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THE ARMAMENT OF POLISH MERCENARY INFANTRY IN THE FIRST PART OF THE 16th CENTURY

Abstract: The armament of Polish mercenary infantry in the first part of the 16th century was discussed on the basis of preserved source materials, mostly manuscripts. Much attention was paid to the users of the weapon, their territorial and social origin, and the role of military formations of foot soldiers in the battles discussed both, from the point of view of tactics and strategy. Numerous armatures were used at that time, for instance spear, pavise, rifles and badges. At least three changes in armament were observed which resulted from the conditions of the battlefield. The trial to give direction to further research of this issue was made.

Keywords: early-modern history, history of warfare, history of arms and armour, mercenary, mercenary infantry

The popularization of the „money” armies, that is hired or mercenary troops in the European battlefields, was connected with the successes achieved by the sovereigns due to those units used in the battle. Armed forces organized in this way appeared in the history of Polish army as early as in the second part of the 15th century. From the beginning of the 16th century the mercenary troops took over the burden of the defense of the country from the weakening mass movement (*expeditio generalis*)¹. The majority of the mercenary soldiers serving for the payment from the sovereigns were the riders therefore the older literature usually did not mention the role of the infantry as it was small in number and it did not fit the historiography model of the battles in the open areas of the eastern and south – eastern theatre of army activities. Nevertheless, the view was unjustified. It is enough to remind that the authors of that time who created theoretical and practical army literature often emphasized the need to reorganize Polish army forces so that the infantry would have become a bigger percentage of the soldiers. At the same time, it is true to claim that the gentry unwillingly served in the infantry and most of the soldiers originated from, so called, third and fourth state. In spite of that, the sovereigns willingly employed the infantrymen because of the advantages resulting from the dispositions they could be given during the sieges and protection of the fortifications and during the open field battles. In the discussed epoch the written documents concerning the recruitment and inspection allowed for the discussion of the most

important issues connected with the organization and functions of the mercenary infantry and its armament². Several years of the research of this issue allow to sum it up to some extent. Nevertheless, one must remember that the armament- which is a fascinating issue of the research – is the fighting tool. The tool loses its usefulness without its user. Therefore, firstly a view words will be devoted to the soldiers of the mercenary infantry in the form of the account of the epoch which is to be summed up at this point.

The summing up account

The mercenary infantrymen were recruited according to the model which had been worked out as early as in middle ages. The infantry detachment (army unit) was recruited for a quarter of a year and there was its leader – cavalry captain. His orders were passed to the soldiers by accompanying him soldiers, whose main role was to give signals and orders to the others. The commander was protected by a few raiders. The soldiers in the army unit gathered in tens with a chief of a group in front of the tens. The size of the army unit depended on the wages of soldiers' payments written down in the letter issued by the sovereign. As some of the combatants (banners men, infantry spearmen, shielded warriors) earned double wages it is necessary to emphasize that the real number of soldiers in the army unit was smaller than the full time employees (written down in the document of recruitment). After conducting the inquiry in the notes

¹ See Biskup 1967; Grabarczyk 2000.

² Boldyrew 2011a, where you can find further bibliographic references.

Province	Number of soldiers	%
Royal Prussia	128	1,09
Kujavia	61	0,52
Great Poland	1045	8,91
Mazovia	541	4,61
Lesser Poland	4560	38,87
Ruthenian lands	1695	14,45
Together	8030	68,45

Tab. 1. Soldiers from Polish provinces in mercenary infantry in 1522-1547 (Based on: private calculations).

of inspection of 119 army units and about 12 000 soldiers the author observed that the real state of the army unit reached 60-84% of full time employees state. The phenomenon of „cutting down” the number of the troops was criticized at that time³.

The army units were mostly paid with royal treasury money. When in need, the money was borrowed or taken from tenancy. Taxes enacted by the succeeding governments (Seyms) for the recruitment of the army flowed slowly, sometimes the necessary sums of money were gathered after the end of war activities. Therefore discouraged soldiers who did not get their salary „took” the payment on their own from royal or church possessions, which usually turned into plundering. It happened most frequently at the beginning of the 16th century when the treasury was had debts incurred by Jan Olbracht⁴. One of the first decisions taken by king Sigismund I old was to pay the debts. The costs of conducting a war were huge. So called „Prussian war” cost almost a quarter of a million zlotys, the Chotyń campaign in 1538 cost about 200 000. The infantry took from the sums of money respectively 40% and 16%.

