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ONE-PIECE SHOES FROM THE MEDIEVAL STRONGHOLD IN PUŁTUSK IN A EUROPEAN CONTEXT

ABSTRACT

The article discusses a unique collection of late medieval one-piece footwear uncovered during the archaeological investigation of the Pułtusk stronghold (Masovian Voivodeship, Poland) in the 1980s. Owing to waterlogged conditions, numerous remains of organic materials were preserved. Among these, a collection of 11 one-piece shoes was identified, dated to the 2nd and 3rd quarters

of the 14th century AD. Three types of cutting patterns are distinguished, based on the number and position of seams. This type of footwear has no analogies of similar date within the territory of present-day Poland and is rarely found in Western Europe, while it is more common in Eastern Europe. The unusual form of the footwear may suggest the origin of some inhabitants of this proto-urban site.

Keywords: medieval shoes, one-piece footwear, *chodaki*, *porshni*, Pułtusk

Introduction

The city of Pułtusk is located in northern Mazovia in central Poland (Fig. 1). The Pułtusk stronghold, which existed before the chartered town, lies on a hill at the eastern edge of the city, within the floodplains of the Narew River. Based on historical and archaeological research, the foundation of the stronghold has been dated to the 1230s.¹ It originated as the centre of the Pułtusk estate castellany of the Płock bishops and played a key administrative role throughout the 13th and the first half of the 14th century. A Lithuanian incursion, led by Duke Kiejstut in AD 1368, ultimately brought an end to the settlement's existence.² The stronghold was burned, its inhabitants were displaced, and subsequently the Płock bishops' castle was built at the stronghold site.

In 1976–1985, archaeological excavations were carried out in the northeastern section of the castle courtyard.³ Archaeological investigations revealed exceptionally well-preserved remains of the medieval stronghold – a densely built proto-urban settlement, featuring a so-

cially diverse population and fulfilling administrative, production, and commercial functions. Owing to waterlogged ground conditions, wooden household structures, street surfaces, and various organic artifacts were uncovered. These remains enabled a detailed reconstruction of the spatial layout, identification of extant architectural features, and the delineation of 17 settlement levels. Two of these levels, both destroyed by fire, covered most of the investigated area and defined two principal settlement phases. The first phase ended when a major fire swept through the stronghold in the last quarter of the 13th century or at the turn of the 13th and 14th centuries. The second fire layer is attributed by researchers to the incursion of 1368.⁴

Investigations at the Pułtusk stronghold yielded a rich and diverse collection of artifacts, most of which remain unpublished. Among them is an extensive assortment of leather items, including knife sheaths, pouches, belts, thongs, and – most frequent – footwear remains.⁵ The majority of these finds comprise multi-piece footwear typical of the 13th and 14th centuries. Among

¹ Zwolińska 1969; Gołębniak *et al.* 1997, 14; Gąsowski *et al.* 2000, 160.

² Długosz Chronicle, 291.

³ Gołębniak *et al.* 1997, 13–39; Stabrowska 2015.

⁴ Gąsowski *et al.* 2000; Stabrowska 2015, 43.

⁵ Leather artefacts are presented at the permanent exhibition at the Regional Museum in Pułtusk.

