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## GREEK FIRE IN THE MILITARY ACTIVITIES OF THE CUMANS

Arms and armour of the Cumans deserve detailed studies. The territory of these Turkish-speaking nomads in the 11<sup>th</sup>-13<sup>th</sup> c. encompassed the western edge of the Great Steppe<sup>1</sup>. It neighboured civilisations which had extraordinary achievements in the manufacture of weaponry: Rus', Islamic states of Western and Central Asia and the Caucasus. Due to a strong impact from these centres, the Cuman weaponry had features which were typical both for medieval peoples of the Great Steppe as well as for their sedentary neighbours. Typical steppe features included, e.g.: exceptional significance and popularity of bows, widespread use of sabres and spears, as well as the lack of use of body armour by lower strata of steppe warriors. External influences were particularly strong in protective armament. The Cuman elite used chainmails, which were taken from sedentary peoples, and helmets belonging to types which came from Rus' and Western-Central Asia.

Archaeological finds, depictions of weaponry on famous Cuman stone statues as well as written sources are of use in studies on Cuman arms and armour. Particularly abundant data on the military activities of the Cumans and their material culture can be found in Rus' chronicles.

One of the most important medieval Rus' chronicles is the so-called *Ipatyevskaya letopis* (also known as the *Ipatyevskaya letopis*). This chronicle is commonly considered as the basic and exceptionally trustworthy source for the history of the Kievan Rus' and its neighbours. Although the *Ipatyevskaya letopis* was finally compiled in the early 15<sup>th</sup> c., it is a copy of an unpreserved chronicle from the 13<sup>th</sup> c.<sup>2</sup> Among very numerous pieces of information on the Cumans, there is an intriguing mention of them using a peculiar weapon during their military activities in Rus'. Under 1184, it was recorded: "godless and cursed Konchak invaded Rus' with a great number of Cumans. He boasted with [his strength] and wanted to capture Rus' strongholds and burn them with fire. This was because he found a Mussulman who was able to shoot living fire and who was with them"<sup>3</sup>.

This mention, although very intriguing, has not been discussed in a more detailed manner so far.

One of the first researchers who paid attention to this record was V. V. Mavrodin (1908-1987), a prominent Russian historian, who dealt i.a. with the beginnings of firearms in Rus'. He interpreted the afore-mentioned record as evidence of a very early use of firearms<sup>4</sup>. Other researchers repeated his opinion.

This hypothesis, however, cannot be accepted. The yearly date of 1184 is namely much too early with regard to the knowledge of gunpowder in this part of the world. The earliest mentions of the use of firearms in Eastern Europe come from the period of two centuries later. In the case of the Golden Horde it is the year 1376, and in Rus' – in 1382<sup>5</sup>. In Southern and Western Europe attested mentions of the beginnings of use of firearms are earlier than in Eastern Europe. However, they do not come from the 12<sup>th</sup> c.

The earliest presently known mention of the knowledge of gunpowder in Europe can be found in *Epistola de secretis operibus artis et nature ...* by Robert Bacon from 1267 and in the treatise of Albert the Great *De mirabilibus mundi ...* from 1280<sup>6</sup>. The earliest sources informing about the use of firearms in the territory of Italy and England are dated

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<sup>4</sup> V. V. Mavrodin, *O poavlenii ognestrel'nogo oružia na Rusi*, „Vestnik Leningradskogo universiteta”, Vol. 3, 1946, p. 70.

<sup>5</sup> V. V. Mavrodin, *O poavlenii ognestrel'nogo oružia ...*, p. 66; A. N. Kirpičnikov, *Voennoe delo srednevekovoj Rusi i poavlenie ognestrel'nogo oružia*, „Sovetskaja arheologia”, Vol. 3, 1957, p. 62; A. N. Kirpičnikov, *Voennoe delo na Rusi v XIII-XV vv.*, Leningrad 1976, p. 77; V. B. Vilinbachov, A. N. Kirpičnikov, *K voprosu o pojavlenii ognestrel'nogo oružia na Rusi*, „Sbornik issledovanij i materialov Artillerijskogo istoričeskogo muzeja”, Vol. 3, 1958, p. 243; W. Świętosławski, *Początki broni palnej w Złotej Ordzie*, [in:] *In tempore belli et pacis. Homines – Loca – Res. Księga pamiątkowa dedykowana prof. dr hab. Janowi Szymczakowi w 65-lecie urodzin i 40-lecie pracy naukowo-dydaktycznej*, ed. T. Grabarczyk, A. Kowalska-Pietrzak, T. Nowak, Warszawa 2011, pp. 665-672; W. Świętosławski, *K voprosu o poavlenii ognestrel'nogo oružia v Zolotoj Orde*, [in:] *Voennoe delo Zolotoj Ordy: problemy i perspektivy izučenia. Materialy Kruglogo stola, provedennogo v ramkah Meždunarodnogo Zolotoordynskogo Forumy, Kazan', 30 marta 2011 g.*, ed. I. M. Mirgaleev, Kazan' 2011, pp. 36-40.

