

Damascus

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DAMASCUS

In the year 633 CE, the 18th century historian Gibbon, narrates that Caliph Abu Bakr (Caliph 632-4 CE) despatched a circular letter to the Arab tribes. It said

"In the name of the most merciful God, to the rest of the true believers. Health and happiness, and the mercy and blessing of God, be upon you. I praise the most high God, and I pray for his prophet Mahomet. This is to acquaint you, that I intend to send the true believers into Syria to take it out of the hands of the infidels. And I would have you know, that the fighting for religion is an act of obedience to God."

Gibbon continues:

"His messengers returned with the tidings of pious and martial ardour which they had kindled in every province; and the camp of Medina was successively filled with the intrepid bands of the Saracens, who panted for action, complained of the heat of the season and the scarcity of provisions and accused with impatient murmurs the delays of the caliph. As soon as their numbers were complete, Abubeker ascended the hill, reviewed the men, the horses, and the arms, and poured forth a fervent prayer for the success of their undertaking. In person, and on foot, he accompanied the first day's march; and when the blushing leaders attempted to dismount, the caliph removed their scruples by a declaration, that those who rode, and those who walked, in the service of religion, were equally meritorious. His instructions to the chiefs of the Syrian army went:

"Remember," said the successor of the Prophet, "that you are always in the presence of God, on the verge of death, in the assurance of judgment, and the hope of paradise. Avoid injustice and oppression; consult with your brethren, and study to preserve the love and confidence of your troops. When you fight the battles of the Lord, acquit yourselves like men, without turning your backs; but let not your victory be stained with the blood of women or children. Destroy no palm-trees, nor burn any fields of corn. Cut down no fruit-trees, nor do any mischief to cattle, only such as you kill to eat. When you make any covenant or article, stand to it, and be as good as your word. As you go on, you will find some religious persons who live retired in monasteries, and propose to themselves to serve God that way: let them alone, and neither kill them nor destroy their monasteries....."

All profane or frivolous conversation, all dangerous recollection of ancient quarrels, was severely prohibited among the Arabs: in the tumult of a camp, the exercises of religion were assiduously practised; and the intervals of action were employed in prayer, meditation, and the study of the Koran. The abuse, or even the use, of wine was chastised by fourscore strokes on the soles of the feet, and in the fervour of their primitive zeal, many secret sinners revealed their fault, and solicited their punishment.

After some hesitation, the command of the Syrian army was delegated to Abu Obeidah, one of the companions of Mahomet; whose zeal and devotion was assuaged, without being abated, by the singular mildness and benevolence of his temper. But in all the emergencies of war, the soldiers demanded the superior genius of Caled (Khalid Ibn Walid); and whoever might be the choice of the prince, the Sword of God was both in fact and fame the foremost leader of the Saracens. He

*obeyed without reluctance; he was consulted without jealousy; and such was the spirit of the man, or rather of the times, that Caled professed his readiness to serve under the banner of the faith, though it were in the hands of a child or an enemy. Glory, and riches, and dominion, were indeed promised to the victorious Mussulman; but he was carefully instructed, that if the goods of this life were his only incitement, they likewise would be his only reward.*¹

Gibbon dwells on the Muslim conquest of Syria, and their campaign to take Syria, providing exquisite details, unfortunately here is not the place to dwell upon them. Thus, straight onto Glubb who tells us:

*"One day, probably early in September 635, (during the Rule of Caliph Omar Ibn al-Khatab) the Arabs flooded into Damascus at dawn. The Byzantine governor surrendered on terms that all non Muslims were to pay a poll tax of one Dinar [a dinar is about 4 grams of gold] per year and a measure of wheat for the maintenance of the army. The cathedral was divided in half by a partition wall, the Muslims in future praying in one half, the Christians in the other. There was no killing or looting. These terms were of extraordinary generosity. Cities taken by storm in Europe were liable to be sacked, even as recently as the Napoleonic wars."*²

Thus began Muslim rule in Syria, a land out of which then emerged some of the greatest places civilisation ever witnessed, a civilisation they then carried to Spain to turn it from its barbaric state into the beacon of modern civilisation (see entries on Spanish cities on this site, especially Seville, the most Syrian of all Spanish cities). Amongst such great Syrian cities was Damascus.

