

# Manuscript of Shooting by Cannons, 1210 H / 1795 AD (Study and Publication)

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**Abstract:** *Manuscript of Shooting by cannons, preserved in the National Library and Documentation House in Cairo under the number (28) Equestrian Timor (Microfilm No. 270). The manuscript is due to the upper state in Morocco, and could be reached to date in (1795), featuring nine and sixty pages.*

*We did not come up with the full terms of the author mentioned the remnants of the second page named "الجلالط" "Al-Gallat" name, but the goal of this research is achieved full deployment of substance and achieve what it contained.*

*The author was one of the sons of Banu'l-Ahmar [1] centered in the Valley East of Morocco, a wide spread to the Bou Regreg valley and Chochawa on the Atlantic Ocean. Teachers have been carried Banu'l-Ahmar tribe tasks teach shooting since the twelfth century and until the date of the manuscript, which was the reason for raising the army efficiency than England was forced to hand over Tanga in 1095 AH (1684 AD) and the elimination of Spanish domination in was left in the hands of the Spaniards until the year 1102 AH (1690 AD), but Ceuta and Melilla, and the author stated that he participated in the liberation wars of these two cities.*

*Research follow the analytical method, where he addressed the manuscript and plan the investigation, and the seven chapters consisting of preferred shooting, recipe Cannon, recipe gunpowder, recipe Sheikh, who shooting knows, and how shooting education, and the rule of baiting a rifle bullet, and how to hunt monsters.*

*Eat as tools and means of shooting bows and shooting types and methods of their use of Greek fire, gunpowder and development of various kinds as well as lead and other rifles.*

**Keywords:** manuscript, shooting, Al-Gallat, cannon, gunpowder, bullets rifles, guns.

## Introduction

Muslims interested in theoretical military studies, and prepared many manuscripts in all fields, including studies on the manufacture and development of weapons, and training on weapons and uses, and studies on military plans and the art of mobilizing and moving armies.

The Islamic historian Ibn al-Nadim counted the books and references in these fields. If the Islamic military scientific heritage is one of the wealthiest references in history, this section is written under the title "Equestrianism and carrying weapons of war and war management [2]". *فيما كتب في الفروسية وحمل آلات الحرب والتدبير. الحربي.*

This scientific heritage consists of two parts: a section composed by Arabs and Muslims, and a translator section, which was transferred from the Persians, Romans and Indians. Among the books translated from Greek: *فن الحركات الحربية* "The Art of War Movements" by Greek composer Elianos. There are books translated from the Roman state such as the book (Taktikon), the military tactics of the writer Leon VI and Stratigikon, which is the strategy of the writer Kakomunos in the tenth century AD.

The Arabic literature is two types: a type that is included in the books of Arab history and literature, in which it describes the battles of Islam, with an explanation of the military plans and military management and the circumstances of the battles, such as the book "Eyes of the News" (*عيون الأخبار*) by Ibn Qutaiba, "The Unique Contract" (*العقد الفريد*) by Ibn 'Abed Rabbo, Siraj of the Kings" (*سراج الملوك*) of Al-Tartoushi.

There are also specialized literature in the science of war: it is written in the shooting and injury to the target, and other in the characteristics of weapons and methods of use such as "the book of tanks and catapults", (*كتاب الديابات*) and a number of books in horses and equestrian and care of horses, such as the book "Favor of horses" (*فضل الخيل*) by the Abdel-Mum'en in Damietta, and the book "Ink filters in the sapphires horses" (*رشحات المداد في الصافيات الجياد*).

There are also scripts in war plans or deception, such as the book "The tricks and machinations", and wrote tactical training book "Literature war," and wrote about "the opening of the forts and cities and the ambush of ambushes," and wrote about "directing spies and pioneers and Corps".

Many of these manuscripts, which Ibn al-Nadim mentioned have been lost from the Arab world, including rare in the libraries of Europe, where he translated several times and benefited from them for centuries.

The most important of these references: the writings of the Islamic military commander Hassan al-Ramah, who lived in Aleppo, Syria and died in (1294), and wrote many books and letters in the intrigues and weapons of war, among his books is the book of equestrian and military positions. There is a picture of this manuscript in the Institute of Arabic Manuscripts in Cairo, There is an explanation for the manufacture of many types of "pilot" missiles vary in length, speed and size as well as the type of torpedoes collide with ships and explode.

And has a book of items in the knowledge of

equestrian, and a copy in the Egyptian Book House, and the equestrian book in the drawing of the holy struggle number (2825) Paris, in which references to complete recipes included the composition and body of gunpowder that was your hand in the guns at the time.

He wrote the book "Equestrian and war mines" (الفروسية والمكاند الحربية) and "End of the Question and Security in Equestrian Learning" (نهاية السؤال والأمنية في تعلم الفروسية). Among his most important books is the book "The Intended Purpose of Science and Work" (غاية المقصود من العلم والعمل), a book on the manufacture of gunpowder, preparation and purification of impurities.

In his book "An Introduction to the History of Science", Sarton points out that Roger Baakon has moved the gunpowder industry from this book.

We cannot fail here to refer to an important Islamic military manuscript that finally appeared in Marrakesh dating back to 1583 AD. The author of this book is Ibrahim Ibn Ahmed Ibn Ghanim Ibn Mohammed Ibn Zakaria. Ibrahim was one of the remnants of the Muslims of Andalusia who hid their Islam. When the Spanish learned of his order, they expelled him to Marrakesh after spending seven years in prison. He was an expert in artillery and industry, and he inherited this science from his grandfather since the Andalusia ages.

The book is called "Glory and the benefits of the Mujahedeen in the way of God with guns" [3], [4] (العز والرفعة والمنافع للمجاهدين في سبيل الله بالمدافع), which was written by A'egamia (Spanish) in 1032 AH (1632). He is a specialist in the art of artillery. He was Arabized by Ahmad ibn Qasim al-Hajri in 1043 AH / 1638 CE. And the most important copy of it is in the public treasury in Rabat (No. 87 c). It was written under the supervision of the translator itself, and there is an important copy of the National Book and Documentation House in Cairo, (under the number 97 Timur equestrian, Microfilm No. 18027) to the end of the month of Ramadan in 1064 AH (1654), and written by the Amir Mohammed Khoja son of Haj Ahmed Ibn Qasim al-Hajri translator lines, this manuscript was considered one of the sources of Andalusia migration to Maghreb Countries.

This book is the first book of its kind in history specialized in the manufacture of guns alone, in which the author describes the manufacture of guns from the ages of Islam to use and development in the Spanish armies. It is a real guide in the field of artillery. The manuscript was written in Spanish in Tunisia by Rivas and translated into Arabic. The guide contains enough drawings, and was devoted to the subject of artillery, which was considered a science based in Morocco from the sixteenth century AD. The writer devoted a precise description of the techniques of making siege mechanisms and their different types (launchers, catapults), their various components and the tricks of their use and movement. He also dealt with different models of guns, methods and names of their materials, methods of packaging, handling, transport and maintenance.

As well as checks on the shooting methods, choosing

the path of the shot in a straight line or curved, over a short or long term. He described different types of missiles such as cannonball, explosives and others, and methods of pulling them out of the guns in case of disabling them, in addition to the gunpowder recipes.

The book was presented with dozens of drawings depicting various war machines, blast furnaces, cranes and mobile arches. These images represent sections or designs.

The author of the book fled Spain (1570) to settle in Tunisia, hosted by Governor Osman, and ordered by Sultan Sa'edi Moulay Zidan, with the aim of developing his artillery.

This manuscript indicates the interest that the Sa'edis gave to the weapons during the two centuries (16-17 AD). Historians have talked about the existence of craftsmen in the city of Fez, specializing in the manufacture of weapons and various mechanical mechanisms and oil since the century (14 AD).

The Marinian minister, Omar Ibn Abdullah al-Fardoudi, used the weapon makers in Fez to manufacture oil and cannons. The Marinians used firearm machines since the 13th century, especially when they were besieged by a siege in (1273 AD).

Thus, the firearm industry became a tangible development, and the soldiers used the guns with firecrackers.

The oldest known Moroccan gun was (1545-1546 AD) used at the time, as evidenced by the attack of Mohamed El-Ghalib on the town of Al-Buraija, defended by the Portuguese by 24 cannons. According to Leon of Africa, firearms are produced by Fez, and Marmol tells us that the teacher Musa, who descended from Madrid, used in (1539 AD) copper metal from the Bassus mine to manufacture a 16 foot cannons.

The Saadian, in addition to small guns, made very large mechanisms for the siege called "Maymouna". The Portuguese were surprised to see them facing them in the siege of Agadir. Sultan Abdul-Malik also gave a Turkish defender, one of them with seven nozzles; the Portuguese retained one of their shells, and is currently in the Lisbon Museum. In view of the booming economy and their financial wealth because of Sudan's gold and desert trade, the sultans of the Sa'edi were able to attract foreign technicians, especially European and Turkish engineers and gunsmiths.

The book describes thirty-two types of guns of various sizes, industry and purposes, describing the types of stones thrown by the cannon and its sizes, and describing the manufacture of the cannon and the method of weighing a special balance to ascertain the accuracy of his injury to the target, and then conclude this manuscript with a funny statement entitled "Dissolve the cannon if it is heavy not to sing enemies", and the book is decorated with colorful illustrations.

Not only is this manuscript valuable information about artillery in Spain in the transition from Islam. But it is the last shout of one of the remnants of Andalusia Muslims to the whole Islamic world, calling him to

vigilance and prepares the sophisticated weapon to confront the enemies of Islam, so as not to face the fate of the people of Andalusia genocide.

In this he says in the introduction to his book: "ما قصدت به نفعاً دينياً، بل الإخلاص لله تعالى راجياً أن يصل إلى جميع بلاد المسلمين، ليحصل به النفع ويحصل لهم الأجر عند الله سبحانه وتعالى بتفريجهم من الكافرين". What I meant by the worldly benefit, but the devotion to God, hoping to reach all the countries of Muslims, to receive the benefit and get them pay when God Almighty to excite Muslims and master their work and intimidate their enemies disbelievers".

