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Seventeenth-Century Leather Goods From the Old Town Moat in Gdańsk

Wyroby skórzane z XVII wieku z fosy Starego Miasta w Gdańsku

Abstract: The article discusses an assemblage of leather artefacts found during archaeological investigations of the moat enclosing the Old Town in Gdańsk (40 Wałowa Street). The medieval moat, functioning from the second half of the 14th century, began being backfilled in the 1630s. The collection in question comes from the intact backfill layer dated to the 1640s and 1650s. The collection includes 765 leather artefacts, mostly remains of multiple-soled footwear. The most numerous group of preserved uppers come from latchet shoes, commonly worn from the mid-16th and into the 17th centuries, following Western European fashion. Other leather items, i.e., clothing remains and dress accessories, account for only 3.5% of the recovered items. The most exceptional find of this category is the front part of a jerkin made from deerskin.

Abstrakt: W artykule omówiono zbiór wyrobów skórzanych odkrytych podczas badań archeologicznych fosy otaczającej Stare Miasto w Gdańsku (ul. Wałowa 40). Średniowieczną fosę, funkcjonującą od drugiej połowy XIV wieku, zaczęto zasypywać w latach trzydziestych XVII stulecia. Omawiany zbiór pochodzi z nienaruszonej warstwy zasypiskowej datowanej na lata czterdzieste i pięćdziesiąte XVII wieku. W zbiorze znajduje się 765 wyrobów skórzanych, w większości pozostałości wieloczęściowego obuwia. Najliczniejsza grupa zachowanych wierzchów pochodzi z obuwia wiązanego na podbiciu, noszonego powszechnie od połowy XVI do XVII wieku, zgodnie z modą zachodnioeuropejską. Pozostałe przedmioty skórzane, np. fragmenty odzieży i dodatki do ubiorów, stanowią zaledwie 3,5% zbioru. Najbardziej wyjątkowym znaleziskiem w tej kategorii jest przednia część kaftana wykonana ze skóry zwierząt z rodziny jeleniowatych.

Keywords: leather artefacts, archaeology, post-medieval footwear, latchet shoes, jerkin, Gdańsk
Słowa kluczowe: wyroby skórzane, archeologia, obuwie wczesnonowoczesne, obuwie wiązane na podbiciu, kaftan, Gdańsk

The article presents an assemblage of post-medieval leather artefacts, excavated during an archaeological survey at 40 Wałowa Street in Gdańsk. Compared to the medieval, documentation of archaeological footwear from the post-medieval period appears sporadically in Polish literature on the subject. The situation differs only for Gdańsk, where many intensive excavations have

been conducted. Post-medieval footwear has been published by researchers excavating the old shipyard (Lastadia site – Ceynowa 2020), the gate complex in Długa Street (Jędrzejczak-Skutnik 2016), urban plots in Długi Targ and in Powroźnicza Street (Blusiewicz 2022), and meat stalls in the Main Town in Gdańsk (single specimens – Ceynowa 2018). Remains of post-medieval leather shoes, presumably from a shoemaker's workshop, also were discovered during excavations in the Lower Town in Gdańsk (Jędrzejczak-Skutnik 2021). Nevertheless, post-medieval footwear is often problematic to date – it is frequently retrieved from dumping layers and backfills that span two or three centuries. Stylistic features and construction of footwear make it possible to narrow the chronology to some extent, but it still is common to broadly date the footwear to 17th–18th or 17th–19th centuries.¹

This difficulty makes the footwear assemblage from 40 Wałowa Street still more informative. The finds were obtained in 2016 from the backfill of a moat surrounding the Old Town in Gdańsk. The artefacts came from a backfill layer located on the bottom of the moat, undisturbed by later works but levelled gradually in the course of about 20 years, after a bastion was erected nearby in 1628. Therefore, they must have been deposited no later than the mid-17th century, an estimation verified by finds such as coins and textile seals (Longa 2020).

Characteristic of the assemblage

A total of 765 leather goods were found during the excavations within a single bottom layer of a backfill (no. 200), described as a homogeneous deposit showing levelling of the moat over the period of ca. 20 years (Longa 2020). The leather finds consist predominantly of remains of multi-part footwear, amounting to 95.6% of the assemblage (Tab. 1). The rest were scarce fragments of clothing and leather accessories, as well as production waste (offcuts) from cutting new leather.

Analysis of the raw material

The majority of the assemblage – 660 fragments of various leather goods and seven offcuts – was analysed (Tab. 2). Animal species of the skins were identified using a Nikon H550S stereomicroscope in 16–25x zoom and based on three taxonomic features of tanned leather: pattern of the grain side, layout and arrangement of follicular orifices on the grain side, and the thickness and structure of fibre bundles on the flesh side and cross-sections (Oborska 1977).

¹ One of the exceptions is a relatively precisely dated assemblage of leather artefacts retrieved from the 18th-century shipwreck of the “General Carleton” (Rodzik, Jakimowicz 2008).

Nearly all analysed items are made of bovine hides (95.7%), of which a mere 1.2% came from young animals (Tab. 2). Next are rare artefacts made from the skins of small ruminants and wild cervids (3.7%). Finally, four fragments (0.6%) could not be reliably assigned to a particular species, but the form of the fibres on their flesh sides precludes classification as from adult cattle.

It is worth noting that all the analysed elements of multi-layered soles (tread-soles, midsoles, insoles, heels, and welts) are made from bovine leather. This certainly is related to the desirable qualities of this raw material, such as durability and resistance to abrasion. Based on observation of the better-preserved specimens, the soles of footwear meant for adults are cut from leather characterised by compact tissue structure, presumably butts 3 mm to 6 mm thick, and tanned specifically for soles. The insoles are made from dense leather that is thinner and more flexible. In turn, the materials used for children's footwear are fleshy and with looser bundles of thick fibres on the flesh side, indicating that they were cut from hides softer than butts; likely obtained from the neck area of the animal. Heel and levelling lifts are made from offcuts of varying thicknesses and from re-used material.

Goatskin, sheepskin, and hides of cervids were used in 23.1% of soft uppers and their supplementary elements, such as linings and toe caps, as well as in half of the other items, including identified remains of clothing and a round-based money pouch. The remaining uppers are cut from soft, bovine leather, likely from the neck area or sides of the animal hide, whereas compact butts were used for belts and straps.

Footwear remains

The assemblage includes 731 identified fragments of multiple-soled shoes². Particular elements of uppers and soles are disjoined and mixed due to exposure to humic acids that led to decay of thread made from plant fibres, and as a result of interventions by conservators. Attempting to fit elements together, it is possible to distinguish the remains of 511 individual shoes in the assemblage (composed of 731 fragments), although the real number of specimens certainly is smaller³. A surprisingly insignificant part of the assemblage is parts of shoe uppers:

² The shoemaking terminology after Goubitz 1984 and Goubitz, Driel-Murray, Groenman-van Waateringe 2001. Based on the shape of the edges of vamps and soles, and examining the stitching traces, it was concluded that the footwear is a welted construction. This means it had at least an insole and an outsole.

³ Matching disconnected footwear elements after the conservation process was a challenging task due to the varying shrinkage of the leather upon drying and the high number of repetitive elements in the assemblage. In only a few cases was it possible to reassemble the sole, welt, and insole into a single specimen based on distinctive, preserved features. Similar challenges arise in connecting separated parts of uppers and soles.

32 vamps, 10 quarters, five linings, seven toe caps, and six heel stiffeners. On this basis, it is possible to identify 37 shoe specimens: 32 latchet shoes, four characteristic boots worn with Polish costume, and a mule.

