

# Chemical Warfare in the 18<sup>th</sup> Century?

## A Wallachian Chronicle and other Written Sources about it

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### Short History of Chemical Warfare

History has always been marked by conflict. As an individual, or in organized structures, man has always tried to triumph over the others, for material gains and/or for fame. As conventional means were not always enough to ensure a total or swift victory, man has turned to more sophisticated means of killing, rapidly and in great numbers. Chemical weapons, as nowadays biological and nuclear weapons, were also a matter of prestige and deterrence, giving a clear advantage to their owner from the very beginning.

Chemical weapons are best known for their use in the 20<sup>th</sup> century, especially in the awful trenches of (especially) the Western front of World War I. The famous Battle of Ypres has become a landmark in the history of chemical warfare.

Few know that this kind of weapon, together with the biological weapons, was used ever since ancient times. Ancient Persian archers would dip the tip of their arrows in manure or blood of corpses. The Scythians used the same method. Other poisons used by archers were snake or ant poison and plant toxins. Poisoning wells was widespread from ancient times – Germanic tribes and Romans, for example – to the Middle Ages – Romanian history is full of descriptions of the scorched earth tactics and the poisoning of the wells, which could easily be done by simply dropping a rotting animal carcass in the water.

Clear material evidence for the use of chemical weapons was found in a collapsed tunnel at Dura Europos, dating from the fall of the city to the Persians, in 256. The skeletons of several Roman soldiers were found by the archeologists, intrigued that the bones had no mark of violence, and the alignment of the bodies. While conducting a chemical analysis of the material from the walls of the tunnel, specialists found traces of bitumen and sulphur crystals, a combination which, on fire, generates a choking smoke, death coming in minutes.

One of the most famous was the Greek fire, used by the Byzantines on land, underground, and on sea. Its composition is not known, although it is believed it included raw petroleum from around the Black Sea. Portable and highly effective, its last use occurred in 1453, in the tunnels, by individual soldiers carrying “flamethrowers”, at the siege – and fall – of Byzantium.

Flamethrowers on carts were also used by the Chinese, who also employed gas to kill their enemies, in tunnels or in open field. As composition, they used wolf or human feces, mixed with arsenic, poisonous herbs and insects.

Catapulting dead bodies infected with plague, for instance, over the walls of besieged cities, became widespread in the Middle Ages.

The Portuguese of the 16<sup>th</sup> century, while conquering what is now Brazil, were “welcomed” by the natives with chilli pepper smoke, causing them severe damage to the eyes.

In the 18<sup>th</sup> century, a few substances are known to have been used for the manufacturing of chemical weapons, such as aconite, antimony, arsenic, belladonna, ceruse, euphorbe, hellebore, lead, minium, nux vomica, orpiment, veridgris. Until now, there was no information about the use of chemical weapons in the 18<sup>th</sup> century. Well known in this century was the use of biological weapons, such as in North America, in the wars against the native Indian tribes.

It seems that the 19<sup>th</sup> century was “clean” from such weapons, as a new type of military chivalrism and honour was adopted, quickly dropped in World War I. In 1914-1918, all belligerents used much gas to empty the other’s trenches, especially chlorine, chlorinate-phosgene mixture, phosgene, benzyl bromide, cyanhydric acid, mustard gas. After 1918, war gas was used in the Russian Civil War (1920), the Rif War (Morocco, 1921-1927), the Italian invasion in Abyssinia (1936) and the Japanese invasion of China.

In the second World War, gas was used as a weapon on the frontline only in the Orient, by and/or against the Japanese. After 1945, gas was used in the Vietnam War, the Soviet invasion of Afghanistan, the Irak-Iran War, and by terrorist organizations<sup>1</sup>.

## The Events

The fifth<sup>2</sup> (and the last) Russian-Austrian-Turkish War of the 18<sup>th</sup> century occurred in the years 1787-1792. Austria was mainly involved in the Danube area and Wallachia, while Russia in Crimea and Moldavia. As usual, the fight was bitter, and required many men and equipment, over large areas, where food and lodging was hard to find, let alone roads or other amenities so necessary for an army.

