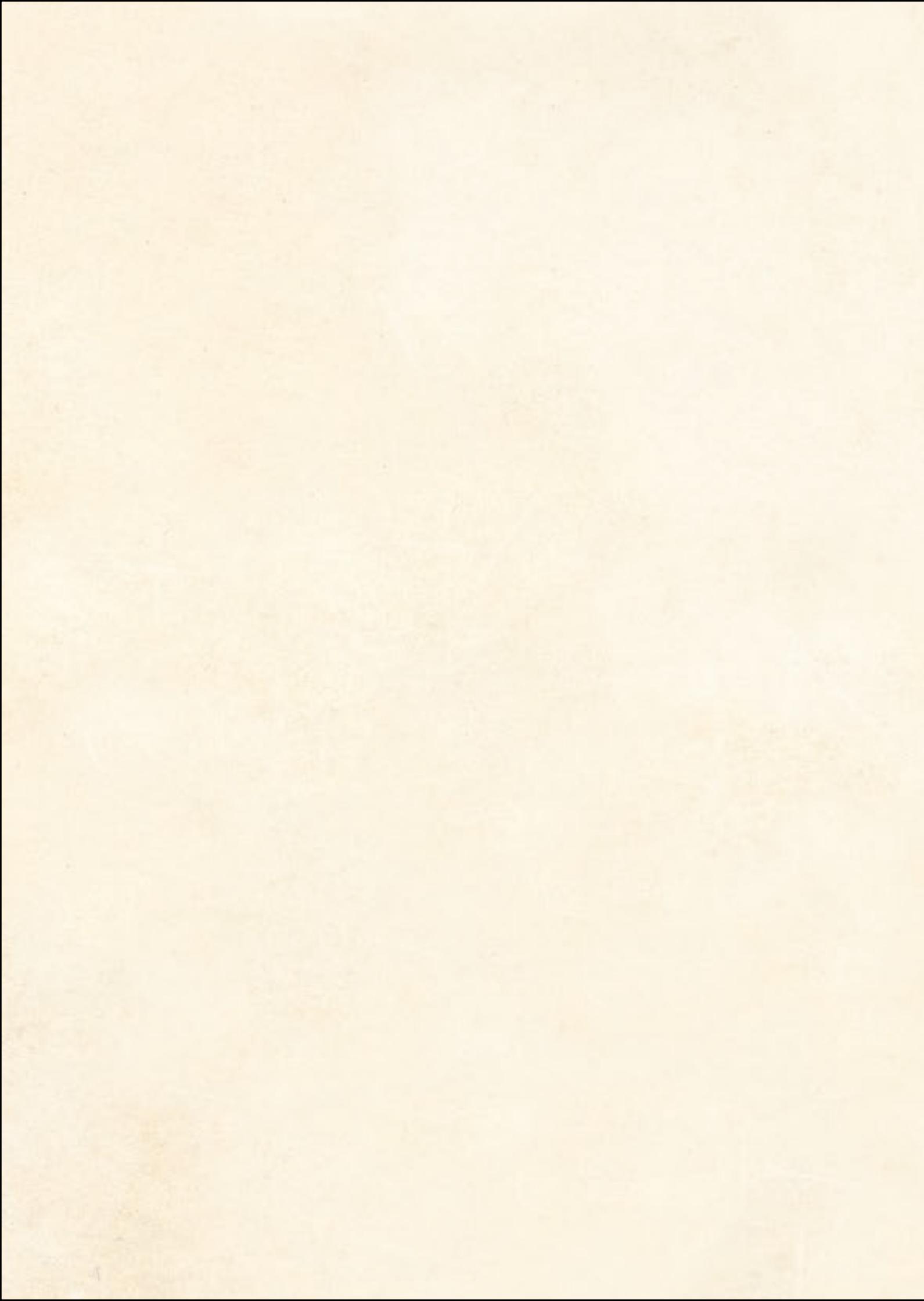


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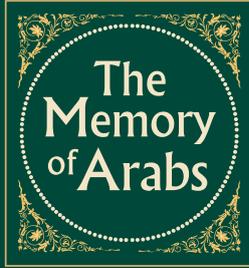




The Memory of Arabs

Peer-reviewed Journal





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The Memory of Arabs is a peer-reviewed scholarly journal concerned with the cultural and historical heritage of Arab and Islamic countries. It aims to emphasize the importance of restoring Arab memory to the current Arab present. The journal is part of the Memory of Arabs project, affiliated with the BA Academic Research Sector.

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- The magazine is keen on publishing new researches on all topics concerning the cultural and historical heritage of Arab and Islamic countries.
- The research should be original, innovative, and methodological. It should not have been previously published elsewhere in any shape or form, or borrowed from any book or university thesis (MA or PhD).
- It should be between 2000 and 2500 words.
- For research written in Arabic, the font should be set to “Traditional Arabic”, size 16 for the body and 14 for endnotes, with single spaces between lines.
- For research written in English, the font should be set to “Times New Roman”, size 14 for the body and 12 for endnotes, with single spaces between lines.
- The endnotes and references should be mentioned at the end of the research, numbered, and linked respectively to the text.
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Contents

Foreword	7
The Role of Military Technology and Firearms in the Ottoman Conquest of the Mamluk Realm 1516 – 1517	9
Prof. Albrecht Fuess	
The Mamlūk Military Saddle in Archaeology and Art	25
Dr. David Nicolle	

Foreword

In line with the Bibliotheca Alexandrina's (BA) mission to become a center of excellence in the production and dissemination of knowledge, an interactive hub between peoples and civilizations, assuming a prominent position in the field of research and scientific publishing, by issuing books, periodicals, and encyclopedias on various aspects of culture, the BA was able to assume its role as a leading international institution in the field of paper and digital publishing, and to create a state of cultural and academic mobility.

