was cleanly cut in two, the embossed one was severely deformed – however, it was not cut through (Fig. 1). No matter how insufficient the described test can be considered, it still provides valuable insight. As expected, it confirmed that cutting through a relatively thin embossed sheet iron, regardless that it was eased by supporting the target with a solid wooden base, is not easy. The boss becomes deformed but the edge does not get through. If the fitting was placed vertically on a soft surface (organic armour base and the body in it), cutting through it would be even harder and the edge would tend to slip from the rounded boss. A flat fitting of the same thickness can be very easily cut through on a hard surface and while it would undoubtedly do much better than that on a soft surface, it would still hardly match the durability of an embossed one and



Fig. 1. 1 – cutting test, 2–3 – armour reconstruction. Photo by author.

would likely bend under a hit, rather than forcing it to slide off. The main danger for such theoretical armour with embossed fittings, as with most armour, would be piercing weapons. The advantages, on the other hand, would be relatively easy manufacturing (especially compared to ring mail) and therefore a lower price and less time needed – which would enable to equip more warriors. The manufacturing could easily be done by less experienced wrights, without the need of the many special tools required for making ring mail – the only real specialised tool is the possible mould and/or the punch. Fittings could have been made of various small leftovers of sheet iron or just thinly hammered pieces of metal and thus the waste material would be utilised.

At this point, the above-described specimen from Bojná (containing the remains of metal coating) and the decorated one from Čertova Skala should be revisited. These two represent an exception from the usual plain and bald style of this group of artefacts. If considering these items to be the remains of armour, the fancy ones could have been used for the decorative lining of such armour (as with the bronze or gilded rings in mail).

I conducted an experiment by reconstructing this hypothetical armour (Fig. 1:b–c).⁶ It was meant to protect the wearer's torso using as few fittings as possible. I made the base of the armour as a simple vest, which was put on over the head and then secured by straps

and buckles on the sides. The vest was made of two layers of heavy linen fabric with a layer of woollen felt between. This combination was supposed to provide a strong enough base to attach the fittings and also, due to the soft inner layer, help to distribute the kinetic energy of the blows received. It was meant to be the outer layer, worn over a gambeson. While the gambeson would provide basic protection to the torso, arms and partially the legs, the outer armour would improve the protection of the torso and vital organs, leaving enough movability for the limbs. While the gambeson and soft base of the outer armour were supposed to reduce the energy of the received blows, the hard surface of thin, but cut-resistant fittings should stop the edges of enemy weapons.

I made the fittings out of 1–1.5 mm sheet iron. Rectangles were cut and heated in a forge first, placed in the mould and then swaged with a punch tool and hammer. Heating the material resulted not only in easier swaging but also a cleaner and sharper shape and the edges of the boss. However, cold forming was also proven possible. Forged pieces were then finished cold (some straightening usually had to be done, especially as the edges were usually warped). The finished fittings were then cleaned, holes drilled in the corners and then they were sewn onto the base, arranged into rows. An attempt was made to cover as much as possible of the base while leaving the finished armour flexible enough for hopefully unrestrained movability. I used saddler's linen thread (waxed with beeswax for better durability)

⁶ Special thanks to A. Kachlar, who ordered it from me and thus made this experiment possible.

for the stitching. To cover both the front and back part of this torso armour for an average sized man, 278 fittings had to be made (after the owner switched from gambeson to a thick woollen coat, the number of fittings could be lowered by 16) and the resulting weight was 5.1 kg. One horizontal row of fittings was skipped on both the front and back part, to allow tightening a belt over it. According to the owner, the armour, worn just over the woollen coat, allows for easy limb movement and weapons (at least dulled ones, used in sparring) easily slide and bump off the bosses. Speaking from my own experience, even a dulled steel sword or axe can deliver quite painful hits through armour, providing plenty of evidence as to whether the armour works or not. As expected, the main problem was spears and narrow-bladed axes. For transporting when not in use, the armour is quite compact, as it can be rolled and carried easily. Another interesting observation of the user is that on some of the more stressed spots (such as the shoulders), the stitches are gradually cut by the edges of the attaching holes, so they need to be fixed every now and then. This wear is lower on the back part since the shoulder area has been covered with horizontally oriented fittings where the stitches are less stressed, as the reversed orientation allows the armour to follow the shoulder curve easier. This may lead us to speculate

that some of the specimens with extra holes in their edges might have been made for such stressed spots, where a stronger attachment was needed. In addition, the fittings would not necessarily have to be arranged into straight rows as on this prototype. It cannot be ruled out that they would have possibly been placed in diagonal or curved lines, for example, in the neck and shoulders area, if it resulted in better protection or movability. To arrange the more sophisticated patterns, a specimen of unusual size (such as the large piece with multiple holes from Bojná) or of irregular shape (square specimen from Gars-Thunau) could be helpful. The need to attach some of the fittings more permanently could also explain the low number of finds with rivets and nails – perhaps these may have been used on some of the more stressed spots of the armour, while the rest of them were only sewn.