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<sup>1</sup> For the history of chemical and biological weapons, see the following websites: <http://www.io9.com/5798230/ancient-chemical-weapons-that-were-ahead-of-their-time>; <http://www.chemical-biological-attack-survival-guide.com/history-chemical-biological-weapons.htm>; [http://www.emedicinehealth.com/biological\\_warfare/article\\_em.htm](http://www.emedicinehealth.com/biological_warfare/article_em.htm); [http://www.dshs.state.tx.us/preparedness/bt\\_public\\_history.shtm](http://www.dshs.state.tx.us/preparedness/bt_public_history.shtm).

<sup>2</sup> The other 18<sup>th</sup> century wars were:

- a. the Campaign on the Pruth in 1711;
- b. the Austrian-Turkish War of 1714-1718;
- c. the Russian-Austrian-Turkish War of 1735-1739;
- d. the Russian-Turkish War of 1768-1774.

Austria<sup>3</sup> was defeated by the Turks, after a few initial successes, and had to abandon the fight in 1791, also because of the French Revolution which was threatening the European establishment and the Austrian possessions in the Low Countries. Russia managed to win the battles against the Turks, but had to sign the peace after its ally abandoned the cause. There are multiple reports and information on the battles, movements and tactics of this war, yet no hint on any particular aspect such as ... chemical warfare. The only source talking about such a thing is the "Chronograph"<sup>4</sup> of a Wallachian monk, Dionisie *Eclesiarhul*<sup>5</sup>.

### About the Author

Dionisie, the future chronicler, was born around 1740 in a village in the north of Oltenia. He attended as a child a church or monastery school, and then became a priest. He got married, but became a widower very soon, so he became a monk at the Hurezi monastery. Here he copied old manuscripts and books, and some time in 1770-1771 he became abbot of Arnota monastery. Then he became the preserver of the archives at the monastery in Râmnicu Vilcea. Here he put the archive in order and made codices of old documents.

Fired by a new bishop, Nectarie, of Greek origins, in 1792, he wandered between several monasteries in Oltenia, where he made codices, copied documents, etc. In 1804 he is to be found as preserver of the archives at the Metropolitan Church in Bucharest, where he also created a school of calligraphy and archives, and wrote several codices.

As Nectarie became Metropolitan of the Wallachian Orthodox Church in 1812, Dionisie was fired again and returned to Oltenia, where he continued his activity as archivist, copier, etc. He wrote his famous "Chronograph" between 1814 and 1820.

He was a very educated man, knew several foreign languages, history, geography, drew miniatures and portraits, and translated documents. He wrote over 30 codices, the "Chronograph", and other works.

He got sick from the painstaking work as a copier, as he writes in his work. Nevertheless, he was convinced that his writings were useful and it seems that he enjoyed his work very much, as he wrote at the beginning of his "Chronograph": "*Cu dulceață iaște oarecum a povesti cinevaș de patriia sa și a istori de ceale ce s-au întâmplat neamului său [...] / With sweetness it is somehow for somebody to speak about his motherland and tell the things that happened to his people [...].*"

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<sup>3</sup> After the victorious war of 1683-1699, when it managed to drive the Turks back from Vienna and then Hungary, Austria had another success only against the Ottoman Empire: the 1714-1718 war, also unofficially called "the War of Eugene of Savoy". The next war, 1735-1739, saw the Ottomans inflicting defeat and humiliation upon the poorly lead Austrian armies, taking back Belgrade, Serbia, and Oltenia/Little Wallachia.

<sup>4</sup> Dionisie *Eclesiarhul*, *Hronograf (1764-1815)*. Bucharest 1987.

<sup>5</sup> The term *Eclesiarh* refers to the monk who was preserving the records of a monastery's income.

## His Work

For the period described, 1764-1815, he gives many information of historical, social, and political nature, for which he used several sources: written sources, especially for European events – journals, newspapers, brochures –; information obtained as an eye witness; information from documents he had seen; information obtained directly from people involved in the events – “*câte am auzit de la cei bătrâni și câte îmi sunt în știință în zilele stării vieții mele / as many as I have heard from old people and as many as came to my knowledge in the days of my life.*”

He presents the events in a somehow objective manner, describing what happened in Wallachia and other areas in the period mentioned above. As his first editor<sup>6</sup> wrote, Dionisie “*nu e mai învățat decât ceilalți cronicari ai Țerei Românești. El urăște pe turci, râde de nemți și ține cu muscalii / is not more educated than the other Wallachian chroniclers. He hates the Turks, laughs at the Germans and likes the Russians.*” His writing has many ironies, even funny comments, short analysis, and personal ideas. Well informed, he has a critical approach and proves much curiosity for the events. In all, the chronicler wishes to present the truth.