Damascus, the Magnificent City of Islam

*"Damascus," says Yaqut (d. 1229 CE), "called Dimishk or Dimashk, is the capital of Syria, and it is the garden of the Earth."*³

Decades before Yaqut, in 1185 CE, the Valencian traveller, Ibn Jubayr saw Damascus as one of the friendliest places he had ever visited and said that *'it surpasses all other cities in its beauty . . . the paradise of the Orient.'*⁴

*"Damascus," said Idrisi, "is the most delightful of all God's cities. It is the most beautiful city of Syria, the finest in situation, the most temperate in climate, the most humid in soil, having the greatest variety of fruits, and the utmost abundance of vegetables. The greater part of the land here is fruitful, and the most portion rich. Everywhere is seen the plain country, and the houses are high."*⁵

Five converging streams made its hinterland the "Garden of the Earth," fed a hundred public fountains, a hundred public baths, and 120,000 gardens, and flowed out westward into a "Valley of Violets" twelve miles long and three miles wide.⁶

¹ E. Gibbon: *The Decline and Fall of the Roman Empire*; Methuen and Co; Limited; London; 1923 edition. vol 5; pp 415-7.

² J Glubb: *A Short History of the Arab Peoples*; Hodder and Stoughton, 1969. p.48.

³ Yaqut al-Hamawi: *Mu'ajam al-Buldan*; Wustenfled Edition; in six volumes; Leipzig; 1866. ii; ; p. 587.

⁴ S.K. Hamarneh: *Health Sciences in early Islam*; Edited by M.W. Anees; Noor Health Foundation; and Zahra Publication; 1983; Vol 1; p. 100.

⁵ Idrisi in G. Le Strange: *Palestine under the Moslems*; Alexander P. Watt; London; 1890; p.237.

⁶ W. Durant: *The Age of Faith*; Simon and Shuster; New York; 1950; pp 230-1:

It was not just the Muslims who were thrilled by the beauty and greenness of the city; the Crusaders themselves were astounded by the greenery which surrounded the city. William of Tyre's History talks of the neighbourhood of Damascus

*"where there are great number of trees bearing fruits of all kinds and growing up to the very walls of the city and where everybody has a garden of his own."*⁷



Figure 1: Omayyad Mosque⁸

The geographer al-Dimashki says:

*"The gardens of Damascus number one hundred and twenty one thousand; all are watered by a single river which comes down from the country near Az Zabadani, and the Wadi Barada. The springs coming from the heights above the wadi and the waters from the Ain al-Fijah come together and form a single river called the Barada, which below divides into seven streams, each called by its name."*⁹

The city, still according to Dimashki, in reality consists of three towns. First come the palaces, the gardens, and orchards in Ghutah, sufficient to form a large town by themselves; then, second, are the under ground water courses; and third are the houses of the city itself.¹⁰ In the heart of the city, amid a population of some 140,000 souls, tells Durant, rose the palace of the caliphs, built by Muawiya I, gaudy with gold and marble, brilliant with mosaics in floors and walls, cool with ever-flowing fountains and cascades. On the north side stood the Great Mosque, one of 572 mosques in the city, and the sole surviving relic of Umayyad Damascus.¹¹ The mosque, Dimashki goes on to say:

"is one of the wonders of the world. On the middle night of the month of Sha'aban they light in it twelve thousand lamps, and burn fifty Damascus quintars weight (quintar = 100kgs) of olive oil,

⁷Historia; XVII, 3; Paulin Paris's edit.; vol ii; p. 141 in J.K. Wright: *The Geographical Lore of the Time of the Crusades*; Dover Publications; New York; 1925. p. 239.

