While there are numerous works on the role of Muslim women in jurisprudence (fiqh) and literature, education and in medicine - although on a much smaller scale -, few sources mention the role of Muslim women in science, technology and governance. There are isolated references that mention some of the famous Muslim women who established charitable, educational and religious institutions. Some examples include Zubayda who pioneered a most ambitious project of digging wells and building service stations all along the pilgrimage route from Baghdad to Mecca, Sutayta who was a mathematician and an expert witness in courts, Dhayfa Khatun who excelled in management and statesmanship, Fatima al-Fihriyya who founded the Qarawiyin mosque and university in Fez, along with the astrolabe maker Al-'Ijliya. This is not to mention the rulers and Queens such as Sitt al-Mulk, Shajarat al-Durr, Raziya of Delhi, and Amina of Zaria. In view of the growing importance of the subject of gender and women in society, this report presents what is currently known about some famous Muslim women, in the hope of initiating debate and starting the process of unearthing what could be a most significant find.
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6. Mathematics
1. Introduction

While several studies have investigated the contribution of Muslim women in various fields of the classical civilisation of Islam, literature, and education, until now few sources mention the role of women in the development of science, technology, and medicine in the Islamic tradition.

In scholarship, there are isolated and scattered references to the famous women who had a role in advancing science and technology. Some examples include Zubayda bint Ja'far al-Mansur who pioneered a most ambitious project of digging wells and building service stations all along the pilgrimage route from Baghdad to Mecca, Sutayta who was a mathematician and an expert witness in the courts, Dhayfa Khatun who excelled in management and statesmanship, Fatima al-Fihriyya who founded the Qarawiyin mosque in Fez, Morocco, which is said to be the first university in the world, and the engineer Al-'Ijlia who made astrolabes in Aleppo.

In view of the scant information on such women and the growing importance of the subject of gender and women in society, this report presents what is currently known about their lives and works. Our aim is twofold: to present the available information and to initiate a process of investigation to unearth what could be a most significant find about the roles played by hundreds of women in various fields during different periods of Islamic history.
2. Women in the historiography: A problem of methodology

Over thousands of years, many women have left a mark on their societies, changing the course of history and influencing significant spheres of life. Since ancient times, women have excelled in the areas of poetry, literature, medicine, philosophy and mathematics. A famous example is Hypatia (ca. 370-415), a philosopher, mathematician, astronomer, and teacher who lived in Alexandria, in Hellenistic Egypt, and who participated in that city’s educational community [1].

In the same vein, it is interesting to note the Islamic view of Cleopatra of Egypt, a monarch who was very protective of Egypt. These sources focused instead on her learning and talents in management. This Arabic image of Cleopatra is in direct contrast to that presented by the Greco-Roman sources which presented her as a hedonist and seductive woman [2].

From the early years of Islam, women had crucial roles in their society. They had special skills in administration. For example, Aisha bint Abu Bakr, wife of the Prophet Muhammad, had special skills in administration, an educator, and an orator [3]. There are also many references which point to Muslim women who excelled in areas such as medicine, literature, and jurisprudence. This long tradition found its counterpart in modern times. For example, Sabiha Gökçen (1913-2001) was the first female combat pilot in the world. She was appointed as chief trainer at the Turkish Aviation Institute.

In contrast, we find little information on Muslim women’s contributions in the classical books of history. New light might arise from the study of yet edited manuscripts. There are around 5 million manuscripts in archives around the world. Only about 50,000 of them are edited and most of these are not about science [5]. This points to the challenging task lying ahead.

3. Recent scholarship

However, this traditional tendency is changing in recent scholarship. Some recent works endeavour to rehabilitate the presented below.

3.1. The Muhaddithat project

For several years, Dr Mohammed Akram Nadwi conducted a long term and large scale project to unearth the biographies of thousands of women who participated in Islamic history. In Al-Muhaddithat: The Women Scholars in Islam [6], Dr Nadwi summarised his 40 volume biographical dictionary of Muslim women who studied and taught hadith. Even in this short text, he demonstrates the central role women had in preserving the Qur’an as rules and norms for life. Within the bounds of their religion, women routinely attended and gave classes...
The huge body of information reviewed in *Al-Muhaddithat* is essential to understanding the role of women in Islamic society, their past achievements and future potential. Hitherto it has been so dispersed as to be 'hidden'. The information in Dr Nadwi’s dictionary will greatly facilitate further study.