## Second: Manuscripts of Military Heritage

Islam has organized all matters of life religiously and worldly, and dealt with matters of war as a social phenomenon, and develop the best curricula and principles for all related to the objectives and methods of management and laws and ethics, we find that the books or scientific works written by the early Muslims in the art of war, in our present age on three types: a type of books printed in modern times, and another type still in the form of ancient manuscripts, and a third type in the manuscripts mentioned in the ancient Arabic catalogs, but today scattered or missing need for those looking for and out.

There are many existing Islamic military manuscripts dealing with war, struggle, martial arts, equestrian, weaponry, and throwing art.

1. An abbreviation in the policy of wars (مختصر في سياسة الحروب) by al-Harithi, the successor of the caliph al-Ma'mun. It is located in 114 pages<sup>1</sup>.

2. Anguish's revealed the knowledge of the wars (كشف الكروب في معرفة الحروب) by Imad al-Din Musa Ibn Muhammad al-Yusufi, who studies the art of Islamic war and the system of soldiers. The author divided it into ten sections<sup>2</sup>.

3. Exemption of the cherub in the war measures (تفريج الكروب في تدابير الحروب) by Abu Abdullah Muhammad ibn al-Rashidi<sup>3</sup>.

4. A message in struggle and the ethics of war (رسالة في الجهاد وأداب الحرب)

5. The result of diligence in the truce and struggle (نتيجة الاجتهاد في المهادنة والجهاد) by Ahmed Ibn Mahdi al-Ghazali Fassi Andalusian<sup>5</sup>.

6. Permission and suspension (التسريح والتباطيل) by an unknown author, a letter in the art of war, invasion, struggle, war machines and author of (100) paper<sup>6</sup>.

Manuscripts of martial arts and packing

1. Masterpiece of the Mujahideen in the work in the fields, (تحفة المجاهدين في العمل في الميادين) by Prince Lajin Ibn Abdullah Al-Zahabi Al-Husami Al-Trabelsi<sup>7</sup>.

2. With a view to working in the fields, (بغية القاصدين بالعمل في الميادين) by the previous author<sup>8</sup>.

3. Intended in science and work items, (غاية المقصود في غاية العلم والعمل بالبنود) by the same author<sup>9</sup>.

4. The good pursuit in the order of soldiers and soldiers, (السعي المحمود في ترتيب العساكر والجنود) by Zain El-Din Abdul Qadir Ibn Ahmed Ali al-Fakehi, and looking at

the invasions and army corps and competition on horses and camels and throwing in all kinds, which is (176) pages<sup>10</sup>.

5. The good pursuit in the order of soldiers and soldiers, (السعي المحمود في ترتيب العساكر والجنود) by Ibn al-Ennabi, an important grandfather in the organization and mobilization of armies and located in (117) pages<sup>11</sup>.

6. Official evidence of military mobilizations, (الأدلة الرسمية في التعابي الحربية) by Muhammad Ibn Minkali al-Naheri<sup>12</sup>.

7. The inventory of the artisans, (المخزون لأرباب الفنون) by an unknown author, in which he spoke about the people who practiced and expressed in the art of war<sup>13</sup>.

8. Tricks in wars, open cities and save the paths, (الحيل في الحروب وفتح المدن وحفظ الدروب) by Mohammed Ibn Minkali al-Naheri<sup>14</sup>.

9. The royal measures in the policy of military goods (التدابير السلطانية في سياسة الصنائع الحربية) by Muhammad Ibn Minkali al-Naheri as well<sup>15</sup>.

10. Royal provisions and mosquito controls, (الأحكام الملوكية والضوابط الناموسية) by Muhammad Ibn Minkali al-Naheri himself, and he discusses the art of fighting and contains (122) sections<sup>16</sup>.

Equestrianism

1. Equestrianism, (الفروسية) by Badr Al-Din Al-Rammah Al-Khan Nadari<sup>17</sup>.

2. Equestrian science and war machines, (علم الفروسية وآلات الحرب) by an unknown author, in which (137) pages<sup>18</sup>.

3. The Perfume whiffs in the equestrian industry, (النفحات المسكية في صناعة الفروسية) by Ahmed Ibn Ahmed Al-Hawi, and this manuscript is composed of (45) pages<sup>19</sup>.

4. The end of the question and the security in teaching the equestrian works, (نهاية السؤال والأمنية في تعليم أعمال الفروسية) by Badr al-Din Baktout Al-Rammah<sup>20</sup>.

5. Extend the tail in the mention of horses struggle, (إسبال الذيل في ذكر جهاد الخيل) by Najmuddin ibn Khair al-Din al-Ramli<sup>21</sup>.

6. Introduction to the art of equestrian and military ploy, (مدخل في فن الفروسية والحيلة الحربية) by an unknown author.

7. Equestrian and military positions, (الفروسية والمناصب الحربية) by Hassan Najmuddin Al-Rammah<sup>22</sup>.

8. Items in Equestrian Knowledge, (البنود في معرفة الفروسية) by Hassan Najmuddin Al-Rammah<sup>23</sup>.

9. Struggle, Equestrian and Martial Arts, (الجهاد والفروسية وفنون الآداب الحربية) by Taybugha Al-Ashrafi the Greek<sup>24</sup>.

Weapons and throwing art

1. The benefit of the people of happiness in the flag of throwing the cross, (الإفادة لأهل السعادة في علم الرمي بالنشاب) by Ali Ibn Qasim al-Sa'edi<sup>25</sup>.

2. Know the flag of throwing arrows, (معرفة علم رمي السهام) by an unknown author<sup>26</sup>.

3. Three doctrines related to equestrianism and throwing, (ثلاثة مذاهب خاصة بالفروسية والرمي) by Jamshar Al-Khwarizmi<sup>27</sup>.

4. Clear in the throwing and arcing, (الواضح في الرمي)

(النشاب الطبري) by Al-Tabri, and this manuscript consists of (98) paper<sup>28</sup>.

5. Glory or benefit to the Mujahedeen in the name of God by the guns, (العز أو المنافع للمجاهدين في سبيل الله بالمدافع) by Ibrahim Ibn Ahmed Ghanem Al-Andalusi<sup>29</sup>.

6. Burns, (الحراقات) by Abu Sa'ed Alaa Ibn Sahl<sup>30</sup>.

7. Elegant in a catapult, (الأنيق في المنجنيق) by Arenbugha Al-Zerdakash<sup>31</sup>.

8. Throwing the bow, (رمي القوس) by an unknown author, which is in (136) pages<sup>32</sup>.

9. Hidayat for the purpose and objectives, (هداية الرامي) (إلى الأغراض والمرامي) by Al-Hasan Al-Bukhari, and similar to the books of modern shooting science<sup>33</sup>.

10. Planting the Flowers in the throwing by Shooting, (كتاب غرس الأنشاب في الرمي بالنشاب) by Jalal Al-Din Al-Suyouti<sup>34</sup>.

First: The manuscript and the achievement plan

Gunpowder [6], [7], [8], [9], [10], is one of the oldest explosives used to propel warplanes and bomb-making, a flammable mixture, or a solid propellant explosive capable of producing a heat-diffusing reaction in isolation from the outside air, with large quantities of gases, High-density polymers, can be classified into two categories according to the composition of the gunpowder and the elements that make up it: the heterogeneous gunpowder, from the black gunpowder, the smoke gunpowder, and the hard-compressible compressible particulates such as the non-smokeless cotton gunpowder used to propel the projectiles, it consists of salt powder, sulfur and coal<sup>35</sup>.

Although the sources confirmed that it is not possible to determine the name of the first person who invented it, and the origin of its name is not known in Arabic, it appears to be Syriac. However, our author mentioned that the name of the hakim who reached the gunpowder was called "Baroud" It is mentioned that when the conquest of Andalusia did not mention the gunpowder, also in the manuscript: the abbreviation of Al-Juman in the news of time, by Al-Imam Al-Shatbi, it was mentioned that the discovery of gunpowder was made in 768 AH (1367 m) [8], [11], [12], [13], [14].

The first use of gunpowder was the Arab Muslims [5], [8], [15], [16], [17], [18]; it is mentioned in the Negroes (Zinj) revolution that the Negroes workers in Basra in Iraq were cleaning the gunpowder in 71 AH / 690 AD. The early Arab Muslim chemists knew the gunpowder of the seventh century, used for military purposes, such as the bombing of the forts and fireworks.

The first use of the gun was in the siege of Zaragoza in 511 AH / 1118 AD and then in 672 AH / 1273 AD. It was used by an Arab Muslim ruler; the Marinian Sultan Abu Yusuf, in his siege of Sijelmasa. After the Arabs came to know the properties of salt rock and gunpowder in the early seventh century (13 AD) they included under the name of "oil", which has since become a new meanings.

The first to use rifles, pistols and hand grenades were Arab Muslims, who used them to defend Granada in the 14th century.

When Andalusia fell in the hands of the Spaniards,

they took the Arab rifle, which was called the "sacrificial" of them, and used it to exterminate the Indians. The Spanish and Arabic sources in Andalusia and Morocco state that they knew the gunpowder and used the cannons in the war since the end of the eleventh century (17 AD). Over time, the word Baroud became the same as the gunpowder or the gunpowder, and the gunpowder became the name given to the rock salt, and the word "gun" was derived from the gunpowder. In the book "Equestrian and military positions", (الفروسية والمكاند الحربية) by Hassan Najmuddin Al-Rammah, there is an explanation for the manufacture of many types of missiles "pilot", vary in length, speed and size, as well as a kind of torpedoes collide with ships and explodes.

On the first page, the writer states: "Here I am talking about shooting with guns and catching them. This is confined to seven chapters: the first chapter on the virtue of shooting, the second chapter in the form of guns, the third chapter on the work of gunpowder, shooting, and the fifth chapter on how to teach the shooting in full, Chapter VI in the rule of hunting with lead bullets, and the seventh chapter in how to hunt monsters and take them in the event of alienation and knowledge of the nature and the rule of her complaints.