Latchet shoes (Figs. 1–5)

The most numerous of the identified remains are of upper parts belong to low shoes, reaching the ankle, with latches fastened on the instep. Since the mid-16th and into the 17th centuries, these were a very common type of footwear in Western Europe (i.e., Boucher 1996; Swann 2001a; Drązkowska 2011, 197–209). Their uppers consist of three construction elements: a vamp with a tongue extended over the instep and two symmetrical quarters that are joined together in the middle of the foot. The latches are fastened together with the vamp on the instep, with a lace passing through holes punched in the vamp tongue.

During the analysis, 26 vamps and 10 quarters were identified as coming from 32 latchet shoes in varying states of preservation. Soles could be matched only to eight of these. The preserved vamps have a characteristic pattern of the sides and the extended tongue covering the instep. After they were joined with quarters, an elliptical side opening revealed part of the foot and added elegance to the shoe. Several specimens with slight excisions and wide, triangularly-cut tongues were observed (Fig. 1:1). Much more common are shoes with deep excisions and long narrow tongues, characteristic of footwear from the late-16th and 17th centuries. In more pristine specimens, the toes of these shoes are rounded. However, it is possible that some were rectangular as their state of preservation precludes more precise evaluation.

The vamp and quarters were joined with a double-needle stitch, either hidden on the inside of a shoe or visible and located on the right side. In the single case of a child's shoe, the tip of the tongue was also joined with this seam (Figs. 2:5, 4:3), being cut separately from the vamp or replaced during repair. The uppers were reinforced with toe caps and heel stiffeners stitched from the inside. A few specimens were found with these reinforcements (Figs. 2:1; 3:6). Traces of whip stitches, hidden in the thickness of leather on the inside of the shoes, indicate that the footwear also was protected from stretching or tearing on the edges of upper parts, either by braiding along their entire length, or only at the junction of vamps and quarters.

Thirteen uppers are ornamented (Figs. 2:5–8; 4; 5:1). The edges of vamps are cut into a serrated form, with a decorative double-needle tunnel stitch applied a few millimetres away creating a convex pattern, potentially embellished with trimming. On the inside of the stitch, notches shaped as stars, hearts, clovers, or four-petalled flowers were made, presumably with punches. In the case

of a single, heavily-damaged vamp with an intentionally removed tongue, an openwork rosette pattern is applied on the instep (Figs. 2:8; 4:8).

The vamps and quarters of latchet shoes mostly are made of soft bovine leather, with elegantly goffered grain sides, or leather obtained from young animals. Slightly more than $\frac{1}{4}$ of the preserved vamps and quarters (28.1%) are made of hides of small ruminants, mostly goats. Among these are three specimens with the grain side turned toward the inside of the shoe, with the uppers made of carefully polished flesh sides, resulting in semi-suede shoes (Fig. 4:4,5).

The specimens obtained have multi-layered soles, consisting of at least an upper attached to a treadsole and insole using a welt (Figs. 3:1; 4:4; 6:1). A low heel made of leather lifts joined together with stitching and wooden pegs are added (Fig. 5:1). Preserved dimensions of soles indicate that these shoes were worn by both adults – men and women alike – and children, even very little ones (around age three), as attested by a few specimens with soles 150 mm in length (Figs. 2:2,5; 5:1).

Latchet shoes were common in post-medieval Europe, a fact confirmed by numerous paintings and museum collections (i.a., Boucher 1996; Swann 2001a; 2001b). They also are recorded archaeologically, albeit rarely (in Gdańsk or Elbląg for instance; see Drażkowska 2011, 197–209; Ceynowa, Trawicka 2016, 72–74). Latchet shoes dated to the mid-16th century and through the 17th century were discovered during excavations in Warsaw (Blusiewicz 2009, 65–67). Specimens analogous to the simple, undecorated footwear found in Gdańsk were retrieved from the wreck of the *Vasa*, which sunk near Stockholm in 1628 (Swann 2001a, 104–105). Similarly decorated shoes, dated to around 1610, were excavated in the Old Town in Oslo (Swann 2001a, 99). Numerous examples also are known from the Netherlands (Goubitz, Driel-Murray, Groenman-van Waateringe 2001, 285–287).

Shoes accompanying the Polish national costume (Fig. 7)

Shoes worn with the Polish national costume grew in popularity in the second half of the 16th century and were in fashion until the mid-18th century (Turnau 1991). Similar to other elements of the Polish costume, shoes were modelled on Turkish and Hungarian designs; hence, they are often referred to as ‘Hungarian-type shoes’ (Eberle 1985; Turnau 1991, 7–14). Iconographic depictions, supplemented with information provided by 18th-century Polish diarist Jędrzej Kitowicz, draw a relatively precise picture of the appearance of footwear worn with the national costume, simultaneously attesting to significant differences in style and construction (Kitowicz 1985). The shoes are known to have been made of leather, dyed yellow, red, or black, with raised toes

and metal fittings or a low heel. The height of the upper would differ – from low, reaching the ankle, to high, covering the knee. Each could be narrow and rigid or wider and softly gathered; slipped-on or fastened from the side. The diversity of patterns is verified by depictions in paintings from the period and finds from crypts; along with other elements of the Polish costume (Grupa 2022, 202–210, 232).

A characteristic feature of the shoe designs is the specific shape of their soles, equipped with horseshoe-like fittings made with a high iron content instead of heels. Such soles feature a leaf-shaped forefoot with a short tip, a strongly narrowed waist, and rounded or triangular heel (Fig. 7:1). Remains of three shoes of this type were identified in the Wałowa Street assemblage (Fig. 7:1–3). The first consists of a sole and an insole, joined with the flesh sides facing each other and with holes left by a missing iron fitting on the heel (Fig. 1:1). The size of the sole (l. 258 mm, w. 102/30/73 mm) indicates that the shoe likely was worn by an adult male. The upper is preserved as a fragment of lining with traces of intentional cutting of the edge (Fig. 7:11). A lining of thin, bovine leather, was originally made of two symmetrical halves stitched together in the middle of the forefoot, partly with a whip stitch. The grain side is turned inward, fixed on the insole with a double-needle tunnel stitch (Fig. 6:3). The other preserved specimen (Fig. 7:2) is an analogously-cut and similarly-constructed lining for a vamp made of goatskin. A part of the vamp was intentionally removed. The third specimen (Fig. 7:3) survives only in the form of the sole of a child's shoe (l. 165 mm, w. 67/32/58 mm) that bears traces of a tunnel stitch in the forefoot and traces of welted construction in the heel. Signs of corrosion found near three large holes in the heel indicate use of an iron fitting. The grain side of the sole bears embossed lines, reflecting the planned cutting pattern.

Analogous finds were discovered in Warsaw and dated from the mid-16th century to the whole of the 17th century (Blusiewicz 2009, 72–77, 168–169; 2017). The remains of an upper resembling the Gdańsk specimen confirm that these were low, ankle-height shoes with pointed toes. Their vamps are made of pairs of symmetrical pieces of leather stitched together in the middle of the insteps and matching the shapes of the finds from Wałowa Street. They were excavated along with soles showing traces of iron fittings, some of which also were found alone. A similar shoe with analogous designs of both the upper and sole is preserved in the Bayerisches Nationalmuseum in Munich. It comes from Turkey and dates to 1600 (Fig. 8). However, it is possible that this type of footwear also had a relatively low shaft stitched to the edge of the upper, such as those depicted in portraits of Ladislaus IV of Poland and Sebastian Lubomirski.

Moreover, several soles of similar form and with traces of iron fittings were found in the Lastadia shipyard and in Powroźnicza Street in Gdańsk (see Ceynowa, Trawicka 2016, 114; Ceynowa 2020, 543, 580; Blusiewicz 2022).