About 40% of infantrymen came from the Lesser Poland (Małopolska), another 15% from Russian lands. Altogether, half of the soldiers were connected with mostly endangered south-eastern territories of the Crown. As it has already been mentioned, most of the soldiers were rooted in peasantry and in towns (so called fourth state). Townspeople, who created 61% of the combatants, usually originated from towns of I-III categories (in the scale consisting of four stages). It must be emphasized that the most involved, as far as recruitment was concerned, were (in demographic terms) the towns of categories II and III so the settlements having several thousand dwellers. The most active recruitment points were Kraków and Lvov, which confirms the dominating role of the Lesser Poland people and the representatives of Russian lands in the mercenary infantry.

It is difficult to say what were the recruits driven by while joining the army. One of the reasons could have been the willingness to earn money and the possibility to participate in the adventure. It must be, however, remembered that

personal motivation cannot be recognized, mostly because of the lack of reliable sources. It is the fact, that some percentage of the soldiers stayed in the army for two or sometimes even for three years. It is difficult to say about professional career (in case of the tens soldiers). The cavalry captains were noted down and stayed in the army even for a dozen or so years. It can be assumed that not only financial reason was determinative, although the cavalry captains were able to earn about 40 zlotys within a quarter of a year. It is possible that ambition played a meaningful role as well.

During inspection, that is a display, the soldiers had to own the armament with which they had to sign up to the army. Basic types of the attack weapon were swords, pole weapon with straight and complex arrow-heads and hand firearms. There was some kind of differentiation of hand firearms in the discussed historical period (as far as forma types are concerned) and harquebus dominated here. On the verge of 1530s and 40s arquebus was introduced quite quickly and it became popular. There were about 10% of them in each of the army units (compare to the whole number of hand firearms). It is important to emphasize that the introduction of the new gun evoked not only, so to say, logistic changes which meant provision of more gunpowder, but also the changes in the war tactics of the army unit. Just like in case of all new inventions, the soldiers had to work out the right tactics for using it. In other words, not the invention itself but its popularization guaranteed maximization of the intended effect. There must have been a favourable economic situation and it had to be skilfully used. Other aspects connected with the changes of the armament of the mercenary infantry will be mentioned later on. Due to the collected and analysed data connected with the armament of the infantry it was possible to work out the model armature of soldiers in this formation. There were four basic models of armatures, that is spearmen, shielded warriors, riflemen and badges men. The first four abounded in four types, the last one in three.

As the role of the infantry changed, similarly changed the armament of the soldiers within discussed period of time. The discussed above armatures are model imagination created on the basis of the data from the first fifty years of the 16th century. One must remember that at the beginning of the century the infantry had different weapon than by the end of its first part. We do not have necessary data to

³ Tarnowski 1987, 51.

⁴ Decjusz 1960, 30-31.