In this context, the library publishes the fourth issue of *The Memory of Arabs* magazine affiliated with the Memory of the Arab World project led by the BA Academic Research Sector. It is a scientific refereed journal that deals with the cultural and civilizational heritage of Arab countries. The first issue of the magazine was released at the end of 2018, with the aim of emphasizing the importance of restoring Arab memory to the current Arab present. Meanwhile, this issue is devoted to the topic of equestrianism and martial arts in the era of the Mamluk Sultans, expressing a side of the cultural events and activities organized by the BA.

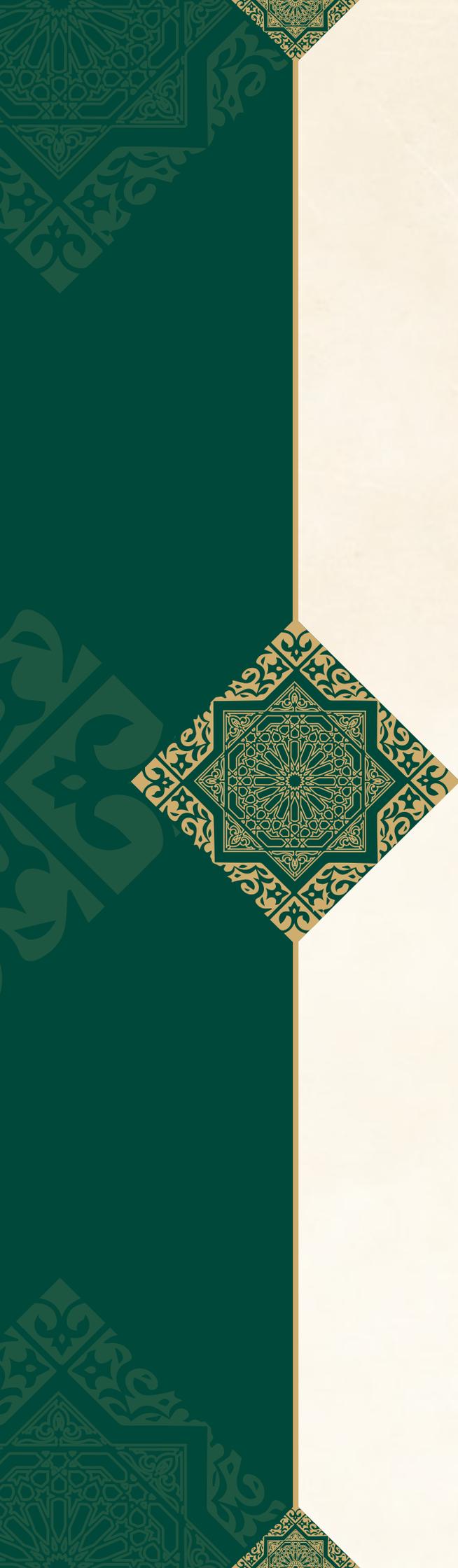
The publication is made available to researchers and those interested through scientific studies and peer-reviewed journals; this issue included some of the research presented within the works of an international conference held at the BA on 24 – 25 June 2019.

The topic of equestrianism in the Mamluk era was chosen as the focus of this issue of *The Memory of Arabs* magazine and continued to the next to shed light on military heroism in the face of attacks from the East and West, spanning a wide swath of the Arab world. The importance of these studies is that they clarify the prominent place of military sciences in the heritage of Islamic civilization. The research in the fourth issue of the magazine reviews the interest of the Mamluk sultans in military power and the equestrian arts, as well as their interest in educating and training their Mamluks in all aspects of such arts, the use of various weapons, and different methods of fencing.

Research topics in this issue vary to include assorted studies in both Arabic and English on equestrian and military plans, martial arts, and horsemanship in the Mamluk era, in addition to the Mamluks' interest in: choosing the finest types of horses distinguished by the quality and strength of their breeds; the arts of training and throwing depicted in sources and manuscripts concerned with the development of the arts of war; the leadership of armies, training soldiers, and organizing and managing battles; the use of weapons and various fighting tools, such as swords, spears, arrows, and military machines; racing fields and training in Mamluk Cairo; and the development of tactics and military plans in the Mamluk era.

Prof. Mostafa El Feki

Director of the Bibliotheca Alexandrina

A vertical decorative bar on the left side of the page, featuring a dark green background with intricate gold and white geometric patterns. The patterns include repeating motifs of stars and floral designs. The bar is bordered by a thin gold line.

The Role of Military Technology and Firearms in the Ottoman Conquest of the Mamluk Realm 1516 – 1517

Prof. Albrecht Fuess



The Role of Military Technology and Firearms in the Ottoman Conquest of the Mamluk Realm 1516 – 1517

Prof. Albrecht Fuess*

Introduction

Around 1300 CE, gunpowder, which had been invented in China, made its first appearance in Europe. During the first half of the 14th century, firearms were to follow. The Ottomans and Mamluks obtained their knowledge of firearms then, directly or indirectly from Central Europe⁽¹⁾.

The success of firearms is surprising as in the beginning they were not very effective, and were difficult to handle and transport. The use of cannons was limited to the case of a siege. Their advantage, compared to contemporary catapults, was that their curve of impact was flatter, and therefore they caused more damage to walls and fortresses. The firing speed of guns of this period was not competitive at all. A professional archer could fire six arrows per minute, whereas a soldier with a gun could shoot, at maximum, once a minute. Moreover, gunfire was not as exact as a bow and it was impossible to load a gun on the back of a horse. On the other hand, gun projectiles had more power to penetrate metal compared to arrows and the training of a gun soldier took only

a week. An archer of the early 16th century needed years of training to achieve and maintain a high professional level in his performance⁽²⁾.

