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WOODEN CROSSBOW BOLT FROM HRODNA: A SMALL CHILDREN'S TOY AS EVIDENCE OF SIGNIFICANT CHANGES IN WEAPONRY OF THE GRAND DUCHY OF LITHUANIA

Abstract

This article discusses the discovery of a wooden toy crossbow bolt, unearthed in 1987 during excavations at the Old Castle in Hrodna (Belarus). It is dated to the 2nd half or the end of the 14th century. While the find offers valuable insights into medieval children's games, it is also a significant piece of evidence for the widespread use of crossbows in the armament of the largest castle garrisons of the Grand Duchy of Lithuania in the late 14th to early 15th centuries.

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KEYWORDS


- crossbow bolt
- toys
- weaponry
- Grand Duchy of Lithuania
- Middle Ages
- Hrodna (= Grodno)


INTRODUCTION

It is a well-known fact that children's play throughout human history has often mirrored the activities of adults. Children's games are not only a form of entertainment but also a means of socialization, allowing them to acquire adult life skills by 'trying on' various social and professional roles typical of adults. Accordingly, children's toys can, to a certain extent, reflect not only kids' play itself but also certain social, cultural, and even technological processes taking place within a given society. This applies fully to the Middle Ages. The fact that toys can be used not only to characterize the 'world of children' but also to gain a deeper and more accurate understanding of the 'world

of adults' continues to attract close attention from archaeologists studying sites across various European regions.¹

War, in its many forms, was an integral part of medieval life. The constant threat of warfare or other armed conflicts necessitated both preparations to repel enemy attacks and readiness to launch offensives against neighbouring territories. Living under the persistent danger of new military confrontations inevitably led to the significant militarization of material culture – including that of the 'children's world'. In the course of studying medieval European towns, including those in Eastern Europe, archaeologists regularly encounter a wide range of military toys, which often closely reflect the range of offensive weapons used by the population of a given region during a particular period. This phenomenon has long

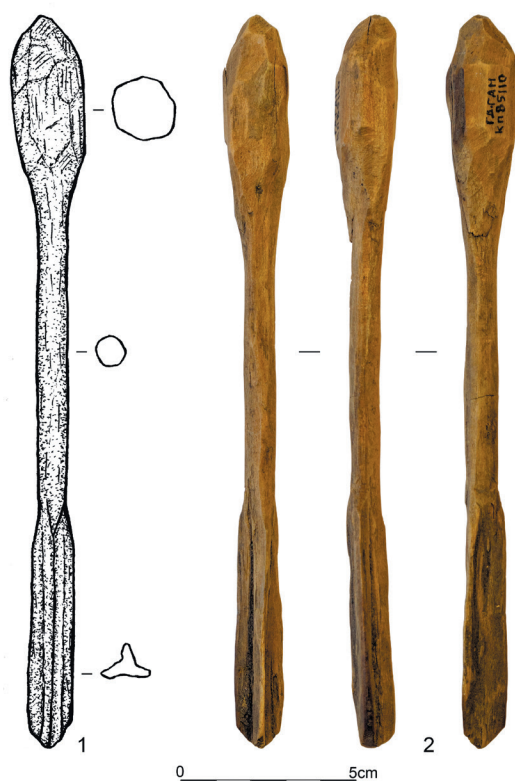
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¹ Plavinski 2001; Kotowicz 2008; Gomulka 2013; Singkh and Stepanov 2020.



Fig. 1. Wooden toy crossbow bolt from the Old Castle in Hrodna. Photo and graphic design: V. Makouskaya.



been recognized by scholars, who actively utilize such finds not only in studies of the ‘archaeology of childhood’ but also in research on medieval weaponry.²

This article aims to introduce into scientific circulation a single toy – a wooden crossbow bolt discovered during excavations in Hrodna (Fig. 1). At the same time, we seek to demonstrate how one military toy can serve as a marker of complex processes and significant transformations in the warfare of the Grand Duchy of Lithuania that occurred in the 2nd half of the 14th century to the early 15th century.