The manuscript is a Moroccan original written in 1210 AH (1795 AD) by Moroccan Naskh line, although the date did not appear directly, but the author pointed out on the eighteenth page that the gunpowder was discovered in 768 AH (1367 AD), it was mentioned that this happened before four hundred and two Forty years.

The author belongs according to the manuscript to the Maghreb and to Banu'l-Ahmar tribe [19], [20], [21], [22], [23], [24], which was introduced to the land of Andalusia in many groups after the conquest, namely the sons of Banu'l-Ahmar of Sa'ed bin Abada, who lived in Valencia, which is located east of Andalusia at the mouth of the river valley wells

Banu'l-Ahmar participated in the revolutions that took place between the Arabs and the Berbers who came from Morocco and lived in Shateba, which is located south of Valencia at the mouth of the river Chakar. The ill-treatment of the Berbers, who used to stay in the areas that were the cause of these revolutions, In Valencia, Shateba and others since 400 AH (1010 AD), causing a dispute between them and Banu'l-Ahmar. When the Muslims left Andalusia, Banu'l-Ahmar dwelt in the land of Morocco.

This manuscript was one of the works of one of the writers who cited several evidence that supported it as follows:

1. The author praised the trigger made in Meknes or Fez, two of the most important Moroccan cities.

2. Speaking of Baroud, he mentioned that he used Marrakech's urgency in the manufacture of one of its types.

3) Several personalities belonging to the Maghreb include: Abdullah Al-Ghazouani, the owner of the palaces in Marrakesh, Ahmed Al-Shoshi, Ahmad Musa Al-Sharif Al-Samla Al-Shoshi, the first shooter and shooting

instructor from Banu'l-Ahmar tribe and Shoshawa Valley<sup>36</sup> [25], [26], Sultan Ismail, In Morocco, ruled from 1082 to 1139 AH (1671-1726), was interested in securing the borders of Morocco, the army was a highly competent and powerful, and ordered his servants to learn shooting by the elders of Banu'l-Ahmar<sup>37</sup>.

4. When talking about the cannula, one of the animals mentioned that the country of Andalusia and the adjacent to the Sea of Andalusia has heard that it is in the country of Yemen.

5. He mentioned that he attended the two Battles of Melilla and Sebta. These cities were located in the north of the Maghreb, the first in the east, and the second in the Straits of Gibraltar.

6. The author mentioned several areas of the Maghreb as a wide valley (Wadi A'areedh)<sup>38</sup> and Shoshawa valley. A'areedh valley, which lies to the east of Morocco, is located in the western part of the city of Hamra and is now called Wadi 'Aris (The manuscript. pp.33-34). Shoshawa Valley is located at Tensift river west of Morocco between the Atlas Mountains and the Mediterranean Sea to the west of Marrakesh along with The Bou Regreg valley (Rajaja) [22], [27],<sup>39</sup> and others.

As for the author of this manuscript and the period of authorship, the name of the author was mentioned on the second page, but it was deliberately distorted to erase the name, which left only a few characters: ".... من الجلائط" mir Al-jallat<sup>40</sup>, [27], his name may have been Amer and his name is Jallata, the name Julata or Culata (The manuscript. p.27) from the Spanish words in the manuscript, which means in Spanish a rifle or a pipe of a cannon or gun [28], so the nickname derives from his job as a military.

It was revealed through the study that this author had lived in a Ahmar country (Bani Nasr - Alnawsara) and possession<sup>41</sup> [28], of a site called a wide eye ('Ayn 'areadh), and learning to shoot the elders of the Red tribe, including Sa'eed Ibn Mohammed Nasiri of the tribe of Banu'l-Ahmar, as learned by Sheikh Ahmed Rouziki, who was a resident of the possession ('Ayn 'areadh), he was a skilled teacher and a gunpowder maker, and belonged to The Bou Regreg valley (Rajaja) in the valley of Shoshawa.

This manuscript dates back to the era of the 'Alawite state in Morocco, founded by Muhammad Ibn Al-Sharif in 1050 AH (1640 AD). This country witnessed many disputes and wars that spread to all the Maghreb countries.

The organization of the army, which consisted of teams, the most important of which was the Sharaqa group, which was composed by young tribesmen who came from the Arabs, the Berbers, the Tlemcen, and others from the east of Morocco (so they called it Sharaqa) and built a special steeple in the region between the Sebou<sup>42</sup> [22], [29], [30], and Ouergha rivers<sup>43</sup> [31].

The Mawla Ismail, who was mentioned by the author, was able to open Marrakesh on Friday, the seventh of Safar 1083 AH (1672 AD), to eliminate the influence of Ahmed Ibn Mehrez, who fled to the desert, and entered for the second time in 1086 (1675) to expel, The reconciliation agreement between them in 1094 AH (1683).

He was concerned with securing the borders of Morocco, clearing the Moroccan shores and holes of foreign colonists, establishing fortified centers and castles in all the centers in the Atlas Mountains and the Malweya vallies and in the important cities to ensure the safety of roads. The number of castles erected in different parts of Morocco was estimated at seventy- Armed forces ranging between (100-500) people, set them special salaries, and carry them the responsibility of maintaining security, and built a descent to house convoys and passers-by along with each castle.

The army took much care of Moulay Ismail, preparing to clean up the coast of Morocco and its foreign occupation. The Moroccan army prepared a full preparation for this mission and took refuge in Senegalese slaves who had taken refuge in Morocco by purchasing or emigrating. At the age of ten for training special education, the children were distributed to the teachers of handicrafts, if they completed their training are transferred to the military training centers, they are trained on horseback riding, walking, mutilation and shooting [32].

The author pointed out (The manuscript. p.47) that the mullah Ismail was assigned to his slaves to learn shooting by the elders of Ahmer, and remained until the era of the author, Ahmer elders have been teaching the slaves of kings from the era of Mullah Ismail 1083 (1672), to the time of writing the manuscript in 1210 e (1795), a long period of more than a century confirms the skill of Ahmer elders in the teaching of shooting.

Also, the army of Moulay Ismail reached a high degree of efficiency and strength, so that he managed to tighten the screws on England, which was forced to hand over Tangier in 1095H (1684), and was able to eliminate the Spanish control, until 1102H (1690), the Spanish remained only Ceuta and Melilla.

In the reign of Muhammad Ibn Abdullah (1171-1204/1758-1790), the intention was to rid Ceuta and Melilla of the Spaniards, he besieged Melilla in 1184 AH (1770 AD) but he was forced to lift the siege on it, as well as in the era of Yazid Ibn Muhammad (1204-1206/1790-1792) [32], the author stated that he participated in the wars fought by the upper army in the city of Ceuta and Melilla (The manuscript. p.68).

The country was ruled by Sulayman ibn Mohamed (1206-1238 AH / 1792-1823 AD) at the time of the manuscript in 1210 AH (1795 AD), who sent a campaign to Fez to suppress sedition and pardoned later<sup>44</sup>. Foreign policy was driven by the nature of delinquency to peace and an attempt to solve problems through mutual understanding with Europe, the Turks, Tunisia or others [32].

The language of the manuscript has some Andalusian influences as well as its collection of the general characteristics of the Moroccan language. In terms of the influence of Andalusians in the language of Moroccans, we can distinguish between two stages [33].

The first stage: the effects of the community before the 17th century in the language of Moroccans.

The second stage: It is especially related to the influences that the Morsicians made in the language of the Moroccans at the beginning of the seventeenth century.

The Andalusians in Morocco maintained their language and distinguished themselves with their accent which differs from that of the Moroccans. Ibn Khaldun [34], acknowledged this, saying that the language of the Andalusians is a language of its own, somewhat different to the language of the people of the Orient and the language of the people of Morocco, and that it was influenced by the language of Jalaliqa. The Andalusians brought with them this linguistic phenomenon to Morocco, which is as follows:

1. There is no existence of the present tense in the Andalusian colloquial. They use silence for the singular speaker, as used for the speaker and with others, with the difference between them by increasing the character of the wow in the latter case. The manuscript contains a large number of words confirming this. The author mentioned the word "we are visiting" (The manuscript. p.35) instead of "I visit it" "Azureh" (أزوره), "we are talking" (The manuscript. p.35) instead of "talking" (أتحدث), and this use is still in Morocco.

2. Do not write T-tethered at the end of the word, for example "bullets shot" (بنندقيت الرصاص) (The manuscript. p.3), instead of "gun bullets".

3. Do not write "A letter elongated" (ألف المد) (The manuscript. pp.56-57) in the middle of the words, eg "transcend" (تعالى) rather than "exalted" (تعالى) "your mother" (أمهاتكم) (The manuscript. p.3) instead of "your mothers" (أمهاتكم).

4. Write the present verb in the first word in the same plural case, for example "People come to him" (ويأتي إليه) (The manuscript. p.41), "Make elders" (جعلوا الشيوخ) instead of "Make elders" (جعل الشيوخ), "Found him dogs" (وجدوه الكلاب) (The manuscript. p.45) instead of "His grandmother Dogs" (وجدته الكلاب), and there are words added in the middle elongated letters, such as "Al-Rahman" (الرحمان) (The manuscript. p.63) instead of "Al-Rahman", (الرحمن) that "ذلك" (The manuscript. pp.1-4) instead of "that" "ذلك" and so "instead of" (ولذلك - ولذلك) (The manuscript. pp.4-9), therefore, "فهذا" instead of "this" (فهذا) (The manuscript. p.9).

The second phase, the Spanish language spread in Morocco, and many words and terms entered into the language of the Moroccans, Spanish became widespread, and the Spanish words in the manuscript: the word "culata" means a gun [28].

The author states: "the arm's cranium is sloping from the edge of the Culata (The manuscript. p.27), a good way to miss the buzz [27], وعجفة الذراع تكون منحدره من حد الكلاطة انحدارا حسنا إلى أن تفوت الدغمة" (The manuscript. p.27), the word "Culata" also means the pipe of the cannon or gun.