Those were the overall conditions of the use of firearms when Ottomans and Mamluks became acquainted to them, following the introduction of these arms into the respective military systems prior to the decisive fight at the beginning of the 16th century.

Firearms in the Ottoman Army Prior to the 1480s

Since the introduction of the *Janissary* corps (literally: the new troop) into the Ottoman army in the 14th century, the infantry played an important role in the Ottoman Empire.

The Janissaries had been initially recruited among prisoners of war, but in the 15th century they were selected through the so-called *devshirme* (or boy conscription) practice, whereby Christian households in the Ottoman Empire had to hand over boys in order to be trained; especially in the

military arts and to serve in the Janissary corps⁽³⁾. The Janissaries initially carried as weapons bows and lances, but during the 15th century they were increasingly equipped with guns. Their numbers were raised from 5,000 in the middle of the 15th century to 10,000 at the beginning of the 16th⁽⁴⁾.

Besides the infantry unit of the Janissaries, the cavalry of the timariotes represented the second key element of Ottoman forces. In return for land granted to him by the sultans, the timariot was obliged, depending the size of his *timar*, to bring a certain number of cavaliers to the army service. At the beginning of the 16th century this cavalry counted 50,000 horse riders throughout the Ottoman Empire⁽⁵⁾. The timariotes were equipped with bows, lances, and swords and fought usually on the left and right wings of the army. Six elite divisions of the army composed out of recruits from the Palace school accompanied the sultan in the center. Among those, the *sipahi* (literally: army soldier) cavalry played an important role as they rode as special guards, always to the right of the sultan, and had to protect the flanks of the Janissaries.

Firearms were apparently used by the Ottomans for the first time in 1378 CE, when they besieged Dubrovnik with cannons. These cannons and following ones, which were used in the 15th century, were large and immobile. However in the 1440s, the Ottomans adopted a new tactic that mobilized their artillery. They copied the so-called *wagenburg* (wagon fort) of the Hungarian army. These *wagenburgs* consisted of several chariots chained together in order to form a mobile fortress. Cannons were placed on top of the chariots. Large units of Janissaries with guns stood behind the chariot-fortress so they could fire, protected by the *wagenburg*-arrangement. Apparently these *wagenburg* tactics were especially suited for the hilly and mountainous terrain of Eastern and Southeastern Europe.

The *wagenburg* had been originally inaugurated by the Czech Hussites under their legendary commander Jan Žižka in the 1420s during their rebellion against the German Emperor and King of Hungary Sigismund (Holy Roman Emperor 1433 – 1437/ King of Hungary 1387 – 1437)⁽⁶⁾. The Hungarians under John Hunyadi very soon recognized the advantages of the *wagenburg* and their role in the protection of mobile artillery and infantry units using guns on the battlefield⁽⁷⁾.

The *wagenburg* protection was essential for soldiers using the first generation of guns and cannons as they had to be defended from attacks of the enemy's cavalry and archers as the speed of firing of firearms was still very slow. In Middle and Western Europe, gunmen were usually protected by large infantry units using pikes⁽⁸⁾.

In 1443/44, the Ottomans faced the Hungarian *wagenburgs* for the first time during their military campaigns on the Balkan. Their inability to circumvent and conquer these mobile fortresses almost made them lose the war. Soon after, they included the new tactics into their army. When the Hungarians met the Ottomans at the second battle of the Kosovo in 1448, the Hungarians noticed that Sultan Murād II (r. 1421 – 1451) was sheltered behind a *wagenburg* of chained chariots and shields with big thorns. Janissaries equipped with guns were behind the arrangement⁽⁹⁾.



(Fig. 1) Ottoman *wagenburg*, 1526, Battle of Mohacs (Cannons chained together).

Source: Ivan Stchoukine, *La peinture turque d'après les manuscrits illustrés : De Sulaymân à Osmân II, 1520 – 1622*, pt. 1 (Paris: P. Geuthner, 1966): XXI. (Suleymanname)

Finally, the wagenburg emerged as a central element of Ottoman land warcraft in the 15th and 16th centuries. The arms became modernized but the principle stayed the same. In the center of the army stood the chariot fortress accompanied by the Janissary gunners. Behind the fortress was the sultan. The cavalry on both wings with its lances, bows, swords, and axes tried to encircle the enemy and push him towards the deadly wagenburg arrangement. As this modernization of the Ottoman army happened on the Balkan front, the other powers of the Middle East took notice of this evolution only belatedly. They still relied mainly on the cavalry as the main element of their forces. The first ruler to feel the impact of Ottoman firearms was Uzun Hasan (r. 1457 – 1478) from the tribal Turkmen confederation of the white sheep, the Aqqoyunlu. He lost the battle of Bashkent in 1473, apparently due to the Ottoman superiority in the firearm sector, while Venetian envoys tried to send him 40 cannons as well as ammunition but could not get them through the Ottoman lines⁽¹⁰⁾.

Firearms of the Mamluk Army Prior to the 1480s

The backbone of the Mamluk army consisted of their highly trained cavalry, which had so famously fought off Mongols and Crusaders in the 13th century. These cavalry soldiers had been bought outside the Muslim realm in the region North of the Black Sea and in the Caucasus in order to be trained for long years on the training grounds beneath the Citadel in Cairo. The stress in their education laid on the art of horse-riding, the *furūsīya*.