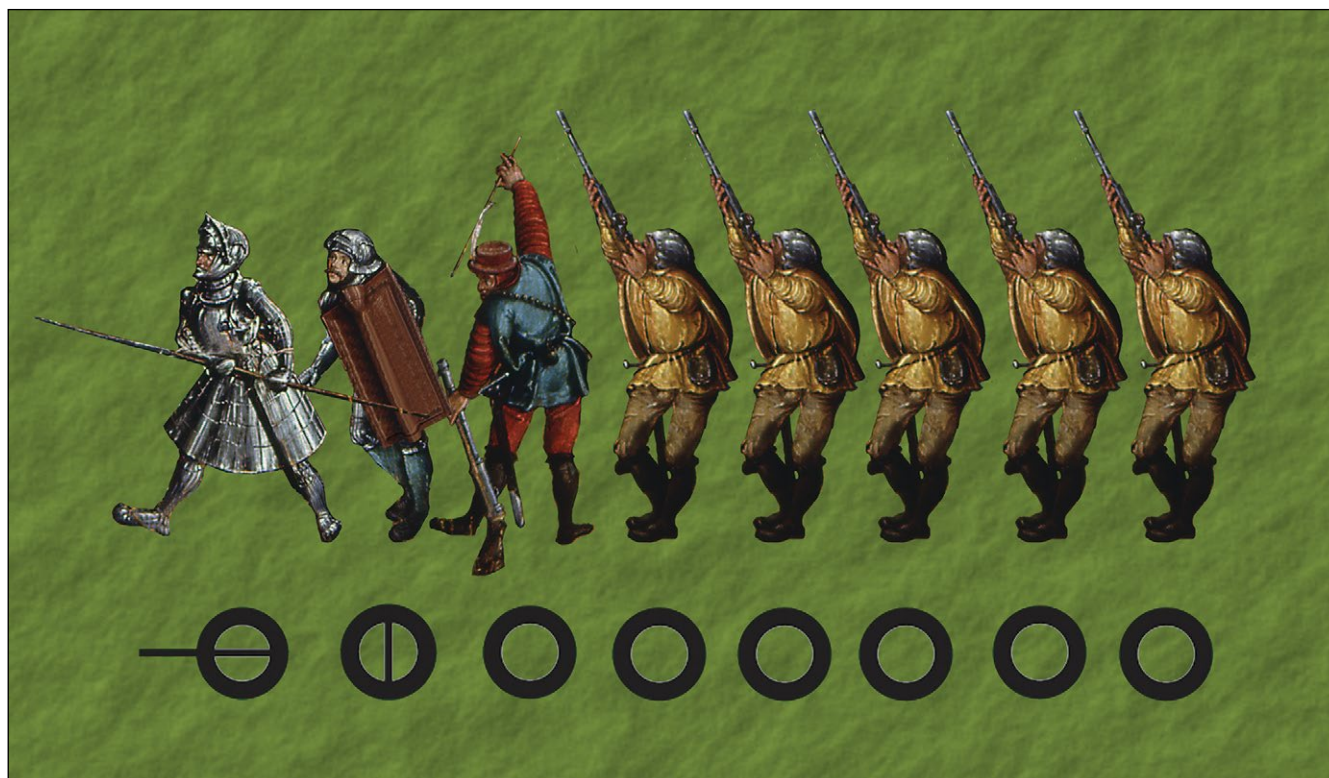


Fig. 1. Ten infantry in armature in 1501-1520.

characterize the armament of infantry during first ten years of the 16th century. We know however, what it looked like in the last years of the 15th century. Spearmen wore spear armour and they usually owned pole weapon represented usually by a spear. Shielded warriors protected their heads with helmets, and additionally, they used incomplete protection for their arms or the right arm. As they used big infantry shields they resigned of the protection of legs. And just few of them used plate armours or scale armour. Riflemen used hand firearms accompanied by a sword or a sabre. They rarely used the protective armour, for instance, a helmet or the elements of plate armour⁵. The category of a flail present in the 15th century written sources disappeared completely in the 16th century. One can assume that between 1496-1498 and in 1500 the infantry armament did not change dramatically. Another important moment, in my opinion, is 1522, when the first preserved instructive register was created. It concerns Piotr Jasiński's army unit⁶. K. Górski also published the data concerning the last years of this army unit⁷. The army unit consisting of 80 soldiers had, so to say, classical armament. Spearmen had spear armours and if they have an offensive weapon it is usually pole weapon. Shielded warriors have pavise and it is the only type of armour noted down next to their names and places of origin. Riflemen, except for the unknown Jacob, were armed with harquebuses. The register

shows in my opinion, not only the changes which took place in the armament of infantry from the end of Middle Ages but it also allows us to draw conclusions that within the first twenty years there was a kind of unification of armament in particular army categories (see Fig. 1).

The beginning of 1530s is another moment worth our attention. At that time (1530, 1531, 1538) pole weapon was massively introduced into use. Respectively for the mentioned years pole weapon was in the hands of 37,97% of soldiers, 27,16% of soldiers and 32,43% of soldiers. The last two years are Jan Twardowski's campaign against Moldavia. As we know, this weapon was used with success (especially in 1531). At least, that is how it was depicted in wood engraving placed in Marcin Bielski's edition of *The Chronicle...* from 1564⁸. We can see there Polish army camp and the infantry gathered in groups and holding pole weapon. Other years, which can be analyzed due to the source data, are characterized by a small number of pike weapons, mostly between 1% to 5,5%. 1522 and 1528 are exceptional because there were several percent of pike weapons. It can be therefore assumed that in case of the planned big war campaign the soldiers bought (especially riflemen) additional weapon and tactical possibilities of infantry grew. Therefore army unit tactics had to be gradually rebuilt⁹ (see Fig. 2).

