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A HACKBUT FROM THE MUSEUM IN JAROSŁAW – A CONTRIBUTION TO OUR KNOWLEDGE OF THE HAND-HELD FIREARMS OF THE POLISH INFANTRY IN THE 16TH C.

Hackbuts as infantry weapons lose their military importance in the late 15th c. in favour of handgonnes, but they still play an important role as siege defence weapons in fortresses. On the other hand, sporadic mentions of hackbuts appear in registers of infantry detachments as late as the first half of the 16th c. These hackbuts were light, smaller calibre weapons that could be easily operated by a single soldier. An example of such a weapon is offered by a barrel safeguarded at the Museum of Jarosław, which is the subject of this paper.

KEY WORDS: firearms, hackbut, Jarosław, Renaissance

The state of our knowledge on Polish weaponry in the 16th c. is still very far from satisfactory, in spite of the fact that a number of new works has been published. There are numerous publications which analyze these issues on the basis available written sources (e.g., Szymczak 2004; Bołdyrew 2011; Plewczyński 2011-2013). However, as far as original artefacts are concerned, the state of research is much worse. I therefore intend to devote this short paper to one kind of weaponry of the Polish infantry in the age of the Renaissance – namely, to hackbuts.

Hackbuts were hand-held firearms which evolved from *piszczel* guns in the second half of the 14th c. Their remarkable trait was that of hooks which were directed vertically downward and which absorbed the recoil after firing. In their earliest stage

of use, hackbuts were weapons with short barrels (about 50 cm) and a considerably large calibre (up to 3 cm). Evident changes in the development of hackbuts can be seen as early as the end of the first half of the 15th c. In European collections we find weapons which are longer than 100 cm. Therefore, both the barrels themselves and complete weapons with stocks become significantly heavier. In order to make use of the combat potential of such a hackbut, the shooter was forced to use some kind of support, such as a wall or a board along a battle wagon (Szymczak 2004, 41, 43-44; Strzyż 2014, 53-54).

It is therefore possible to say that in the last years of the first half of the 15th c. the development of hackbuts begins to proceed in two directions. To some extent, hackbuts were still used as the personal weapons of infantrymen and in this case we

are dealing with lighter artefacts whose weight does not exceed 10 kg and which fire projectiles with a calibre of about 2 cm. The other direction led to the formation of effective siege defence weapons. Therefore, bores become longer, powder chambers become stronger, and the calibre increases to c. 2.5-3 cm. Due to these modifications, weapons of this kind were able to effectively hit an adversary at a distance of much more than 100 m. A group of siege defence hackbuts is thus formed, and such weapons will be in use well into the 17th c.

Written sources from the epoch also inform us of the use of heavier variants of hackbuts. For instance, an inventory from Bratislava from 1443 mentions “grossen eysyn hockpuxen”. These iron barrels were present among weaponry kept in the Water Tower, and another eight large hackbuts were kept in St Michael’s Gate (Durdík 1967, 576, 591, 592). These pieces of information are confirmed by the chronicle of Peter Eschenloer, who said that in May 1467 the troops of Christoph Skoppe had been equipped, among others armaments, with a wagon with 24 iron hackbuts that weighed 3 stones each (Peter Eschenloer 1828, 34), that is, about 29 kg. At present, the vast majority of surviving artefacts from Polish collections are of such siege hackbuts, and the same concerns archaeological finds (for more on this see Strzyż, Dzieńkowski, Gołub 2016, 102-106, Tab. 1-2, Figs. 8-9, 14).

On the other hand, the history of hackbuts which were intended to be the personal weapons of shooters is different. In the late 15th c. handgonnes appeared as weapons of infantrymen and they quickly replaced obsolete *piszczel* guns and hackbuts. The calibre of such handgonnes was about 15 mm, which is why they were lighter and easier to operate than massive and relatively heavy hackbuts. Furthermore, they were provided with stocks which encompasses their barrels along the entire length of their bores. Such stocks had well-profiled butts. What is more, such weapons were equipped with simple mechanisms which facilitated firing: “serpentes” and then matchlocks (Durdík, Mudra, Šáda 1977, 34, Figs. 1-2; Szymczak 2004, 45, 49-50, Fig. 10; Bołdyrew 2011, 222-223). In such circumstances, from the 1490s infantrymen commenced to abandon *piszczel* guns and hackbuts and rearm with handgonnes.