To date, it is not possible to state a definite interpretation of the practical function for the embossed fittings. Despite their proposed use as armour parts that appear to best suit all the given circumstances and conclusions, not even this theory is without doubt. A final answer would most likely be provided by discovering a larger group of these items in the proper context, which we still lack. The above-described theory could also be further confirmed or disproved by further experiments.

Souhrn

Obdélná kování s pukličkou – možné součásti zbroje? V rámci velkomoravské hmotné kultury se relativně vzácně vyskytují nálezy drobných plechových kování ve tvaru obdélníku, s plastickou pukličkou uprostřed a otvory v rozích. Nálezy se koncentrují především na Moravě a Slovensku. Přestože jejich výskyt není příliš častý, je jich v současné době evidováno přinejmenším 50 kusů a kování jsou si napříč souborem nápadně podobná. Nejčastěji bývají interpretována jako ozdobná kování opasků, případně koňských strojů a na základě několika kusů, v jejichž otvorech se zachovaly hřebíčky, se uvažuje také o možnosti jejich aplikace na dřevěné předměty. Autor zde představuje vlastní teorii, podle níž se může jednat o součásti ochranné zbroje. Tuto interpretaci zakládá zejména na uniformním provedení jednotlivých kusů, absenci

výzdoby a stopách nepřilíš pečlivého zhotovování, což je v rozporu s obvyklými atributy ozdobných předmětů a naopak nasvědčuje jejich praktické funkci. Na základě bližšího průzkumu zachovaných hřebíčků soudí, že jejich délka a záměrné ohnutí naznačují spíše aplikaci kování na kožený či textilní podklad, nikoli na dřevo. Častá absence hřebíčků a nýtů pak může znamenat, že kování byla na podklad našívána. Svou hypotézu se pokusil ověřit jak testem odolnosti kování s pukličkou proti seku, tak také fyzickou rekonstrukcí takovéto zbroje. Jak se ukázalo, kování dokáže odolat přímému zásahu sekerou a rovněž zbroj se uživatelsky osvědčila. Její opotřebení se navíc zdá poměrně dobře odpovídat některým atypickým kusům, které mohly být určeny pro namáhanější úseky zbroje.

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Mgr. Petr Luňák, Ph.D.