⁸ <http://www.benjaminranck.com/photos/lebanon2004/pages/DamascusGreatMosque.html>

⁹ Al-Dimashki; in G. le Strange: *Palestine*; op cit; p. 265.

¹⁰ Dimashki in G. le Strange; p. 265.

¹¹ W. Durant: *The Age of Faith*; op cit; pp 230-1:

and this not counting what is consumed in the other edifices, such as the colleges, mosques, convents, cloisters, and hospitals. The walls of the mosque are faced with marble after the most exquisite manner ever seen, and above are mosaics in coloured glass and gold and silver. The length of the mosque from east to west is 282 ells, and the width is 220 (or 210) ells [1 ell = 1.143 metre]. The roof is covered with sheets of lead.”¹²

Durant’s description of the building goes:

“The whole land tax of the empire, we are told, was devoted for seven years to the construction of the mosque; in addition a large sum was given to the Christians to finance a new cathedral. Artists and artisans were brought in from India, Persia, Constantinople, Egypt, Libya, Tunis, and Algeria; all together 12,000 workmen were employed, and the task was completed in eight years. Muslim travellers unanimously describe it as the most magnificent structure in Islam; and the Abbassid caliphs al-Madi and al-Mamun — no lovers of the Umayyads or Damascus — ranked it above all other buildings on the earth. A great battlemented wall, with interior colonnades, enclosed a spacious marble-paved court. On the south side of this enclosure rose the mosque, built of squared stones and guarded by three minarets — one of which is the oldest in Islam... The roof and dome — fifty feet in diameter — were covered with plates of lead. The interior, 429 feet long, was divided into nave and aisles by two tiers of white marble columns, from whose gold-plated Corinthian capitals sprang round or horseshoe arches, the first Moslem examples of this latter form. The mosaic floor was covered with carpets; the walls were faced with coloured marble mosaics and enamelled tiles; six beautiful grilles of marble divided the interior in one wall, facing Mecca, was a mihrab lined with gold, silver, and precious stones. Lighting was effected through seventy- four windows of coloured glass, and 12,000 lamps. “If,” said a traveller, “a man were to sojourn here a hundred years, and pondered each day on what he saw, he would see something new every day.” A Greek ambassador, allowed to enter it, confessed to his associates: “I had told our Senate that the power of the Arabs would soon pass away; but now, seeing here how they have built, I know that of a surety their dominion will endure great length of days.”¹³

Ibn Jubayr, the 12th century Valencian traveller, tells that the Mosque has four gates, and also describes something remarkable worth quoting at good length:

“On your right hand, coming out of the Bab Jarun, in the wall of the portico fronting you, is a gallery, which has the form of a great archway, and set around it are arches of brass, in which open small doors, in number according to the number of the hours of the day. Through the working of a piece of mechanism, when one hour of the day is passed, there fall two weights of brass from the mouths of two falcons fashioned in brass, who stand above two brazen cups, set one under each of the birds. One of the falcons is below the first of the doors, and the second below the last of them. Now the cups are perforated, and as soon as the balls have fallen, they run back through a hole in the wall to the gallery. The falcons appear to extend their necks when holding the balls, leaning towards the cups, and to throw the balls off with quick motion, so wondrous to see that one would imagine it was magic. With the falling of the two balls into the two cups, there is heard a sound (as of striking) a bell: and thereupon the doorway, which pertains to the hour that has elapsed, is shut with a brass door. A similar action goes on for each of the hours of the day; and when all the hours of the day are passed, all the doors are shut. When all the day hours are passed, the mechanism returns to its first condition. For the hours of the night they have another mechanism. It is this... In

¹² Dimashqi in G. le Strange; op cit; p. 265.