Due to these changes, handgonnes dominate in the Polish army of the first half of the 16th c., with other hand-held firearms being found but sporadi-

cally. This process can be observed in the registers of infantry detachments of the Kingdom of Poland from the years 1471 and 1496-1500. Although in the first register among shooters with hand-held firearms there are soldiers armed both with *piszczel* guns (3 cases) and hackbuts (12 cases), records from the late 15th c. mention solely handgonnes as hand-held firearms (Grabarczyk 2000, 147-148, Tab. 6; J. Szymczak 2007, 97-98). Therefore, it is certain that in the period between the third quarter of the 15th c. and the turn of the 15th and 16th c. the role of hackbuts was basically limited to that of fortress firearms, and their function in infantry detachments was taken over by handgonnes. However, hackbuts did not disappear completely from the equipment of infantry, although their share is rather incidental. Among detachments which were registered in the first half of the 16th c. hackbuts and half-hackbuts were recorded only in a few cases – in total 8 and 7 items respectively. In the detachment of Wojciech Polak from Leśnica in 1535 there were five shooters with half-hackbuts and one with a hackbut. On the other hand, in the detachments of Stanisław Jarocki and Jerzy Rokitnicki only single soldiers were armed with hackbuts (Bołdyrew 2011, 224-226, 242). Against the background of a general number of 8,243 shooters who are known from detachment registers from the first half of the 16th c. and who were equipped with firearms, hackbuts and their lighter variants are mentioned only in 15 cases. On this basis it can be said that such weapons played a completely marginal role in this period. The weapons which dominated were handgonnes (7,572 items) and arquebuses (647 items) (Bołdyrew 2011, 244).

Hackbuts which could be operated without the need to use supports are also very rare in Polish arms collections. One example of such an artefact is the previously unknown barrel (Fig. 1) kept in the Museum in Jarosław (inv. No. MJ-H-427)¹. It is iron-forged and is octagonal in its transverse cross-section. Its muzzle part is broadened in a funnel-like manner and its powder chamber is notably thickened. Its hook is long and trapezoid and it is located at a distance of 22 cm from the muzzle. It was manufactured separately and then it was forge-welded to the barrel (Fig. 1:3). The hook is provided with

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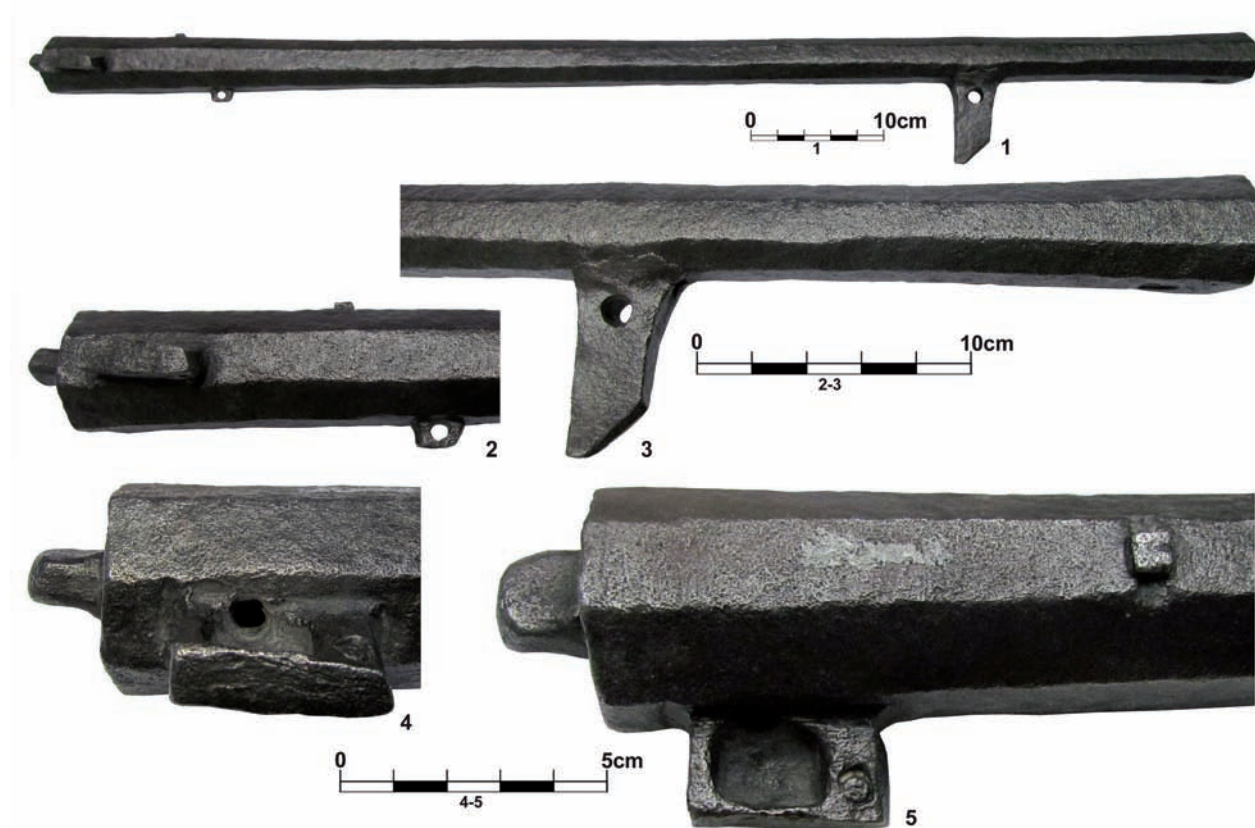