By the end of 1530s the last meaningful change concerning the infantry armament took place. In 1538 for more than

⁵ Grabarczyk 2000, 180-186.

⁶ Central Archives of Historical Records, The Treasury Archives, State and Army Records, Dep. 86, sign. 12, Vol. II, ch. 1-3v.

⁷ Górski 1893, 224-225.

⁸ Spieralski 1965, illustration on p. 339.

⁹ Bołdyrew 2013, passim.

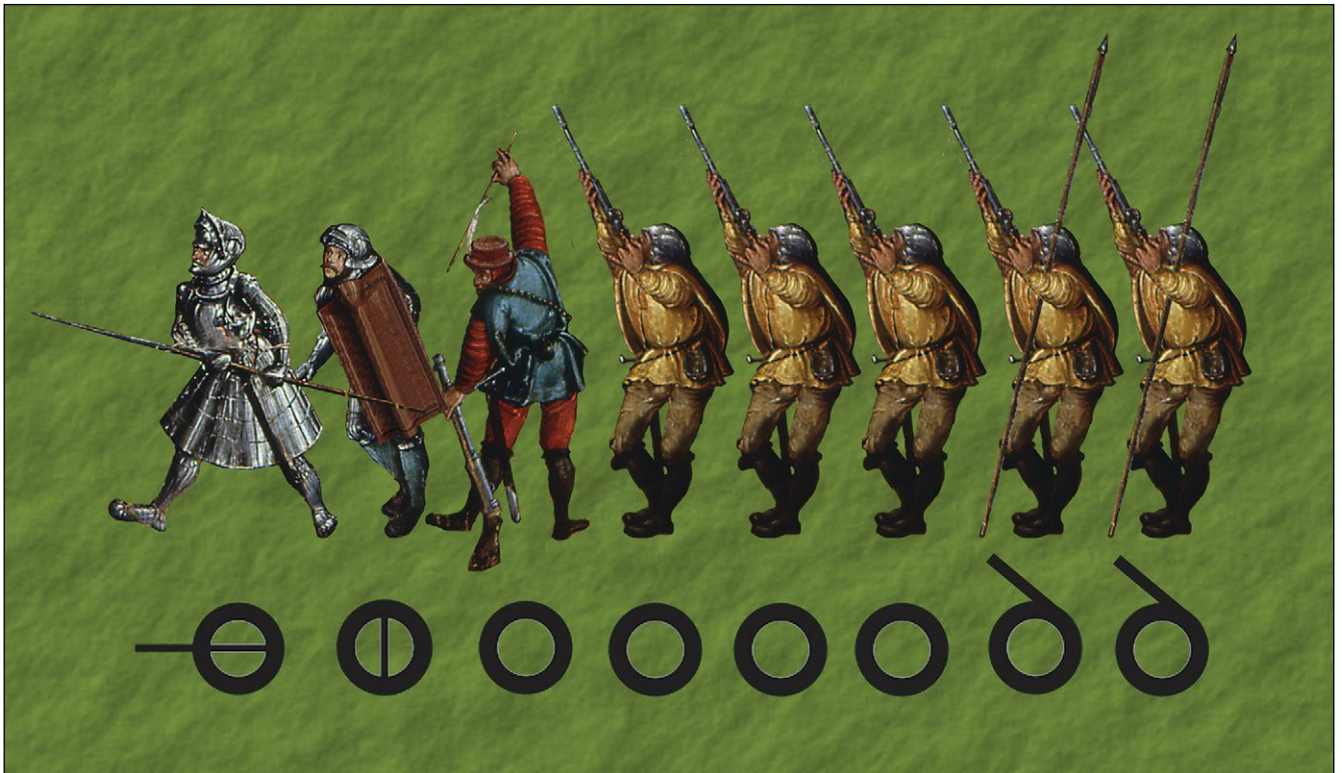


Fig. 2. Ten infantry in armature in 1530-1538.