### 3.2. Dictionary of women

Expanding on her work, *Islam: The Empowering of Women*, Aisha Abdurrahman Bewley published *Dictionary*. This most timely work in dictionary form is a comprehensive reference of Muslim women throughout Islamic history from the first century AH (After Hijri) to roughly the middle of the 13th century AH. A successful, for example, as scholars and businesswomen for the past fourteen centuries.

The author wrote that her book originally came about as a response to frequent requests to provide some sources about women scholars:

"When I went through my biographical references, I was surprised by the number of references to women, and the great number of women represented in all areas of life, from scholars to rulers, whether who wielded substantial political influence. This led to the decision to given modern views of women in Islam, it gives us a surprising picture from the very beginning up until the present time.

"The dictionary covers the period from the time of the Prophet to roughly the middle of the 13th century AH. The perusal of the entries, the role of Muslim women was by no means confined to house and home. They were active in many fields. This is not a question of either/or. It is a question of many roles, all intermeshed and interlocking, rather than separate categories. A business woman is still a mother and a scholar is still a wife. Women simply learn to juggle things more, but that is something women are very good at doing, as can be seen by the entries.

The entries are compiled from a number of sources. Many of the biographical references. A number of notable scholars mention their teachers, who in women, as-Sakhawi had ijazas from 68 women, and as-Suyuti studied Abu’l-Faraj al-Isbahani is the major source for singers. An excellent modern source is *A’lam an-Nisa* by ‘Umar Rida Kahhala, which consists of five volumes dealing with notable women, and is by no mea...
4. General overview

The eminence attained by many women during Islamic civilisation begins to be unveiled in recent scholarship. The female relatives of the Caliphs and courtiers vied with each other in the patronage and cultivation of letters. Ayesha, the daughter of Prince Ahmed in the Andalus, excelled in rhyme and oratory; her speeches aroused the tumultuous enthusiasm of the grave philosophers of Cordoba; and her library was one of the finest and most complete in the kingdom.

Wallada (known as Valada in Western scholarship), a princess of the Almohads, whose personal charms were not inferior to her eloquence; her conversation was remarkable for its depth and brilliancy; and, in the academic contests of Cordoba, the capital quarter of the Iberian Peninsula, she never failed, whether in prose or in poetical composition, to out-distance all competitors.

Al-Ghassania and Safia, both of Seville, were also distinguished for poetical and oratorical genius; the latter was unsurpassed in the illuminations of her manuscripts; these were the despair of the most accomplished artists of the age. The literary attainments of the Andalus, the caustic wit and satire of her epigrams were said to have been unrivalled.

Umm al-Sa’d was famous for her familiarity with Muslim tradition. Labana of Cordoba was thoroughly versed in the complex geometrical and algebraic problems, and her vast acquaintance with general literature obtained her the imperial patronage of the Caliphs.

In Al-Fihrist, Ibn al-Nadim names women with a varied range of skills. Two are grammarians — a much respected branch of knowledge, related to the use of the full range of excellence of the Arabic language. There was a woman scholar of Arab dialects, "whose origin was among the tribes", and another a book entitled "Rare forms and sources of verbal nouns". Aspiring poets, like Abu Nuwas, used to spend time with the desert tribes to perfect their knowledge of pure Arabic. In a different field, Arwa, "a woman known for her wise sayings", wrote a book about "sermons, morals and wisdom".

The making of astrolabes, a branch of applied science of great status, was practiced by Al-'Ijliyah bint al-'Ijli al-Asturlabi, who followed her father's profession in Aleppo and was employed at the court of Sayf al-Dawlah (333 H/944 CE-357/967), one of the powerful Hamdanid rulers in northern Syria who guarded the frontier with the Byzantine empire in the tenth century CE.