The recruitment method was expensive and needed a high level of logistics. This meant that the core element of the army could not be easily expanded and it seems that the Mamluks were reluctant to engage into ill prepared military activities as it was very expensive to refill their ranks. At the end of the 15th and beginning of the 16th centuries, the import was hampered as relations to the northern neighbors, the Ottomans and Safavides, became increasingly hostile. Due to plague and a downturn of the Mamluk economy, the number of elite Mamluk soldiers apparently diminished. Ulrich Haarmann estimates the number of Mamluk elite horse riders went down from 12,000 men in the fourteenth century to 4,000 – 6,000 men in the 15th century⁽¹¹⁾.

First, cannons were used by the Mamluks during sieges by the mid-14th century. If we are to believe the sources, Mamluk forces used their first cannon (*madāfi'*) in 1342 during the siege of Karak, where Sultan an-Nāṣir Aḥmad (r. 1342) had taken refuge against his Mamluk rivals. In 1352, the citadel of Damascus was apparently reinforced by cannons⁽¹²⁾. Al-Qalqashandī (d. 1418) saw during the reign of sultan Al-Ashraf Sha‘bān (r. 1363 – 1367) in the sixties of the 14th century a cannon, cast of bronze, which shot iron bullets in order to protect the harbor. According to him, cannons were called *makāhil al-bārūd* and they existed in three types: cannons which could throw Greek fire (*naft*), cannons which could shoot arrows capable of piercing stones, and finally, cannons which could shoot iron bullets⁽¹³⁾. After that date, cannons became a common sight in the Mamluk army.

The Ottoman-Mamluk War (1485 – 1491)

However, no signs of mobile guns or muskets used by Mamluk soldiers could be traced until the Ottoman-Mamluk war of 1485 – 1491, when the Mamluks for the first time met large numbers of Ottoman Janissary musketeers in military encounters in Cilicia. There, they struggled against the Ottomans about the over-lordship of the principality of Dulghadır (*Dū l-Qadr*), which the Mamluks had regarded for long time as a Mamluk vassal. Sultan Bāyezīd II (r. 1481 – 1512) however, did not share this opinion and let his troops invade Cilicia in 1485, conquering Adana. Already aware of the Ottoman advance, the Mamluk army, composed out of the Syrian and Egyptian units, left Aleppo for Cilicia in the same year. Coming from Aleppo, they crossed the Syrian Passes and set up their camp in Ayas in Cilicia, where they casted cannons. Afterwards, the army crossed over the Bridge at Missis and besieged Adana⁽¹⁴⁾. Apparently it had been the custom of Mamluk armies to cast cannons in Ayas before embarking on military actions towards Adana or Tarsus⁽¹⁵⁾. This might also explain why the Ottomans were keen to expulse the Mamluks from this region.

However, hearing of the Mamluk activity, Sultan Bāyezīd II ordered his son-in-law the Damad Hersek-Oğlu to revitalize the Ottoman troops before Adana, only to suffer a humiliating defeat in March 1486 against the Mamluks.

He himself was taken captive and brought to Cairo⁽¹⁶⁾. He had to stay in custody until the beginning of 1487, when he was released with the rest of the Ottoman prisoners in order to go back to Istanbul and broker there a peace agreement.

But Sultan Bāyezīd II would not hear any of it, and for the next invasion attempt he ordered the Ottoman fleet in action, which would be able to block Ayas and raid the Syrian Coast, in order to hamper the Mamluk supply lines⁽¹⁷⁾. At the same time, the land army advanced in Cilicia. As soon as April 1488, the Mamluks were aware of the renewed Ottoman offenses and started

their preparations to start another counterattack from Aleppo. The Ottoman war council then deployed the Ottoman fleet, which was equipped with cannons, mortars, and rifles. The navy was ordered to block the Mamluk advance by shelling the coastal road south of Baghras castle with their artillery⁽¹⁸⁾. In addition to this, the Ottoman navy—under the command of Heršek-Oğlu—raided the harbors of Ayas and Tripoli so that Mamluk ships could not use them for transportation of army units. The gulf of Iskanderun was thereby blocked for shipping.



(Fig. 2) The Ottoman Navy at Bāb Al-Malik, 1488.

Source: Philippe Lonicer, *Türkische Chroniken (Chronica Turcica)* (Frankfurt, 1577): 24a. Lonicer, Philipp, *Chronicorvm Tvrcicorvm, In quibus Tvrcorvm Origo, Principes, Imperatores, Bella, Praelia, Caedes, Victoriae, Reiqve Militaris Ratio exponuntur; Et Mahometicæ religionis Instituta.*

Accessere, *Narratio De Baiazethis Filiorvm Seditiõibvs; Et Iohannis Aventini Liber, in quo causæ miseriarum, quibus Christiana Respub.*

premitur, indicantur ... Tomvs ... : Omnia Nvnc Primvm Bona Fide Collecta Sermoneqve latino exposita à Reuerendo & doctissimo viro D.

Philippo Lonicerõ Theologo. Tom. II. Diuersa de rebus Turcicis opuscula continet. Tom. III. Georgij Castrioti, Epirotarum Principis, Vol. I, Francoforti ad Moenum : Feyerabendt, 1578, 24 a. (Courtesy of the Library of Marburg University)

The Ottoman navy then ambushed the first contingents of the Mamluks in July 1488 at Bāb Al-Malik. The Mamluk vanguard was immediately decimated. The surviving troops retreated to Aleppo where the Mamluk war council still decided to go through with the initial war plan despite the menace of the Ottoman navy⁽¹⁹⁾. When the bulk of the Mamluk army arrived in Bāb Al-Malik they found out that they could not advance if they were not willing to take heavy losses. However, they were saved according to contemporary sources due to a heavy storm that havocked the Ottoman navy and cleared the way for the Mamluks. Of course, this was perceived by Mamluk authors like Ibn Iyās as divine intervention⁽²⁰⁾.