The author begins with a presentation of the seven manuscript chapters, each dealing separately as follows:

Chapter One: In the virtue of shooting (The

manuscript. pp.3-9), it is stated that it is an obligatory duty, and that most of the struggle with guns and gunpowder, and that the Prophet (peace and blessings of God be upon him) commanded to learn shooting, where he said: "God Almighty enters one arrow three corners of Paradise and calculated and calculated and strengthened by it", (أن الله تعالى يدخل بالسهم الواحد ثلاثة نفر الجنة الرامي والمحتسب ، بصنعه والمقوى به)

He said: "throw and ride, and if you throw loved me to ride and all is enjoyed by the believer are invalid only three, About horse liver and discipline your horse and playing with your family, that is from the right."

(ارموا واركبوا وإن ترموا أحب إلي من أن تركبوا وكل لهو يلهو به المؤمن باطل إلا ثلاثة رميك عن كبد فرسك وتأديك فرسك وملاعبتك مع أهلك فإن ذلك من الحق).

He said to Sa'ed bin Abi Waqas on the day of Uhod battle: "toss Sa'ed my father and my mother are your redemption" (ارم سعد فداؤك أبي وأمي), and called him and said: "Oh God, hit him and call him", (اللهم أصب رميته وأجب دعوته)

He said: "the camels are the pride of its people, the sheep are a blessing and the horses are settled in their good places until the day of Resurrection".

(الإبل عز لأهلها والغنم بركة والخيل معقود في نواصيها الخير إلى يوم القيامة).

He said: "the best of horses and humiliation in the ears of cows" (العز في نواصي الخيل والذل في أذنان البقر).

He said: "the earth will open up to you and you will be able to fill the food, so none of you will be able to play with its share". (تستفتح لكم الأرض وتكفون المؤنة فلا يُعجزن أحدكم أن يلهو بسهمه).

He said: "prepare for them as much as you can of strength, but the force of fire" he said three. (وأعدوا لهم ما استطعتم من قوة إلا أن القوة الرمي)، قالها ثلاثا.

He said: "Whoever leaves the throwing after learning it has left favor and in another news grace left it". (من ترك الرمي بعدما تعلمه فقد ترك حسنة وفي خبر آخر نعمة تركها)

He said: The honorable person should not appeal to four people, even if he is an emir from the council of his parents and his servant to his guest, and to perform his duties on his horse and serve him for his worship, from which he takes knowledge. (لا ينبغي للشريف أن يأنف من أربعة، وإن كان أميرا قيامه عن مجلس والديه وخدمته لضيفه وقيامه على فرسه In a novel: "He has disobeyed me" (فقد عصاني)

Omar bin al-Khattab may Allah be pleased with him said: "Teach your children shooting, equestrian and swimming, and ordered them to disappear between the purposes, you differed and feared, and received the sun free your faces and threw the objects and descended on the horses".

(علموا أولادكم الرماية والفرسية والسباحة، وأمرهم بالاختفاء بين الأغراض، إختلفوا واخشوشنوا واستقبلوا حر الشمس بوجوهكم وارموا الأغراض وانزوا على الخيل نزوا). [27].

He said: "The symptoms<sup>46</sup> [27], of a kindergarten of Paradise and the Rami on the symptoms Kalrami on the enemy, which returns the arrow, was to him with every foot and neck." Al-ma'erad: Kindergarten of the Garden of

Paradise, and the shooter of Al-ma'erad as shooter of the enemy, in which the arrow was given to him with every foot and neck".

(المعراض: روضة من رياض الجنة، والرامي على المعراض كالرامي على العدو، والذي يرد السهم كان له بكل قدم عتق رقبة).

Chapter II: In the form of guns, which is by shooting (The manuscript. pp.9-15) and it is stated that it is required to be made of the court and the iron well, and the Roman guns exceeded the guns of others because of the large iron, and take into account that the quilt is soft from the inside as a bottle and no cracks, Before using the guns to ensure the quality of their manufacture.

It was mentioned that the workmanship of the Muslims is better than the workmanship of the Romans, and the finest of the work of Fez or Meknes, and its length is an inch, a banner is placed above the barrel of the cannon used for Straightening, and the height is short and long, and set the distance between the index finger and thumb, Quarters of an inch.

Chapter III: It deals with the status of gunpowder and how to reach it (The manuscript. pp.15-32), it was made by placing the salt in the fire, so that a blue fire would emerge from it like the fire of sulfur<sup>47</sup> [35], they found that, if placed in a confined space, they were driven more strongly than if they were in a large space, and they made her a quiver of iron.

They used a primer in which fire, then they reached the trigger, and it was mentioned that the name of the Hakim who reached the gunpowder was called "Baroud" (بارود) and was named by him. It was also mentioned that when the conquest of Andalusia did not mention the gunpowder, also in the manuscript "Shortening Juman in the News of Time" (اختصار الجمان في أخبار الزمان) by Imam Shatby, It was established in 768 AH (1367 AD) and its duration was 442 years. The date of the manuscript was determined in 1210 AH (1795 AD).

It was mentioned when he spoke of salt gunpowder, that he extracts the quality of the caves and caves in the heads of the mountains that do not see the rain and rain, and less quality of salt caves where blowing wind and cold air, and reduce the quality of the urgent Marrakech.

As for the distillation of the gunpowder, it is necessary to build a conical basin, which is narrower than the bottom of the shaft or less, and has a hole in front of it, which is wider than the top. It is placed in the mouth of the hole with a roof to prevent dirt from reaching the hole. Water, and make the dirt around it on the ground, and add a quarter of the ash or a third of it and spray it with water and mix it.

Then pour it over the soil, and then place it in the dropper, and soak the dirt gently and make it a small newspaper or a light slit. He stands on the edge, takes the water and puts it in a brass vase, and makes a quiet fire under it.

If the water is Boiled it covered with foam, it is removed from the surface of the water, does not make the fire strong so as not to burn, and when it cooled quietly pour into water until the salt is left in the end. The

gunpowder in which the food was left was not suitable for winter.

After that, the water containing the gunpowder is placed on a low heat, then add the zeros of the eggs, then heated and filtered to become silver bars, then add sulfur one to five of the salt or one to six, and add the first sulfur with the second and the first salve with the second, or can add one to seven, Until the hexagon or pentagon is repaired in summer, autumn and spring in winter and spring.

And coal is added to the weight and a quarter to the sulfur and salt together, and the best coal is the new girl's coal, which is close to the land, where the salt is washed from the ash, and coal with sulfur and well salted in the mucus<sup>48</sup> [27], and then placed in the sieve of the skin wide eyes<sup>49</sup> [27], even smaller are thoroughly purified.

Chapter 4: The author talks about the status of the Sheikh who teaches shooting (The manuscript. pp32-41), and it is mentioned that the shooting position is a sheriff, and that the sheiks of the Banu'l-Ahmar Country and around it teach people to shoot in good faith, including Said Ibn Muhammad al-Nasseri, Sheikh Abu Azza Ibn Muhib Ibn Dibaj, and his nephew Sheikh Ali and Sheikh Ahmed Al-Ruziki, a student of Sheikh Abdullah Al-Ghazwani in Marrakech, and Said Al-Hamri Al-Bayhisi, who entered the west during the time of Elias Habib Al-Maliki<sup>50</sup> [31], [36], [37], [38], [34], as well as his son Mohamed Ibn Sa'id and Sheikh Nasser Ibn Abdul Mawla Al-Nasseri. Sheikh Ahmed al-Ruziki makes gunpowder, as well as being a skillful teacher of the Shooting, where the author learns the shooting of his hands, and how to catch monsters.

Chapter 5: talking about how to learn to shoot perfectly (The manuscript. pp.41-48), and dealing with methods of shooting and control the cannon in the case of sitting and in the case of doing, and then the arm and returned the alloy and ordered him to catch and direct the eyes to the Straightening and move the disc so as not to shake his head or blink his eyes and then put the gunpowder,

and orders him to catch and move the disk and teach him how to build the gun and determine the amount, and to make a pillow of fiber or paper so as not to leave the bullet in the gunpowder only, and how to get him to spread it on the mouth of the jubilee,

and put the head of the skewer presses<sup>51</sup> [27], in the middle and push him in the quiver, Until he reaches the gunpowder, and puts the bullet on the pot If you reach the gunpowder make a pillow of fiber or skin the amount of the bullet to prevent it from moving, and the first pillow between the bullet and gunpowder,

And then put a wall of stones of five or seven on top of them and a distance of fifteen steps, and make them in the middle of the stone and gently move the disk to hit the stone and fall, and then make the fence of three stones, and then two stones where he hits them in the confluence and then one stone and ordered him to hit him In the middle and then increase the distance step.

Chapter 6: ruling on hunting with lead gun, clay gun, cheese, chickpeas and others (The manuscript. pp.48-53). Explain the method of making lead by melting it in a pot of iron or pottery by placing it in the fire from above and below and then emptying it into the mold. The spraying industry is covered with yellow arsenic<sup>52</sup> [38], which beats well and then melts Lead in a steel vessel with a narrow mouth that has a fluid flow in cold water where it becomes a grain. If it is not turned into a grain, the arsenic is added after the resulting spray is dissolved and then cooled and then taken between two stones, where the sprays become spherical.

Chapter Seven (The manuscript. pp.53-69): how to catch the beast and take him to his grotto and know the nature of the deer, lion, pig and others.

### Third: Study

This is a study of the art of shooting and its origin, and the talk of shooting, the author of mentions: *"القوس في زماننا من الذي هو ترك ولم يبق اليوم به جهاد"* "The bow - in our time - from which is left and there is no left today with jihad" (The manuscript. p.5) [39], [40], [41], [42], [43], [44], [45], [46], [47]. The shooting with the cannons includes Greek fire, gunpowder and gun fire. On the gunpowder, where the majority of historians of the Europeans that Byzantium is the inventor of it, but if we return to the historical sources that the invention of this invention, the inventor Egyptian [19], or Syrian [48], named Callinikos, who lived in Ba'albek in the middle of the seventh century [42].