In the development of the art of calligraphy, one woman at least took part. Thana' was a slave in the household of the tutor to one of the Abbasid Caliph Al-Mansur's sons. This tutor, Ibn Qayyuma, seems to have been a dedicated teacher, for the young slaves in his household benefited as well as his royal pupil. Of the two whom he sent to be trained by the leading calligraphist of the day, Ishaq ibn Hammad, one was the girl Thana'. His pupils, says Ibn al-Nadim, "wrote the original measured scripts never since equaled.

We now present brief information on women who excelled in medicine, mathematics, and other fields, as examples for future research and further investigation.

5. Medical care

Throughout history and even as early as the time of the Prophet Muhammad, to the improvement of the quality of the social and economic life of their society jurisprudence, medicine and health as they were motivated by their concern for to have great concern for society in all spheres of life. Thus, throughout Islamic worship. With the arrival of Islam, women were able to practice as physicians. However, the strict segregation between men and women meant that women in the healthcare of Muslim women was mainly handled by other women, but contributed to the advancement of medicine.
The title of the first nurse of Islam is credited to Rufayda Bint Saad Al Aslamiyya, one of the companions of the Prophet Muhammad. She is known for her nursing services during the battle of Badr in 624 H.

### 5.1. Rufayda al-Aslamiyyah

Rufayda bint Sa’ad, also known as Rufayda al-Aslamiyyah, considered the first nurse in Islamic history, lived at the time of the Prophet Muhammad. She nursed the wounded and dying in the wars with the Prophet Muhammad in the battle of Badr on 13 March 624 H.

Rufayda learnt most of her medical knowledge by assisting her father, Saad Al-Aslamy, who was a physician. Rufayda became an expert healer. She practiced her skills in field hospitals in her tent during many battles as the Prophet used to order all casualties to be carried to her tent so that she might treat them with her medical expertise.

Rufayda is depicted as a kind, empathetic nurse and a good organiser. With her clinical skills, she trained other women to be nurses and to work in the area of health care. She also worked as a social worker, helping to solve social problems associated with disease. In addition, she helped children in need and took care of orphans, the disabled and poor [11].

### 5.2. Al-Shifa bint Abdulllah

The companion Al-Shifa bint Abdulllah al-Qurashiya al-‘Adawiyah had a strong presence in early Muslim history as she was one of the wise women of that time. She was literate at a time of illiteracy. She was involved in public administration and skilled in medicine. Her real name was Laila, however "al-Shifa", which means "the healing", is partly derived from her profession as a nurse and medical practitioner. Al-Shifa used to use a preventative treatment against ant bites and the Prophet approved of her method and requested her to train other Muslim women.

### 5.3. Nusayba bint Harith al-Ansari

Nusayba bint Harith al-Ansari, also called Umm ‘Atia, took care of casualties on the battlefields and provided them with water, food and first aid. In addition, she performed circumcisions [13].

### 5.4. Women surgeons in 15th-century Turkey

Between those first names of early Islamic history other women practiced medicine and nursing. Few of them were recorded. However, a serious investigation in books of history, of medicine and literature writings will certainly provide precise data about their lives and achievements.

In the 15th century, a Turkish surgeon, Serefeddin Sabuncuoglu (1385-1468), did not hesitate to illustrate the details of obstetric and gynaecologic procedures in his surgical manual, while his male colleagues in the West reported against the female healers. Female surgeons in Anatolia, generally performed some gynaecological procedures like surgical management of fleshy grows of the clitoris in the female genitalia, imperforated female pudenda, warts and red pustules arising in the female pudenda, perforations and eruptions of the uterus, abnormal labours, and extractions of the abnormal foetus or placenta. Interestingly, in the forms of miniatures indicating female surgeons. It can therefore be speculated that they reflect the early recognition (15th century) of female surgeons with paediatric neurosurgical diseases like foetal hydrocephalus and macrocephalus.
The attitude towards women in the history of medicine reflect the general view that society held of women during the period. It is interesting that in the treatise of Serefeddin Sabuncuoglu we find an open minded view of women, including female practitioners in the complex field of surgery [14].