<sup>6</sup> E. de Crouy-Chanel, *Canons Médiévaux*, Lassay-les-Châteaux 2010, p. 17.

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<sup>1</sup> S. A. Pletneva, *Polovcy*, Moskva 1990.

<sup>2</sup> P. P. Toločko, *Russkie letopisi i letopiscy X-XIII vv.*, Sankt-Peterburg 2003.

<sup>3</sup> *Ipat'evskaja letopis'* [in:] *Polnoe sobranie russkikh letopisej*, Vol. II, Sankt Peterburg 1908, p. 634.

to the 1320s<sup>7</sup>. From the same time come the earliest known depictions of firearms in two manuscripts of Walter de Milemete, which were dedicated to the later King of England Edward III. In Arab sources mentions of gunpowder appear in the 13<sup>th</sup> c.<sup>8</sup> One of the earliest examples of the use of cannons, according to Arab sources, is the battle of Huesca in Aragon in 1324<sup>9</sup>, where cannons were used by Ismail I, Emir of Granada. The beginnings of spread of firearms in Europe are still an open issue, which has not been sufficiently explained yet. There is no question that it was a very complex process. In all probability, the knowledge of black gunpowder and firearms spread from China to the West via the peoples of the Great Steppe and the Arabs. The Europeans perhaps learnt about gunpowder in several different regions at more or less the same time: at the touch point with the Arab world in the Iberian Peninsula, from the Seljuk Turks in South-Eastern Europe and in the eastern borders of the continent from Muslim inhabitants of Central Asia. It is certain, however, that we have no data so far on the use of gunpowder either in Europe or in the Islamic world as early as the 12<sup>th</sup> c. Therefore, the mention of “a Mussulman who was able to shoot living fire” is to be interpreted in a different way than it was done by V. V. Mavrodin. Definitely it does not testify to the use of firearms.

In the discussed fragment of the *Ipatyevskaya letopis* there are two very significant pieces of information. What was clearly stated was the presence of a “Mussulman,” who was alien to the Rus’ and the Cumans, and the fact that he was able to project fire in order to set wooden ramparts of Rus’ strongholds on fire.

The use of the word “Mussulman” is easy to explain. Both now and in the late Middle Ages, that is at the time when the record was written down, this word was used for Muslims in Slavonic languages, i.a. in Rus’, Polish or Czech. The “Mussulman” was therefore a newcomer from the Islamic world, a foreign specialist who was able to use ways of fighting which were unknown in Rus’.

The words “able to shoot living fire” are not to be interpreted as the use of firearms which launched a projectile with a roar, as there is no mention of this. In contrast to that, these words are to be read literally, as a description of the use of a flamethrower. The use of such a device in the late 12<sup>th</sup> c. was fully possible. The Muslim who came to the Cumans and operated for them in the south of Rus’ originated from the Islamic world, where so-called Greek (Byzantine) fire was already known at that time. This was a multicomponent flammable mixture. Medieval sources

mention its various components. In the case of Greek fire, the most often stated ingredients were: sulphur, saltpetre, tar, natural rubber, raisin, colophony, petroleum and plant oils (e.g., linseed oil). On the other hand, Byzantine fire which was ignited in contact with water, was said to additionally contain calcium oxide<sup>10</sup>.

The easiest way to use such incendiary mixtures was to put them in appropriate containers, such as barrels or clay vessels, and throw them with the use of catapults. A more complex way was to make use of a special device. It consisted of a container, where the mixture was heated, a connecting pipe and a nozzle, to which the mixture was pumped from the container with the use of a piston. The piston was also used to discharge the mixture outside, and the mixture was ignited at the end of the nozzle<sup>11</sup>. An experiment which was made some years ago confirmed a considerable effectiveness of flame which was projected from a reconstructed device at the distance of at least a dozen or so metres<sup>12</sup>.