However, the historian Gibbon [51], says that Cedrinus (Calenicus) was the ruins of Heliopolis in Egypt which was part of the Byzantine state, which confirms that the invention of Greek fire was an Egyptian invention. The Byzantine word was attributed to Greek fire until it was invented in Egypt during the Byzantine rule [43].

Although the Byzantines used the Greek fire for the first time in the siege of Constantinople in 54 AH (674 AD) [52], which confirms that there is a difference in the composition of Greek fire is different from the composition of gunpowder, Greek fire is composed of a mixture of fast-inflammable materials such as sulfur or oil, and some Resins and fats in the form of liquid thrown from a rectangular copper cylinder or fired in the form of burning balls or pieces of linen saturated with oil [53], and is famous for the strength of its action and its eloquent damage because of the act and the power of ignition in water and air, it is said that if ignited burned iron and stone [19], and it is not extinguished except by wet threads with vinegar, halves and nectar, but the water it increases inflamed [54], gunpowder is made from sulfur and salt gunpowder, and added to the coal [46], the warships that used to be their industry in Alexandria has supplied the Greek fire, which confirms that the work of the fire and its machines were in Egypt<sup>53</sup> [19], [38].

Princess Anna Cominina, the daughter of the Byzantine Emperor Alexius Cominus, who witnessed the Crusades in this book, described this Greek fire in her book about the history of her father's life. She described

this fire as being high in the air and when it ignites, and when it rises like a piece of hell where people are burned and leaves them with their belongings ashes winds are indicated by the composition of this fire, and it is a mixture of oil, sulfur and frozen oil with a kind of flammable gum.

This fiery mixture was filled in copper pipes with a nozzle ignited from them, and in the back of the bow, it was launched and pushed forward. These pipes were placed in large quantities in a rectangular cylinder placed in the catapult and then thrown on the enemy, and the spread of its wrath on every side, so that it will make hell around it and desolate destiny with hell and a miserable fate [55].

Muslims have made many improvements to the Greek fire, both in terms of composition and ignition. In terms of composition, they have added some gums that ignite them. In terms of ignition, they have supplied their fleets on a large scale [43].

Al-Tartousi [45], says that the preparation of fire was one of the secrets that should be preserved, in order to prevent the diversion to the enemy, and made it hidden secrets only to those who please him of the virtues, and it seems that some of these fires were shot by crossbow or placed in pottery vessels to be thrown by the catapult.

The fire was never extinguished until it came to the last place it was burning, and it was burning for a month or more, the more it hit the water or the dirt, the more fuel it became. This is evidence of the development of the fire [45], walking on the water without extinguishing the fire, has been used by Muslim Arabs some of these structures in their battles, sea and land since their first conquests [46].

The manufacture of this weapon has reached an advanced level, where it was pressed in pottery vessels and placed in the catapult to throw it at the enemy. Some kind of bombs or oil bottles were found, which are pots of oil, thrown at the forts and castles for burning [39], and added structures that make it more lethal.

The gunpowder is the blister, the propellant, or the propellant, and the Arabic scientist, Hassan Najmuddin al-Ramah, was the leading scientist who contributed to the discovery of this material. He set the rules for the manufacture of gunpowder from sulfur, iron and coal, and the gravel of arsenic and arsenic, for which the gun is called by this name and means the propulsion machine, and gunpowder is the driving charge of the projectile to reach the target [57].

In the thirteenth century, scientists came to uncover the materials that make up the gunpowder, and the author mentions in his talk about gunpowder that (The manuscript. p.17) the Hakim who reached the gunpowder was called (Barood) gunpowder named after him, and the discovery of gunpowder was in 768 AH (1367 AD) has been To reach the materials that make up the gunpowder, and that it is a burning substance that is a loud bang, a bang and a fiery flame, and make sure that the bangs and bangs caused have a great impact on the art of war [58].

The author talked about the status of gunpowder and how to reach it, where the salt is extracted from caves and



caves that do not see rain or wind, and the process of melting and water, and then add the egg yolk to become silver bars, and add sulfur and coal (The manuscript. pp.15-32).

Although the cannons were known to the Chinese since 618 AD, the Arabs used them in several wars; they made them from wood, tied them with ropes and coated them with paints for durability [59], [43], [60], [58].

But the oldest picture of a cannon in an ancient manuscript dating back to the year (1226), was a large vessel similar to the name so named, and the shell of this gun copper arrow stuffed from the mouth of the cannon and behind the gunpowder, which ignites igniting a piece of coal The first projectiles of the cannon were also heavy stone balls known by the Arabs in Spain during the 13<sup>th</sup> century. The 14<sup>th</sup> century did not end until the guns of the European armies were thickened [61].

The most recent conclusion was that the earliest date of health was about the use or invention of the gun between the years 1320-1325 and not earlier. Historians have found signs of the use of firearms by Arabs, Moroccans, English, Scots and others during the second quarter of the 14th century, and there is a cartoon drawing of cannon in the form of a pot with a nozzle in one of the manuscripts in the Christ Church of Oxford dated in 1327 [58].

The manuscript describes the guns (The manuscript. pp.9-15) through one of the chapters that deal with the characteristics of the guns that are made by shooting. The cannon is made up of the barrel, the body and the trigger, and there is the flag that is placed on top of the nozzle and used for the straightening.

Also, the manuscript (The manuscript. pp.41-48) describes how to learn to shoot the most fully, and the methods of shooting and control of the guns in the case of sitting and in the event of doing, and the gunner to reconstruct the gunpowder and determine the amount, and puts a pillow of fiber or skin so as not to leave the bullet in the gunpowder, Then he will push the gun with the skewer presses, then put the bullet with a pillow of fiber or leather to prevent the bullet from moving. The first pad will be between the bullet and the gunpowder and then straighten the straightening.

The author explains the method of making lead (The manuscript. pp.48-52), where the lead is dissolved in a pot and put on fire and then emptied in a mold, while the spray is made with yellow arsenic, which beats well, then melt the lead in a vase, and then pour in cold water until it becomes a grain.

The author mentioned shotguns, clay gun, the Chalabi and chickpeas (The manuscript. p.48), as well as hazelnuts made of glass and stones, and the hazelnuts in the Abbasid era were large.

The Abbasid Caliph al-Nasser al-Din made the throwing of hazelnuts great and great because he was fond of him and was wearing trousers bully, and made the caliph himself head of the range of throwing hazelnuts, as was the throwing of hazelnuts great in the Middle Ages in

Iraq and Syria and Egypt and others, and then mastered in throwing hazelnuts by compressing the air at the back of the pipe, like a gun pipe, as they invented the gunpowder they threw the hazelnuts out of those pipes, and they called this machine by the name of gun [62].

The military industries in the Maghreb have developed considerably. When Sultan Yacoub al-Marini attacked Sijimasa in 672 AH (1372 AD), he was placed on it by the iron hammers that were thrown from the iron hoists, the burning fire in the gunpowder [62], Ibn Khaldun [34] mentioned that the Moroccans had invented the cannon for the first time, the Grenadines used the cannon in Andalusia during the reign of Sultan Abu al-Walid Ismail I in 724 AH (1324 AD) when the city of Huescar was conquered.

However, the Andalusians excelled in the field of metallurgy, where the sources confirmed that they were supervising the manufacture of weapons and ammunition in the city of Fez, [63], [64], and the cities of Fez and Meknes were important centers for the manufacture of weapons, and the author confirmed this when talking about guns (The manuscript. p.14).

The manuscript of the Ezz and the benefits of fighting for the sake of God with guns is a sure proof of the flourishing of the defender industry in the Maghreb. Its author gave studies to the Spanish defenders, his departure from Spain, his stability in Tunisia and a review of artillery art.

Perhaps, the manuscript "Glory or benefit to the Mujahedeem in the name of God by the guns, (العز أو المنافع للمجاهدين في سبيل الله بالمدافع) by Ibrahim Ibn Ahmed Ghanem Al-Andalusi a sure guide to the flourishing of the defense industry in the Maghreb. Its author gave studies to the Spanish defenders, his departure from Spain, his stability in Tunisia and a review of artillery art.

#### Firearms industry in Morocco

During the second half of the 7th century AH (13 AD), Moroccans began to using the blasting machines, which throw out the burning balls, and the aim of the fortresses and walls. They were used by three kings of The Marinid dynasty in four battles. This is reviewed in this introduction as follows:

A. In the reign The Marinid Jacob bin Abdul-Haq during the siege of Segmassa in 672 AH / 1273 AD. Ibn Khaldun said when talking about the blockade: (Yacoub al-Marini on Sigamassa) erected by the siege machines of catapults<sup>54</sup> and pulses<sup>55</sup> and Hidam of oil thrown iron blocks, emitted from the safe in front of the fire in the gunpowder, the nature of strange acts [34].

Nasseri [65], commented on it by saying: The benefit of it: that the gunpowder was present on that date, and that people were fighting it and use it in their siege and wars of the enemy in that day. In this witness to say explicitly that the gunpowder was known to the Arabs, and they use it in their wars by Schwarz by about half a century [48].

B. In the era of Abul Hassan Ali bin Abi Sa'eid al-Marini, in the defense of the Green Island in southern Spain in (746 AH / 1342 AD) [66]. The manuscripts of

that time prove that firearms were common among the Arabs quickly, and they used them in particular to defend the city of the island, which was attacked by Alfonso XI of Castile 742 AH / 1342 AD. It was in his history that the Moroccans of the city - On the army, and throw him several large bombs of iron, such as large apple, and to a distance from the city, some of them over the army, and some fall on it.