E-mail: custom.history@gmail.com

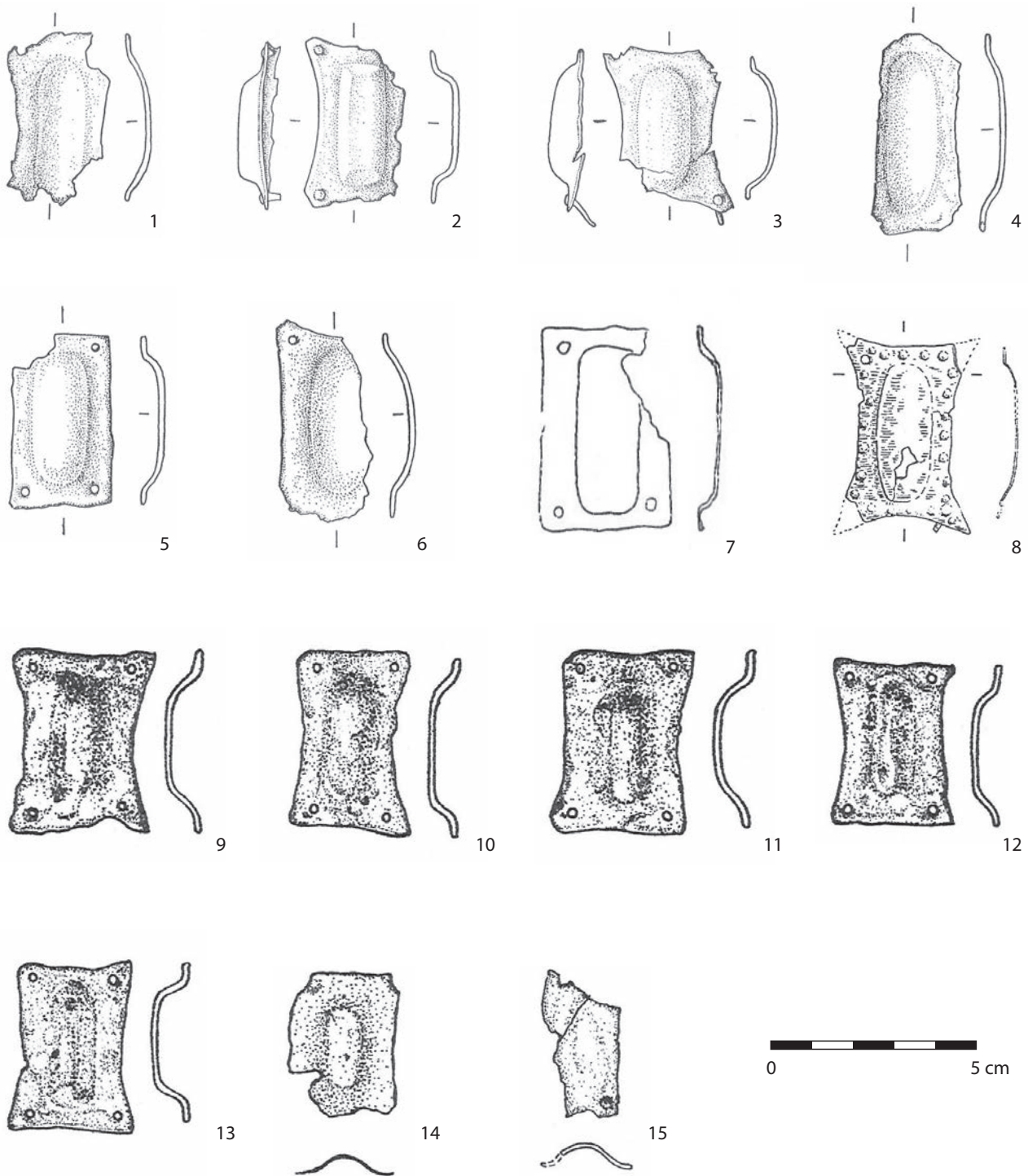


Fig. 2. Rectangular embossed fittings from Pobedim, Vyšný Kubín, Trenčianske Teplice and Mužla-Čenkov: 1-6 – Pobedim (nach BIALEKOVÁ 1989-1990), 7 – Vyšný Kubín (nach ŽAKI 1965), 8 – Trenčianske Teplice – Čertova Skala (nach PIETA 2000), 9-15 – Mužla-Čenkov (nach HANULIAK/KUZMA/ŠALKOVSKÝ 1993).