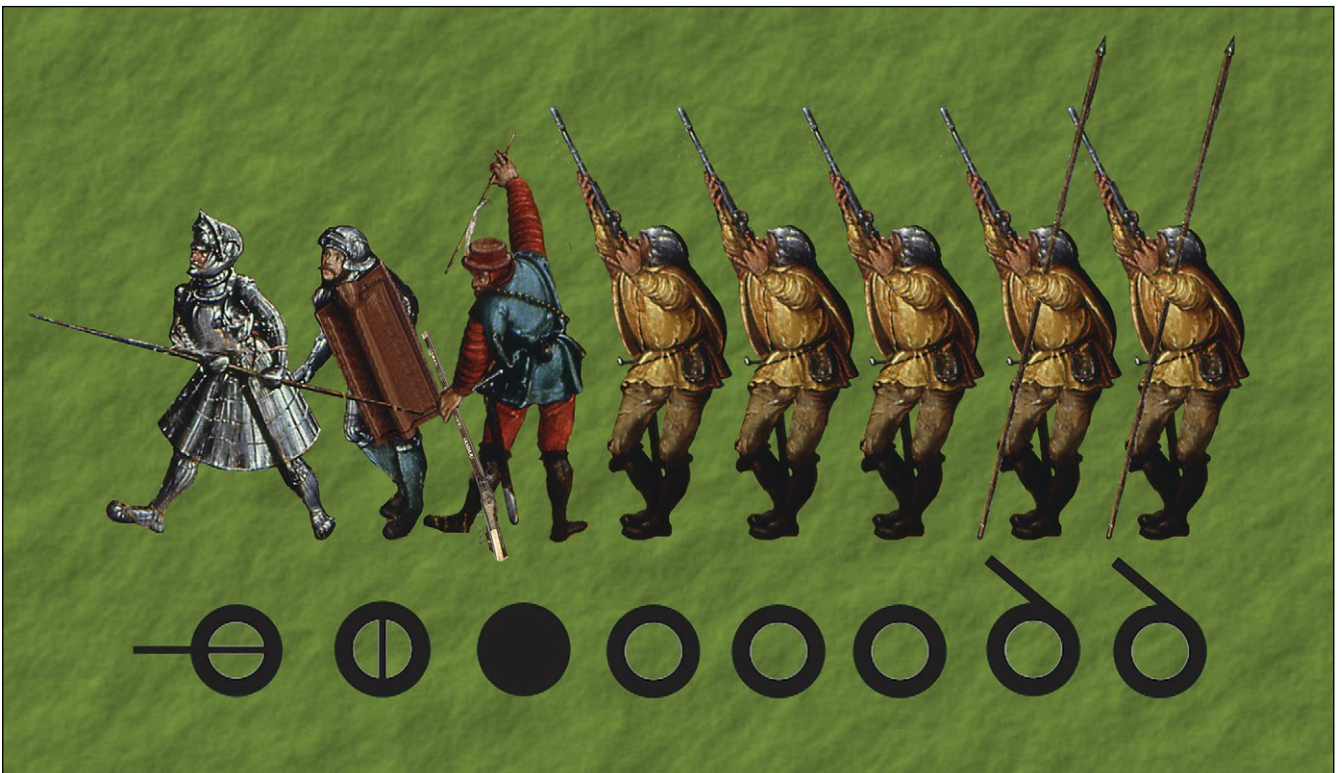


Fig. 3. Ten infantry in armature in 1538-1547.

40 registered army units there appeared in 35 of them about 10% of arquebuses (in the scale of the number of soldiers). On the basis of the investigated source manuscript materials one can assume that the year 1538 was a kind of chronological “threshold”. The arquebuses became so popular at

that time that all army units later on used them to a bigger or smaller extent. Infantry army units once again changed their tactics of fighting to adjust it to the possibilities of the new weapon. Further completion of the infantry with this type of long hand pole weapon was not possible at that time.

The reason was high price of such a gun but also impossibility of using it to a wide extent. It is, however, a fact that the arquebuses took the permanent position among the armament of Polish mercenary infantry and not only in the first part of the 16th century but also later¹⁰ (see Fig. 3).