This category of footwear may also include remains of a large male shoe (l. > 240 mm) preserved as a vamp made of bovine leather, half of a thin and delicate goatskin lining of the vamp, and an insole attached to the upper with a draw-stitched construction (Fig. 7:4). A double-needle, flesh-edge stitch running along the upper edge of the vamp confirms that the shaft was sewn, whereas the pattern of the lining resembles the above-described Hungarian-type footwear, albeit the shape of the insole and the lack of clear traces of an iron fitting preclude unambiguous classification. It is possible that the shoe had a high, slip-on upper on a flat heel – a design also worn with the Polish national costume.

Mule (Fig. 5:8)

The term *mule* refers to shoes consisting of an upper that covers only the forefoot (Goubitz, Driel-Murray, Groenman-van Waateringe 2001, 243–248; Volken 2022). The analysed assemblage contains one vamp of this type (Fig. 5:8). Made from soft, bovine leather, its instep is decorated with a stitch that creates a convex pattern of two lines parallel to the edge and flanking a regular row of triangles. The total length of the front edge of the vamp is turned inward and bears traces of a whip stitch showing that the upper used to have a leather or textile lining. There are no traces of seams after joining the quarter that indicate the type of shoe. Accurate reconstruction is impossible because the sole is missing. However, the preserved dimensions of the vamp (l. > 120 mm, w. 205 mm) indicate that it was an adult shoe.

The specimen finds its closest analogy in a shoe also from Bogusławskiego Street in Gdańsk, dated to the 16th–17th centuries, with a decorated vamp and a sole raised with wooden filling between insole and treadsole (Ceynowa, Trawicka 2016, 103). Shoes of this kind also were excavated in the Old Town in Toruń (Drażkowska 2007, 71–76). Several examples, dated to between the mid-16th and early 17th centuries, are known from Warsaw, including a single case with a preserved sole and low, wooden platform (Blusiewicz 2009, 70–71). Numerous shoes of this type dated to the 16th and 17th centuries are held in Dutch collections (Goubitz, Driel-Murray, Groenman-van Waateringe 2001, 243–248).

In the remaining cases, the poor state of preservation caused by intentional cutting make more accurate typological classification of the shoe uppers impossible. This is true for three damaged vamps, which likely are the remains of low shoes or boots for men given their large sizes (Fig. 5:6,7).

Shoe bottoms (Figs. 9–12)

The largest part of the assemblage are dispersed elements of shoe bottoms. They come from footwear of undetermined form but certainly manufactured in ways characteristic of post-medieval shoemaking. The majority feature elements of welted construction, which allows for the creation of durable, multi-layered bottoms, including with raised heels. Constructing shoes in this way, the vamps and soles are not stitched together directly. The upper first is joined with an insole by a welt. Then, the welt is wound under the bottom of the insole with its edges tied likely with thread (Fig. 6:1). The assemblage contains welts encircling the whole circumference of the foot, as well as welts cut separately for the forefoot and heel. Each welt would then be stitched to the bottom, consisting usually of two soles: a midsole with the grain side turned inward and a clear impression of the welt, and treadsole with the grain side directly touching the ground (Fig. 10:1). The thread was hidden in the diagonal incision on the grain side of the treadsole to protect the stitch. All unevenness was levelled with lifts inserted between the soles. Some treadsoles also are reinforced with additional clump soles attached with wooden pegs.

The bottoms could either be flat or with heels, usually made of leather lifts joined with stitches and/or wooden pegs, or, sporadically, iron nails (Figs. 5:1; 6:4–6; 9:8; 10:5,6). In one specimen, a wooden heel was used, presumably encased in leather (Fig. 11:1). The external soles could have been full-length and combined with the heel (Fig. 6:4,5; e.g. Figs. 9:3; 10:1,6) or end at the waist (Fig. 6:6; e.g. Fig. 9:2,8). Two-part soles also were found, usually joined at the forefoot or toe with flesh/edge stitching (Fig. 9:8).

The full length of the soles was recorded for 104 specimens⁴ (Tab. 3). The largest group (52.9%) was middle-sized shoes, between 215 mm and 260 mm, labelled as female but including the widest range of users – older adolescents, women, and smaller men. A significant share (43.3% in total) of the assemblage belonged to soles of children's shoes, including footwear manufactured in very small sizes, with soles spanning between 125 mm to 150 mm, for children aged approximately two-to-five years. Welted construction is used in shoes for adults and children (Fig. 9:1).

Remains of flat, multi-layered soles in large sizes (l. 255–282 mm) also are distinguished by a wide forefoot and gently rounded nose. Presumably for adult males, their edges were joined or reinforced along the circumference

⁴ Due to significant difference in length between the sole and the insole in one shoe and the risk of unintended duplication of results, the present calculations include only soles (treadsoles and midsoles) whose full length is preserved and measured.

with wooden pegs and iron nails (Figs. 9:4; 11:4,5). Some of these bottoms lack any traces of pressed fastening of the welt, which indicates that the upper edge of the shoe either was turned outward and stitched directly to the sole, or had an open welt (Fig. 6:7–9).

The methods employed in constructing the upper and bottom parts of shoes suggests a standardised manufacturing process. The high consistency of sole shapes with nearly identical proportions prove that the shoes were mass produced for anonymous customers, presumably with templates in uniform sizes. Some of the analysed specimens are clearly lateralised – meant either for the right or left foot – but in many cases, these differences are insignificant and stem rather from uneven wear (Fig. 13). Therefore, it appears that heeled footwear had symmetrical bottoms, cut for both feet based on the same template. Thus, the soles differ predominantly in the shapes of their toes. In regard to soles meant for adults, the analysed assemblage contains many more elements of bottoms with rounded toes (77.1%) than those with squared toes (22.9%). Among the children's shoes, rounded toes are found in 86.2% of bottoms. Apart from that, the soles have a wider forefoot, a waist gently narrowing on both sides, and a rounded heel. In only a few cases, different sole shapes were found: in two shoes with a straight forefoot matching a toe in width (Fig. 10:8,9), as well as in the aforementioned soles of the Hungarian-type footwear (Fig. 7:1,3) and platform shoes (Fig. 12:1,2).

The assemblage contains platform bottoms from adult shoes (Fig. 12:1,2), all with a characteristic, almond-shaped forefoot and low-placed narrowing of the mid-foot. They were manufactured using welted construction and each with wood fillings (h. 9–15 mm) between the treadsole and the insole over the length of the foot (Fig. 6:2). In two cases, the insoles are made of two parts – separately-cut and stitched toes, beneath which leather pads are attached instead of wood (Fig. 12:2). This design likely was intended to increase the elasticity of the shoes. The archaeological record available to date suggests that bottoms of this kind were usually used in *mules* (cf. Blusiewicz 2009; Drażkowska 2007).

Other goods

The assemblage contains few identifiable remains of other leather goods. The most noteworthy is the front part of a simple jerkin (Figs. 14:1; 16:1), made of soft fleshy leather, probably from cervids. The fragment came from the right side and has a semi-circular opening cut near the neck, another for the sleeve, and a diagonally-cut bottom edge. The front of the jerkin had at least eight buttonholes, carefully braided with coloured silk thread. All preserved edges show traces of minor stitches fixing the remaining elements (sleeves, basque)

or trimmings. Such leather jerkins are extremely rare finds, but their fragments, embellished with slashed sleeves according to the Renaissance fashion, have been discovered in previous excavations in Gdańsk (Ceynowa 2013).

Other remains, possibly of clothing, include also two pieces of goatskin. The first is trapezoidal in shape, with small, elongated, rectangular stitch-holes along the edge and an abrasion indicating that the longer edge of the skin was likely padded and stitched as a cuff of a glove or sleeve (Figs. 14:2; 16:3). The second is an irregularly-shaped fragment of soft, ductile leather bearing traces of running and whip stitching (Figs. 14:3; 16:2). A fragment of a wide strap of very thin and soft leather, probably goatskin, with numerous small stitch holes along the edge and near the ends may have been meant for stitching or otherwise attaching decorative applications to items of clothing or accessories (Fig. 14:5). The assemblage also contains a bovine leather strap, 25 mm wide and 2 mm thick and with four pairs of fastening holes, which could have served many purposes, for instance, as part of a costume or riding equipment (Fig. 14:6).