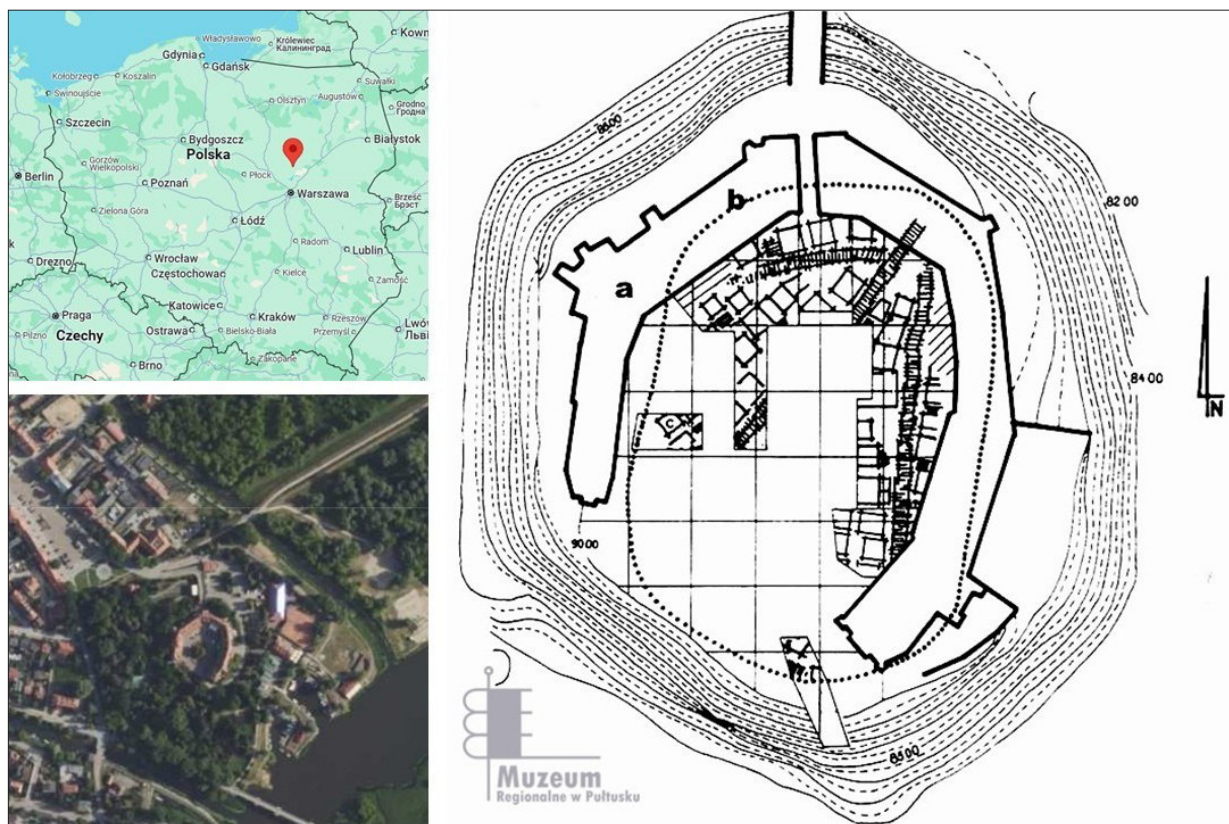


Fig. 1. Pułtusk. Localisation and plan of the excavated part of the stronghold (after: <https://muzeum.pultusk.pl/sredniowieczne-proto-miasto-w-pultusku/> access 02.07.2025 r.).

them, high shoes fastened with thongs wrapped around the ankle and calf predominated,⁶ whereas low shoes – with side-laced fastening or fastened on the instep with a tie-lace or straps⁷ – constitute only a marginal share of the assemblage.⁸ Notably, the collection also contains 11 examples of one-piece shoes – an exceedingly rare find in late medieval leather assemblages.

One-Piece Shoes from the Pułtusk Stronghold

The principal feature of one-piece footwear is that it has been made from a single piece of leather without a separate sole, contrary to multi-piece shoes.⁹ The cut-

ting pattern, when properly folded, created a whole foot covering with toe and heel. These shoes typically reached below the ankle and were secured to the foot by long leather thongs passed through slots cut along both sides (Fig. 2). The thongs were likely wrapped and tied around the calf to prevent the shoe from slipping off.¹⁰ Despite the apparent simplicity of this footwear, various cutting pattern variants were used, requiring the use of a maximum of three simple seams to form the toe and the heel.

Remains of 11 one-piece shoes, in varying states of preservation, were recovered from the settlement strata of the Pułtusk stronghold dating to the 2nd and 3rd quarters of the 14th century, after the first fire event.¹¹ Although relatively few specimens were discovered, three different variants of this footwear have been identified,

⁶ Type 10 according to Goubitz 2001.

⁷ Type 40, 50 and 70 according to Goubitz 2001.

⁸ Blusiewicz 2003.

⁹ Older Polish archaeological literature often referred to such one-piece footwear as *chodaki* (Wiklak 1969, 486). In dictionary meaning, this term applied to simple footwear made of wood, bark, leather, or other materials. Today, *chodak* is generally understood to mean a specific slip-on shoe without a heel, characterized by a high wooden platform and leather vamp. Therefore,

contemporary scholars prefer the term “one-piece footwear”, which emphasizes the most distinctive feature of this type of leather footwear (e.g. see Harjula 2008, 22).

¹⁰ Izûmowa 1959, 202; Osipov 2006, 136, Fig. 36.

¹¹ Found in levels XI–XV of the stronghold, except for one finding without a reference number, which in such circumstances has been attributed to the entire period of the stronghold existence.



Fig. 2. One-piece footwear from Pułtusk, 2nd-3rd quarter of the 14th c. (photo by M. Dąbski).