Most sources reporting on the use of Byzantine fire concern attacking of enemy ships. There is, however, also evidence that it was used during sieges of fortresses. There are medieval Byzantine iconographic depictions on which one can see soldiers with hand-held flamethrowers, who attempt at setting the wall of the attacked fortress on fire (Fig. 1)<sup>13</sup>.

Greek fire (called Byzantine fire after later modifications) was in use since at least the 7<sup>th</sup> c. Its ingredients were kept in secret by the Byzantine Greeks for many centuries, but in the times of the Cumans the components were known in the Near East not only by the Byzantines. It is therefore probable that the “Mussulman” mentioned in the Rus’ chronicle came from the territory of the Near East, with which the Cumans maintained political and economic relations.

Rus’ chronicles contain very numerous mentions of fights against the invasions of the Cumans. Konchak, who was mentioned in the record in question, is known from numerous actions against the Rus’. He was referred to as a khan in late medieval Rus’ sources and he was no question a talented leader. In the late 1170s he managed to unite hordes which nomadised in the steppes on the Don and the Dnieper and create a real power which endangered Rus’. His name was recorded for some dozen subsequent years

<sup>10</sup> W. H. Spears, *Greek Fire: The Fabulous Secret That Saved Europe*, Cambridge 1969; J. R. Partington, *A History of Greek Fire and Gunpowder*, Baltimore 1999.

<sup>11</sup> E. Pászthory, *Über das Griechische Feuer. Die Analyse eines spätantiken Waffensystems*, „Antike Welt“, Vol. 17, 1986, No. 2, pp. 27-38; J. Partington, *A History of Greek Fire ...*

<sup>12</sup> J. Haldon, M. Byrne, *A Possible Solution to the Problem of Greek Fire*, „Byzantinische Zeitschrift“, Vol. 70, 1977, pp. 91-99; J. Haldon, *Greek fire revisited. Recent and current research*, [in:] *Byzantine Style, Religion and Civilization. In Honour of Sir Steven Runciman*, ed. E. Jeffreys, Cambridge 2006, pp. 290-325.

<sup>13</sup> E. Pászthory, *Über das Griechische Feuer ...*, p. 31.

<sup>7</sup> A. Daxböck, *Ein Handbüchsenfragment von der Ruine Schrattenstein, Niederösterreich*, „Beiträge zur Mittelalterarchäologie in Österreich“, Vol. 20, 2004, pp. 17-24.

<sup>8</sup> A. Rahman Zaky, *Gunpowder and Arab Firearms in Middle Ages*, „Gladius“, Vol. VI, 1967, fig. 1.

<sup>9</sup> R. Irwin, *The Mamluks in Egyptian and Syrian. Politics and Society*, Leiden-Boston 2004, p. 120.