In the following land battle in the plain of Aġa Çavır between Adana and Tarsus, the Mamluks retained the upper hand and won against an apparently exhausted Ottoman foe. Heavy fighting caused the retreat of the Ottoman army and the Mamluks made rich booty and reoccupied Adana, only to lose it again to the Ottomans when they ended their campaign and retreated to Syria.

The outcome of the war was therefore somehow indecisive. The Mamluks had won major battles, but the conflict remained unsolved. In the peace treaty of 1491, the Ottomans agreed to leave the area, but the Mamluks had to agree that their belongings in that region were transformed into religious foundations (*awqāf*) and that the income of the foundations would be used to the benefit of Mecca and Medīna⁽²¹⁾. This presented a considerable loss of income.

According to Har-El the war had worn out the Mamluks, but for the Ottomans who were also militarily active on the Balkans it had represented only a sideshow⁽²²⁾. An immediate result of the war is the appearance of infantry units carrying guns in the Mamluk army. They did not integrate, however, the wagenburg at this date and it is unclear if the Ottomans made use of it at this conflict, but the initial reforms now inaugurated in the Mamluk military sector targeted guns.

Ibn Iyās dates the first use of rifles (*al-bunduq al-raṣāṣ*) in 1490 under the reign of Sultan Qāyrbāy (r. 1468 – 1496) during the Ottoman-Mamluk conflict, when Qāyrbāy did send *awlād an-nās* and other soldiers equipped with guns to the front. After having shown in a public display

to the sultan their newly acquired expertise, they were sent off to the north⁽²³⁾. Thereafter guns are increasingly mentioned by Mamluk authors. The units carrying the guns are, to me, clearly shaped after the Ottoman infantry corps of the Janissaries which they had encountered on the battle field. In the aftermath of the war we therefore witness an increasing activity of the Mamluks in order to gain more knowledge about the usage of cannons and rifles and they tried as well to get hold of foreign experts.

The Military Reforms under Sultan Al-Nāṣir Muḥammad II (r. 1496 – 1498) and Inner Mamluk Turmoil until 1501

Sultan Al-Nāṣir Muḥammad II followed the path his father Sultan Qāyrbāy laid out for infantry units with guns. Immediately after ascending the throne, the young sultan was challenged by the powerful amirs of his father. Qānsūh Al-Khamsamīya, for example declared himself Sultan in February 1497. He besieged the young sultan in the citadel of Cairo. In the battle that ensued, Al-Nāṣir Muḥammad II was victorious because young Mamluk recruits fought for him under the command of his maternal uncle, Qānsūh. Moreover, a unit of black slaves with firearms was used very successfully during this skirmish. Qānsūh Al-Khamsamīya finally fled to Syria some days later where he was put to death by his arch enemy Āqbardī, the Great-Dawādār⁽²⁴⁾.

Āqbardī the Great-Dawādār took this opportunity to return to Cairo from Syria, where he had fled fearing Qānsūh Al-Khamsamīya and resumed his offices. There, he started almost immediately to plot against the young sultan and his entourage. In August 1497 came the turn of Āqbardī to besiege the young sultan in the Citadel. He put up his headquarters in the Mosque complex of Sultan Ḥasan beneath the citadel, and attacked al-Nāṣir Muḥammad II and his troops from below. Although Āqbardī had hired an Italian cannon caster by the name of Domenico, and was apparently in possession of firearms, he did not succeed in conquering the fortress and went back to Syria⁽²⁵⁾.

In doing so he saved his head, but left Domenico to his fate. The poor Italian cannon caster was decapitated after his master's defeat

and his head was shown on a pike on Bāb Al-Silsila, the formal entrance to the royal court on the citadel⁽²⁶⁾.

In both cases of internal fighting, a unit of black slaves with rifles helped the young sultan to win. As this was very early into his reign, one might assume that the plans to build the unit had already be drawn by his father. However, Al-Nāṣir Muḥammad II paraded openly with the new unit, which apparently angered the Mamluk horse soldiers. When the Sultan descended from the citadel into town he was usually accompanied by his cousins Jānībek and Jānim and a troop of black slaves with rifles marching in front of them⁽²⁷⁾.

Within the Mamluk military then started a rift which opposed the new infantry to the experienced Mamluk knights. Racial issues certainly played a role as well, besides the mutual competition for financial resources.

Ibn Al-Ḥimsī presents us with an event which highlights this rivalry. According to this story, in February 1498, the young sultan gave Faraj Allah, who was the chief of the black slave rifle

squadron, the right to wear clothes and headgear previously reserved to the Mamluk military elite and to marry a white Circassian slave girl. When the Mamluks saw this, they took to their arms and killed Faraj and 50 of the 500 black slaves, while losing only two of their own. After this incident his advisors apparently persuaded the young sultan to stop equipping black slaves with rifles and abstain from nocturnal outings with them. He promised to sell the black slaves to the Turkomans⁽²⁸⁾.

While we can discover in that story an anecdote highlighting the tension within the Mamluk army, we do not have evidence that infantry units of black slaves were not carried on. In fact, the officials of the Mamluk Sultanate tried to acquire as much guns as possible in order to compete with the Ottomans. As black slaves were the cheapest slaves on the market and guns were easy to handle compared to other contemporary weapons, it is for obvious economic reasons that the gun carrying infantry units were composed of black slaves. One case in point is represented by the powerful amir Kurtbāy “Al-Aḥmar” (the red) who was appointed as governor of Damascus by Al-Nāṣir



(Fig. 3) Black Mamluk rifle soldier wearing a red *zamṭ-hat* (early 16th century).