THE WOODEN TOY CROSSBOW BOLT FROM HRODNA: DESCRIPTION OF THE ARTEFACT AND ITS ARCHAEOLOGICAL CONTEXT

A wooden crossbow bolt (Fig. 1), interpreted as a toy, was discovered in 1987 during archaeological excavations at the site of the Old Castle in Hrodna,³ conducted under the supervision of Alieh Trusaŭ. The artefact is currently housed in the collection of the Hrodna State Museum of History and Archaeology (Inventory No. KP 85110).

The bolt, carved from a single piece of wood, has been preserved in its full length of 14.9 cm. It is crafted with striking realism and features

carefully detailed components – both the tip and the fletching. The tip is 4.5 cm long and has an asymmetrical hexagonal cross-section (1.25 cm wide). The shaft is circular in cross-section, with a diameter of 0.6 cm. The finely executed fletching consists of three vanes, measuring 4.4 cm in length and 1 cm in width. The overall appearance of the artefact leaves no doubt that this toy closely and accurately replicates the form of a real crossbow bolt (Fig. 2).

The toy crossbow bolt was recovered from Trench 2, excavated during the 1986-1987 fieldwork seasons. It was found in Layer 16, which contained materials from various periods, broadly dated to the 12th-14th centuries. However, the actual formation of this layer can be confidently dated to the 2nd half or the end of the 14th century. This is supported by dendrochronological dates obtained from the overlying Layer 15, which was dated to the late 14th century.⁴ Based on stratigraphic evidence, the bolt can thus be securely dated to the 2nd half or end of the 14th century.

THE IMMEDIATE CONTEXT OF THE FIND WITHIN THE MATERIAL CULTURE OF THE GRAND DUCHY OF LITHUANIA: COMPARABLE MILITARY TOYS

The very fact of finding a wooden toy bolt is not itself exceptional, as such artefacts have been repeatedly discovered during excavations of towns with ‘wet’ cultural layers, both in Eastern Europe⁵ and in some towns of the South-Eastern Baltic region.⁶ However, almost all of these finds, with extremely rare exceptions, can be identified either as arrows intended for shooting from toy bows, or as arrows whose function cannot be determined with confidence due to their fragmentary preservation, primitive manufacturing, or schematic detailing.

The fact that we are dealing specifically with a bolt for a toy crossbow, used in the 2nd half to the end of the 14th century, is of particular interest. To the authors’ knowledge, there are no other known finds of toy crossbow bolts from towns of the Grand Duchy of Lithuania. In fact, the only, albeit somewhat indirect, analogy to the discussed artefact from Hrodna known from the territory of the Grand Duchy comes from the excavations of the Lower Castle in Vilnius. The indirect nature

² Plavinski 2001; Blaževičius 2012; Singkh and Stepanov 2020.

³ Bieńkowska and Kiziukiewicz 2006, 26.

⁴ Trusov and Tkachev 1988a, 5; Trusov and Tkachev 1988b, 172; Trusaŭ et al. 1993, 31.

⁵ Khoroshev 1998, fig. 1: 9-12; Plavinski 2001, 155; Blaževičius 2011, 51; Dubrovin 2016, 76; Singkh and Stepanov 2020, 188.

⁶ Romanowicz 2016, 83.

of this analogy lies in the fact that the above-mentioned find from Vilnius is not a toy crossbow bolt but a stock of a toy crossbow (Fig. 3). This artefact, made of pinewood, is 39.5 cm long and is notable for its high-quality detailing. It is dated to the late 14th – 1st half of the 15th century.⁷

Outside the Grand Duchy of Lithuania, in the South-Eastern Baltic region, there are five known finds of late medieval toy crossbows (three from Elbląg, one from Stralsund and one from Lübeck) and three toy crossbow bolts (one from Riga and two from Tartu).⁸ However, the Hrodna specimen stands out in this group due to its complete preservation.

The finds of a toy crossbow fragment from the excavations of the Lower Castle in Vilnius and a toy crossbow bolt from the Old Castle in Hrodna alone testify only to the fact that children who lived in these castles in the 2nd half of the 14th century – 1st half of the 15th century could use military toys, including crossbows, in their play. However, the significance of these finds appears to be much greater when viewed in the broader context of archaeological evidence for the use of crossbows in the warfare of the Grand Duchy of Lithuania.