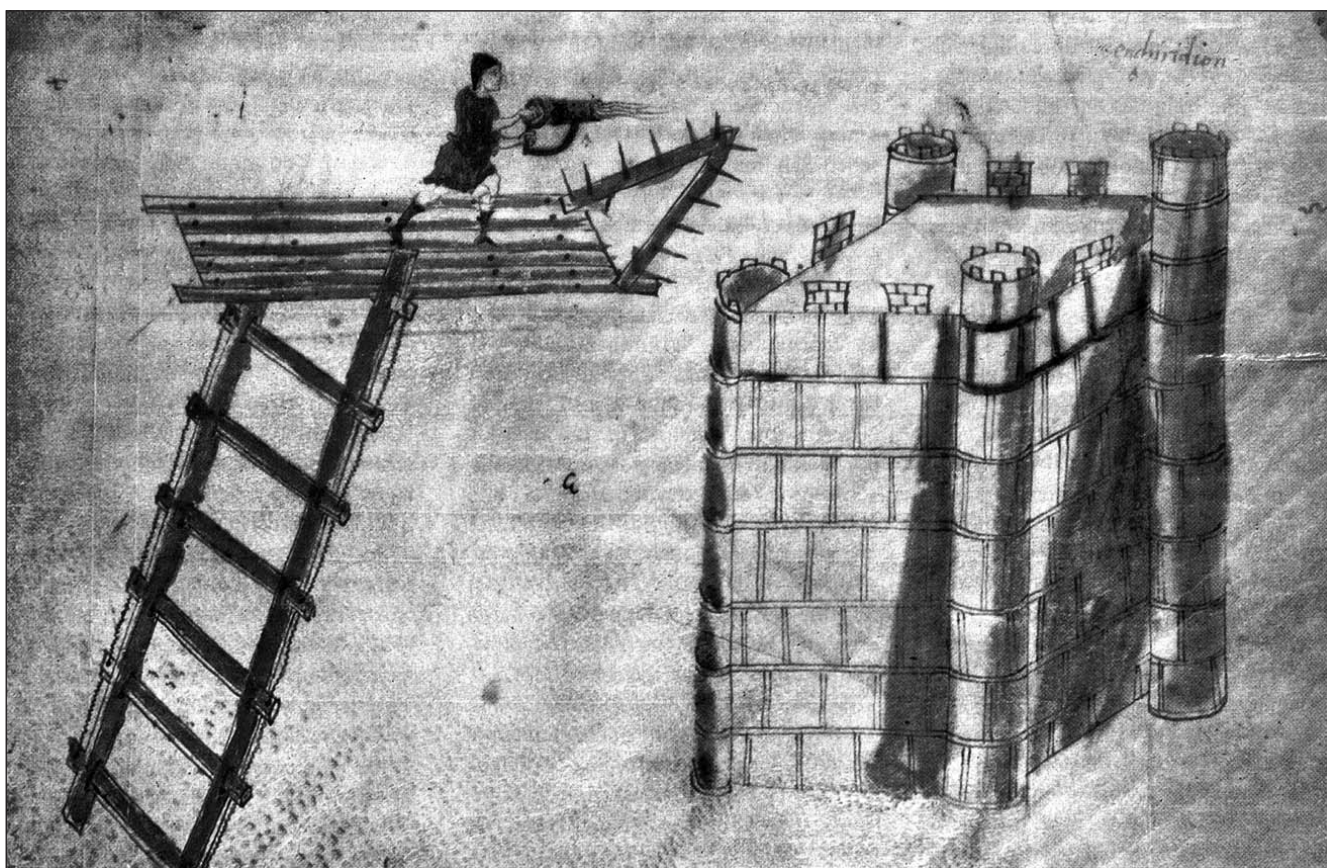


Fig. 1. A Hand-siphon for Greek fire. Codex Vaticanus, 11<sup>th</sup> c.

on the pages of chronicles in repeating descriptions of Rus'-Cuman clashes. In 1174 he invaded the Duchy of Pereyaslavl and in 1179 he ravaged the lands on the Dnieper. In 1180 and 1181 he vigorously joint internal struggles in Rus': he entered the territory of the Duchy of Kiev, supporting efforts of Svyatoslav Vsevolodovich for the throne of Kiev. In the early Spring of 1184 "cursed Konchak with a multitude of Cumans invaded Rus'" again, but he was defeated by troops of the Duke of Kiev and the Duke of Pereyaslavl. However, in the subsequent year 1185, after the famous expedition of Duke Igor which ended so disastrously for the Rus', Konchak attacked the territories of numerous Rus' duchies in retaliation. He launched another attack in 1188. Due to the persistence of his military operations against the Rus', one inclines to the opinion that Konchak may have sought for effective and innovative ways of destroying of main defensive centres of the Rus' lands – strongholds.

Fire posed an exceptional threat for their wooden ramparts. Exceptionality of the afore-mentioned record against the background of very numerous mentions of Cuman attacks against the territories of Rus' may suggest that the use of flamethrowers was a sporadic event. Perhaps it took place only during the campaign of 1184. The record that Konchak "wanted to capture Rus' strongholds" (so he did not capture them) proves that for some unknown reasons it was not possible to achieve the aim. Perhaps the use of a flamethrower of Byzantine fire against the walls of Rus' strongholds failed in practice.

In spite of that, the record from the *Ipatyevskaya letopis* that the Cuman Khan Konchak "found a Mussulman who was able to shoot living fire" in 1184 is to be considered significant. It confirms the openness of the Cumans for the search for innovative military techniques, which were far different from their traditional ones.