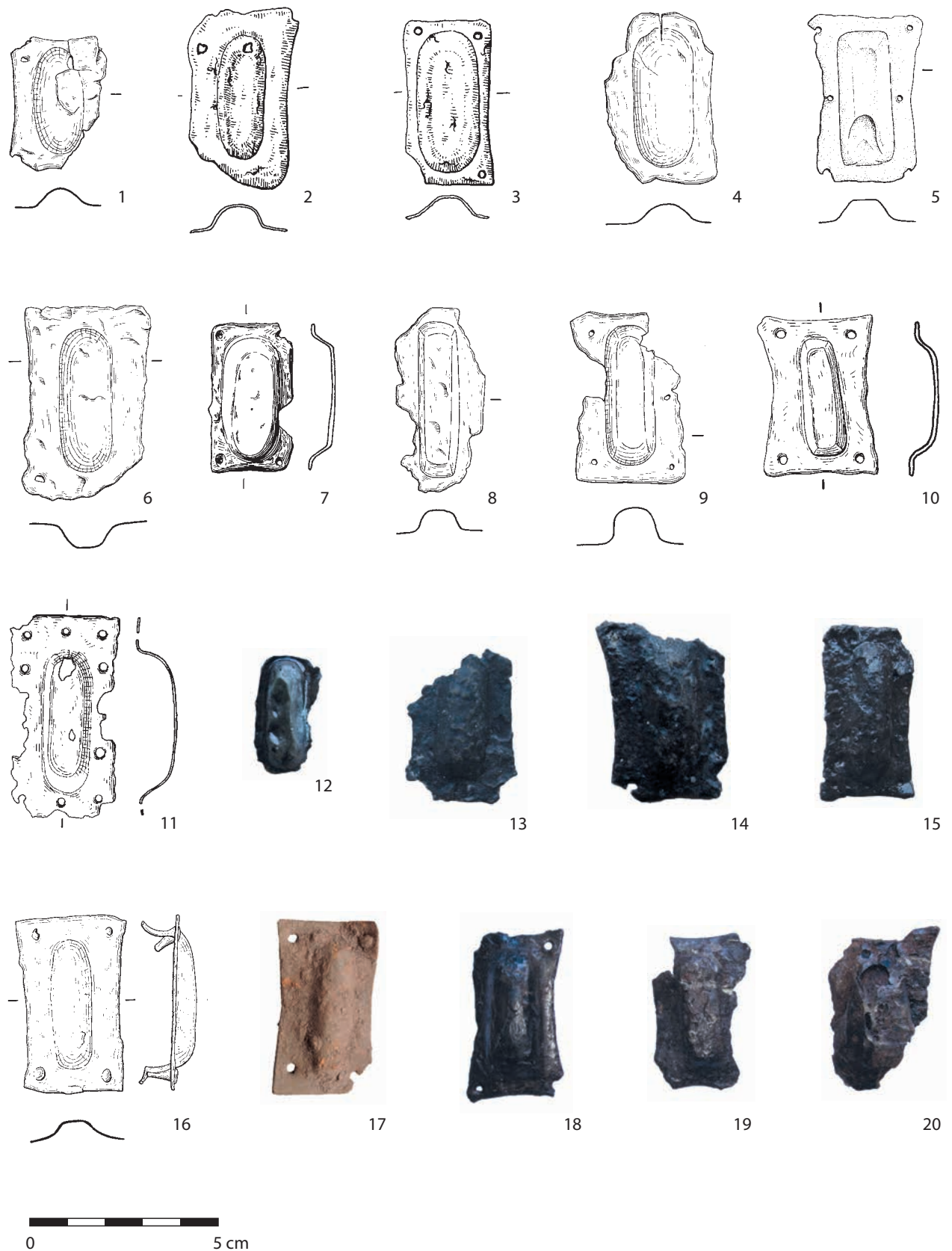


Fig. 3. Rectangular embossed fittings from Bojná, Dolné Vestenice–Hradová and Pohansko u Břeclavi: 1–15 – Bojná (Inv. no.: 1–70/12, 2 – 97/04, 3 – 112/04, 4 – 164/08, 5 – 391b/08, 6 – 409/12, 7 – 717/07, 8 – 977/07, 9 – 992/07, 10 – 269/09, 11 – 1121/07, 12 – 502/08, 13 – 727/10, 14 – 643/10, 15 – 75/09), 16–17 – Dolné Vestenice–Hradová, 18–20 – Pohansko u Břeclavi (Inv. no. 18 – P175-406, 19 – P161-917, 20 – P229-482-4 (1, 4–11, 16–17 – Archiv AÚ SAV, Nitra; 2–3 – PIETA/RUTTKAY, A./RUTTKAY, M. 2005; 12–15, 18–20 – photo by author).