C. In the reign of Abu Anan ibn Abi al-Hasan al-Marini, who used it in his war with Bani-Zayan, the kings of Tlemcen.

D. In the era of Abu Annan in the siege of Bejaia [67], is talking about a maneuver by the Annani fleet outside Bejaia, and this phrase: *"وأنت - الأساطيل - من ألقاها بكل متناجج الشواطئ بجول دويه بين الألسنة والألغاز، مرسل في الجو ذوابة كعقبة البرق، منذرة للسامعين بالصدق، ومالئة بالهويها ما بين الغرب والشرق"* "and - fleets - came of the words with all thrilled of shrapnel, its loud voice resonates between the tongues and the machines of oil, sent a whimper in the air like a lightning bolt, a warning to those who listen to truth, and are fond of their love between the West and the East". *"وأنت - الأساطيل - من ألقاها بكل متناجج الشواطئ بجول دويه بين الألسنة والألغاز، مرسل في الجو ذوابة كعقبة البرق، منذرة للسامعين بالصدق، ومالئة بهيها ما بين الغرب والشرق"*.

It appears that the fleet of Ceuta - in particular - was equipped with these words, Ibn al-Khatib [68], described this city as a fleet of talented, forbidden flame, and this is confirmed by the arrival of the word flame in this text, after we saw *(فيض العباب)* the flood of clouds describes the smoke of oil by flame<sup>56</sup>.

After that we mention that it was in Fez in the eighth century AH (14 m) makers of specialists in the machines of oil and fire, they were mentioned in Ibn al-Khatib in *(nufadat aljerab)* "Shaking the Bursa" by the words: *"قاديح"* "Lightness the oil torch and the scapegoat of the disabusing catapult", within the manufacturers summoned by the Minister Marini Omar bin Abdullah al-Fodoudi [34], in preparation for the pleading of the army of Abdul Halim bin Abi Ali al-Marini, where besieged Fez new and Sultan Tashufin bin Abi Hassan al-Marini on 7 Muharram in 763 E (1362 AD).

Thus, it is clear from this presentation that Morocco has precedence over the use of firearms, with its shells being called "gunpowder" by Ibn Khaldun, Nasiri and Zidane.

As for the machines of the gun launcher, we saw the designation of the machines of oil at the author of "flood of clouds," an expression of what has become called - from afar - "in the name of (Madfa'e) cannon", in the second half of the ninth century, Abdullah bin Ahmed bin Said al-Zemmouri, in his commentary on Al-Shifa of 'Ayyadh [69], talks of preparing the city of Tangier - by the Moroccan stakeholders - with the great machines of oil and guns.

There is no doubt that these firearms: gunpowder, cannons and nuts require Moroccan factories to produce them, but we can not find any mention of these plants until the first half of the tenth century, where Sultan Abu Abbas

al-Wattasi built a weapons factory in the royal palace of the new Fez, it has been used for the production of flanges, nuts and gunpowder, in addition to the manufacture of arches, dikes and so on [70].

The Saadian period is the golden age of this industry, and the oldest Moroccan gun is the one that dates back to the reign of Sheikh Muhammad the First in 952 AH (1545).

This machine was later reproduced in Morocco, Abdallah al-Ghalib Billah, the second Saadian sultan of Morocco, Attack Al-Bareha BY twenty-four artillery, one of which was called Maimouna [71], and was very large. After this, some of the places of Muhammad Al-Mutawakil included more than 150 machines of oil [73].

When Abd al-Malik al-Mu'tasim was acquitted, he took care of the production of the cannons, which he was familiar with, and supervised the preparation of about eight of them [71]. Al-Mansur al-Sa'di built Dar al-'Ada, near to the Badi'a Palace in Marrakech, which Castilian [72], said: *"وأما ما يفرغ مع الأيام من مدافع النار ومكالحها بدار العدة"* *"المائلة قرب أبوابهم الشريفة من قصبته المحروسة... فشيء غصت به"* *"as for what empties with the days of fire guns and their ankles in the house near the doors of their honorable gate of their guarded ... something was filled with safes for weapons and ordinary homes"* [72].

Within the Mansuri army, there were four artillery squads called the fire brigades or the firecrackers. Castilian said: *"والترتيب الذي جرى عليه العمل في عساكر النار بالحضرة: أن يتقدم - أولا - جيش السوس، ثم يردفه جيش الشرافة، ثم يردفهما العسكران العظيمان: عسكر الموالي المملوكيين ومن انضاف إليهم، وعسكر الأندلس"* "The order in which the fire was done in the presence of the garrison: to advance - first - the Sous army, and then the army of the Sharaqa, and then followed by the two great soldiers: soldiers of Mawali and those who were added to them, and the soldiers of Andalusia and those who whoever wears their clothes and enters into their flock".

As for the extent of the impact of the firearms in the sites, the same source [72] reports that the armies of Al-Mansour are fired with shrapnel of fire, and Gun-filled rifles, filled with blasts, and lightning strikes.

The construction of fourteen artillery towers dates back to the period of Mansur, called Bastions [72], and varies from four Moroccan cities: one in Taza, two in Larache, nine in the new Fes walls, and two outside old Fes near Bab El Fotouh and Bab Mahrouq. The latter is known as the Tower of Fire, as proof of its artillery mission, and then the inhabitants canceled the name and replaced it with the name of the "tower of light."

The same Sultan equipped these fourteen towers with guns, and housed the competent garrisons, and the fortifications of old Fes were thrown with gunpowder and fire, and metal and stone [72].

It is noted to Mansour that during his time in Morocco, the custom of striking the guns on the occasion of the two holidays was observed: Eid al-Fitr and al-Adha, and when great new was received, al-Qastali said of the

Fez defender: "وإذا استهلكت رعوها في العبيد من المصلي أو لورود بشارة عظمى، فلا تسأل عن دوي الأرض وجفاتها... ويمتد على البلدين ركاب" "If it start her rampage in the two days of the prayer or a great gospel, do not ask about the sound of the earth ... and the rubble of the gunpowder extends as if it were a night applied to both countries". After this Sultan, the activity of this industry is transferred to the days of his son Zidane, and we will recall - almost imminent - that there is one of the guns he ordered is still in existence.

Sultan Zidane employed the stone goddess in his court as a translator and a writer in Spanish. After his journey from Morocco, he translated from Spanish into a book in the art of artillery. He called the translation: "Glory and the benefits of the Mujahedeen in the way of God with guns". At the conclusion of the book that Sultan Zidane was giving generous to a Christian, revealing to him some of the secrets of the artillery industry<sup>57</sup>.

It seems that the activity of the firearms industry did not stop completely after the death of Zidane, a foreign source reported that the Netherlands was importing from Morocco gunpowder and salt, especially during the fight against the Spaniards in 1038 AH (1628), and it is known that this date agrees with the days of Abdul Malik II Ben Zidane.

It is now mentioned that some of the Saadian cannons are still in existence. They were placed in the garden of 'Amala in the city of Tangier, including a gun of Muhammad the First Sheikh, written above in the Moroccan script: "Made for Moulay Mohamed Al-Sharif, God bless him a dear victory. At the bottom: عمل منصور" "Mansour al-'Alaj worked two hundred and fifty-nine hundred", and another cannon of Sultan Zaidan, written on it in the eastern third line: "امر بعله عبد الله أمير المؤمنين مولانا زيدان المظفر بالله، ابن أمير المؤمنين" ordered by his servant Abdullah the Commander of the Faithful Maulana Zaidan Al-Muzaffar Billah, the son of the Commander of the Faithful Maulana Ahmad, the son of the Commander of the Faithful, Maulana Muhammad al-Shaykh, may God be pleased with him. "The middle of this writing is a rectangle with the Zidane sign.

At the end of this era, we note that Moroccan literature played a part in the beautification of some of the Saadian guns. In the translation of Muhammad ibn Ali al-Wajdi al-Fazi, he mentioned four verses of his order, where he wrote on a gun made by the painter Al-Ma'mun al-Saadi during his days of the reign of Fez [74].

In the era of the Alawite state, Sultan Mohammed III worked on reviving the manufacture of firearms and shooting artillery, and to this end he brought a mission from Astana, the capital of the Ottoman caliphate. This mission was held in 1181 AH (1767-1768 AD) and consisted of 30 experts; they were divided - according to their specialties - into four divisions, including: war-makers, bomb-makers, guns and mortars, and mortars.

The Moroccan Sultan sent the teachers of the jihadi boats to Edouin. They entered the work shop in Rabat.

They worked alongside the Moroccan teachers. The Turks were the best craftsmen, while the Moroccans outperformed the boats.

The manufacturers of guns and mortars were sent to Fez, where they lived until they realized the death there. Zayani [75], did not mention whether they had worked with the machines, but a source confirmed that Sultan Mohammed III had established factories to defrost the guns. And bringing experts from Astana [71].

The same Sultan established a factory in Tétouan to produce heavy bombs under the supervision of Turkish specialists, of whom the industry had learned some of the Taoists. The Sultan sent the teachers of the jihadi boats to Al-'Odwatayn<sup>58</sup>, they entered the industry house in Rabat, they worked alongside the Moroccan teachers, the Turks were the best craftsmen, who learned this industry from them some of the people of Tetouan [75].

It may be the product of this work; the huge bombs used in the siege of the city of Jadida, to liberate them from the rule of Portugal, and some describe them in the form of pots weighing more than one Kantar<sup>59</sup> [76].

If we do not know the names of the Turkish specialists in the first three people, we can know the names of each of the two specialists in the shooting with mortars, the first is called: Ismail Al-Dreazi, the second: known as: Baba Suleiman Al-dreazi, Haj Suleiman Bunbaji, on the way the Turkish proportion to the industry "البنب", which is the bombs burned, the latter was famous for Morocco, and was aware of the shooting of guns and mortars, Al-Dha'eif said: "He taught the children of Rabat and Salé and others" [77].

It is apparent that this is what Zayani<sup>60</sup> [65], says after mentioning the city of Ribat al-Fath: "It was known by the Tobjis (shooters guns) of the people of Sala and Rabat and graduated on his hands Intelligent student, and then inherited the people of Al-'Odwatayn this industry for a period," and Zayani said: he had done well in opening the new city.