6. Mathematics

In the field of mathematics, names of female scholars featured in Islamic history such as Amat-Al-Wahid Sutaita Al-Mamali from the 10th century. Systematic investigation, with the methodology of history of science, will certainly yield more information on women scholars who practiced mathematics in Islamic history. We know of many women who practiced fiqh (Islamic jurisprudence). Now, calculations and arithmetic were intertwined with successional calculations (branch of applied mathematics devoted to performing calculations of inheritance according to the rules of Islamic law).

6.1. Sutayta Al-Mamali

Sutayta, who lived in the second half of the 10th century, came from an educated family from Baghdad. Her father was Abu Abdallah al-Hussein, author of several books including Kitab fi al-fiqh, Salat al-'idayn [15]. Her uncle was a Hadith scholar and her son was the judge Abu-Hussein Mohammed bin Ahmed bin Ismail al-Mahamli who was known for his judgements and his talents.

Sutayta was taught and guided by several scholars including her father. Other scholars who taught her were Abu Hamza b. Qasim, Omar b. Abdul-Aziz al-Hashimi, Ismail b. Al-Abbas al-Warrq and Abdul-Alghafir b. Salamah al-Homsi. Sutayta was known for her good reputation, morality and modesty. She was praised by historians such as Ibn al-Jawzi, Ibn al-Khatib Baghdadi and Ibn Kathīr.

Sutayta did not specialise in just one subject but excelled in many fields such as Arabic literature, it is said that she was an expert in hisab (arithmetics) and fara'idh (successional calculations), both being practical branches of mathematics which were well developed in her time. It is said also that she invented solutions to equations which have been cited by other mathematicians, these equations include equations which denote aptitude in algebra. Although these equations were few, they demonstrated that her skills in mathematics went beyond a simple aptitude to perform calculations.

6.2. Labana of Cordoba

Labana of Cordoba (Spain, ca. 10th century) was one of the few Islamic female mathematicians known by name. She was said to be well-versed in the exact sciences, and could solve the most complex geometrical and algebraic problems.

Her vast acquaintance with general literature obtained her the important employment of private secretary to the Umayyad Caliph of Islamic Spain, al-Hakam II.

7. Making of astronomical instruments

In astronomy and related fields, the historical records kept just one name, that of Al-'Ijliya, apparently an astrolabe maker. Little information is available about her, and we know of only one source in which she is mentioned in section VII.2 (information on mathematicians, engineers, practitioners of arithmetic, musicians, calculators, astrologers, makers of instruments, machines, and automata), Ibn al-Nadim presents a list of 16 names of engineers, craftsmen and artisans of astronomical instruments, of whom Ibn al-Nadim did not mention the first name, is the only female in the list. Several of the experts thus named are from Harran, in North Mesopotamia, and probably Sabians, whilst others may be Christians, as it can be concluded from their names. At the end of the list, two entries mentioned Al-'Ijli al-Usturlabi, [pi he worked in the court of] Sayf al-Dawla; she was the pupil of Bitolus" (Al-'Ijli al-Usturlabi ghulâm Bitolus; Al-'Ijliya ibnatuhu ma'a Sayf al-Dawla).
The name of Al-‘Ijli and his daughter is derived from Banu ‘Ijl, a tribe which was part of Banu Bakr, an Arabian tribe whose original lands were in Nejd, in central Arabia, but most of the tribe’s bedouin sections migrated northwards immediately Euphrates. The city of Diyarbakir in southern Turkey takes its name from this tribe. The Banu ‘Ijl, mostly Bedouin, located in al-Yamama and the southern borders of Mesopotamia.