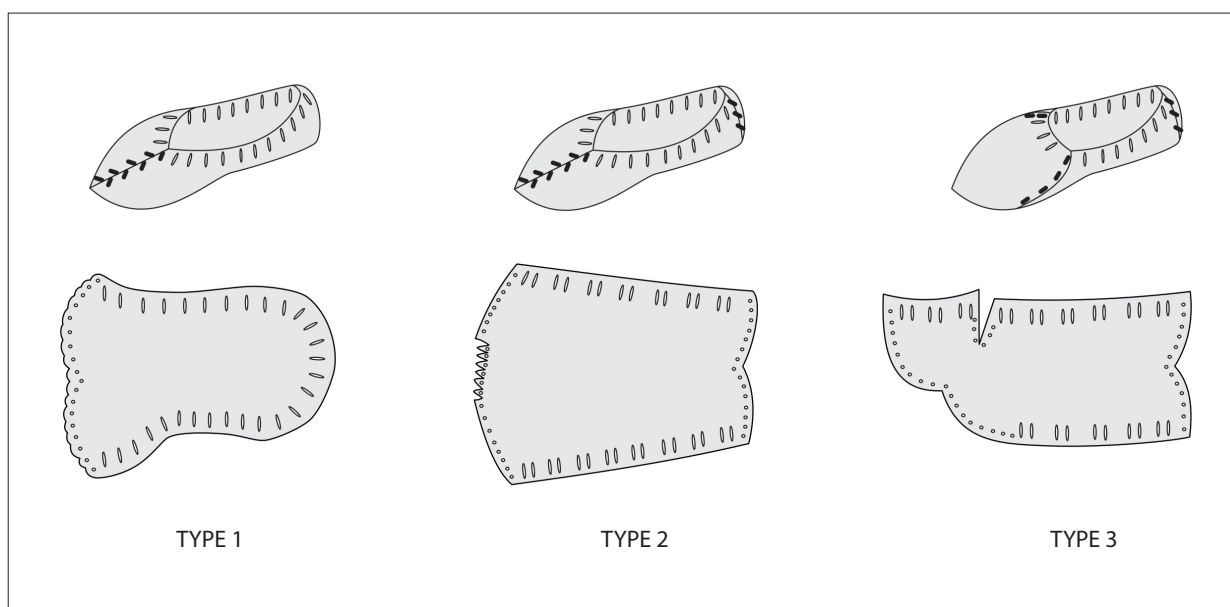


Fig. 3. Types of Pułtusk one-piece footwear (compiled by K. Blusiewicz).

each characterized by distinct construction methods. Based on the number and placement of seams, three types of cutting patterns were distinguished (Fig. 3).

Type 1 (Fig. 3:1) was the simplest to produce. A symmetrical cutting pattern required a single seam at the front, from the toe tip to the middle of the instep. The heel section was gathered using straps, like a pouch. Only one artefact of this type was found at Pułtusk stronghold (Fig. 4:1).

Type 2 (Fig. 3:2) also utilized a symmetrical cutting pattern, but included two constructional seams: one running from the toe tip to the middle of the instep, and another at the centre of the heel. The pattern length roughly matched the foot length. Six artifacts were classified as Type 2 (Figs 2:1–2; 4:2–6). One other specimen, missing the heel part, is either Type 1 or Type 2, with no further differentiation being possible.