Source: David Nicolle, *The Mamluks 1250 – 1517*, Men-at-Arms 259 (Oxford: Osprey, 1993): 32.

Muḥammad II. In August 1498, he ordered the people of Damascus to provide him with money and black slaves. He then trained a large group of black slaves with firearms and formed a unit which upheld public security. Apparently because of his nickname “the red”, they wore red clothes and red caps⁽²⁹⁾. On the other hand they might have been called “the red” as well because they were allowed to wear the red *zamṭ* hat: a typical headgear reserved to Mamluk soldiers by the end of the 15th century⁽³⁰⁾. However, after the killing of Al-Nāṣir Muḥammad II in October 1498 and the fast succession of three Mamluk sultans, it was not until the succession of Qānsūh Al-Ghawrī in 1501 that the Mamluk sultanate regained stable ground.

The Ottoman Military Situation (1491 – 1510 CE)

The lessons the Ottomans learned from the Ottoman-Mamluk war (1485 – 1491 CE) were that the might and power of the royal Mamluks were a threat to their battle center. Therefore, they strengthened their own center by increasing the number of Janissaries there. Moreover, they refined the wagenburg tactic developed on the Balkans to the Eastern front. They also increased the output of their artillery production and knew that they could block the Mamluks from going north in order to access to metals and slaves easily with their navy.

Bāyezīd II (r. 1481 – 1512) and his son Selīm I (r. 1512 – 1520) increased the naval program tremendously. The ship arsenal of Istanbul at the shore of the golden horn was able to construct or repair around 250 ships in the 16th century⁽³¹⁾. The Ottoman Empire became truly seaborne at that time and counted around 70 smaller and larger ship arsenals⁽³²⁾. The only surviving enemies at sea in the Eastern Mediterranean were the Knights of Rhodes and the Venetians, old trade allies of the Mamluks, who however had to cede several islands and territories to the Ottomans in a peace treaty of 1503⁽³³⁾.

Mamluk Military under Sultan Qānsūh Al-Ghawrī (r. 1501 – 1516)

We can assume that the Mamluk sultans were aware of these developments and tried to counter them through their own initiatives. However they

received a severe blow when Vasco da Gama sailed around the Cape of Good Hope in 1498. The presence of the Portuguese in the Red Sea and the Indian Ocean meant a real threat to Mamluk trading activities and the security of the Holy cities.

Sultan Qānsūh Al-Ghawrī therefore sent 500 black slaves with guns in the spring of 1503 on a military expedition to the Hedjaz⁽³⁴⁾. Moreover, he inaugurated another infantry unit with guns called *ṭabaqa al-khāmisa* (the fifth troop)⁽³⁵⁾ in order to cope for the military challenges of the early 16th century⁽³⁶⁾. They were composed out of *awlād al-nās*, Turcomans, Persians, and other mariners⁽³⁷⁾, and their first objective was to fight the Portuguese on the Red Sea.

For this fight, the Mamluk Sultan Qānsūh Al-Ghawrī (r. 1501 – 1516) needed assistance and sent an envoy to Venice, the Spanish born Dragoman Taghrī Birdī, who was to stay ten months in Venice from the end of 1506 until mid-1507⁽³⁸⁾. One of the main objectives of the visit had certainly been the issue of military assistance. However, not all promises were apparently kept from the Venetian side. The Venetians were not sure that the Mamluks were strong enough to fight the Ottomans and therefore sent envoys to the Safavids, which were captured by the Mamluks in 1510. Sanuto recalls in his *Diarii* that at that point the former envoy, the drogoman Taghrī Birdī, became very angry and complained heavily that besides this treason, the Signoria had failed to send gifts and artillery, which Venice had promised to send to the Sultan during his stay in Italy⁽³⁹⁾.

In his quest for assistance against the Portuguese, Qānsūh Al-Ghawrī then turned to the Ottomans. There is clear evidence that from 1507 on, the Ottomans provided the Mamluks with war materials such as wood and copper, and also sent marine soldiers. A joint Ottoman-Mamluk fleet was constructed in Suez and fought, initially victorious in an encounter with the Portuguese at the Indian coast at Chaul in January 1508. However, in a return engagement the Portuguese destroyed shortly afterwards a great number of the Mamluk-Ottoman ships at Diu, on the northwest coast of India⁽⁴⁰⁾. Thereafter, the Ottomans transported war material to the Mamluks on a regular basis⁽⁴¹⁾. At the same time, we notice that Sultan Qānsūh Al-Ghawrī had tried to modernize

his army and encounter the Ottoman threat. He looked for natural resources in his Empire in order to build more cannons and produce gunpowder. In January 1509 the architect (*al-mi‘mar*) Khayrbak who had been ordered to ‘Aqaba to erect Towers and a Khān send for example stones in which he claimed to have found copper. The sultan had the metal inside the stones cast and found out (to his disappointment) that there were apparently only negligible quantities of copper inside⁽⁴²⁾. In the year 916 H./1511 CE, an honest man came to Qānsūh Al-Ghawrī and told him that he had found saltpeter—which is necessary for the production of gunpowder—near Al-Karak. He cooked it and remarked that this was excellent saltpeter. The sultan rejoiced and bestowed upon the man 10 *dīnār*. He ordered to extract much more of the saltpeter⁽⁴³⁾.