From this, albeit too brief, quotation of Ibn al-Nadim, it turns out that Al-‘Ijliya, of whom Ibn al-Nadim did not specify the first name, was the daughter of an instrument maker, and like her father, they were members of a rich tradition of engineers and astronomical instrument makers who flourished in the 9th-10th century. Ibn al-Nadim mentioned her in a section on ‘machines’ but in it on astronomical instruments only. Therefore, we do not know if Al-‘Ijliya was solely expert in this field. She worked in the court of Sayf al-Dawla in Aleppo (reigned from 944 CE to 967 CE) and was the pupil of a certain Bitolus, who taught her the secrets of the profession. She was the pupil of the same master, who seems to have been a famous astrolabe-instrument maker. We do not know where she was born nor if she learned instrument making in Aleppo or elsewhere. Among the few extant Islamic astrolabe sources can allow us to judge, she is the only woman mentioned in connection with instrument making or engineering work.

8. Patronage

Muslim women have played a major role in promoting civilisation and science in the Islamic world. Some have built schools, mosques and hospitals. The following are some examples of these women and their crucial impact on Islamic civilization.

8.1. Zubayda bint Abu Ja’far al-Mansur

Zubayda bint Abu Ja’far, the wife of Harun ar-Rashid, was the wealthiest and most powerful woman in the world of her time. She was a noblewoman of great generosity and munificence. She developed many buildings in different cities. She was known to have embarked upon a gigantic project to build service stations with water wells all along the Pilgrimage route from Baghdad to Mecca. The famous Zubayda water spring in the outskirts of Mecca still carries her name. She was also a patron of the arts and poetry.

8.2. Fatima al-Fihriyya

Fatima al-Fihri has played a great role in the civilisation and culture of her community. She migrated with her father Mohamed al-Fihriyya from Qayrawan, Tunisia to Fez. She grew up with her sister in an educated family and learnt money from her father which she used to build a mosque for her community. Established in the year 859 CE, the Qarawiyyin mosque had the oldest, and possibly the first university in the world. Students travelled there from all over the world to study Islamic studies, astronomy, languages, and sciences. It is held by some historians that Arabic numbers became known and used in Europe through this university. This is one important example of the role of women in the advancement of education and civilisation.

8.3. Dhayfa Khatun

Dhayfa Khatun, the powerful wife of the Ayyubid ruler of Aleppo al-Zahir Ghazi, was the Queen of Aleppo for six years. She was born in Aleppo in 1186 CE. Her father was King al-Adel, the brother of Salah al-Din Al-Ayyubi and she became the Queen of Aleppo as her grandson was only 7 years of age. During her 6-year rule, she faced threats from Mongols, Seljuks, Crusaders and Khuarzmein. Dhayfa was a popular queen; she removed injustices and unfair taxes throughout Aleppo. She favored the poor and scientists and founded many charities to support them. Dhayfa was a prominent architectural patron. She established large endowments for the maintenance and operation of her charitable foundations.

In addition to her political and social roles, Dhayfa sponsored learning in Aleppo which specialised in Islamic studies and Islamic law, specially the Shafi’i doctrine and had a teacher, an Imam and twenty scholars, according to the structure of i

Figure 8: Front cover of The Forgotten Queens of Islam by Fatima Mernissi, translated from French by Mary Jo Lakeland (University of Minnesota Press, 1993, hardcover).
8.4. Hürrem Sultan

Hürrem Sultan, also called Roxelana, was born in year 1500 to an Ukrainian father during the reign of Yavuz Sultan Selim, and presented to the Ottoman palace. She became his wife. During her lifetime, Hürrem Sultan was concerned with charitable works and supported a mosque complex in Istanbul and the Haseki Külliye complex, which consists of a built çifte hamam (double bathhouse with sections for both men and women) and commissioned the building of four schools in Mecca and a mosque in Jerusalem near of the Süleymaniye Mosque [24].

9. Rulers and political leaders

In addition to the roles played by women in Islamic history, as surveyed in the previous sections, we cannot finish this introductory article without pointing out the role of some Muslim women as rulers and political leaders in various regions and phases of Islamic civilisation. We have already referred to Queen Dhayfa Khatun and Princess Hurrem Sultan as patrons of great buildings and institutions in the previous section. In the following, we refer to a few outstanding women in management and governance.