Other identified clothing accessories include a money pouch of soft delicate leather, probably sheepskin. It is made of a single piece measuring 180 mm in diameter and with a semi-circular cut (Figs. 15:1; 16:4). Round notches spanning 4 mm in diameter are regularly arranged near its edge and through which lacing passed to fasten the pouch. Traces of stitching near the semi-circular cut and the opposite side indicate that the purse was reinforced in these places (Fig. 17). Similar purses for coins and other small items enjoyed greater popularity in the late Middle Ages and early-modern period, remaining in use until the 20th century with little change in form (Goubitz 2007, 65–69).

Perhaps also the quasi-rectangular fragment of sheepskin, with ten notches on the shorter side (Figs. 15:2; 16:5) should be included to the category of pouches and cases. Alternating abrasions and folds between the notches indicate that they were used to pass a small strap fastening the mouth of the case. Its upper edge also bears traces of a whip stitch, perhaps for a top band, whilst the longer edges have visible holes left by a running stitch. Another, irregularly-shaped fragment with traces of a regular stitch along the edge is made of bovine leather and, presumably, is the internal bottom of a girdle purse (Figs. 15:3; 16:7).

The primary functions of the remaining fragments cannot be determined. One of the most interesting items of unknown function is a square piece of fleshy, bovine leather with sides measuring 160 mm (Figs. 14:4; 16:6). Except for a margin spanning between 1.5–3.0 cm from the edges, the inside of the square is filled with regular rows of relatively shallow incisions and small notches arranged at 6–7 mm intervals, sometimes doubled with slight deviations. Notches at the corners and along the edges feature pressed traces of nail heads or hobs,

indicating the fragment was attached to some kind of a base. Perhaps, it was a fragment of tapestry, padding, or a template for making regular notches on, for instance, parchment? Its exact function cannot be ascertained.

Possible remnants of leather tapestry are damaged fragments with small nail or peg holes along the edges and clear abrasions located near them of the grain side (Figs. 12:4; 15:4–7). The last group of finds includes straps of bovine leather with wear marks (Fig. 14:7,8) and nine intentionally cut or destroyed pieces with holes from regular stitches (Fig. 16:4).

Conclusion

The artefacts retrieved during the archaeological excavations in 40 Wałowa Street in Gdańsk, with few exceptions, are represented by remains of footwear which should be considered typical for post-medieval Europe in their stylistic and technological aspects. Deposited in the moat in the second quarter of the 17th century, remains of shoes reflect the fashion of the late 16th and the first half of the 17th century. Such dating is corroborated by the aforementioned analogies and well-dated museum exhibits (Swann 2001a; Drązkowska 2011, 201). The multi-layered soles with heavy proportions, lacking any heels but reinforced with nails, resemble footwear from the second half of the 16th century (Eberle 1985), whereas the platform bottoms become rare after the beginning of the 17th century (Swann 2001b, 97). It has to be noted, however, that most numerous analogies for the upper parts of analysed shoes come from the early decades of the 17th century, while the shoes with squared toes did not enter popular use until ca. the year 1590 (Swann 2001a, 205). Therefore, insights from studies on costume and fashion are in agreement with the stratigraphic observations.

Noteworthy is the vast disproportion between the numbers of preserved soles and uppers of shoes. This difference indicates that the excavated layers contained incomplete shoes – predominantly parts of multi-layered soles. The upper parts may have been re-used, by cutting off whatever leather was still usable, as was the case with other goods made of soft leather. This is supported by the discovered offcuts with traces of stitches which were produced by cutting off the remaining parts of the upper shoe. Such structure of the assemblage combined with the evidence of intentional cutting the leather off the items indicate that the layers deposited in the moat contained waste from a leather-working workshop, in which damaged shoes were mended or sourced for re-usable material. The workshops of cobblers are attested in Gdańsk already for the mid-14th century. They were allowed to mend shoes or make new ones from re-used leather. In the beginning of the 17th century, there were ca. 50 active cobblers in Gdańsk (Bogucka 1962, 127–130).

Table 1. The number of leather artefacts from the excavations at 40 Wałowa Street in Gdańsk
 Tabela 1. Liczebność zabytków skórzanych z wykopalisk przy ul. Wałowej 40 w Gdańsku

Category Kategoria	n	%
Footwear	731	95.6
Leather items	27	3.5
Offcuts	7	0.9
Total	765	100

Table 2. Species identification of leather artefacts from the excavations at 40 Wałowa Street in Gdańsk
Tabela 2. Identyfikacja gatunkowa surowca wyrobów skórzanych z wykopaliisk przy ul. Wałowej 40 w Gdańsku

	Leather identification Oznaczenie gatunkowe								Total Łącznie
	Bovine (<i>Bos primigenius</i> f. <i>taurus</i>) Bydło		Goat (<i>Capra aegagrus</i> s. f. <i>hircus</i>) Koza	Sheep (<i>Ovis ammon</i> f. <i>aries</i>) Owca	Goat or sheep Koza / owca	Cervids (<i>Cervidae</i>) jelenio- wate	Goats or cervids Koza / jelenio- wate	unidenti- fied nieokre- ślone	
	adult.	juvenil.							
Elements of shoe uppers Elementy wierzchów obuwia									
Vamp	40	4	3	1	–	1	2	–	51
Quarter	2	3	4	–	1	–	–	–	10
Toe cap	3	–	–	–	1	1	1	2	8
Lining	1	–	2	1	–	–	–	–	4
Heel stiffener	5	–	–	–	–	–	–	–	5
Total (shoe uppers)	51	7	9	2	2	2	3	2	78
%	65.3	9.0	11.5	2.6	2.6	2.6	3.8	2.6	100
Elements of shoe bottoms Elementy spodów obuwia									
Soles	317	–	–	–	–	–	–	–	317
Welts	99	–	–	–	–	–	–	–	99
Heel lifts	103	–	–	–	–	–	–	–	103
Levelling lifts	47	–	–	–	–	–	–	–	47
Total (shoe bottoms)	566	–	–	–	–	–	–	–	566
%	100	–	–	–	–	–	–	–	100
Other leather items Inne wyroby skórzane									
Clothing and accessories	7	1	3	2	–	1	–	2	16
Offcuts	6	–	1	–	–	–	–	–	7
Total (leather artefacts) Łącznie (wyroby skórzane)									
N	630	8	13	4	2	3	3	4	667
%	94.5	1.2	2.0	0.6	0.3	0.4	0.4	0.6	100

Table 3. The number of soles in each size range
Tabela 3. Liczba podeszew w poszczególnych zakresach rozmiarów

Soles Podeszwy	< 150 mm	151-214 mm	215-259 mm	> 260 mm	Total Suma
n	7	38	55	4	104
%	6.7	36.6	52.9	3.8	100