It was known in this period and after it a group of artillery shooters: there was - in Rabat - the teacher Al-'Enaya al-Ba'udi, and was aware of the beating of "المهراس" the morals, which is tight on the Spanish in the siege of Ceuta during the days of Sultan Al-Yazid, they killed him and represented him in a position that was on Thursday 24 argument 1205 AH (1791) [77], and three of Sala:

The first: Haji Abdullah Yaquob deceased around 1200 AH (1786), said by Ibn Zaidan [65], [78], during the talking about Mohammed the third: "كان السلطان المترجم كلفه بيسائر تغور إيالته من مرسى مليلية إلى أطراف السوس، وأسند إليه سائر ما يرجع لأبراج الثغور ومدافعها ومهاريبها ومتعلقاتها: من بارود وبنب وكور وتنظيم رجال وإصلاح أحوال حسبما أفصحت عن ذلك ظهائره المولوية التي خاطبه بها تاريخ أولها سنة 1177 هـ وتاريخ آخرها سنة 1193 هـ" The translator Sultan cost him all the gaps of his mandate from the anchorage of Melilla to the outskirts of the city of Sus, and assigned to him the rest of the port towers and their guns and barricades and accessories: From Gunpowder, pomegranate, bungee, and bomb, organizing men, and repairing conditions, as revealed by the mullahs who

addressed him, the first date was the year 1177 AH (1764 AD), and the most recent date in 1193 AH (1779 AD), and we will follow this study with three of these decrees.

Second [78]: Mohammed bin Mohammed bin Hussein Feneish died in Fez (1236 AH / 1820-1821).

Third: Mohammed bin Abdullah Mallah [65].

And from Tetouan: we recall Ahmed 'Anikid, who died in Fez (1236 AH / 1820 - 1821 AD), and was - according to Akansos [78], is unparalleled, and the words of Alistiqsaa: "وكان عجباً في صناعة الرمي بالمهراس" "It was a wonderful industry throwing stones". Finally, we remember from the city of Fez, Sa'id al-'Allaj, who knows how to throw. who was familiar with the art of shooting [65].

One of the manifestations of industrial activity to produce some Nazi weapons in this era is that Morocco was able to export 4,000 kantars of gunpowder made in Morocco, in the form of assistance to the Ottoman Empire [79].

The activity of this industry has reflected its impact on the field of authorship, and the same period has emerged: exploratory studies and a system in the field of shooting and the like. We offer five of them are still manuscript: The first was "النشر اللائق نمو أراد الجهاد بالصواعق" "The Decent Deployment of Jihad Wanted by Lightning" by an anonymous author who lived in the days of Sultan Mohammed III. He wrote it on the suggestion of some of his friends, and recorded in the editorial and the curse of this Sultan using the bombs burned in the jihadist battles, and classifies it in ten parts and a conclusion according to the following topics:

The preparation of the gunpowder and the nature of the parts from which the wick is made, and which the bombs were burning in this era. The method of making the fuse, the method of knowing the cannon's mouth capacity, the amount of gunpowder placed in a type of cannon, how to place the bomb in the cannons, the recipe to make the wick into the bomb, the knowledge of the distance between the defender and the target and the arithmetical and mathematical rules in 9<sup>th</sup> and 10<sup>th</sup> parts.

Conclusion in recommendations for shooters.

It should be noted that this message is accompanied by illustrations, and there are a few copies of private and public<sup>61</sup>.

The second study: A system in Arjosh is similar to the Targiz of the message before it<sup>62</sup>, and called: "روض الجهاد" "The supernatural Jihad, لمن أراد الغزو بالصواعق" for those who wanted to conquer the lightning." Organized by Mohammed bin Ahmed Al-Reafi Al-Timsimani al-'Aranshi Al-Dar, in 142 verses, the message ended in raby'e I, 1195 AH (1781 AD)<sup>63</sup>.

The third study: a letter entitled "نزهة الناظرين، وتعلima للمجاهدين، وإعانة على جهاد أعداء الله الكافرين" "Picnic of the beholders, the teaching of the Mujahideen, and the help of the Jihad of the enemies of Allah the disbelievers" by an unknown author, collected from the former Haji Suleiman Al-Turki, who lived in the days of Sultan Muhammad III, He talked about making gunpowder and how to make it in

guns and mortars, and how much each one has made and the method of dropping them [80].

Fourth: Arjosh in lightening the structures, which are the incendiary bombs, for poet was living the days of the Sultan, and it is located in (143) verses, and attributed to Ahmad Al-Timsimani mentioned above<sup>64</sup>.

Fifth: The conclusion of a letter in the work of the astronomical star of an author visited Morocco during the days of Sultan Mohammed III, and called himself Mohammed bin Abdul Qadir, and the end of this letter in conclusion to explain the method of shooting with guns, it's a manuscript of some in the city of Wazzan.

This letter presents three decrees issued by Sultan Muhammad bin Abdullah to President Haji Abdullah Yaqoub Al-Salawi<sup>65</sup>, the first: " خدينا القائد عبد الله بن محمد الرحماني. والقائد عبد الهادي... سلام عليكما ورحمة الله تعالى وبركاته، وبعد: فحامله خدينا المعلم الحاج عبد الله يعقوب، قد جعلناه كبيراً على جميع المدافع بالثغرين المذكورين، وأذننا له أن يتفقد في كل جمعة أحوال المدافع بالثغرين المذكورين، بحيث يمسحهم ويصلح ما شاء من أمرهم فتأمر... أن يقدره قدره... ولا يخالفوه، فقد وليناه أمرهم، وجعلناه رئيسهم، ونأمركما... أن تشدا عضده، وتكونا له خير معين، وحيث يقرأ هذا... الكريم على الطبخية ليمنثلوا أمره المطاع، يبقى ظهيره بيد الحاج عبد الله المذكور، Our servant, Commander Abdullah bin Mohammad Al-Rahmani and Commander Abdullah Hadi ... Peace be upon you and the mercy and blessings of Allah. After: our servant teacher Haji Abdullah Yacoub, we have made it great on all the gunmen on the guns in the ports of Salé and Rabat, and authorized him to inspect every Friday the conditions of the defender in these two ports, So that he will wipe them and correct what he wants from them, so he ordered ... that they appreciate his ability ... and do not violate him, and made it their boss, And we will command you .... to tighten his back, and have a certain good, and where he reads this ... the generous on the gunmen to obey his obedience, his back remains in the hand of the Haj Abdullah mentioned, and peace, In the seventh of Jumada II 1177 (1764)".

The second: " خدينا عبد الله يعقوب، سلام بونص الظهير الثاني وبعد، فأمرنا أن تعلمنا بعدد الأنقاض الذين عليك ورحمة الله تعالى وبركاته بغير العرائش<sup>66</sup> من غير سرائر، ولا تذكر لنا إلا الأنقاض المعترين، وأما المدافع المتلاشون الذين لا يقدرون على الخدمة فلا تذكرهم لنا، وكذلك أعلمنا بعدد المدافع الذين بغير العرائش، لنعلم ما بقي لكمال المانة مدفع وتكملها إن Our servant, Abdullah Yaqoub, peace be upon you and the mercy and blessings of Allah. After that, we are told to tell us how many rubble in the port of Larache without alsarayir (the beds), You do not remember us except the rubble, As for the wandering guns who can not serve, do not remind them of us, and also informed us of the number of guns that Larache is missing, to know what remains of the hundred cannon and complete it, God willing, and peace, on the third day of the Holy Day, 1183 (1769).

Conclusion

This manuscript is one of the most important manuscripts in the military, especially with regard to gun shooting because it collected several topics in the superiority of shooting and the recipe for guns and

gunpowder and gun training.

The author was a member of Banu'l-Ahmar tribe of Morocco, which was concentrated in a A'areedh valley in east of Morocco and spread to Ragrag valley and Shoshawa Valley on Atlantic Ocean.

This manuscript dates back to the era of the 'Alawite state in Morocco, which witnessed several wars against internal rebellions or external aggression. It was also found that the teachers of Banu'l-Ahmar tribe have been carrying out the education of shooting since the era of Sultan Ismail, who took power in 1082 AH (1671), and was the reason for raising the efficiency of the army, so he managed to tighten the screws on England, which was forced to hand over to Tangier in 1095 H (1684), and was able to eliminate Spanish control until 1102 H (1690) which was left with the Spanish but Ceuta and Melilla, the author states that he participated in the liberation wars of these two cities.

The author put the conditions that must be met in the barrel of the cannon, and said that the European guns excel in the quality of the iron made, while the superiority of Arab guns in the quality of its industry, especially the guns made in the cities of Fez and Meknes.

The date of its discovery was determined in 768 AH (1367 AD). The conditions required for the quality of gunpowder: to be extracted from caves and caves not exposed to air, and to determine the methods of manufacture of gunpowder to which coal and sulfur is added, and for added sulfur ratios (1 sulfur to 5 salt, 6 or 7), and the hexagon or pentacle is valid in the summer and autumn, while the seven days are valid in winter and spring. Then add the charcoal and a quarter of the gunpowder and sulfur together and knead thoroughly, to be purified.

The manuscript also helped to identify the methods of shooting, control the guns and how to reconstruct, to fill the gunpowder, and put the head of the skewer presses to pay gunpowder, and the teaching of shooting is on five stones or seven stomping on each other, Three stones and hit in the middle and then two stones and hit them when they meet, and then beating on one stone.

The author talked about the manufacture of lead, by melting it in a pot of iron or pottery and put it on fire and unloading in a mold, but the manufacture of spray is covered with yellow arsenic, which beats until it turns into grain.

The shooting was a final stage in the evolution of the shape of the arch. The gun was defined since its inception, the shape of the jug, the methods of use, and the types of projectiles.