### Streszczenie

#### Ogień grecki w działaniach bojowych Połowców

Wśród bardzo licznych informacji o Połowcach w *Letopisie ipatjewskim* znajduje się intrygująca wzmianka o użyciu w trakcie ich działań wojennych na Rusi specyficznej broni. Pod datą roczną 1184 zapisano: „napadł bezbożny i przeklęty Konczak z wielką liczbą Połowców na Ruś,

chwałąc się [siłą swoją] i chciał zdobyć ruskie grody i spalić je ogniem, bo znalazł bisurmanina, umięjącego strzelać żywym ogniem i który był z nimi”. W. W. Mawrodin, wybitny rosyjski historyk zajmujący się m.in. początkami broni palnej na Rusi, wspomnianą wzmiankę zinterpretował jako

poświadczenie bardzo wczesnego użycia broni palnej. Za nim sąd ten powtórzyli inni. Z hipotezą taką nie można się jednak zgodzić. Data roczna 1184 jest bowiem w aspekcie znajomości prochu w tej części świata zbyt wczesna. Najstarsze wzmianki o użyciu broni palnej w Europie Wschodniej pochodzą dopiero z czasów o dwa wieki późniejszych – z drugiej połowy XIV w. W Europie Południowej i Zachodniej poświadczone informacje o początkach stosowania broni palnej są wcześniejsze – pochodzą z XIII w. Jak dotąd nie mamy informacji o stosowaniu prochu ani w Europie, ani w świecie islamskim już w XII w. Wzmiankę o „bisurmaninie żywym ogniem strzelającym” w 1184 r. należy więc zinterpretować inaczej niż zrobił to W. W. Mawrodin. Z pewnością nie jako poświadczającą użycie broni palnej, ale dosłownie, jako opis użycia miotacza tzw. ognia greckiego (bizantyjskiego) – płonącej wieloskładnikowej mieszaniny. W źródłach średniowiecznych podawane są różne jej składniki, najczęściej: siarka, saletra, smoła, kaczuk, żywica, kalafonia, ropa naftowa, oleje roślinne, tlenek wapnia. Miotano go używając specjalnego urządzenia składającego się z pojemnika, w którym podgrzewano mieszaninę, rury łączącej, wyrzutni, do której przepychano ją ze zbiornika tłokiem. Tłokiem wypychano ją też na zewnątrz, podpalając przy wylocie.

Ogień grecki (po późniejszych modyfikacjach zwany bizantyjskim) stosowano co najmniej od VII w. do atakowania okrętów przeciwnika i podczas oblegania twierdz.

Zachowały się średniowieczne, bizantyjskie przedstawienia ikonograficzne, na których widoczni są wojownicy z ręcznymi miotaczami, próbujący podpalić ścianę atakowanej twierdzy (ryc. 1). Jego receptura przez długie wieki utrzymywana przez bizantyjskich Greków w tajemnicy w czasach Połowców znana już była na Bliskim Wschodzie nie tylko Bizantyjczykom. Prawdopodobnym jest więc, iż ów, wspomniany w ruskiej kronice „bisurmanin”, pochodził z terenów Bliskiego Wschodu, z którymi Połowcy utrzymywali kontakty polityczne i gospodarcze.

W średniowiecznych kronikach ruskich są bardzo liczne informacje o walkach z najazdami Połowców. Wspomniany w zapisce Konczak znany jest wielokrotnych, uporczywych działań bojowych przeciwko Rusinom. Skłania to do sądu, iż mógł on poszukiwać skutecznych, nowatorskich sposobów niszczenia głównych centrów obrony ziem ruskich – grodów, dla których ogień był szczególnym zagrożeniem.

Wyjątkowość wspomnianej wzmianki na tle bardzo licznych informacji o atakach Połowców na ziemie ruskie, świadczy zapewne o tym, że użycie miotacza ognia mogło być incydentalnym działaniem. Być może jedynie w kampanii 1184 r. Zapis, iż Konczak „chciał zdobyć ruskie grody” (a więc nie zdobył), świadczy, że zamiaru tego z nieznanых powodów nie udało się zrealizować. Mimo to interesującą nas zapiskę uznać należy za ważną, potwierdzającą gotowość Połowców do poszukiwań nowatorskich technik wojсковych, odmiennych od ich stepowych tradycji.