The infantry, due to the gathered armament and the right organization, fulfilled its tasks, so to say, statute tasks. The soldiers spent little time for fighting. They were mostly marching, camping and guarding. During some of the campaigns the infantry had to walk for long distances which must have been problematic for organizational reasons. It must be remembered that all the remarks aim at summing up the state of scientific research on mercenary infantry with special attention paid to its armament and changes taking place within its range. It was possible to state that the first part of the 16th century was an interim in which the Middle Ages elements and typically modern elements interacted. The armament of infantry is one of many elements confirming the conclusion. At the same time, some of the issues must be further studied.

The research conducted on the title issue allow to point to those areas which lack detailed studies which makes it impossible to sum up the problem. Therefore, it is impossible to answer some of the questions at this stage of the research. There are several of such areas. In fact it is possible to assume that they are the point of departure for further research. Therefore they compose the opening account for further studies.

The opening account

The fact of pavise being constantly used by mercenary infantry is very intriguing. The pavise was supposed to have disappeared at the beginning of the 16th century when the long hand pole weapon was introduced. The pavise was too weak protection from the bullets of the enemy. In fact, as it was proved in another place, they were used for the whole first part of the 16th century, exactly up to 1547 when they were still described as the armament of infantry. If we already know that their end in the Polish army did not come at the beginning of the century, the question is: when were they given up? The remarks on this topic placed in the subject literature allow to assume that it happened during the reign of Sigismund II August. We do not have any detailed data here. The information can be provided by a detailed inquiry in manuscript sources concerning army registers and storehouses of weapon placed in particular strengthened points of resistance¹¹.

Another problem worth the attention is the usage of pole weapon with a complex arrow-head. By the end of the 15th

century infantrymen used mostly spears. As J. Grabarczyk claims, since the spears were such popular weapon, they were not described in instructive registers. The exception was Hanusz Szolc's army unit, which was described in 1497. His soldiers (spearmen) were divided into three groups. Except for those with spears (the first group) we should pay attention to the next two groups as the second one had assegais (2 spearmen) and the soldiers in the third group had sulica, Polish spear (7 cases). It is worth reminding the recruit *Irzyk* fighting in *Irzyk Hubaty's* army unit in 1498 with pole weapon. Interestingly, we lack data conforming that Polish infantry in the 15th century used pole weapon with complex arrow-heads¹².

As for pole weapon, during the first part of the 16th century thee infantrymen used it most frequently, there were more than 2 thousand of pole weapons registered. Moreover, more than 600 spears used by spearmen by the end of Middle Ages as well. Four cases of sulica must also be mentioned as they appeared in the treasury and army documents¹³. Among different kinds of pole weapon there were also halberds in the first part of the 16th century. There were 171 of them which means that their number, in comparison to the previous period, increased. However, one should remember that there was no regularity in using them, at least it cannot be seen in the data provided. The biggest number of halberds was used in 1528, then in 1530 and then in 1547. Interestingly, they appeared also between 1530 and 1547 but in a small number. In such a way it was possible to state the approximate moment when the pole weapon with complex arrow-head appeared in hands of mercenary infantry¹⁴. Like in the case of pavise discussed earlier we do not have data allowing us to discuss further history of halberds in Polish army.

Another issue is the usage of hand firearms by the infantry. It was proved that on the turn of the 15th century the archers were generally deprived of crossbows and they were armed with harquebus. They were not a perfect sort of weapon. From 1530s the soldiers were gradually armed with arquebuses and other sort of long hand firearms appeared occasionally. In the first part of the 16th century shorter rifles appeared which might have been the prototypes of handguns used in the army in the 17th and 18th centuries. Their sizes differed from contemporary handguns but at that time they were treated as short weapon. There is no information, however, that short harquebus, half-arquebus and pistol were treated as typical side arm¹⁵. It is an open question whether the harquebuses and arquebuses were long lasting weapon and what kind of changes took place in this area in the second half of the 16th century. It is possible that further research would allow us to state the moment of introduction and popularization of a musket.

¹⁰ And so the instructive register of nine army units written in 1552 inform that among 771 registered soldiers there were 546 archers (47 with arquebuses). Soldiers with arquebuses composed about 9% of all archers. See Plewczyński 2001, 119.

¹¹ Bołdyrew 2011c, 49-78.

¹² Grabarczyk 2000, 125-127.

¹³ Bołdyrew 2011a, 209-214.

¹⁴ Bołdyrew 2011a, 214-218; Bołdyrew 2013, passim.