His work is thus very useful. On top of everything, his most interesting and somehow unbelievable information comes in form of a description of chemical warfare at the end of the 18<sup>th</sup> century – the Russians against the Turks in Crimea, during the war in 1787-1792. The author cannot be accused of writing fantasy, as the description and information he provides are very accurate and plausible. Nonetheless, his information is backed by other sources from the same century, contemporary or not, both Romanian and Russian.

## The “Secrets”

Defending Crimea, perhaps in 1788, Dionisie writes that the Russian army used “*secreturi / secrets*”, i. e. toxic gas, against the Turks. Faced with a powerful Ottoman offensive, the Russians found themselves in a grave situation on the front line and asked for help from Catherine II. The Empress “*a poruncit de au scos secreturile / ordered that they take out the secrets*”<sup>7</sup> with the armies that were ready and sent them right away to Crimea. The “*secrets*” eventually arrived with the army, while the Turks had their camp in a wide valley. The officers were studying the landscape, in order to shoot better with “*cu tunurile ceale mari ce le trag cu câte 40 de boi, de sănt ca butea, și cum ar putea slobozi și secreturile într-ânsii / the huge cannons which were pulled by 40 oxen, and looked like huge barrels, and how they could shoot the secrets at them*”. “[...] *au așezat secreturile 4 și doao tunuri ca butea, în gura acei văi / [...] they put 4 secrets and 2 of those huge cannons like barrels at the mouth of that valley*”; the huge cannons were shooting cannonballs, full or just pieces, pieces of Turkish cannons, horseshoes, “*și orice / and anything else*”. Very effective on a wide range, as they cleared the fields in front of them, these huge cannons could only fire once.

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<sup>6</sup> Alexandru Papiu Ilarian.

<sup>7</sup> Dionisie Eclesiarhul, *Hronograf*, p. 43.

The chronicler writes that he got this information from a very reliable eye witness. After firing the huge cannons, and causing much damage to the Ottoman camp, the Russians prepared for the Ottoman attack. Shattered but not destroyed, the Ottomans, cavalry and infantry alike, charged the Russian positions. *“Iar înțeleptul comandir, văzînd năvala turcilor și mulțimea nenumărată că s-au apropiat de ei, de grab au poruncit de au slobozit secreturile într-âșii; și întâmplându-să (cu voia lui Dum[ne]zeu) de au suflat vântul asupra lor pe acel șleau, au mersu fumu secreturilor de au intrat pe nările și gurile turcilor și a cailor lor; și, fiind acel fum foarte otrăvit, câți l-au mirosit toți au murit, zbierând caii și oamenii, căzând ca znopii. Perit-au și din muscali câți au ajuns de au mirosit acel fum. / And the wise commander, seeing the hurry of the Turks and the huge number closing in, immediately ordered the secrets to be released onto them<sup>8</sup>; and as it happened (with the will of God) that the wind was blowing towards them, the smoke of the secrets went and entered the nostrils and the mouths of the Turks and of their horses; and, being that smoke very poisonous, everybody who smelled it died, horses and men crying out, and falling like sheaves. The Russians who got to smell that smoke also died.”* The rest of the Turks withdrew, the Russians pillaged the camp and the dead, burned the dead, *“să nu facă putoare / so they don't make stench”,* and returned with plenty of captured material<sup>9</sup>.