Fig. 1. Hackbut, Museum in Jaroslaw, inv. No. MJ-H-427. Photo P. Strzyż

a crudely made opening, which allows a wooden stock to be fixed to the barrel. The same function is fulfilled by a small eye attached near the bottom. The touch hole is 5 mm in diameter and it is located on the right side at a distance of 3 cm from the bottom. It is accompanied with a rectangular plate of the priming pan with the remains of a rivet which fixed a lid (Figs. 1:2, 4-5). The bottom ends with a screwed-in quadrangle peg (1.1x1.9 cm). The barrel's equipment is completed with aiming devices, that is, a backsight which was made separately and was then pressed into a proper mortise in the wall of the barrel. The total length of the barrel with the peg is 90.5 cm, without the peg – 88.8 cm, and the bore's length is 85.5 cm. The external diameter of the barrel at the muzzle is 3.7 cm, while behind the funnel-like broadening it is merely 3.1 cm. The external diameter in the bottom part reaches 4.2 cm. One can clearly see that the wall's thickness is uneven and it oscillates between 8 and 10 mm, which means that the barrel was rather carelessly manufactured. The surface of the walls was ornamented with double vertical incised lines located both near the muzzle

and in the bottom part. The weapon fired projectiles with a calibre of 1.9 cm. The present total weight of the artefact is 4.4 kg.

Near the muzzle in the lower part of the barrel there is a manufacturer's mark: a letter V in an oval field (Fig. 2:6). Such marks can be found on many hackbuts from Central European collections (Fig. 2:1-5), for instance: Bardejov (inv. No. H-314), Bojnice (inv. No. H 1078), Budapest, Castle Museum (inv. No. 52.2323.1), Levoča (inv. Nos. SM 379 and SM 10396), Košice (inv. No. F 9223) and the Polish Army Museum in Warsaw (inv. No. 299) (Konieczny 1964, 189-190, Figs. VIII-IX; Malečkova 2005, 14-15, cat. No. 4; Strzyż, Dzieńkowski, Gołub 2016, 102-106, Tab. 1-2, Figs. 10, 13). This implies that these barrels were manufactured in one centre which worked for the needs of Central and Western European markets. Regrettably, we have no closer data on its location. Almost all artefacts come from former collections and their chronology is usually quite general. However, it seems that many of these weapons, above all those from the territory of present-day Hungary and Slovakia (that