¹⁵ Bołdyrew 2011a, 209-214; Bołdyrew 2011b, passim.

The marginal issue, although not less important, is the genesis of introducing and using the wheellocks in hand firearms. In fact, the origin of wheellocks used in the Kingdom of Poland is not known. There has been discussion concerning this problem for a long time in the subject literature. If the western European research of this issue is quite advanced¹⁶, unfortunately in Polish literature dominates the opinion that this kind of firing a gun in the battlefield was useless¹⁷.

All the questions, and the answers to the questions are meaningful not only for the researches of weapon but also for wider perspective. From the point of view of history of army, especially army activities on the level of tactics and strategy, new questions appear. What was the influence of the change of armament of the combatants on the tactics of the formation. The presence of the shielded warriors in the first row must have influenced the mobility of the unit in the battlefield. Similarly, the fact that riflemen had pole weapon and modern arquebuses had also an impact on their functions as the members of the units. The shielded warriors were supposed to slow down fast maneuver. The riflemen with pole weapon, for a change, were supposed to attack quickly, which happened for example, in the Obertyn battle in 1531. On the other hand, they probably strengthened the defence of the army unit when the enemy attacked. Finally, why (except for strengthening the burst of fire of riflemen) some of the harquebuses (according to the detailed research about 10%) were replaced with arquebuses? In other words, how was the enlarged power of the infantry unit fire used? Another question appears here: what was the burst of fire like?

Jan Tarnowski was the first one who commented on this issue in theoretical and practical army literature. He wrote that "infantry captain should pass their experience to their comrades and teach them how to use the rifles as it is necessary because in Poland we have few *veteranos milites*, so they should teach new and inexperienced people how to shoot well. And when it comes to the battle, when the first row fires, they should kneel and load the gun. The second

row should fire at that time and then they should repeat it again and again, and then load again just as it was written here."¹⁸ M. Kukiel supported the way of shooting suggested by J. Tarnowski¹⁹.

Interestingly, other researchers did not support this vision. K. Górski claimed that the last row fired as the first one and the other rows knelt. Then the last but one row fired above the heads of those kneeling from the front of the unit and the last row was loading the guns and so on, and so forth. Finally, he summed up: „the fire of Polish army units must have been weak as there were very few rows and the riflemen loaded slowly.”²⁰ A. Czołowski supported this opinion²¹. It is, however, surprising that, although the burst of fire was so weak, did the army unit oppose with fire the attack of the enemy's cavalry, like in the battle of Orsza? We cannot also forget about the battle of Obertyn when one of the infantrymen crossed the line of laager and killed a Moldavian skirmisher. Z. Spieralski and J. Wimmer's views are similar to K. Górski and A. Czołowski's views²². Moreover, J. Wimmer claimed that a second before firing spearmen and shielded warriors were moved to the flanks of the army unit²³. K. Konieczny had a different opinion as he claimed that the first rows fired horizontally and the other parabolic (*nawija*) track (just like crossbows in the Middle Ages). His opinion was based on the analysis of „The battle of Orsza”²⁴.

The effectiveness of the long hand firearms is also confirmed in subsequent documents. For instance, Florian Zebrzydowski in 1559 wrote in *Porządek żołnierski tak w polu jako i na zamkach* noted: „The riflemen who fire from the distance are the best to defend the castles because they can shoot a running man and they will not allow the enemy to build earthworks close to the walls or move around the castle so that he would not see anything.”²⁵ All the issues might possibly have been explained during the research conducted in archival materials from the second part of the 16th century, especially from the period of Sigismund II Augustus's reign although literature concerning the later period is also full of ambiguities²⁶.

Sources

Decjusz J. L. 1960. *Księga o czasach króla Zygmunta* [translation K. Komaniński and others]. Warszawa.

Tarnowski J. 1987. *Consilium rationis bellicae*, introduction written by J. Sikorski, the text was prepared for print and the editor's note, commentary and dictionary were written by T. M. Nowak. Warszawa.

¹⁶ See for example Oakeshott 2000, 38-39.

¹⁷ Ciośński 1997, 13-15.

¹⁸ Tarnowski 1987, 115.

¹⁹ Kukiel 1929, 52.

²⁰ Górski 1893, 13.

²¹ Czołowski 1931, 20.

²² Spieralski 1965, 317; Wimmer 1978, 103.