9.1. Sitt al-Mulk

In Muslim Civilisation, no woman who had held power had borne the title of caliph or imam. Caliph has been a title exclusively reserved to a minority of men. However, although no woman ever became a caliph, as such, there have been women who became (Queens). Sitt al-Mulk, the Fatimid Princess in Egypt, was one of them. Intelligent and careful enough not to violate any of the rules and requirements that govern politics in the Islamic society, and while she carried out virtually all the functions of caliph, she directed the affairs of the empire quite effectively as Regent (for her nephew who was too young to rule) (Vice Sultan).

Sitt al-Mulk (970–1023), was the elder sister of Caliph Al-Hakim. After the death of her father Al-Aziz (975-996), she tried with the help of a cousin to force her brother from the throne, and she became Regent for his son and successor Al-Zahir. She continued to wield influence as an advisor after he came of age, as evidenced by the very generous apanages that came her way.

After the assumption of power, she abolished many of the strange rules that Al-Hakim had promulgated in his reign, and worked to reduce tensions with the Byzantine Empire over the control of Aleppo, but before negotiations could be completed she died on 5 February 1023 at the age of fifty-two.

9.2. Shajarat al-Durr

Another Queen bearing the title of Sultana was Shajarat al-Durr, who gained power in Cairo in 1250 CE. In fact, she brought the Muslims to victory during the Crusades and captured Louis IX, the then King of France.

Shajarat al-Durr (whose name means in Arabic ‘string of pearls’), bore the royal name al-Malikah Ismat ad-Din Umm-Khalil Shajarat al-Durr. She was the widow of the Ayyubid Sultan as-Salih Ayyub who played a crucial role after his death during the Seventh Crusade against Egypt (1249-1250). She was being of Turkic origin. She became the Sultana of Egypt on May 2, 1250, marking the end of the Ayyubid reign and the
In the course of her life and political career, Shajarat al-Durr, played many roles and held great influence within the court system that she inhabited. She was a military leader, a mother, and a sultana at various points throughout her career with great success until her fall from power in 1257. Her political importance comes from the period in which she reigned, which included many important events in Egyptian and Middle Eastern history. The Egyptian sultanate shifted from the Ayyubids to the Mamluks in the 1250s. Louis IX of France led the Sixth Crusade into Egypt, took Damietta and advanced down the Nile before the Mamluks stopped this army at Mansura. In the midst of this hectic environment, Shajarat al-Durr rose to pre-eminence, reestablished political stability and held on to political power for seven years in one form or another [25].

9.3. Sultana Razia

On the other extremity of the Muslim world and almost in the same time as Shajarat al-Durr, another woman held power, but this time in India. Razia (or Raziyya) Sultana of Delhi took power in Delhi for four years (1236-1240 CE). She was the only woman ever to sit on the throne of Delhi. Razia's ancestors were Muslims of Turkish descent who came to India during the 11th century. Contrary to custom, her father selected her, over her brothers, to be his successor. After her father's death, she was persuaded to step down from the throne in favour of her stepbrother Ruknuddin, but, opposed to his rule, the people demanded that she become Sultana in 1236.

She established peace and order, encouraged trade, built roads, planted trees, dug wells, supported poets, painters, artists without the veil, wore tunic and headdress of a man. State meetings were often open to the people. Yet, she made enemies when she tried to eliminate some of the discriminations against her Hindu subjects.

Jealous of her attention to one of her advisors, Jamal Uddin Yaqt (not of Turkish blood), her governor, Altunia, rebelled. Razia's troops were defeated, Jamal was killed in battle, Razia was captured and married to her conqueror in 1240. One of her brothers claimed the throne for himself, Razia and her new husband were defeated in battle where both died.