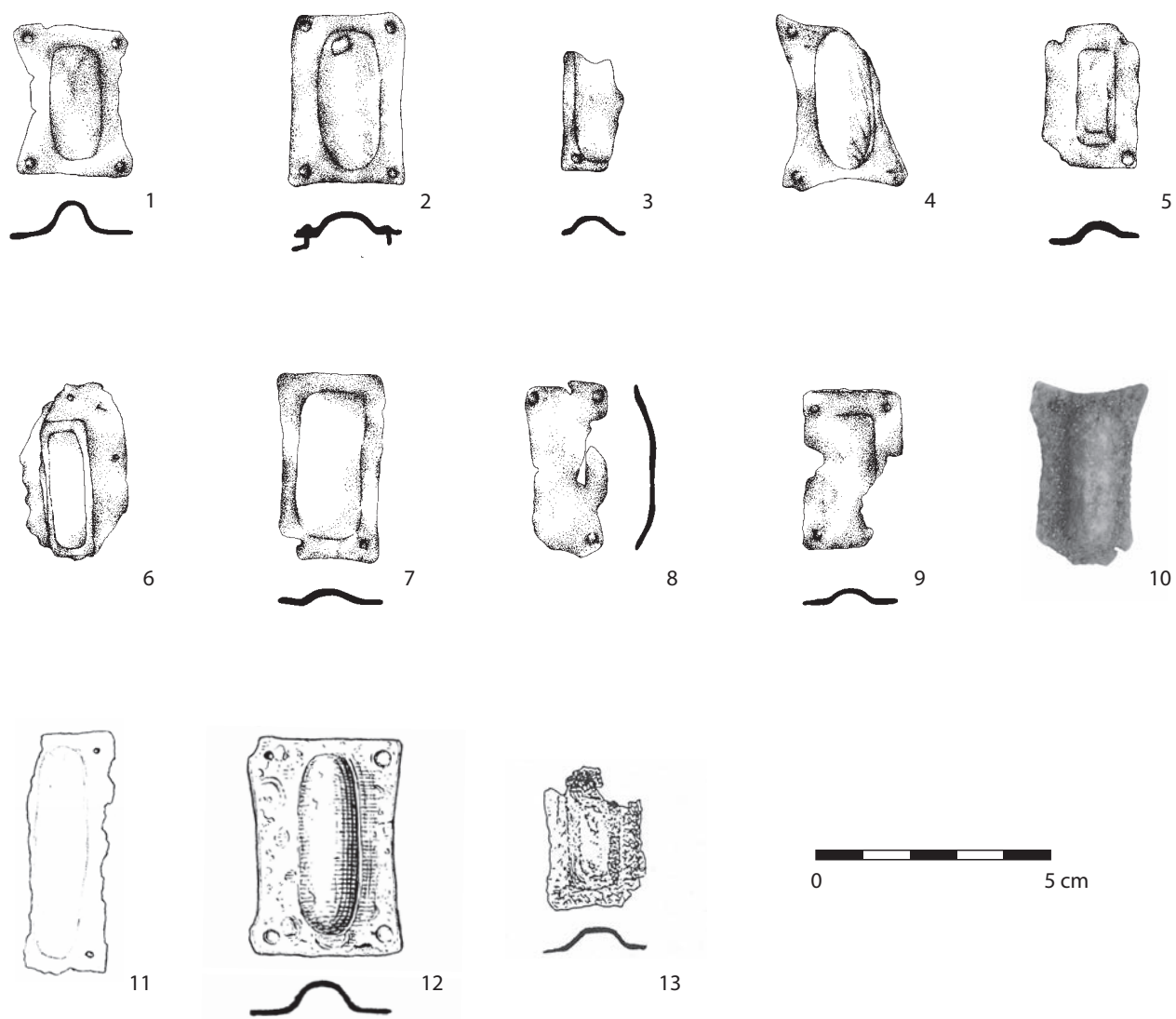


Fig. 4. Rectangular embossed fittings from Mikulčice, Dolní Věstonice, Staré Zámky and Libědice: 1–9 – Mikulčice (Inv. no.: 1 – 1143/69, 2 – 1144/69, 3 – 1145/69, 4 – 599/70, 5 – 580/71, 6 – 932/76, 7 – 949/82, 8 – 2598/88, 9 – 5606/89; 10 – DP598), 11 – Dolní Věstonice, 12 – Staré Zámky, 13 – Libědice (1–9 – Archiv Archeologického ústavu AV ČR Brno, 10 – Photo by author, 11 – UNGERMAN 2007, 12 – STAŇA 2010, 13 – PROFANTOVÁ 1995).

Bewaffnung und Reiterausrüstung des 8. bis 10. Jahrhunderts in Mitteleuropa
Waffenform und Waffenbeigaben bei den mährischen Slawen
und in den Nachbarländern

in der Reihe „Internationale Tagungen in Mikulčice“ (ITM) Band IX
Herausgegeben von Lumír Poláček – Pavel Kouřil

Verantwortlicher Redakteur: Lumír Poláček
Redaktion: Petr Luňák, Zdeňka Pavková
Layout und Textgestaltung: Zdeňka Pavková
Übersetzung: Pavla Seitlová, Tereza Bartošková
Sprachliche Korrekturen: Torsten Kempke, Paul Michael Maddock
Umschlaggestaltung: Pavel Dvorský, Barbora Pokorná / Atelier Zidlicky
Druck: Azu design s. r. o.

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ISBN 978-80-86023-59-5
ISSN 1804-1345

INTERNATIONALE TAGUNGEN IN MIKULČICE



BEWAFFNUNG UND REITERAUSRÜSTUNG
DES 8. BIS 10. JAHRHUNDERTS
IN MITTELEUROPA