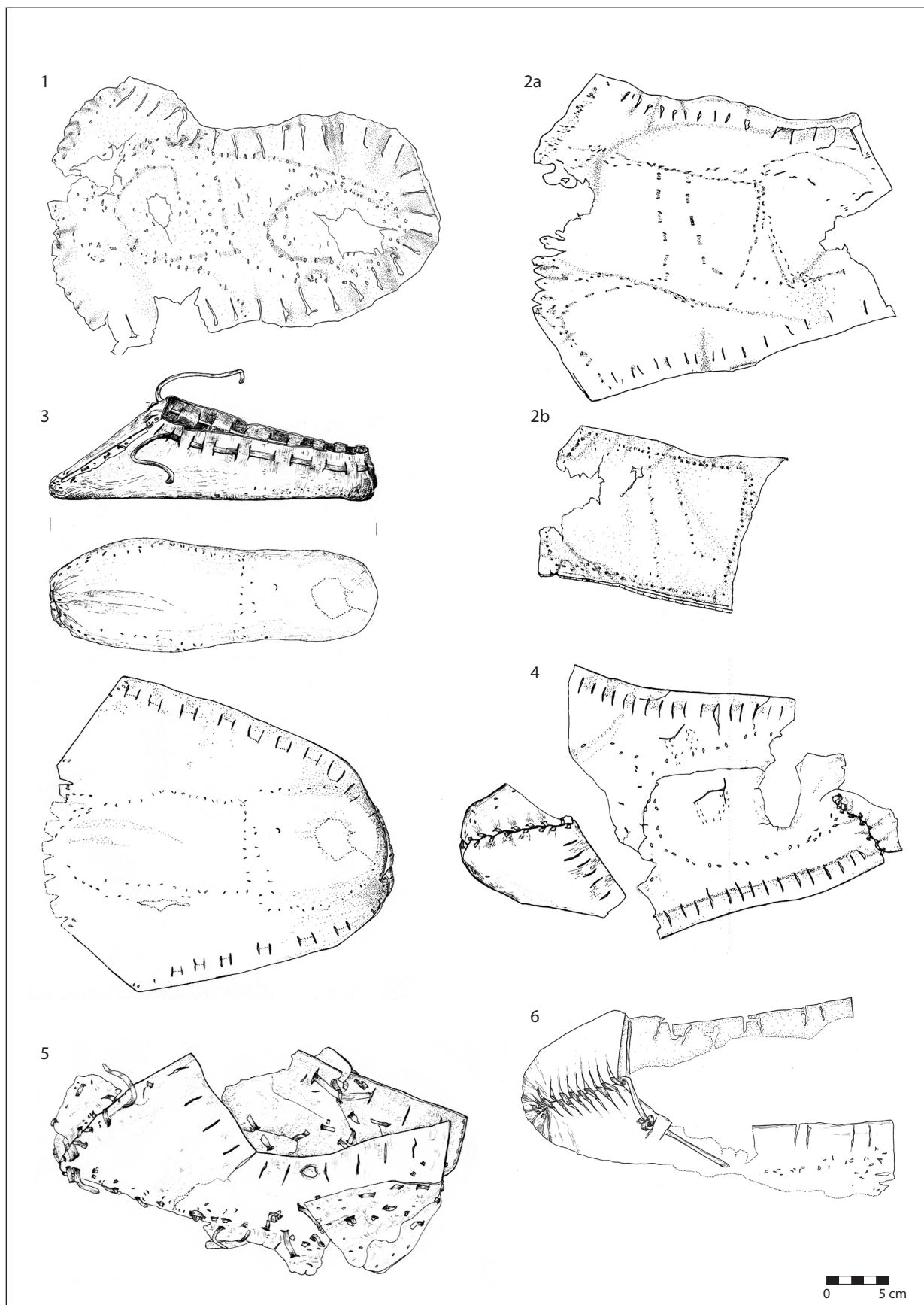


Fig. 4. One-piece footwear from Pułtusk, Type 1 (1) and 2 (2-6) (drawing by K. Blusiewicz, G. Zborowska-Znajkowska).

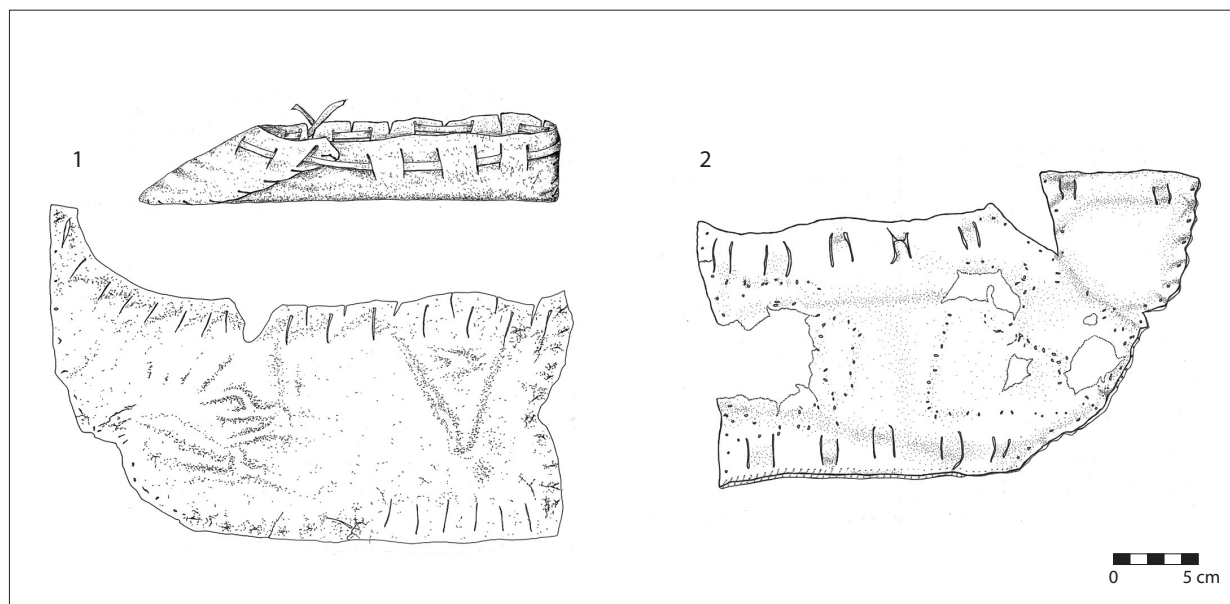


Fig. 5. One-piece footwear from Pułtusk, Type 3 (drawing by K. Blusiewicz, G. Zborowska-Znajkowska).

Types 1 and 2 might have been cut and sewn identically for both feet, conforming to each foot through wear. In contrast, Type 3 is more distinctive and unique, identified in three specimens (Figs. 2:3; 5:1–2). Its cutting pattern is asymmetrical with an overlapping section, requiring three seams in total: two along the sides of the foot and one at the centre of the heel. Consequently, this type was probably cut separately for the left and right foot.