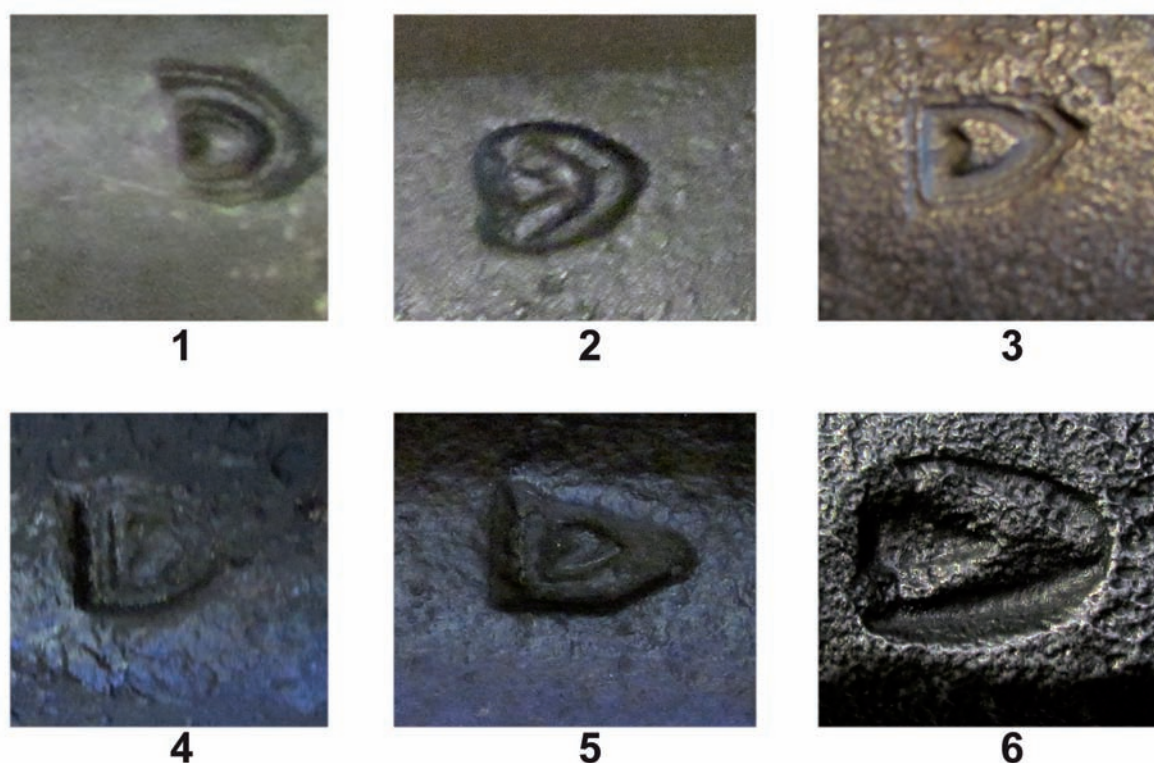


Fig. 2. Manufacturer's marks on hackbut barrels: 1 – Bardejov; 2 – Bojnice; 3 – Budapest, Castle Museum; 4 – Levoča; 5 – Levoča; 6 – Jarosław. Photo P. Strzyż

is, the Kingdom of Hungary in the Middle Ages), are related to the increasing Turkish threat. After the defeat of the Hungarian troops in the battle of Mohács in 1526 and the subsequent (1541) division of the Kingdom of Hungary into three parts, two of which were strongly dependent from Turkey, intensive preparations for defence took place in territories which were directly threatened by the Ottoman expansion. The second and third quarters of the 16th c. witness increased purchases of artillery, hand-held firearms, ammunition, and shooting equipment (Kelenik 1988; Domokos 1997). The fact that the aforementioned weapons are contemporaneous is testified to by both construction similarities and the marks mentioned on their barrels.

The chronology of hackbuts whose bottom parts end with screwed-in pegs encompasses the period from the early 16th c. to the beginning of the second half of that century (Strzyż, Dzieńkowski, Gołub 2016, 103, 106). Concerning analogies to the weapon from the Museum in Jarosław, we do not know many artefacts with a precise chronology. One of the best counterparts is a hackbut which was found in the course of archaeological excava-

tions in Eger Castle in northern Hungary (Strzyż, Dzieńkowski, Gołub 2016, 103) (Fig. 3). It is also an iron-forged barrel which is octagonal in cross-section in the bottom and muzzle parts and round in its central part. The muzzle is broadened in a funnel-like manner and is provided with a foresight. The hook is massive and trapezoid, and is provided with an opening for a peg which fixed the stock. The touch hole is on the right side and it is provided with a plate with a priming pan. The bottom part ends with a screwed-in shank which is quadrangle in cross-section. In the lower part of the barrel there is an eye with an opening for a peg which fixed the stock, and the upper part of the breech part is provided with a backsight. The total length of the barrel is 85.5 cm and its calibre is 1.6 cm. This find, which, regrettably, is strongly corroded, was discovered in cultural layers which formed in the course of the siege of Eger by Turkish troops in 1552. It is therefore certain that the manufacture of this weapon should be dated to the mid-16th c.

The hackbuts from the Museum in Jarosław and from Eger fired projectiles with a calibre of 1.6 cm and their barrels are c. 90 cm long. These



Fig. 3. Hackbut, Museum in Eger, inv. No. 80.24.1. Photo P. Strzyż

weapons are clearly smaller than their siege defence counterparts. The latter weigh about 15-25 kg and their total length with the stock reached 170-180 cm (Strzyż, Dzieńkowski, Gołub 2016, 104-106, Tab. 1-2). It is therefore highly probable that the weapons in question can be identified as *hacovnijcze* or especially *polhakovnijcze*, which are known from registers of infantry detachments (Bołdyrew

2011, 225-226). Such weapons were more mobile than siege defence hackbuts and thus they could be operated by the shooter without the need of a support for the hook. Therefore, the hackbut from Jarosław is a small but significant contribution to our knowledge on the equipment of Polish troops during the Renaissance.

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