Very interesting is then the description of the making and use of the “secrets”:

*“Așa spun că aceale secreturi, doao sau, precum spun unii, patru, iar nu mai multe, cum că au fost pe acea vreme un franțuzoi, meșter foarte iscusit la facere de tunuri și, cerând de la împăratul multe feliuri de metaluri, le-au băgat în topitoare, amestecându-le și cu multe feliur[i] de otrăvuri iuți, împreunându-le și fierbându-le cu foc iute, după ce s-au topit toate materiile le-au vărsat în tipar, eșind tunuri nu prea mari, cu gura ca de somnu. Și apoi au adunat otrăvuri foarte iuți și scumpe foarte de pe la spițăriile împărătești, de la Hindiia, Franța, Englitera iproci, amestecându-le și colesându-le cu prafuri iuți și cu alte materii veninoase; și făcându-le barut, cum au știut, au făcut și măsura cu cumpăna cât să bage într-unul ca o umplutură. Și cercându-le, spun că mare trăsnet fac și numai fum iase dintr-ânsele, că ghiulele sau altceva nu bagă în iale. Și fumul acela, răsfirându-se, cine îl va mirosi moare îndată și de năprasnă, ori omu, ori dobitoc și ține multe ceasuri acea putoare iute. / They say about those secrets<sup>10</sup>, two, or, as others say, four, but no more, that there was in those days a Frenchman, very skillful in making cannons, and, asking from the Emperor<sup>11</sup> many types of metal, he put them in the foundry, combining them with many types of pungent poisons, combining them and boiling them at rapid fire, and after all materials melted, poured them in the cast, making cannons not too big, with the muzzle like that of a sheat fish. And then they got very pungent and very expensive poisons from imperial drugstores, from India, France,*

<sup>8</sup> *Idem*, p. 43.

<sup>9</sup> *Idem*, p. 44.

<sup>10</sup> *Ibidem*

<sup>11</sup> Perhaps, Peter the Great.

England and others, mixing them and combining them with pungent powders and other venomous substances; and making gunpowder out of them, as they knew, they also measured the quantity necessary for a shot. And after testing them, they said that they make huge noise and only smoke comes out of them, and there's no need to put shrapnels or anything else in them. And that smoke, while spreading, whoever will smell it will die at once, either man or beast, and that pungent stench holds for many hours."

The Emperor convinced the Frenchman to write down for him all the recipes and the names of the ingredients and of the products. After that, he gave him the command of a cavalry unit, much money and awarded him titles and a high social status, but never let him be alone, go wherever he wanted, or write to anybody, for fear he could make such things for other rulers.

"Și aceste tunuri sânt oprite a nu da cu ele nicidecum, cu mare legătură și poruncă, pentru căci prea mult omor face" in both armies. / And it is ordered that these cannons shall not be used, because they make too much killing." And it is with much spending that the gunpowder of the secrets is made, costing millions of rubles, and those poisons are hard to be found, and only when it is absolutely necessary will they be used, so the Empire will not be defeated, and they should be shot only once, and not more." / "Și cu mare cheltuială să face acel barut al secreturilor, cu milioane de ruble și cum că cu anevoe să găsească aceale otrăvuri, fără numai cînd va fi mare nevoe, ca să nu să răpească înpărăția, atunci să le sloboază, adecă să dea cu ele numai o dată, iar mai mult nu."

"Spun cum că tunarii și cei ce așază secreturile cu meșteșug sunt legați la gură și la nas, cînd le sloboade; iar unii spun că au bășici de sticlă sau cristal, și bagă capu în ele, încheindu-le cu meșteșug la gât. / They say that the gunners and those who carefully handle the secrets have their mouths and noses covered, when they are shooting; and some say they have glass or crystal bubbles, and they put their heads inside, closing them at the neck."

Dionisie also writes that others say that the Frenchman was beheaded by the Emperor, but the author does not believe this version, as the Frenchman saved the Russian Empire from being overrun by the Turks, Swedes, and French<sup>12</sup>!

"S-au mai izvodit de s-au făcut și niște tunuri de dau cu ele umplându-le cu barut și cu smoală și, slobozindu-le smoala, să aprinde cu foc de la barut și, improșcînd, cade pe turci cu inuțime și să lipește de haine și le arde și cade pe cai de arde cai[i], iar cai[i] încep a fugi în toate părțile și nu-i pot ținea turcii și dau cu picioarele și trântesc pe turci jos și-i calcă cai[i] cu picioarele. / And they also made other cannons<sup>13</sup> that are fired after they fill them with gun powder and tar, and, shooting the tar, it catches fire from the gun powder, and, scattering, it falls on the Turks rapidly and gets stuck to the clothes and it burns them and falls on the horses and it burns the horses, and the horses begin to run all over the place and the Turks

<sup>12</sup> There is no information regarding the use of toxic gas against the Swedish army or that of Napoleon!