None of the recovered examples represents the simplest known form of one-piece footwear, which requires no seams and relies solely on edge slots for threading a leather strap, thereby gathering the leather around the foot in a bag-like shape.

One-piece shoes were stitched using leather thongs, many of which have survived. In a few cases, the connecting material did not survive; given the small stitch holes, the use of thread cannot be excluded. Two principal stitching methods were employed: the “baseball” stitch and the “running” stitch. The baseball stitch involves bringing the edges together and passing a leather strap alternately through slots in opposite edges, resulting in a robust, characteristic and decorative pattern (Fig. 6). This stitch terminates by threading the strap through a series of small, tight slots. The running stitch, by contrast, is created by overlapping the leather edges, cutting through the overlap, and threading narrow leather straps through these slots. Both stitches were used for the front and back seams, often employing the same technique at the toe and heel, or combining the baseball stitch at the toe with the running stitch at the heel.

Only two specimens deviate from these typical sewing methods. In the first – a Type 3 shoe – the side and back edges were joined using an edge/flesh seam hid-



Fig. 6. Baseball stitch on the toe part of the one-piece shoes (photo by K. Blusiewicz).

den in the thickness of the leather. This technique was likely feasible due to the thickness of the hide, and was common in late medieval shoemaking. In the second exceptional shoe (Type 2), the instep seam was executed with an ornamental whip stitch and openwork decoration (Fig. 4:6).

The recovered footwear was used by adults or older adolescents. Eight specimens were sufficiently complete to measure, yielding lengths from 23 to 27 cm. Traces

of use found on the leather show that the one-piece footwear from Pułtusk was made of reused leather.¹² Five specimens retained traces of older edge/flesh seams unnecessary for one-piece shoe construction (Figs. 4:1–2; 5:2). Furthermore, the surface of the leather was heavily abraded throughout, even in areas less exposed to wear. Heavy wear of the grain surface made species identification of the leather difficult, and sometimes even impossible. Macroscopic observations suggest that four of the one-piece shoes were made of bovine hide, four from goat or sheep skins, while no definitive identification could be made for the remaining specimens.¹³

Nearly all specimens bear marks of multiple reinforcements and repairs. Additional leather pieces were affixed to the exterior sole area, separately for the heel and forefoot. This demonstrates attempts to eliminate the main problem of one-piece footwear, i.e. the relatively thin sole part that wore out early. In some shoes, the degree and pattern of wear, combined with signs of mending on soles not yet fully worn, suggest that certain reinforcements may have been planned during the initial manufacturing stage (Fig. 4:2–3).

The Distribution of One-Piece Footwear in Late-Medieval Europe

It is widely recognized that one-piece shoes represent the oldest and most basic form of leather footwear, with archaeological evidence tracing their origins to the 4th millennium BC.¹⁴ In Europe, the presence of such footwear has been documented as early as the Bronze Age, with a notable increase in findings from the early medieval period, particularly in regions of the Baltic and North Sea coasts.¹⁵ Findings of one-piece footwear within the present-day territory of Poland have been dated to the 8th–11th centuries AD and originate from excavations conducted in Gniezno,¹⁶ Santok,¹⁷ and early medieval settlements in Western Pomerania, including Szczecin, Wolin,¹⁸ and Kołobrzeg.¹⁹ Henryk Wiklak postulated that this type of footwear ceased to be used at the turn of the 10th and 11th centuries AD, persisting only in Rus and along the eastern Baltic coast.²⁰

This hypothesis is partially supported by comparative analyses of late medieval and post-medieval one-piece footwear finds, which are predominantly concentrated in Eastern and Northern Europe (Fig. 7). One-piece footwear – known as *porshni* – has been identified in nearly all excavated medieval Rus towns where archaeological conditions enabled the preservation of organic materials.²¹ There, *porshni* remained in use throughout the medieval period and persisted until the early 20th century. This region is considered the only one in Europe where one-piece footwear was produced by professional shoemakers during the late Middle Ages and early modern period.²²

Although less numerous, similarly dated examples have also been recovered from Nordic countries. Early medieval finds from Scandinavia likewise suggest a continuity in the tradition of one-piece shoe production.²³ In contrast, Western Europe has yielded only a single late medieval example, discovered in Hoogland (Netherlands) and dated to no earlier than the 12th century.²⁴ One-piece shoes are generally regarded as atypical and primitive when compared to the more advanced Western European leatherworking tradition. Consequently, such footwear is interpreted as an import, most likely originating in Eastern Europe or Scandinavia – even when associated with contexts dating to the 10th or 11th centuries.²⁵

This issue has been thoroughly examined by Janne Harjula in his study of a late medieval collection of one-piece footwear from Turku.²⁶ Harjula also argues that the prevailing assumption of foreign origin may contribute to difficulties in identifying such footwear remains and recognizing their presence within Western European archaeological assemblages. This perspective is further supported by the examples from Pułtusk, which were initially misidentified and published as components of clothing or protective leather elements of military equipment, possibly a breastplate.²⁷

The closest analogies to the Pułtusk artefacts, in terms of geographical proximity, chronology, and stylistic characteristics, originate from the territory of present-day Belarus. *Porshni* corresponding to Pułtusk's Type 1 and Type 2 one-piece footwear have been identified

¹² Similar observations were made for one-piece footwear i.a. from Grodno (Trusau, Sobal, Zdanowicz 1993, 64), Pskov (Oâteva 1962, 80), Turku (Harjula 2008, 25) and Oslo (Schia 1977, 175; 1987, 366).