A BROAD CONTEXT WITHIN MATERIAL CULTURE, OR A FEW REMARKS ON THE DISTRIBUTION OF CROSSBOWS IN THE WARFARE OF THE GRAND DUCHY OF LITHUANIA DURING THE SECOND HALF OF THE 14TH TO THE EARLY 15TH CENTURIES

The question of the time of the appearance and distribution of crossbows in the warfare of the Grand Duchy of Lithuania has been repeatedly addressed by researchers over the past two decades. The greatest contribution to the study of this issue was made by Gintautas Rackevičius, who summarized all finds of crossbow parts and crossbow bolts known at that time from the territory of Lithuania in his monograph *Arbaletas ir lankas Lietuvoje XIII–XVI a.*⁹ In addition, G. Rackevičius devoted several of publications to various aspects of the distribution, use in battles, and manufacture of crossbows in Lithuania, particularly in Vilnius.¹⁰

The issue of the distribution of crossbows in the warfare of the Belarusian lands of the Grand Duchy of Lithuania has been repeatedly addressed in the works of Yuri Bokhan.¹¹ It should be noted

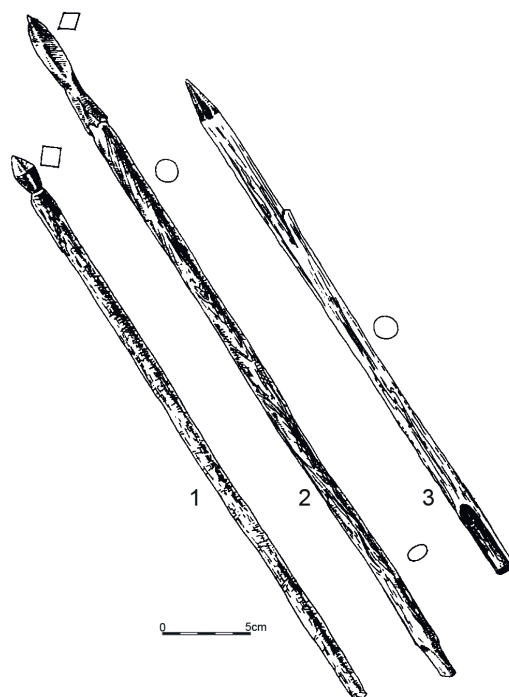


Fig. 2. Crossbow bolts from the territory of Lithuania, 4th quarter of the 14th century – early 15th century: 1-2 – New Trakai; 3 – Vilnius Lower Castle. Source: G. Rackevičius 2007.

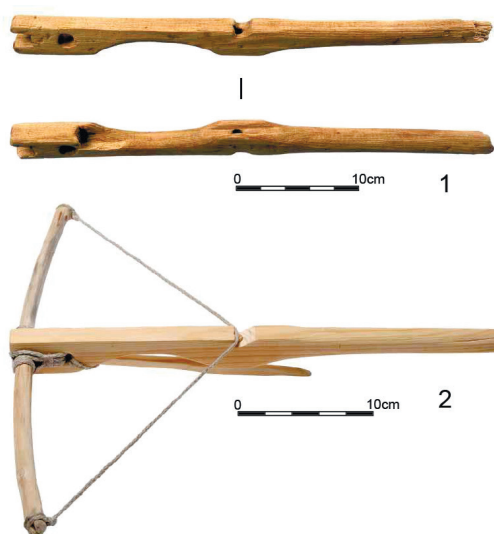


Fig. 3. Wooden toy crossbow from the Vilnius Lower Castle (1) and its reconstruction (2). Source: P. Blaževičius 2012.

that Bokhan's research was mainly based on written sources, with archaeological materials used primarily as illustrations supporting his conclusions. Data on finds of crossbow bolts from the territory of Belarus were summarized by Uladzimir Plavinski,¹² who, together with Natallia Kiziukevich and Mikalai Plavinski, published finds of crossbow parts from excavations in Hrodna.¹³ Finally, data on archaeological finds of crossbow fragments and bolts from Belarus were summarized in a joint article by Uladzimir and Mikalai Plavinski.¹⁴

⁷ Blaževičius 2012; Blaževičius 2013, 140.

⁸ Romanowicz 2016, 83.

⁹ Rackevičius 2002.

¹⁰ Rackevičius 2001; Rackevičius 2007; Rackevičius 2008; Ratskyevichyus 2009.