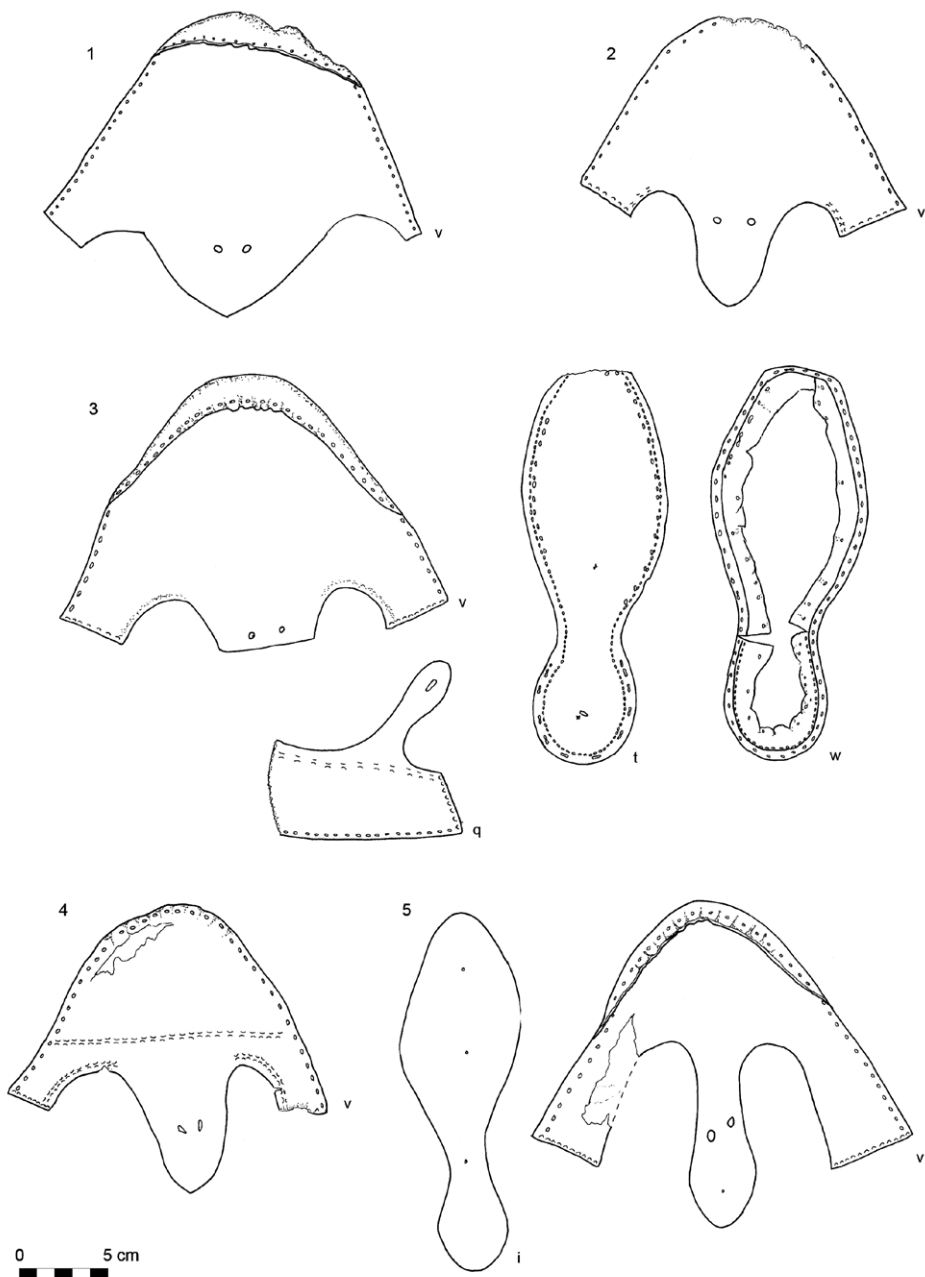


Fig. 1. Leather artifacts from Gdańsk (40 Wałowa St.). Latched shoes (1–5): v – vamp; q – quarter; t – treadsole; i – insole; w – welt. Drawing by K. Blusiewicz

Ryc. 1. Wyroby skórzan z Gdańska (ul. Wałowa 40). Obuwie wiązane na podbiciu (1–5): v – przyszwa; q – kwatka obłożyny; t – podeszwa zewnętrzna; i – podpodeszwa; w – pas obuwniczy. Rys. K. Blusiewicz

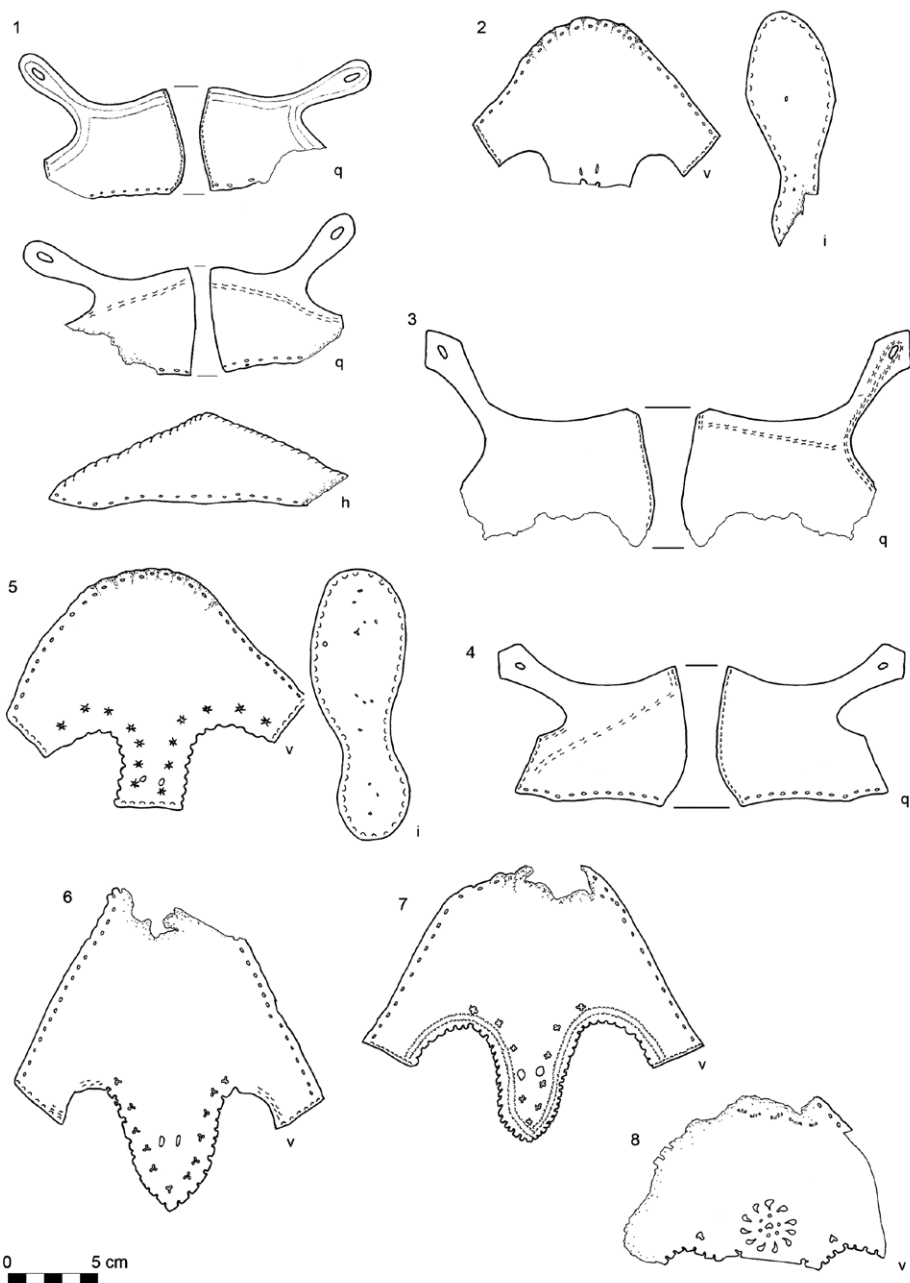


Fig. 2. Leather artifacts from Gdańsk (40 Wałowa St.). Latchet shoes (1–8): v – vamp; q – quarter; h – heel stiffener; i – insole; w – welt. Drawing by K. Blusiewicz
 Ryc. 2. Wyroby skórzan z Gdańska (ul. Wałowa 40). Obuwie wiązane na podbiciu (1–8): v – przyszwa; q – kwatarka obłożyny; h – zapiętek; i – podpodeszwa; w – pas obuwniczy.
 Rys. K. Blusiewicz