Firishta, a 16th-century historian of Muslim rule in India, wrote about her: "The ablest kings and the strictest scrutinizers of her actions could find in her no fault, but that she was a woman. In the time of her father, she entered deeply into the affairs of government, which disposition he once appointed her regent (the one in control) in his absence. When his daughter to such an office in preference to so many of his sons, he n women, gaming and the worship of the wind (flattery); that therefore he bear and that Raziya, though a woman, had a man's head and heart as"

9.4. Amina of Zaria

During Muslim Civilisation in Subsaharan Africa, several women excelled in various fields. Among them, was Queen Amina of Zaria. Amina of Zaria, the Queen of Zazzua, a province of Nigeria now known as Zaria, was born around 1533 during the reign of Sarkin (king) Zazzau Nohir. She was probably his granddaughter. Zazzua was one of a number of Hausa city-states which dominated the trans-Saharan trade after the collapse of the Songhai empire to the west. Its wealth was due to trade of mainly leather goods, cloth, kola, salt, horses and imported metals.

At the age of sixteen, Amina became the heir apparent (Magajiya) to her mother, Bakwa of Turunku, the ruling queen of Zazzua. With the title came the responsibility for a ward in the city and daily councils with other officials. Although her mother's reign was known for peace and prosperity, Amina also chose to learn military skills from the warriors.

Queen Bakwa died around 1566 and the reign of Zazzua passed to her younger brother Karama. At this time Amina emerged as the leading warrior of Zazzua cavalry. Her military achievements brought her great wealth and power. When Karama died after a ten-year rule, Amina became Queen of Zazzua.

She set off on her first military expedition three months after coming to power and continued fighting until her death. Her main focus, however, was not on annexation of neighbouring lands, but on forcing local rulers to
She is credited with popularising the earthen city wall fortifications, which became characteristic of Hausa city-states. She ordered the building of a defensive wall around each military camp that she established. Later, towns grew within these protective walls, many of which are still in existence.

9.5. Ottoman women.

We finish this section with a note on Ottoman women, a field of investigation that began to attract the attention of scholars. In the government of the Ottoman Empire [29]. Unlike the common perception, the Harem was an administrative centre in which a systematic investigation will be rewarded by great results.

10. Miscellania

In addition to the specialties and social roles mentioned above, other fields knew the contribution of Muslim women. For instance, in chemistry, historical sources quote the name of Maryam Al-Zinyani. Some scholars suggest that Maryam Al-Zinyani is Maryam bint Abdullah al-Hawary who died in year 758 CE in Qayrawan. In addition to writing poetry, Maryam was skilled in chemistry [31].
11. Conclusion

Muslim women participated with men in constructing Islamic culture and civilisation, excelling in poetry, literature and the arts. In addition, Muslim women have demonstrated tangible contributions in mathematics, astronomy, medicine and in the profession of health care. However, the study of the role of Muslim women in the advancement of science, technology, medicine and governance is difficult to document as there are only scant mentions of it. New light might arise from the study of not yet edited manuscripts. There are around 5 million manuscripts in archives around the world. Only about 50,000 of them are edited and most of these are not about science. Editing relevant manuscripts is indeed a strategic issue for discovering the role of Muslim women in science and civilisation.

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Footnotes


[7] Over the last few years Dr. Nadwi has, on several occasions and in different cities, given an introductory talk on the hadith. One of those talks was given in New York. Carla Power, a London-based journalist attended that occasion, and published an article in the *New York Times* (25 February 2007): see *A Secret History*. A follow-up article, done after an interview with Akram Nadwi, this one in Arabic, go here. Read also a: scholars in Islam, click here.


[12] See the articles Muslim Women in History and Al-Shifaa bint Abdullah al Qurashiyah al Adawiyah.


in Islam.


[25] See on Shajarat al-Durr the classic work of Götz Schregle *Die Sultanin von Ägypten: Sagarat ad-Durr in de O. Harrasowitz, 1961) and the recent articles by David J. Duncan, "Scholarly Views of Shajarat Al-Durr: A Need for and in Arab Studies Quarterly (ASQ), vol. 22, January 2000. Read also Amira Nowaira, Shajarat Al-Durr, From the Ha

[26] Sultana Razia by Lyn Reese in *Her Story: Women Who Changed the World*, edited by Ruth Ashby and Debc

[27] Quoted in "Muslim Women Through the Centuries" by Kamran Scot Aghaie, *Nat'l Center for History in the Sc*


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Malika IV: Hurrem Sultan (Roxolana)

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