¹³ Macroscopic identification of leather was made by Lidia Eberle and revised by the author.

¹⁴ Groenman-van Waateringe 2001; Pinhasi *et al.* 2010.

¹⁵ e.g., Hald 1972; Groenman-van Waateringe 2001; Volken 2014; Kowalska 2018.

¹⁶ Rajewski 1939, 104–109.

¹⁷ Kowalska 2018.

¹⁸ e.g., Wiklak 1995, 79–82; Kowalska 2007.

¹⁹ Wyrwot-Wyszkowska, Radek 2007, 221–222.

²⁰ Wiklak 1969, 503–504; 1995, 90.

²¹ Kurbatov 2004, 50.

²² Saksa *et al.* 2002, 62.

²³ e.g., Groenman-van Waateringe 1984.

²⁴ Goubitz 1997, 432–443.

²⁵ e.g., York; see Mould, Carlisle, and Cameron 2003, 3280.

²⁶ Harjula 2008, 97–101.

²⁷ Turska 1987, 187–189.

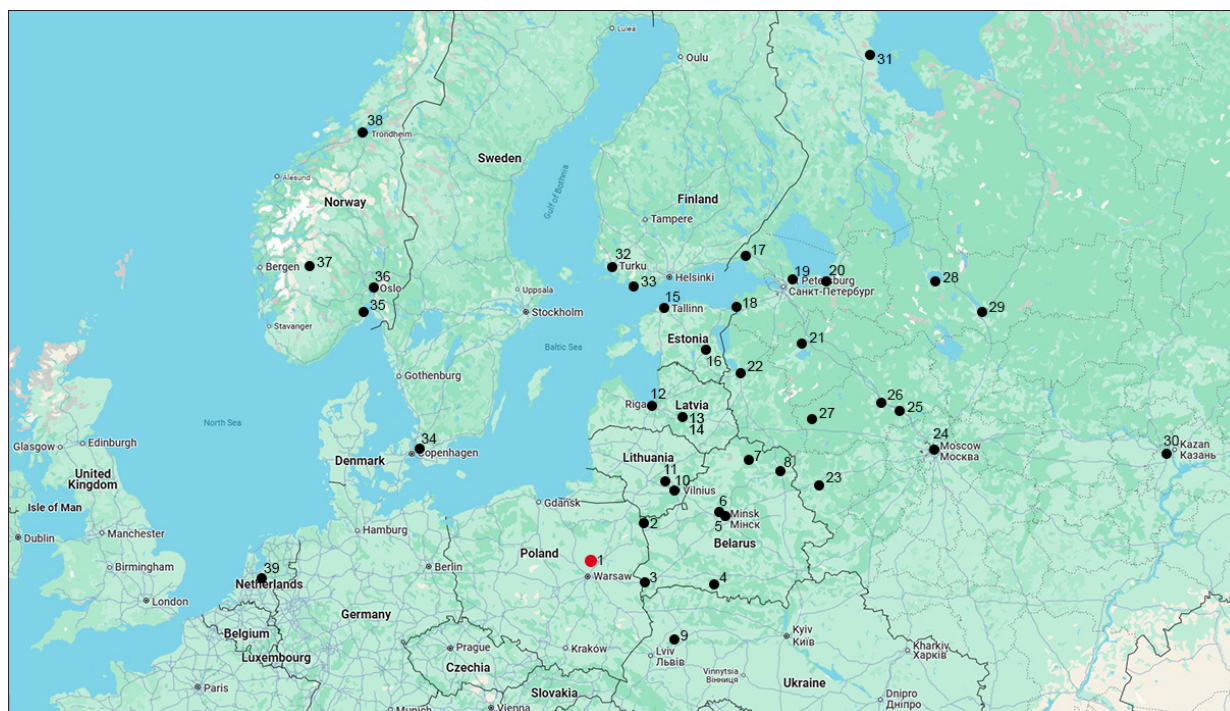


Fig. 7. Sites with finds of medieval and post-medieval one-piece shoes (compiled by K. Blusiewicz).