²³ Spieralski 1965, 317; Wimmer 1978, 103.

²⁴ Konieczny 1964, 202.

²⁵ Bodniak 1931, 303.

²⁶ Spieralski 1965, 95; Boldyrew 2011a, 343.

Bibliography

- Biskup M. 1967. *Trzynastoletnia wojna z Zakonem Krzyżackim 1454-1466*. Warszawa.
- Bodniak S. 1931. *Hetman Florjan Zebrzydowski o porządku żołnierskim*. „Przegląd Historyczno-Wojskowy” 4 (1), 295-305.
- Bołdyrew A. 2011a. *Piechota zaciężna w Polsce w pierwszej połowie XVI wieku*. Warszawa.
- Bołdyrew A. 2011b. *Arkebuzy w wojsku polskim w pierwszej połowie XVI w. (w świetle rejestrów popisowych piechoty zaciężnej)*. In: T. Grabarczyk, A. Kowalska-Pietrzak and T. Nowak (eds.), *In tempore belli et pacis. Ludzie – miejsca – przedmioty. Księga pamiątkowa dedykowana prof. dr. hab. Janowi Szymczakowi w 65-lecie urodzin i 40-lecie pracy naukowo-dydaktycznej*. Warszawa, 539-550.
- Bołdyrew A. 2011c. *Pawęże w wojsku polskim w pierwszej połowie XVI w. (w świetle rejestrów popisowych piechoty zaciężnej)*. In: O. Ławrynowicz, J. Maik and P. A. Nowakowski (eds.), *Non sensistis gladios. Studia ofiarowane Marianowi Głoskowi w 70. rocznicę urodzin*. Łódź, 49-78.
- Bołdyrew A. 2013. *The Changes of Offensive Armament of Polish Mercenary Infantry in the First Part of the 16th Century and their Influence on the Tactics of the Unit*. In: L. Marek (ed.), *Weapons bring peace? Warfare in medieval and early modern europe*. Wratislavia Antiqua 18. Wrocław, 221-227.
- Ciośniński H. 1997. *O zamku kołowym*. „Dawna Broń i Barwa” 12 (16), 13-15.
- Czołowski A. 1931. *Bitwa pod Obertynem 22 VIII 1531*. Lwów.
- Górski K. 1893. *Historia piechoty polskiej*. Kraków.
- Grabarczyk T. 2000. *Piechota zaciężna Królestwa Polskiego w XV wieku*. Łódź.
- Konieczny K. 1964. *Ręczna broń palna w Polsce w XV i XVI*. „Muzealnictwo Wojskowe” 2, 167-237.
- Kukiel M. 1929. *Zarys historii wojskowości w Polsce*. Kraków.
- Oakeshott E. 2000. *European Weapons and Armour. From the Renaissance to the industrial Revolution*. Woodbridge.
- Plewczyński M. 2001. *Polska technika wojskowa w XVI wieku*. In: J. Wojtasik (ed.), *Studia z dziejów polskiej techniki wojskowej od XVI do XX wieku*. Warszawa.
- Spieralski Z. 1965. *Wojskowość polska w okresie odrodzenia 1454-1576*. In: J. Sikorski (ed.), *Zarys dziejów wojskowości polskiej do roku 1864 I*. Warszawa, 244-351.
- Wimmer J. 1978. *Historia piechoty polskiej do roku 1864*. Warszawa.

Streszczenie

Uzbrojenie polskiej piechoty zaciężnej w pierwszej połowie XVI w.

Uzbrojenie polskiej piechoty zaciężnej w pierwszej połowie XVI w. zostało omówione w oparciu o zachowane materiały źródłowe, głównie rękopiśmienne. Uwagę poświęcono również użytkownikom narzędzi walki, ich pochodzeniu terytorialnemu i społecznemu oraz roli formacji pieszych w walkach prowadzonych w omawianym okresie zarówno na szczeblu taktycznym i strategicznym. Odnotowano także stosowanie wielu armatur, a wśród nich kopijniczej, pawężniczej, strzeleckiej i proporniczej. Zauważalne były również co najmniej trzy zmiany uzbrojenia całych oddziałów, co wynikało z potrzeb pola walki. Podjęto również próbę ukierunkowania dalszych badań nad tym zagadnieniem.