<sup>13</sup> Dionisie Eclesiarhul, *Hronograf*, p. 45.

cannot keep them in order and they kick with their feet and knock down the Turks and trample them with their feet.” And so the army of the Turks was utterly defeated.

It is very possible that the Emperor mentioned in the text is none other than Peter the Great. It is well known that, in the attempts to modernize Russia, the czar brought from all over the Western world specialists in different domains – architecture, ship building, artillery, military tactics, sciences, art –, and of different nationalities – Scots, French, English, Dutch, Germans, etc. It would not be strange that among all these, a specialist in making toxic chemicals was employed, and his name lost, or not yet known.

How could Dionisie, a monk, get this type of information? The most obvious version is that he got it while in Bucharest, during the Russian occupation of the country, in 1806-1812. In 1787-1792 he had been in Craiova. Also, the detail regarding the defeat of the French by the Russians, and the layout of the text itself could lead to the idea that both information were fresh.

Also, information about the battle could be passed on by anybody, but the mixture of details regarding the battle and the origins of the chemical weapons leads us to think that his informer was a Russian officer, maybe of the highest rank, one that had participated in the Crimean campaign more than 20 years before. A prosaic yet possible explanation how the information could pass on to Dionisie is rather simple – during the occupations of the Romanian Countries by the Russians and/or Austrians, social life flourished in the two capitals. The officers of the foreign armies organized and attended balls and soirees, where they would invite the local elite, boyars and high clerics. It was not hard for a less sober officer, maybe sad and nostalgic, or even bragging, to tell military stories.

The scenarios could go on, as we may actually never know the truth...

## Other Sources

A first mention of the “secrets” in a 18<sup>th</sup> century source is the campaign notes of Russian Field Marshal Boris Petrovich Sheremetev<sup>14</sup>, the commander of the Russian army during the 1711 campaign. While writing about the decisions taken before attempting to break through the incirclement, the Field Marshal notes that the cannons, the cannonballs and the secrets should be thrown in the river, so they are not captured by the enemy<sup>15</sup>.

For the same event, Ion Neculce, the hetman of the Moldavian army, wrote in his *“Letopiseful Țării Moldovei [Moldavian Chronicle]”,* that, while being surrounded by the enemy, *“Zicea împăratul moschicesc că are și el două cumbarali de cele mare, făcute cu altu meștersug, cu otravă, care îl ține una câte 50 pungi de bani, și să căiești că n-au luat mai multe. Că acum ar arunca și el vro una, dar n-are la cine arunca, că ordia turcilor încă nu-i strănsă, să fie așăzată la un loc. Că acel fel de cumbarale sunt nu numai herăle ce-s într-însele, ce și mirosul; pe cine agiunge, cade de moare. Ce oricum, dimineată, dintr-acele doao a arunca una, unde*

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<sup>14</sup> Sheremetev (1672-1719) was a diplomat and Field Marshal of Russia, one of the most capable commanders of the army of Peter the Great.

<sup>15</sup> *Călători străini despre Țările Române*, VIII, p. 429.

*a vedea ordia lor strânsă.* / The Russian emperor was saying that he has 2 of those big bombs<sup>16</sup>, made with a different method, with poison, which cost him 50 bags of money each, and he is sorry he didn't take more with him. Because now he would throw one, but he has nobody to throw at, because the army of the Turks is not gathered in one place. Because that type of bomb consist not only of the iron they are made of, but also the smell; whoever the smell reaches, falls dead. Anyway, in the morning, from these two he will throw one, where he will see their army gathered."<sup>17</sup> As we already know, the Russians did not use the "secrets", which were actually thrown in the river Pruth... An Ottoman source says that, on that morning, the wind was blowing all the dust and smoke towards the allied camp.