It was found that this manuscript is a reflection of the political conditions that prevailed in the Maghreb in the era of the state of Alawite, because the author was a combat soldier who participated in the fight to liberate the cities of Ceuta and Melilla, and was proficient in the shooting he learned about the red sheikhs, and fully aware of all the manuscript, the Andalusians had a major role in the development of the Western metals and weapons

industries, where they supervised the manufacture of arms and ammunition in the city of Fez. Fez and Meknes were the most important centers of the industry thanks to the Andalusians, although the Moroccans had invented the cannon fifty years before the Grenadines reached it.

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#### Notes

<sup>1</sup> This manuscript is photocopied at the Institute of Arabic Manuscripts of the League of Arab States in Cairo, and the number of the film (No. 844).

<sup>2</sup> There is a copy in the Military Museum in Cairo, No. 106 and another copy in the Egyptian Book House.

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<sup>7</sup> Berlin Library maintains a rare copy of it, illustrated and illustrated, and a copy of it is available at the Oxford Library in Britain.

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<sup>20</sup> It is an illustrated manuscript in the library of Cairo University (No. 26340) and original in the British Museum in London.

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<sup>25</sup> There is a copy of it in the Egyptian Book House (No. 193).

<sup>26</sup> Located in the library of the Military Museum in Cairo.

<sup>27</sup> It is a photographic manuscript preserved at the Cairo University Library (No. 26340) and original in the London Museum of England.

<sup>28</sup> It is located in the library of Al-Azhar University in Cairo (No. 7275).

<sup>29</sup> There is a copy of it in the Egyptian Book House (No. 86), (1995). achieved by Ihsan Hindi.

<sup>30</sup> It is located in the National Library of Iran in Tehran.

<sup>31</sup> This manuscript is provided with drawings, and a copy in the Egyptian Book House in Cairo.

<sup>32</sup> A copy of it in the Egyptian Library.

<sup>33</sup> A photocopy of it in the Institute of Arabic Manuscripts in Cairo under (No. 1056).

<sup>34</sup> A photocopy of it in the Institute of Arabic Manuscripts in Cairo.

<sup>35</sup> Compounds of gunpowder components: powder (75%) coal, (15%) sulfur and (10%) powder powder and its scientific name "potassium nitrate".

<sup>36</sup> Shoshawa Valley: Located on the Tensift River west of Morocco between the Atlas Mountains and the Mediterranean Sea to the west of the city of Marrakesh, and is located in the country of Haha, which was known in Islamic history; when Oqba bin Nafie crossed the country of Haha during his return from Morocco, The tribes of Ragra and Haha lived in the Shoshawa Valley, along with Nfiss valley and the country of Ruda and the province of Jdmoye, followed by Tensift Valley, which pours into the Atlantic Ocean, and saw the expansion of the Almoravid, who surrendered to them tribes Ragra and Maha, allegiance when they were fed into Tensift Valley.

<sup>37</sup> He was referred to as "Ashaykh," and was nicknamed "Red Skies" by senior tribesmen. It was part of a social organization that spread throughout the Maghreb. There were the Arab Shikhs and the Andalusian Soldiers' Corps, and the advice of these two bodies was limited to military matters.

<sup>38</sup> Ain Arida: Arida valley is located east of Morocco. It is now called Wadi 'Aris, and in the south is the city of Hamra. Zema is located within this valley.

<sup>39</sup> Ragra, The Bou Regreg valley is located between the reed of Mahdia and the city of Salé. See: Razouk, Mohamed (1991). (Al'andalusioun wahijratuhum 'ila almaghrib), Andalusians and their migration to Morocco, Casablanca, p.190. This valley is located in the area between Sebou valley and Wadi Sus, which is closer to the second, and is located in the north of the valley of Umm al-Rabi, which flows near Azmour, and north of Tensift Valley, which is located near the city of Marrakech and the north of Sebou valley. The tribe of Ragra has been established in The valley of Bou Regreg River. The tribe has converted to Islam since the days of the Prophet Mohamed when a group of the Ragra tribe went to Mecca to perform the Hajj before the emigration. Okba bin Nafie passed on the tribes of Haha and Ragra upon his return from Morocco.

<sup>40</sup> Coagulation: coagulate anything from something else, Stripped and scrubbed it.



<sup>41</sup> Al-Hawz: Possession, what man possesses for himself and between his borders and the barriers on him, no one has a right to it. Al-Hawz is a suburb, a collection of Ahwaz.

<sup>42</sup> Sebou Valley: the largest of the Moroccan rivers, springs from the Atlas Mountains and tells the regions of Fez, Meknes and the west. It flows into the Atlantic Ocean in the present city of Mahdia. It is surrounded by the city of Fez from the east and west. Many battles took place in the Islamic era in Sebou valley, during disputes during the end of the Umayyad rule and the beginning of the Abbasid period.

<sup>43</sup> Wurgha Valley: The River Sabo is bordered by a large river called the Wurgha River, and meets with it in an area called the Al-ma'emoura, which flows into the Atlantic Ocean and to the north of the Shoshawa Valley.

<sup>44</sup> His architectural works are numerous; In Fez, the Mosque of Al-Adham was built in Al-Rasif, and the Al-Diwan Mosque and Al-Sharabliyeen Mosque were expanded. The Wadi School, Al-Ananiyah School, and built the door of Al-Fotouh and the door of Bani Musafir, and built bridge valley between them, bridge of pier valley and Sebou valley, in addition to several mosques and bridges in different countries of Morocco, It is hardly a city without a trace of his architectural monuments.

<sup>45</sup> Horse board support: make his face into a Valley, contrary to the custom of other body, aghdam thing: make it black, insert, adgham: black nose.

<sup>46</sup> Al-ma'erad: arrow has no plumage, delicate side's thick middle, affects vulnerable without basis. Al-ma'erad: the place of the punches and the stomach and the origin of the jackets, the combination of ma'areed, a place where the fighter is hiding to attack the enemy.

<sup>47</sup> Sulfur: A non-crystalline, dark-colored, chemically active, Diffuse in nature, it is one of the elements in the mountains (protoplasm), and used to prepare gunpowder, sulfur dioxide, sulfuric acid, paper pulp, rubber, punches and insecticides.

<sup>48</sup> Al-Muhraz: A pot in which the gunpowder is struck, it is made of marble, sometimes made of oak wood, apricot, elm, the thing is crushed, delicate, and the horse: the tool of the mite, and the mortar, and so on, which is called the jar.

<sup>49</sup> Silk sieve: sieve grain and so on, clean with gutter of impurities, and sieve tool like tambourine with holes purified by grain of impurities, combine sieves.

<sup>50</sup> Elias al-Habib al-Maliki: Abd al-Rahman Abi Ubaydah ibn 'Aqba ibn Nafie had traveled to sea in Africa and settled in Tunisia in the late 125 AH (743 AD). He took advantage of the caliphate of the caliphate as a result of the killing of al-Walid bin Yazid in Jumadi al-Akhra in 126 AH (744 AD) To try to achieve what he failed in Andalusia in the Maghreb, and has lived in Tunisia since the end of the other in 127 (February 745), and was able to overcome the African, and worked hard to stabilize his feet to be a kingdom, which helped to create unrest, and invited him to equip A campaign of 600 knights led by brother

Elias bin Habib, to restore Tunisia in 130 AH (748 AD), and the situation of the country has increased turbulence.

At the time of the Abbasid attempts to restore the mandate of Morocco, Abdul Rahman independence from the Abbasid state in 137 AH (754 AD), where there were several battles between Habib bin Abdul Rahman and Elias bin Habib, and ended with the killing of Elias, which lasted only about a year, Where he was killed in Rajab from the year 138 AH (December 755 - January 756 AD).

<sup>51</sup> the skewer presses: knocking thing, the skewer presses, is a tool to be hammered, fix a nail in the head, and be like a hook.

<sup>52</sup> Arsenic yellow: sulfur overcame by the foam, and the origin of smoke vapor, which happened to moisture in the Jordan Valley, and cooking without maturity, it consists of five varieties: the first is yellow: it is dominated by a lot of moisture and plasticity and has a light like gold, red: it is a little moisture, fast disintegrating, white: arsenic, black, green: the lowest species exist and beneficial, and black: the most massive and the intensity of combustion. See:

<sup>53</sup> The manuscript provides a chapter on the character of gunpowder and how to reach it and manufacture it, chapter III, pp. 15:33.

<sup>54</sup> Guns throw stones at the besieged, it is then called the stone cannon.

<sup>55</sup> A small type of catapult.

<sup>56</sup> There is a copy of this manuscript in the Institute of Moulay El Hassan in Tetouan, No. 27, 2, pl. 127.

<sup>57</sup> Book "Ezz and benefits", 87, p.114b, and see the definition of the same book: Al-Mounouni, Mohamed. The phenomenon of Arabization in Morocco Sa'edi. Magazine Da'wa Haqq, 3, 10th year, Morocco, pp.78-85.

<sup>58</sup> Al-'Odwatayn of Andalusia or 'Odwa of the Andalusians is the western section of the city of Fez in ancient times, where Fez after its foundation is divided into two 'Odwatayn: ('Odwa of Al Quaraouiyine and 'Odwa of Andalusia)

<sup>59</sup> Kantar is equal to either 157 kilograms

<sup>60</sup> He was quoted in Alistiqsaa, published by the House of the Book in Al-Baydhaa.

<sup>61</sup> It bears the manuscript X. P. D, No. 1342, the Royal Library, No. 490.

<sup>62</sup> Tarjiz: Amazigh version of the word Targiz in Arabic, and what is meant in the party of «behavior» is to sing Arabic poems in a special way, as it starts one individual of them and then echoed by others, and intervening another adder or former respondent.

<sup>63</sup> There are two manuscripts, X. P. D, No. 3368, the Royal Library, No. 490.

<sup>64</sup> In the manuscript X. P. D, No. 1342, and was not included in the Royal Library version No. 1043.

<sup>65</sup> X. P. "Film": 45. 48. 50, C. H. N, the Royal Library.

<sup>66</sup> Is an important harbour town in the region of Tanger-Tetouan-Al Hoceima in northern Morocco. The town was probably founded by the Banu Arous tribe, who gave it the name *Araich Beni Arous*.