1. Pułtusk (PL), 13th-14th c.; 2. Grodno (BY), 12th-13th c. (Trusau *et al.* 1993, 64); 3. Berest (BY) 12th-14th c. (Lysenko 1985, 287-289); 4. David-gorod (BY) 12th-14th c. (Earnwood, Małachowska 1993, fig. 8.6); 5. Minsk (BY) (after Kurbatov 2004, 50); 6. Zaslavye (BY) end of 13th – 1st half of the 15th c. (Zaáč 1995, 72) ; 7. Polotsk (BY) 2nd half of the 12th – 1st half of the 13th c. (after Kurbatov 2004, 50); 8. Vitebsk (BY), 14th-18th c. (Levko 1984, 49-50); 9. Berestechko (UA), half of the 17th c. (Svešnikov 1993, 213); 10. Vilnius (LT), 13th-14th c. (Navickas 1964, 194); 11. Kernave (LT), 13th-14th c. (Luchtanas *et al.* 2002, 90) ; 12. Riga (LV), 12th-14th c. (Bebre 1987, 26; 1997); 13. Koknese (LV) 11th-14th c. (after Bebre 1997, 114); 14. Sēlpils (LV), 15th c. (after Bebre 1997, 114); 15. Tallin (EE) 13th-14th c. (Sarv 2006, 160); 16. Tartu (EE) 13th-14th c. (after Harjula 2008, p. 495); 17. Vyborg (RU), 15th-16th c. (Saksa *et al.* 2002, 60-62); 18. Ivangorod (RU), 16th c. (Kurbatov 1991, 71; 2015); 19. Oreshek (RU), 15th-16th c. (after Kurbatov 2019, 198); 20. Staraya Ladoga (RU) 16th-17th c. (Oâteva 1965, 52); 21. Pskov (RU) 11th-13th (Oâteva 1962, 78-80); 16th-17th c. (after Kurbatov 2019, 197); 22. Novgorod (RU) 11th-16th c. (Izûmowa 1959, 201-202, 211); 23. Smolensk (RU), 11/12th-13th c. (Osipov, Sobol 2013, 377); 24. Moscow (RU) 13th-17th c. (Osipov 2006, 40-41); 25. Tver (RU), 1180s – 1260s (Kurbatov 2004, 48-50) ; 26. Torzhok (RU), (after Kurbatov, 2004, 50); 27. Toropets (RU), (after Kurbatov, 2004, 50); 28. Belozersk (RU) 11th-13th c. (Oâteva 1973, 201) ; 29. Vologda (RU), end of the 15th-17th c. (after Kurbatov 2019, 197); 30. Sviyazhsk (RU) late 16th – 18th (Bogatowa *et al.* 2016); 31. Kem (RU), 2nd half of the 16th c. – beg. of the 17th c. (Kurbatov 2019, 195-198); 32. Turku (FI), 14th-16th c. (Harjula 2008, 21-25); 33. Hankoniemi Cape (FI), beg. of the 17th c. (after Harjula 2008, 171-172); 34. Lund (SE), 13th c. (after Harjula 2008, 97) ; 35. Tønsberg (NO) 13th-1st half of the 14th c. (after Harjula 2008, 97); 36. Oslo (NO), 13th/14th c. (Schia 1977, 175, Fig. 98; see Harjula 2008, 97); 37. Uvdal (NO) (after Harjula 2008, 97); 38. Trondheim (NO) (Marstein 1989:58-60, Figs. 1d, 29a-b); 39. Amersfoort-Hoogland (NL), 12th c. (Goubitz 1997, 432-435).

in 12th- and 13th-century stratigraphic layers in Grodno²⁸ and Minsk,²⁹ as well as in contexts dated to the 12th-14th centuries in Brest³⁰ and David-Gorod.³¹ Single examples of analogous one-piece footwear, dated to the 13th and 14th centuries, have also been documented in Vilnius.³²

A substantial number of one-piece footwear specimens have been recovered from regions further east and northeast (see Fig. 7), notably from extensive excavations in Veliky Novgorod³³ and Tver.³⁴ Collections from Grodno, Brest, David-Gorod, and Novgorod,

²⁸ Trusau *et al.* 1993, 64.

²⁹ Kurbatov 2004, 50.

³⁰ Lysenko 1985, 288.

³¹ Earnwood, Małachowska 1993, Fig. 8.6.

³² Navickas 1964, 194; Catalogue 2020, cat. no. 1, 3.

³³ Âkunina 1947; Izûmowa 1959, 201-202, 211.

³⁴ Kurbatov 2004, 48-50.

from Smolensk, Pskov, Minsk, Polotsk, and Toropets³⁵ and Latvia³⁶ contain openworked *porshni* with top-cut patterns closely resembling those observed in the Pułtusk artefacts. According to archaeological sources, *porshni* featuring openwork decoration were in use only for a limited period, spanning the 13th century and the first half of the 14th century.³⁷ Remarkably, no such decorated one-piece footwear has been recovered from excavations conducted in Western and Northern Europe. Furthermore, published collections of medieval leather artefacts do not present any parallels to the third type of one-piece shoe identified in Pułtusk, which exhibits a highly distinctive, asymmetrical cutting pattern.