¹¹ Bokhan 2001; Bokhan 2002, 172-177; Bokhan 2008, 222-229.

¹² Plavinskiy 2014.

¹³ Plavinskiy et al. 2018.

¹⁴ Plavinski and Plavinski 2017.

Fig. 4. Finds of semi-finished crossbow parts in the towns and castles of the Grand Duchy of Lithuania: 1 – Vilnius; 2 – Hrodna; 3 – Minsk. Map by V. Makouskaya.



Archaeological finds of crossbow-related weapons from the territory of the Grand Duchy of Lithuania can be divided into two main categories: 1) crossbow projectiles or bolts and 2) parts of crossbows and equipment elements used by arbalisters.

The most numerous category of finds indicating the use of crossbows is bolt heads. At the same time, it is quite clear that most of the bolt heads discovered during excavations of towns and castles in the territory of Lithuania and Belarus belonged to the attackers (often crusaders) who besieged these sites.¹⁵ Naturally, there are exceptions to this general rule, in cases where the archaeological context of the discovered bolt heads allows us to assert that they were part of the defenders' equipment of a particular castle.¹⁶ However, taken as a whole, crossbow bolt heads mainly represent the weapons of attackers and primarily testify to the intensity of military conflicts and the frequency of crusader assaults on certain regions of the Grand Duchy of Lithuania.¹⁷

Significantly more valuable for characterizing the chronology and extent of crossbow use in the warfare of the Grand Duchy of Lithuania proper are finds

of crossbow parts and arbalisters' equipment discovered during excavations of towns and castles that were likely lost during everyday use or repairs.

At the same time, finds of semi-finished crossbow parts are of particular interest, as they allow us to confidently assert that crossbows were produced or repaired locally. Indeed, with the beginning of local crossbow production, we have solid grounds to say that this type of ranged weapon became an integral part of the armament, at least of the garrisons of the largest towns and castles of the Grand Duchy located in Lithuania and the north-western regions of Belarus. Currently, reliable evidence of crossbow manufacture, namely, finds of their structural elements in an unfinished state, has been identified during excavations in Vilnius, Hrodna, and Minsk (Fig. 4).

The most representative collection of semi-finished products was found in Vilnius, where excavations at the Lower Castle uncovered a workshop for crossbow manufacture, dating to the 2nd half of the 14th century to the 1st half of the 15th century. During this research, a series of crossbow supports was discovered.¹⁸

From the excavations of the Old Castle in Hrodna comes a blank of a crossbow nut (Fig. 5:1), found during excavations led by N. Kiziukevich

¹⁵ Rackevičius 2007, 67-69; Rackevičius 2008, 137-148; Plavinski and Shadyra 2011; Vitkūnas 2011, 22-42; Plavinskiy 2014, 335-341; Plavinski and Plavinski 2017, 27-30.

¹⁶ Rackevičius 2007, 69; Dziarnovich 2017, 10; Plavinski and Plavinski 2017, 30.

¹⁷ Plavinski and Plavinski 2017, 30.

¹⁸ Rackevičius 2001, 380-381, fig. 2:4-7.

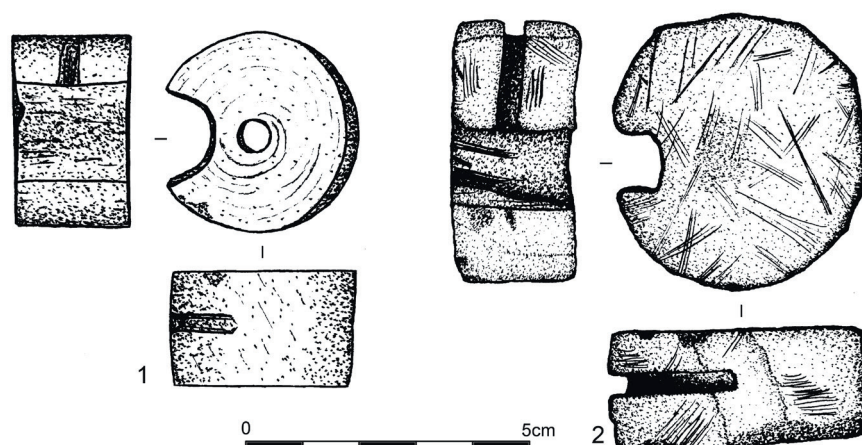


Fig. 5. Blanks of crossbow nuts: 1 – Hrodna Old Castle; 2 – Minsk, castle hill. Graphic design: M. Plavinski (1), V. Makouskaya (2).