Fig. 3. Leather artifacts from Gdańsk (40 Wałowa St.). Latchet shoes (1–9): v – vamp; q – quarter; tc – toe cap; m – midsole; i – insole; w – welt. Photograph by K. Blusiewicz
 Ryc. 3. Wyroby skórzone z Gdańska (ul. Wałowa 40). Obuwie wiązane na podbiciu (1–9): v – przyszwa; q – kwaterek obłożyny; tc – podnosek; m – podeszwa wewnętrzna; i – podpodeszwa; w – pas obuwniczy. Fot. K. Blusiewicz



Fig. 4. Leather artifacts from Gdańsk (40 Wałowa St.). Latchet shoes (1–8): v – vamp; q – quarter; t – treadsole; i – insole; w – welt. Photograph by K. Blusiewicz

Ryc. 4. Wyroby skórzone z Gdańska (ul. Wałowa 40). Obuwie wiązane na podbiciu (1–8): v – przyszwa; q – kwatere obłożyny; t – podeszwa zewnętrzna; i – podpodeszwa; w – pas obuwniczy. Fot. K. Blusiewicz



Fig. 5. Leather artifacts from Gdańsk (40 Wałowa St.). Latchet shoes (1–8): v – vamp; q – quarter; tc – toe cap; i – insole. Photograph by K. Blusiewicz
 Ryc. 5. Wyroby skórzan z Gdańska (ul. Wałowa 40). Obuwie wiązane na podbiciu (1–8): v – przyszwa; q – kwatka obłożyny; tc – podnosek; i – podpodeszwa. Fot. K. Blusiewicz

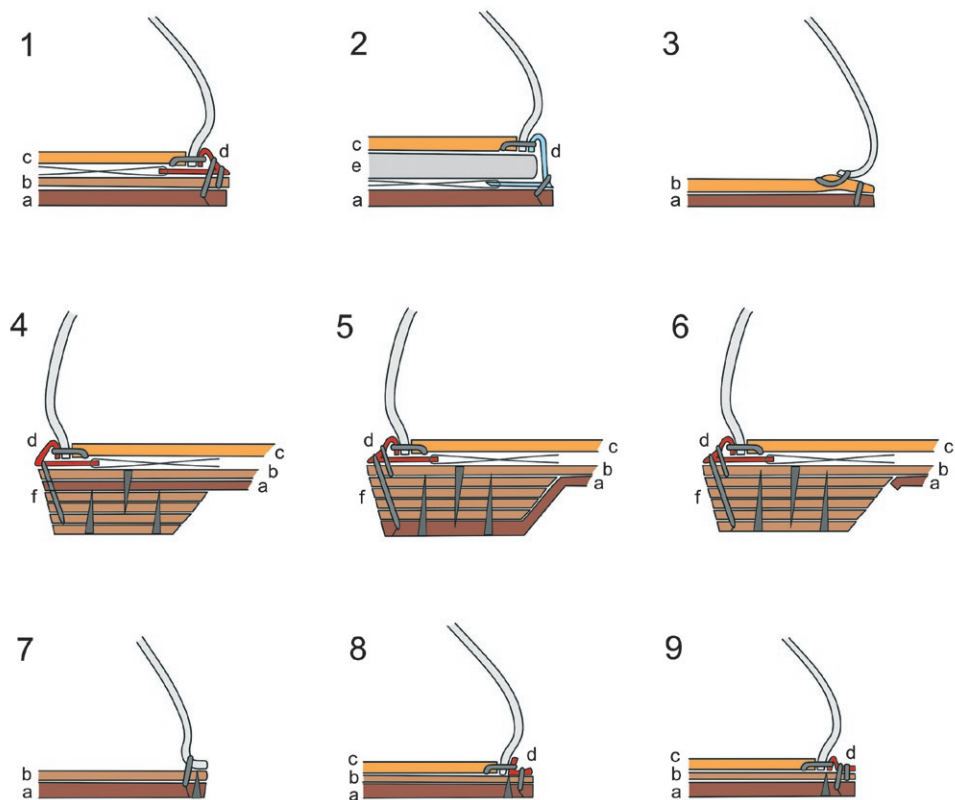


Fig. 6. Methods of post-medieval shoe/upper construction: a – treadsole; b – midsole; c – insole; d – welt; e – wooden platform; f – heel lifts. Drawing by K. Blusiewicz

Ryc. 6. Sposoby łączenia wierzchu ze spodem w obuwiu nowożytnym: a – podeszwa zewnętrzna; b – podeszwa wewnętrzna; c – podpodeszwa; d – pas obuwniczy; e – koturn; f – składki obcasa. Rys. K. Blusiewicz



Fig. 7. Leather artifacts from Gdańsk (40 Wałowa St.). Shoes in Polish national costume (1–4): v – vamp; l – lining; t – treadsole; i – insole. Drawing/photograph by K. Blusiewicz
 Ryc. 7. Wyroby skórzane z Gdańska (ul. Wałowa 40). Obuwie w polskim stroju narodowym (1–4): v – przyszwia; l – podszewka; t – podeszwa zewnętrzna; i – podpodeszwa. Rys./fot. K. Blusiewicz



Fig. 8. Pair of shoes with iron fitting, Turkey, c. 1600. Bayerisches Nationalmuseum in Munich (after: Durian-Ress 1991, 42, photo 24)

Ryc. 8. Para obuwia z podkówkami, Turcja, ok. 1600. Bayerisches Nationalmuseum w Monachium (za: Durian-Ress 1991, 42, photo 24)



Fig. 9. Leather artifacts from Gdańsk (40 Wałowa St.). Multi-layered soles (1–8): t – treadsole; m – midsole; i – insole; w – welt; s – sole. Photograph by K. Blusiewicz
 Ryc. 9. Wyroby skórzan z Gdańska (ul. Wałowa 40). Wielowarstwowe podeszwy obuwia (1–8): t – podeszwa zewnętrzna; m – podeszwa wewnętrzna; i – podpodeszwa; w – pas obuwniczy; s – podeszwa. Fot. K. Blusiewicz



Fig. 10. Leather artifacts from Gdańsk (40 Wałowa St.). Multi-layered soles (1-9): t – treadsole; m – midsole; i – insole; w – welt; s – sole. Photograph by K. Blusiewicz
 Ryc. 10. Wyroby skórzan z Gdańska (ul. Wałowa 40). Wielowarstwowe podeszwy (1-9): t – podeszwa zewnętrzna; m – podeszwa wewnętrzna; i – podpodeszwa; w – pas obuwniczy; s – podeszwa. Fot. K. Blusiewicz



Fig. 11. Leather artifacts from Gdańsk (40 Wałowa St.). Multi-layered soles (1-5). Photograph by K. Blusiewicz

Ryc. 11. WYROBY SKÓRZANE Z GDAŃSKA (UL. WAŁOWA 40). WIELOWARSTWOWE PODESZWY (1-5). FOT. K. BLUSIEWICZ



Fig. 12. Leather artifacts from Gdańsk (40 Wałowa St.). Multi-layered soles (1–4): t – treadsole; m – midsole; i – insole; w – welt; s – sole. Photograph by K. Blusiewicz
 Ryc. 12. Wyroby skórzone z Gdańska (ul. Wałowa 40). Wielowarstwowe podeszwy (1–4): t – podeszwa zewnętrzna; m – podeszwa wewnętrzna; i – podpodeszwa; w – pas obuwniczy; s – podeszwa. Fot. K. Blusiewicz