A short mention of the Russian "secrets" appears in the chronicle of Wallachian boyar Ienăchiță Văcărescu, when describing the war of 1768-1774. In a battle with the Turks, in southern Bessarabia, the ammunition carts of the Russians caught fire, by mistake. The flames were raging, and the Turks, "*crezând că sunt lagumuri sau secreturi, s-au întors înapoi și au năvălit la fugă.* / believing they were mines/tunnels or secrets, turned around and fled." <sup>18</sup>

For the same war, relating about the battle at Silistra in 1773, another boyar, the *medelnicer* Dumitrache, wrote that the Russians stood ready to storm the fortress. The Turks attacked, crushed the Russians in front of them, and captured "*un tun al infanteriei și încă unul secret al artileriei.* / a cannon of the infantry and another secret one of the artillery."<sup>19</sup> The secret cannon would be recovered the next year<sup>20</sup>. From the description of the facts, we believe the cannon in question was not one used for firing "secrets", but a type of mortar, maybe a new model being brought to the front for testing. The Russians had many types of cannons developed in the 18<sup>th</sup> century, and there was a must in keeping the secrecy about the capacities of the new weapons. Also, both parts were too close to use the "secrets", and the Russians were preparing to storm the fortress in a few hours. The ditches had already been filled with gabions, so the presence of a special cannon near the infantry was dangerous and even useless for this type of attack. Dumitrache was present at the battle, yet he does not deliver any information about the type of secret the cannon was holding...

## Conclusions

So far, Dionisie's chronicle is the only clear proof that chemical weapons were used in the 18<sup>th</sup> century. The other sources used in this study speak for the existence and possibility of use of such weapons.

If used against Western armies, such as the Swedish or French, information about such weapons would have emerged immediately. There was never an

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<sup>16</sup> Big bombs, similar to the Turkish bombs, probably referring to mortar cannon balls.

<sup>17</sup> Ion Neculce, *Letopisețul Țării Moldovei*, Bucharest 1972, p. 210.

<sup>18</sup> Ienăchiță Văcărescu, *Istoria othomanicească*, Bucharest 2001, p. 107.

<sup>19</sup> *Istoria evenimentelor din Orientu, cu referință la Principatele Moldova și Valahia, din anii 1769-1774. Scrisă de biv vel stolnic Dumitrache și editată, după copia lui Necolai Piteșteanulu din anii 1782, de V.A Urechia, Membru al Academiei Române.* "Analele Academiei Române, Memoriile Secțiunii Istorice" 2 (1887-1888), p. 441.

<sup>20</sup> *Ibidem*, p. 448.



annihilation battle between the Russians and their Western European foes, so that nobody could tell about the horrors of a chemical attack. Many of the officers commanding the Russian armies were of Western origins, and the rules of chivalrism were generally applied. Also, the tactics of the period made quite impossible to catch a Western-type army crowded in a suitable place to be covered in clouds of poisonous gas. In our opinion, the Russians simply could not use this wretched killing method in the select club of European warfare.

On the other hand, fighting against the Ottomans was always difficult, as they did not obey to the rules of engagement, such as taking prisoners and not executing them, for example. The battles of Eastern Europe in the 18<sup>th</sup> century, as they had always been, were usually massacres, while honour or respect among enemy commanders and armies did not exist. Also, the sheer numbers of Ottoman soldiers sent into battle, and especially the almost medieval way of charging along the entire length of the front in no particular alignment, meant that the Russians had to develop a way to cause as much damage to their opponent, and gain as much possible in the shortest period of time, also for strategic reasons. Last but not least, fighting against Muslims implied that any means could be used. These are a few of the reasons why the Russians might have used these chemicals only against the Ottomans, and not against Western armies.

It would be very useful if, one day, some scholar would find buried documents to give clear and undisputable information on the subject somewhere in a Russian or Ottoman archive.

## **Chemical Warfare in the 18<sup>th</sup> Century?**

### **A Wallachian Chronicle and other Written Sources about it**

(abstract)

One of the most interesting texts in a Romanian chronicle is to be found in the *Hronograf* of a Wallachian monk, Dionisie. In a very clear and simple style, he presents the history and use of chemical weapons in war, by the Russians. Other sources regarding the same subject are also taken into consideration, in an attempt to present a subject that has been largely unknown to the public.