The Decisive Ottoman Advance in the Years (1514 – 1517 CE)

The Ottoman advance of the years (1514 – 1517) was at first directed against the Safavids and their Shii ruler Shah Ismā‘īl (r. 1501 – 1524). In March 1514, Sultan Selīm routed the Safavid army in August 1514 at Chāldirān north of Lake

Van⁽⁴⁴⁾. The Ottomans had superior numbers, more cannons, and were better trained for fighting with guns.

The cavalry of the Safavides just did not come round the Ottoman wagenburg, which they encountered here for the very first time. Having understood the functioning of the *wagenburg* they tried to build it themselves. Shah Ismā‘īl ordered the building of 50 chariots with cannons following the Ottoman model that had fallen into the River Araks during the war of 1514⁽⁴⁵⁾. In 1528, the Safavid wagenburg was the used to beat their Eastern foe, the Uzbeks, at the battle of Cām⁽⁴⁶⁾. In 1526, the Mughal Emperor Babur inflicted with the wagenburg a great defeat on his Indian enemies at the battle of Panipat. His military commander, a man called Muṣṭafā Rūmī, arranged the chained chariots in the “Ottoman style”⁽⁴⁷⁾. In about a century the Hussite wagenburg had made its way from Central Europe to Central Asia. Successful technology wanders around and is transferred. The early 16th century is just a case in point. For the time being however, the Safavids retreated to the Iranian High Plateau and resorted to a scorched Earth policy which kept the Ottomans effectively away.



(Fig. 4) The path of the wagenburg-technology transfer in the 15th and 16th centuries.

Source: Albrecht Fuess, Fond de carte : D. Andrieu. Cartographie : F. Troin, CITERES-EMAM.

The Mamluks had not the geographical option of the Safavides. There was no place to hide for them behind high mountains. After the Safavid defeat, rumors about an Ottoman attack on the Mamluk Empire either by land and sea became commonplace in Cairo. In February 1516, Sultan Qānsūh Al-Ghawrī ordered 200 cannons to be sent to Alexandria to secure the port⁽⁴⁸⁾. But the actual encounter took place in Northern Syria in the summer of 1516, with firearms on both sides. The Venetian consul of Alexandria tells the story that the Mamluk army brought 25 to 30 cannons from Egypt to Syria⁽⁴⁹⁾. Ibn Iyās tells us that every Mamluk cavalry soldier was worth at least 1000 Ottoman infantry soldiers⁽⁵⁰⁾. Unfortunately for the Mamluks, the Ottoman infantry was not impressed by such mathematics, and the Mamluks lost the battle at Marj Dābiq on 24 August, and the Sultan his life⁽⁵¹⁾.

The Ottoman wagenburg with its chained chariots presented for the Mamluks as well an invincible obstacle⁽⁵²⁾. Sultan Selīm was in the center of the battle line with his Janissary body guards. In front of him were 10,000 foot soldiers arranged, mostly Janissaries with guns. And before them stood 300 chariots equipped with cannons. As usual, the Ottoman cavalry was on both wings of the army⁽⁵³⁾. The Ottomans apparently overpowered the Mamluk enemy with their fire capacities. The Mamluk historian of Damascus Ibn Ṭūlūn counted thirty wagons (*'araba*) and twenty fortresses on wheels (*gal'a 'alā 'ajal*), when the Ottomans entered Damascus in autumn of 1516. He remarked that the chariots were chained together and resembled a fortified wall. For him this clearly showed the might of the Ottoman sultan and when all cannons were fired at the same time the inhabitants of Damascus thought that the sky would fall on their heads⁽⁵⁴⁾.

The Mamluks had apparently used guns and cannons in their defenses, but did not possess armed chariots in order to build a wagenburg. However, just after their defeat in Syria, the new Sultan Ṭūmān Bāy tried to imitate the Ottoman tactics. He ordered 100 chariots and cannons to be brought to the battlefield at Al-Raydānīya where the Mamluks waited for the Ottomans, but they lost the battle in January 1517⁽⁵⁵⁾. The last Mamluk sultan, Ṭūmān Bāy, fled, but was apprehended later and hanged in April 1517⁽⁵⁶⁾.

Conclusion

The Mamluk military downfall is often explained by saying that the Mamluks, as proud horse warriors, refused to fight with firearms because it was not chivalrous enough for them. According to this reasoning, it was against their code of honor to fight with guns. This line of interpretation can be clearly traced back to David Ayalon and his classical work *Gunpowder and Firearms*⁽⁵⁷⁾.

Among others, such as Robert Irwin, the present author thinks that Ayalon has taken the wrong path here. He argues that fighting with firearms was not prestigious enough for a Mamluk soldier and therefore you could never find a high-ranking Mamluk in the list of those who fight with firearms. To this can be responded that nowhere in the known world will you find horse riders fighting with firearms on horseback at the beginning of the 16th century. These arms were exclusively reserved for the infantry. Guns are simply not suited to be carried and loaded on horses at that time. It would constitute a considerable waste of money and manpower to have highly trained professional cavaliers leaving their bows, descending from their horses just to take up firearms which any man could cope with after some initial training. When horsemen fought at the beginning of the 16th century they did not use firearms, as can be seen here as well on the miniature of the battle of Marj Dabiq.

See as well: <https://gallica.bnf.fr/ark:/12148/btv1b8414992x/f2.image>.





(Fig. 5) Ottomans and Mamluks at the battle of Marj Dabiq (1516).

Source: Khodja Efendi, *Selim Nama*, Paris. Bibliothèque nationale de France, BnF. Supplément turc 524: fol. 159.