The Origins and Social Context of One-Piece Footwear from Late Medieval Pułtusk

The examined one-piece footwear, dated to the 2nd and 3rd quarters of the 14th century, constitutes an exceptional discovery within the territory of present-day Poland. The presence of this type of footwear alongside typical late medieval multi-piece shoes may be interpreted in several ways. One possible explanation is that it represents a continuation of early medieval local shoemaking traditions. Although footwear of similar form and construction was worn along the Baltic coast at least until the 11th century,³⁸ suggesting a direct continuity would be a far-reaching assumption. Consequently, given the absence of preserved leather artefacts from early medieval settlements in the Mazovia region, this hypothesis remains unverified.

Alternatively, the footwear may have been associated with the local rural population, constituting an element of long-standing rural tradition. A similar interpretation has been proposed for comparable finds from Riga, where one-piece shoes have been linked to the poorest segment of the population and rural folk who had migrated to the town.³⁹ Unfortunately, the limited scope of archaeological research on late medieval villages currently limits our ability to substantiate this claim.

A third possibility assumes that this type of footwear belonged to populations who may have arrived from eastern regions, where such shoemaking traditions had persisted, particularly given that important transit and trade routes from the East to the Polish territories passed



Fig. 8. Multi-piece high shoe from Pułtusk with openwork decoration, 2nd half of the 13th c. (photo by K. Blusiewicz).

through Pułtusk.⁴⁰ Furthermore, one of the recovered multi-piece shoes exhibits distinctly eastern characteristics, featuring an upper decorated with cuts on the instep and possibly embroidered (Fig. 8). Comparable decorative elements have been documented in Grodno,⁴¹ Brest,⁴² and Kernavė.⁴³ Regardless of the interpretation of the origin, the absence of one-piece footwear in earlier settlement layers – before the first fire – is a notable observation. The available archaeological evidence suggests that this type of footwear may have been introduced by incoming populations, including merchants, craftsmen, carpenters involved in the reconstruction of the settlement after the fire, and immigrating settlers.

Discussions concerning the users of one-piece footwear in the late medieval period also assume that such shoes were primarily worn by the lower socioeconomic classes, who could not afford products crafted by professional shoemakers.⁴⁴ This assumption is largely based on the characteristics of one-piece footwear, including the simplicity of its design, the use of leather thongs for stitching, the incorporation of recycled leather, and evidence of repeated patching. Such features suggest that this type of footwear could be produced domestically, requiring minimal tools and relying on the skills of an amateur rather than a trained artisan. However, the possibility that some of these artefacts were crafted by professional shoemakers cannot be excluded. According to A. V. Kurbatov, in Rus, such late medieval shoes were exclusively produced by professional shoemakers.⁴⁵ Certain examples of one-piece footwear from Pułtusk exhibit more complex cut-

³⁵ Kurbatov 2004, 50.

³⁶ Bebre 1997.

³⁷ Kurbatov 2015, 469.

³⁸ See Wiklak 1995, 90.

³⁹ Bebre 1997.

⁴⁰ Dunin-Wąsowicz 1975, 59, 62, 68.

⁴¹ Trusau *et al.* 1993, 65, Figs. 88:7, 88:15.

⁴² Lysenko 1985, 292.

⁴³ Luchtanas *et al.* 2002, 90.

⁴⁴ Izumowa 1959, 202; Bebre 1997.

⁴⁵ Kurbatov 2012, 23.

ting patterns, structural reinforcements during production (through the addition of extra sole layers), and stitching executed with awls and thread – indicating the involvement of skilled craftsmanship. It remains uncertain whether these craftsmen were based in Pułtusk, although archaeological investigations confirm their presence within the stronghold. The identification of workshop locations is supported by the discovery of shoemaking tools, such as lasts, as well as production waste.⁴⁶

The practice of repairing not only one-piece but also multi-piece footwear highlights the considerable value attributed to leather goods, which were used intensively. This is also evidenced by the secondary use of leather for the production of one-piece footwear. Such practices may indirectly reflect social stratification, as it suggest

the possibility of shoes being passed down from wealthier individuals to those of lower status. However, the mere presence of mending does not necessarily indicate the social status of the shoe's original owner.

Furthermore, considering the presence of one-piece footwear in traditional folk costumes across various regions of Europe, including Finland, Estonia, and Latvia, as well as among the Carpathian and Balkan mountain populations,⁴⁷ it is plausible that such footwear also functioned as a marker of cultural identity in earlier periods. Due to the scarcity of historical sources, the question of both the users and producers of one-piece footwear in the late medieval Pułtusk stronghold remains unresolved.

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⁴⁶ Stabrowska 2015, 58–61.

⁴⁷ Hald 1972, 149–207; Moszyński 1929, 457–458, Minksztyrn 2020, 97–98.

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