¹³ W. Durant: The Age of Faith; op cit; pp 230-1:

the bow of the great arch, which goes over the small arches (with the doors), just mentioned, are twelve circles cut out in the brass, and over each of these openings, in the wall of the gallery, is set a plate of glass. This is all so arranged as to lie behind the doors (for the day hours) above mentioned. Behind each glass is a lamp glass, which is water set to run for the space of one hour. When the hour is past, the light of the lamp coming down, illumines the glass, and the rays shine out of the round opening in front of it, and it appears to the sight of a red circle. This same happens to each circle in turn, till all the hours of the night are passed, and then all the circles have red light in them. There are eleven workmen (belonging to the mosque) who attend to this gallery, and keep the mechanism in order, and see the opening of the doors, and the running back of the weights into their proper places. This (piece of mechanism) is what people call al-Mikanikiyah. " ¹⁴

Sarton tells without making it explicit, that there was a famous clock in one of the gates of Damascus, which was hence called Bab sa'a. It was placed there about the middle of the twelfth century and diverse medieval travellers mentioned it.¹⁵ It was constructed and taken care of by one Muhammad ibn 'Ali al-Khurasani, and after Muhammad's death it was repaired and kept in good order by his son, Ridwan Ibn al-Saati. In 1203 the latter wrote a treatise explaining its construction and use.¹⁶ It is certain that this is the same clock which Ibn Jubayr describes.

Syrian construction genius is also seen in the architecture of the madrasas. We learn that courses of coloured stone were used to accentuate building facades.¹⁷ The Zahiriyya madrasa of Damascus, which also housed the tomb of its founder, the Mamluk sultan Baybars (d. 1277), has a portal constructed of black and white courses; the tomb chamber has a lavishly decorated mihrab and band of glass mosaic imitating designs used in the eighth-century Umayyad mosque.¹⁸ Typically Syrian madrasas had an elaborately decorated portal and an inner courtyard onto which opened living chambers along with a small mosque and larger rooms for classes; the latter often in the form of barrel-vaulted eyruds, a feature that may suggest Iraqi influence.¹⁹ In addition to lecture halls and cells for the students, Syrian madrasas of the twelfth and thirteenth centuries, of which almost 200 are recorded in the medieval sources, often had an oratory and an attached mausoleum for the founder.²⁰ From Syria the fashion quickly spread to Egypt, encouraged by Salah Eddin after 1171, following his victory over the Fatimids.²¹

Damascus, just like the rest of Syria, is also famed for its industries. Idrisi again:

"The city of Damascus contains all manner of good things, and streets of various craftsmen, with merchants selling all sorts of silk and brocade of exquisite rarity and wonderful workmanship—all this, such that the like exists nowhere else. That which they make here is carried into all cities, and borne in ships to all quarters, and all capital towns both far and near. The manufacture of the Damascus brocade is a wonderful art. " ²²

Lapidus outlines the city's medieval industries, which include fine household decorations, utensils, and jewellery in gold and silver, brass and copper. It was famous for silks, cottons, linens, decorative brocades

¹⁴ Ibn Jubayr; pp 262-97 in G. le Strange: Palestine; op cit; pp. 249-50.

¹⁵ G. Sarton: *Introduction to the History of Science*; The Carnegie Institute; Washington; 1927 fwd. p. 27.

¹⁶ G. Sarton: 2; p. 27.

¹⁷ R. Hillenbrand: *Madrasa; Dictionary of Middle Ages*; Vol 8. J.R. Strayer Editor in Chief; Charles Scribner's Sons; New York; 1982 fwd. Vol 8; p. 11.

¹⁸ R. Hillenbrand: *Madrasa*; p. 11.

¹⁹ P.P. Soucek: *Islamic Art and Architecture; Dictionary of the Middle Ages*; Vol 6; pp. 592-614; p. 607.

²⁰ R. Hillenbrand: *Madrasa*; op cit; p. 11.

²¹ R. Hillenbrand: *Madrasa*; p. 11.