The Mamluks were apparently not too chivalrous to use firearms, cannons or gunpowder; they just had serious disadvantages in this sector compared to the Ottomans. It was harder for a Muslim empire lying mainly to the south of the Mediterranean to keep up with the technical evolution as the majority of resources like lumber for ships, iron and copper to cast cannons, or ingredients for the gunpowder production lied mainly on the northern shores and within the Ottoman Empire⁽⁵⁸⁾. Mamluks had to import raw materials, experts, and guns. Moreover, the import needed the goodwill of Europeans or Ottomans.

The main problem therefore, was not the presumed chivalric arrogance, but the lack of resources and the difficulty to obtain them. The Mamluks did not refuse to fight with firearms: they simply had not enough of them compared to the Ottomans.

On the military side, the Ottomans had greatly profited from the expertise gained on the Balkans. In brief, the Ottomans had more men under arms, better equipment, and used superior war tactics compared to their adversaries, but and it should be noted as well that the Mamluks resisted very strongly up to their very end, and showed an immense will for reforms in the military sector.

Endnotes

- * Prof. Albrecht Fuess, Professor of Islamic Studies, Philipps-University of Marburg, Germany.
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- (6) Bert S. Hall, *Weapons and Warfare in Renaissance Europe: Gunpowder, Technology, and Tactics*, Johns Hopkins Studies in the History of Technology 22 (Baltimore: John Hopkins University Press, 1997): 108.
- (7) Emanuel Constantin Antoche, “Du Tábor de Jan Žižka et de Jean Hunyadi au Tabur Çengi des armées ottomanes : L’art militaire hussite en Europe orientale, au Proche et au Moyen-Orient (XV^e – XVII^e siècles)”, *Turcica* 36 (2004): 104.
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- (9) Imber, *The Ottoman Empire*: 269.
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- (13) Shihāb al-Dīn Abū ‘l-Abbās Aḥmad ibn ‘Alī ibn Aḥmad ‘Abd Allāh al-Qalqashandī, *Šubḥ al-‘ashā fī Šinā’at al-inshā*, edited by Muḥammad Ḥusayn Shams al-Dīn, Vol. 2 (Beirut, 2000): 153.
- (14) Shai Har-El, *Struggle for Domination in the Middle East: The Ottoman-Mamluk War, 1485 – 1491*, The Ottoman Empire and Its Heritage 4 (Leiden: Brill, 1995): 139.
- (15) *Ibid.*
- (16) *Ibid.*: 140-141.
- (17) *Ibid.*: 161-162.
- (18) *Ibid.*: 175.
- (19) *Ibid.*: 181.
- (20) *Ibid.*: 183; Ibn Iyās, *Badā’i’ az-Zuhūr*, Vol. 2: 254-256.
- (21) Har-El, *Struggle for Domination*: 211.
- (22) *Ibid.*: 192.
- (23) Ibn Iyās, *Badā’i’ az-Zuhūr*, Vol. 3: 269.
- (24) *Ibid.*: 343, 350.
- (25) *Ibid.*: 366-376.
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- (27) *Ibid.*: 387.
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- (33) Imber, *The Ottoman Empire*: 36.
- (34) Ibn Iyās. *Badā’i’ az-Zuhūr*, Vol. 4: 109.
- (35) According to Ayalon, the name was given because they received their payment on the fifth day after the other troops, which were paid on the four days ahead, see: Ayalon, *Gunpowder and Firearms*: 71-83.
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- (40) Virginia de Castro e Almeida, *Les grands navigateurs et colons portugais du XV^e et du XVI^e siècles : 5 chroniques de Garcia de Resende, João de Barros, Damião de Goes, Gaspar Correa, Fernão Lopes de Castanheda : l'empire portugais d'orient, Dom Francisco d'Almeida* (Bruxelles: Desmet-Verteneuil, [1940]): 186-191; Palmira Brummet, *Ottoman Seapower and Levantine Diplomacy in the Age of Discovery*, Suny Series in the Social and Economic History of the Middle East (Albany: State University of New York Press, 1993): 115; Ibn Iyās, *Badā'i' az-Zuhūr*, Vol. 4: 156. News of the defeat led to despair in Cairo.
- (41) *Ibid.*: 201.
- (42) *Ibid.*: 144; Ayalon, *Gunpowder and Firearms*: 130, n258.
- (43) Ibn Iyās, *Badā'i' az-Zuhūr*, Vol. 4: 204.
- (44) Hans-Robert Roemer, *Persien auf dem Weg in die Neuzeit: Iranische Geschichte von 1350 – 1750*, *Beiruter Texte und Studien* (Beirut: Franz Steiner, 1989): 258-263.
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- (49) Robert Irwin, "Gunpowder and Firearms in the Mamluk Sultanate Reconsidered", Chap. 6 in *The Mamluks in Egyptian and Syrian Politics and Society*, edited by Michael Winter and Amalia Levanoni (Leiden: Brill, 2004): 133.
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- (51) *Ibid.*: 68-70.
- (52) Irwin, "Gunpowder and Firearms": 133.
- (53) Imber, *The Ottoman Empire*: 277.
- (54) Ibn Ṭūlūn, *Mufākahat al-Khillān*, Vol. 2: 30-31, 34.
- (55) Ibn Iyās, *Badā'i' az-Zuhūr*, Vol. 5: 139.
- (56) *Ibid.*: 176.
- (57) Ayalon, *Gunpowder and Firearms*: n57. (David Ayalon: gunpowder) is a general reference to the mentioning of the work in the text and not related to the image; it does not need a page, as it just explains the title mentioned in the text.
- (58) Irwin, "Gunpowder and Firearms": 128, 136.





A Mamluk by Carle Vernet, 1822.





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