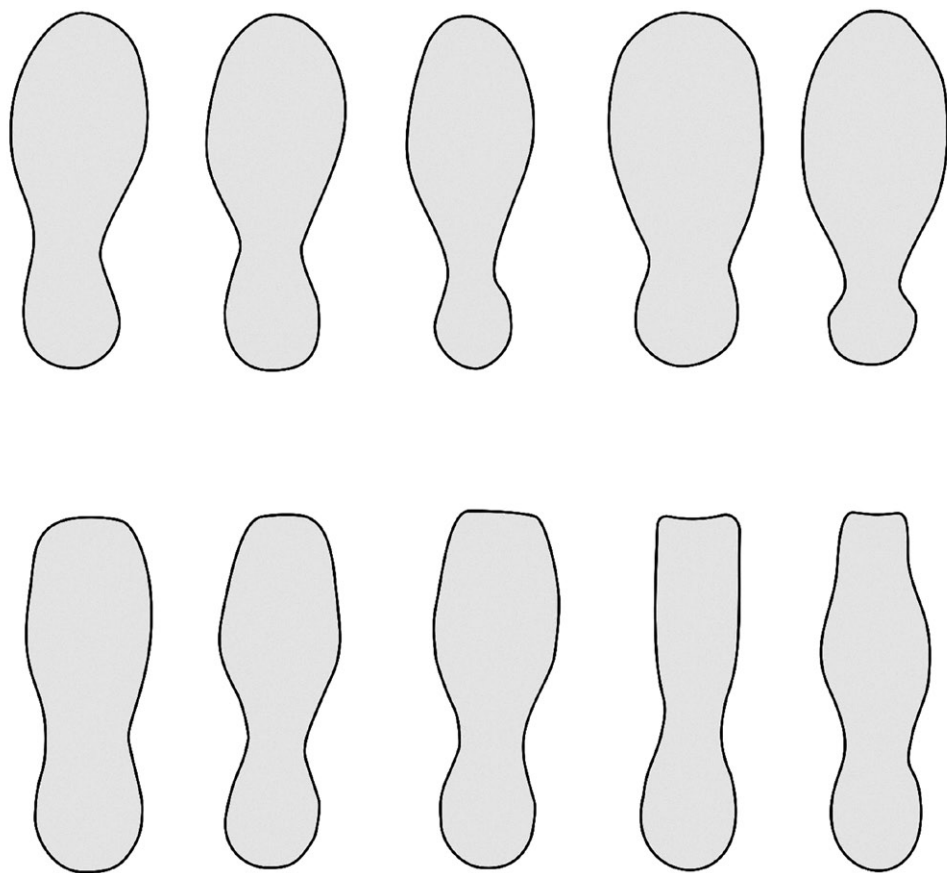


Fig. 13. Shapes of post-medieval shoe soles from 40 Wałowa Street in Gdańsk. Drawing by K. Blusiewicz
Ryc. 13. Kształty wczesnonowożytnych podeszew z ul. Wałowej 40 w Gdańsku. Rys. K. Blusiewicz

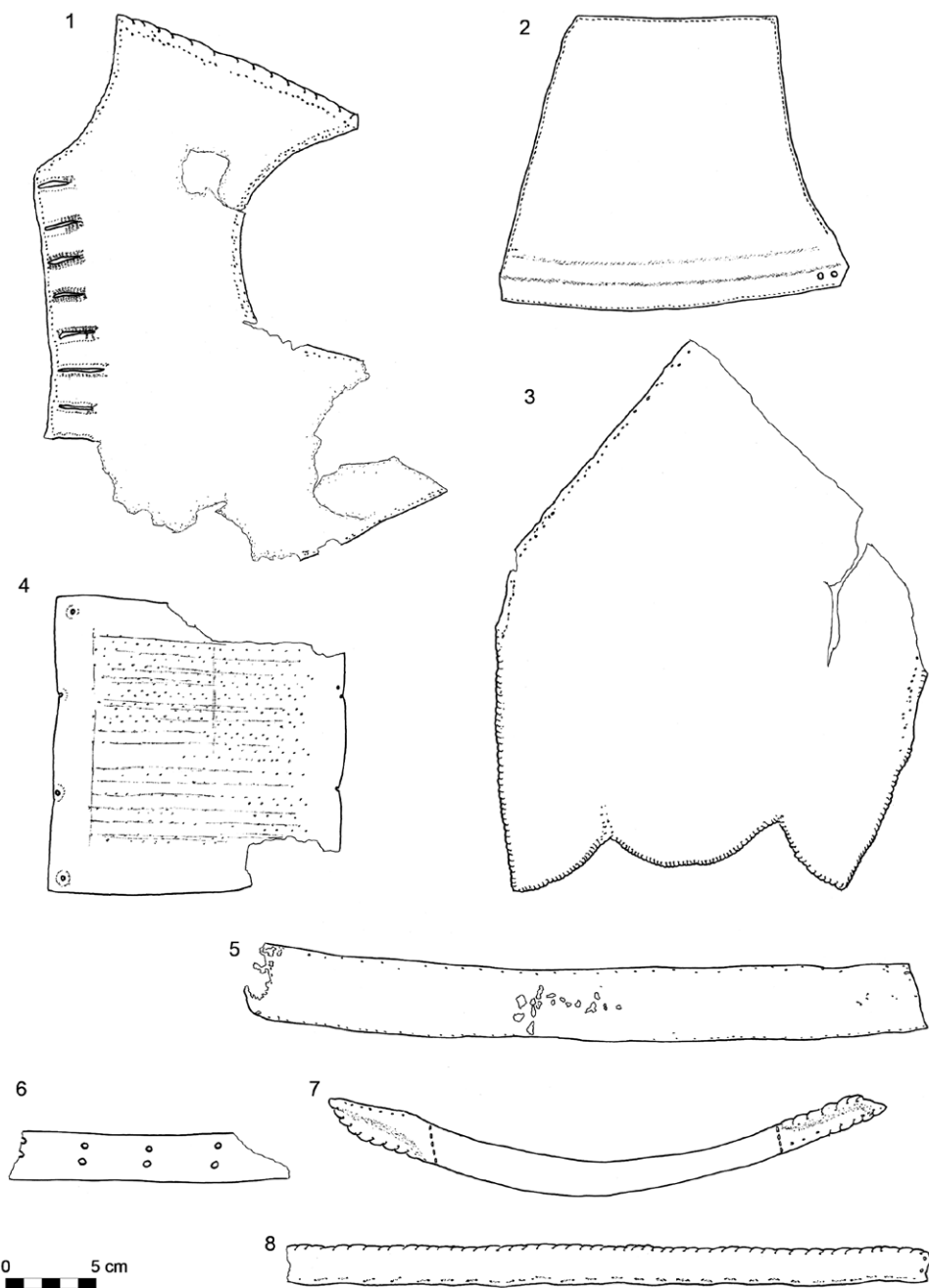


Fig. 14. Leather artifacts from Gdańsk (40 Wałowa St.): 1-3 – Clothing; 4 – Template (?); 5-8 – Belts and straps. Drawing by K. Blusiewicz

Ryc. 14. Wyroby skórzane z Gdańska (ul. Wałowa 40): 1-3 – odzież; 4 – szablon (?); 5-8 – paski i paski. Rys. K. Blusiewicz