in 2015. Based on stratigraphic data, it dates to the late 14th century – early 15th century. The fact that this is indeed a workpiece is evidenced by the absence of a longitudinal groove – which is normally cut into the nut to allow it to rotate when the iron trigger is lowered – and by the unfinished hole intended for the insertion of the trigger.¹⁹

Finally, another blank of a crossbow nut comes from the excavations of the Minsk castle hill (Fig. 5:2). Unfortunately, this artefact initially did not attract researchers' attention and ended up among the mass finds. For a long time, it was exhibited as an undefined horn blank in the exhibition of the educational laboratory of museology at the Faculty of History of Belarusian State University, and it only became available for study during the reconstruction of the archaeological exposition of this laboratory. Unfortunately, we have no information on the stratigraphic position and, consequently, the dating of this artefact. The workpiece is characterized by rough processing – it is uneven and roughly sawn off from the horn, with the outer surface cut off and not turned on a lathe. The diameter of the workpiece is 5.1×4.8 cm, and its thickness is 2–2.2 cm. Interestingly, despite the extremely rough nature of the find, the longitudinal groove – designed to allow the nut to rotate when lowering the iron trigger – has already been cut. However, neither the hole for the trigger nor the hole perpendicular to the nut's axis, intended to fasten the nut in the crossbow stock, were drilled.

Obviously, the manufacture of crossbow parts in major urban and defensive centres of the Grand Duchy of Lithuania, such as Vilnius and Hrodna, is attested from the 2nd half to the end of the 14th century. It is also noteworthy that from that time onwards, not only blanks but also whole or broken nuts, supports, and other crossbow components

have been found in the cultural layers of the most important towns of the state. In Vilnius, finds of crossbow supports and nuts have been recorded in the Upper and Lower Castle layers dating from the 2nd half of the 14th century.²⁰ Two crossbow nuts and two fragments of supports were found during excavations of the Old Castle in Hrodna.²¹ Unfortunately, their precise stratigraphic dating is difficult. Two crossbow nuts found in Brest date to the 15th century.²²

SHORT CONCLUSION

Based on the above brief review of finds of crossbow parts and blanks, we have every reason to believe that already in the 2nd half to the end of the 14th century, crossbows were not only widely used but also repaired and manufactured in the garrisons of the castles of the capital of the Grand Duchy of Lithuania and Hrodna – one of the most important residential centres of the Gediminids (which belonged to Witold at the end of the 14th century). This, in turn, allows us to assert that at that time, at least in the most important centres of the Grand Duchy, crossbows had become common weapons and had firmly secured their place in the local armamentarium. The adoption of crossbows into the military arsenal testifies to a certain degree of westernization of the military tradition of the Grand Duchy of Lithuania, which was both logical and necessary given the constant warfare with the crusaders.

It is not difficult to see that the dating of the wooden toy bolt from the excavations of the Old Castle in Hrodna, which became the 'subject of our publication, coincides precisely with the dating of the toy crossbow from the Lower Castle in Vilnius, and

¹⁹ Plavinskiy et al. 2018, 80, fig. 2: 3.

²⁰ Rackevičius 2002, 30–32, fig. 6.

²¹ Voronin 1954, fig. 88:18; Medvedev 1966, 93; Trusaŭ et al. 1993, 35; Plavinskiy et al. 2018, 80–81.

²² Lysenko 1985, 283, fig. 194:2–3.

both correspond to the period of adaptation, wide distribution, and manufacture of real crossbows in these towns. Obviously, the young inhabitants of the Vilnius and Hrodna castles, playing with toy crossbows, not only spent their leisure time in an interesting way but also gained early experience and skills in using crossbows – skills that for many would later become their adult profession.

Thus, the find of a wooden toy crossbow bolt from Hrodna is of considerable interest for characterizing children's play in the Middle Ages, but it is also important evidence of the wide distribution of crossbows in the complex of weapons of the Grand Duchy of Lithuania's largest castle garrisons in the 2nd half of the 14th-15th centuries.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

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