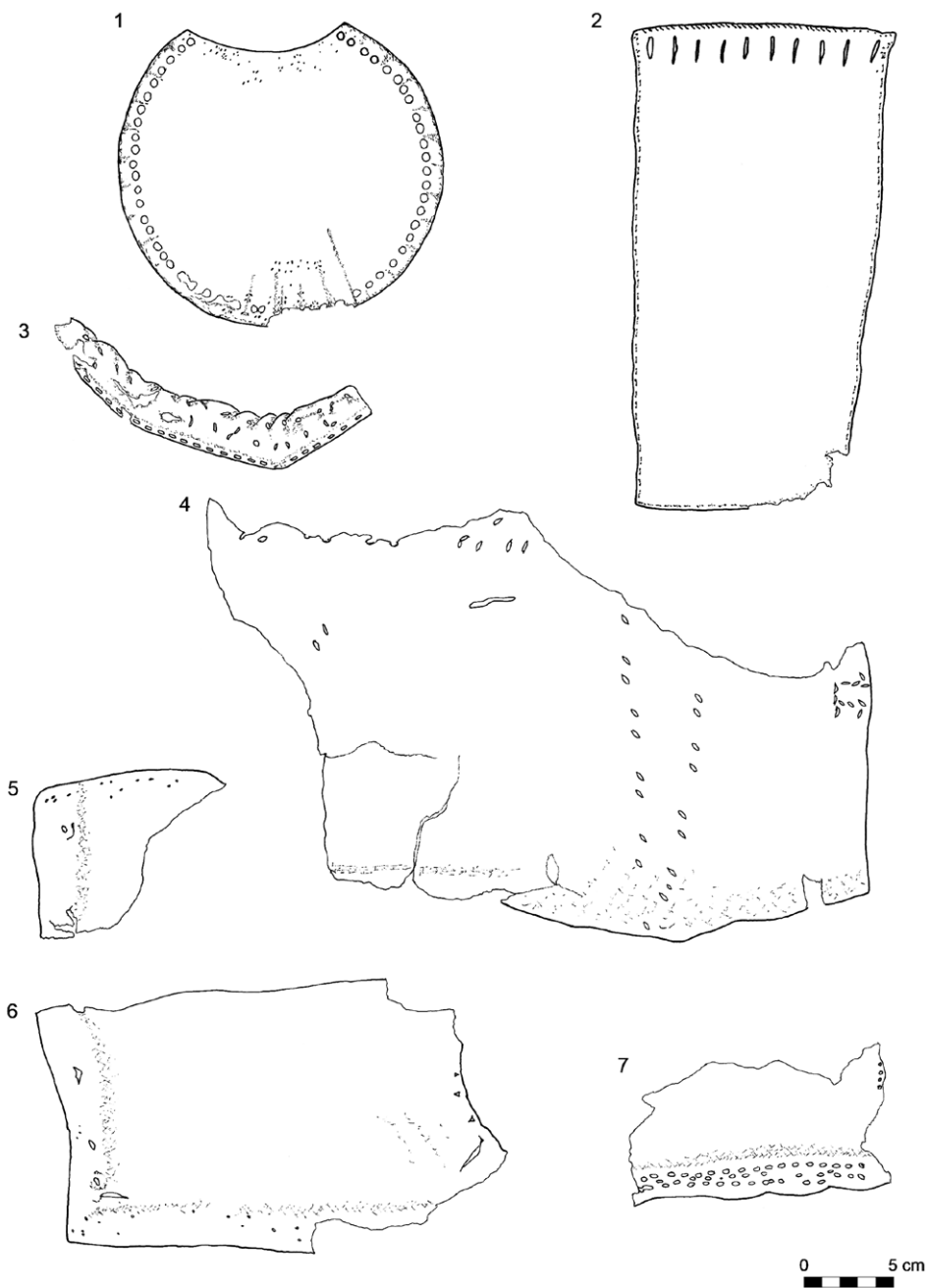


Fig. 15. Leather artifacts from Gdańsk (40 Wałowa St.): 1 and 2 – Pouches; 3 – Girdle purse; 4–7 – Upholstery (?). Drawing by K. Blusiewicz
 Ryc. 15. Wyroby skórzane z Gdańska (ul. Wałowa 40): 1 i 2 – sakiewki; 3 – kaletka; 4–7 – obicie mebli (?). Rys. K. Blusiewicz



Fig. 16. Leather artifacts from Gdańsk (40 Wałowa St.): 1–3 – Clothing; 4 and 5 – Pouches; 6 – Template (?); 7 – Girdle purse. Photograph by K. Blusiewicz.

Ryc. 16. Wyroby skórzane z Gdańska (ul. Wałowa 40): 1–3 – odzież; 4 i 5 – sakiewki; 6 – szablono (?); 7 – kaletka. Fot. K. Blusiewicz

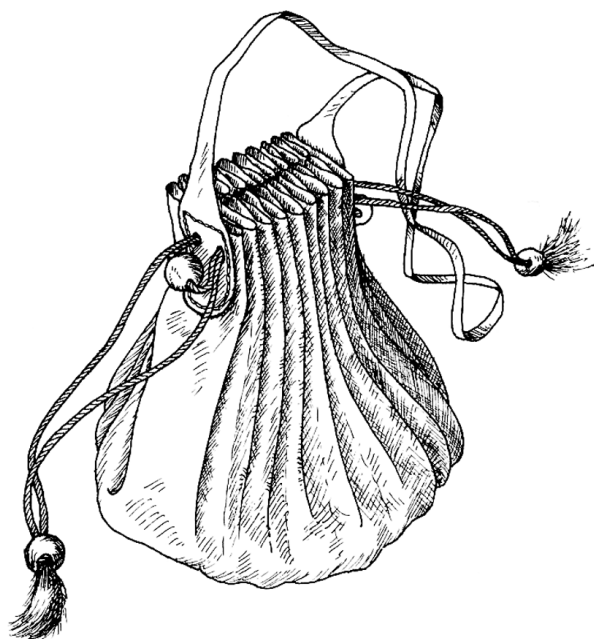


Fig. 17. Money pouch (after: Goubitz 2007, 102)
Ryc. 17. Sakiewka (za: Goubitz 2007, 102)

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Streszczenie

Poza nielicznymi wyjątkami przedmioty skórzane odkryte podczas badań archeologicznych przy ul. Wałowej 40 w Gdańsku to pozostałości obuwia, pod względem stylistycznym i technologicznym typowe dla wczesnonowoczesnej Europy. Zdeponowane w fosie w 2. ćwierci XVII wieku, odzwierciedlają modę końca XVI i pierwszej połowy XVII stulecia. Takie datowanie potwierdzają liczne znaleziska archeologiczne oraz analogiczne i dobrze datowane eksponaty muzealne (Swann 2001a; Drażkowska 2011, 201). Odnotowane w zbiorze wyprofilowane, wielowarstwowe podeszwy pozbawione obcasów, ale wzmocnione gwoździami, przypominają obuwie z 2. połowy XVI wieku (Eberle 1985), natomiast spody na koturnach w świetle dotychczasowych badań zanikają od początku XVII wieku (Swann 2001b, 97). Należy zaznaczyć, że najliczniejsze analogie dla wierzchów analizowanego obuwia pochodzą z pierwszych dziesięcioleci XVII wieku, zaś obuwie z kwadratowymi noskami weszło do powszechnego użytku wcześniej, około 1590 roku (Swann 2001a, 205). Wydaje się zatem, że ustalenia płynące z dotychczasowych badań nad ubiorem potwierdzają datowanie depozycji zbioru.

Na uwagę zasługuje także nieproporcjonalna liczba zachowanych podeszew i wierzchów. Różnica ta wskazuje, że w eksplorowanych warstwach znajdowało się niekompletne obuwie – przeważały fragmenty podeszew wielowarstwowych. Wierzchy mogły zostać ponownie wykorzystane poprzez odcięcie skóry, która nadawała się jeszcze do użytku, podobnie jak w przypadku innych wyrobów wykonanych z miękkiej skóry. Świadczą o tym ścinki ze śladami szwów. Ich obecność w zespołach znalezisk – w zestawieniu ze śladami celowego wycinania skóry z innych przedmiotów – wskazuje, że do fosy trafiały odpady z warsztatu skórniczego, w którym naprawiano zniszczone obuwie lub pozyskiwano surowiec do ponownego wykorzystania. Tego rodzaju warsztaty w Gdańsku są potwierdzone od połowy XIV wieku. Na początku XVII wieku w Gdańsku działało około 50 warsztatów naprawiaczy obuwia (Bogucka 1962, 127–130).

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