²² Idrisi in G. Le Strange: Palestine; op cit; p. 239.

and embroidered garments, tents, horse-trappings and robes made for Mamluk elites. The city's craftsmen turned their skills towards making weapons and precision instruments such as quadrants and astrolabes. High quality building crafts flourished. Even Cairo made use of her plasterers, masons, marble workers and brick manufactures. Damascus had an active glass industry, noted for gilded lamps, vases, ewers and bowls. Nor were iron, ceramic, leather, paper and the manufacture of fine confections neglected. Damascus was of singular importance as a producer of luxury goods which were exported throughout the empire and abroad.²³

In Damascus, underglaze painting predominated, and some vessels contain Persian patterns. In such ceramic ware, designs are drawn directly on the body, usually in black or blue; red and green highlights are sometimes added, the surface then is covered with a transparent, usually colourless, glaze.²⁴ From Damascus the technique was carried to Cairo, probably by Syrian craftsmen who settled there.²⁵

An industry that made the fame of Damascus was the paper industry. The first paper mills in the land of Islam were built in Baghdad in the late 8th century. After Baghdad, paper manufacturing rapidly spread west to Damascus, Tiberias and Syrian Tripoli. The factories set up in Syria benefited greatly from the favourable conditions for growing hemp. Syrian paper was regularly shipped to Egypt, the Red Sea ports, and India. The paper mills constructed in Damascus were the major sources of supply to Europe, which as production increased, became cheaper, more available and better quality. Cotton paper, sold as charta Damascena, was previously made at Damascus.²⁶



Figure 2: The Azem Palace²⁷

²³ I.M. Lapidus: *Muslim Cities in the later Middle Ages*; Harvard University Press; Cambridge Mass; 1967.pp.19-20.

²⁴ P.P. Soucek: *Islamic Art and Architecture; Dictionary of the Middle Ages*; Vol 6; pp. 592-614. p. 608.

²⁵ P. Soucek; *Islamic ..* p. 608.

²⁶ J.W. Draper: *A History of the Intellectual Development of Europe*; Revised edition; George Bell and Sons, London, 1875. Vol II:p.200

²⁷ http://www.syriait.net/photos/uncategorized/azem_palace_1.jpg

Damascus was described as a glassmaking centre by Ibn Battuta (d. 1377) and Niccolo of Poggibonsi who travelled in the Holy Land in 1345-6.²⁸ Lamm assigned two main groups of vessels to Damascus: one decorated with fish placed in herringbone patterns, arabesques, and scenes of revelry, and the other with "Chinese" ornament.²⁹ Another Damascene tradition was the manufacture of enamelled and gilded glass and lamps decorated in this manner became especially popular in the thirteenth and fourteenth centuries in Egypt where they were used in many Mamluk buildings.³⁰ The political links between Syria and Egypt, particularly during the Ayyubid and Mamluk periods (1169-1517), led to the migration of craftsmen from one region to the other and the creation of a unified style in both regions.³¹ Glass production may have ceased after Timur Lang's invasion of 1401. It was Timur who, as will be shown later, did not just end manufacturing in Syria, but also slaughtered the population of the country to large measure, and destroyed the culture and civilisation of Damascus for centuries to come.

Damascus: City of Munificence and Learning

When he reached Damascus, the Moroccan traveller, Ibn Battuta (b. Tangier 1304; d. 1368-9) is struck by the dedication of its population to all forms and manners of religious charitable foundations. There were so many foundations that it became difficult for him to count them. He cites as examples legacies by people who could not travel to Mecca to pay others to do it; foundations aimed at providing girls from poor backgrounds with all the requirements for their marriage; foundations devoted to purchasing the freedom of Muslim prisoners; others for paying the maintenance of roads, and so many more.³² Once, he saw a young boy dropping a porcelain plate, which broke. The passer-bys told the boy to take the pieces to the foundation for utensils. Consequently the boy got a refund for the value of a new plate.³³ The people of Damascus, in their great numbers, also provided waqfs for schools, hospitals and mosques. It was a city, as Ibn Battuta tells us, where the social spirit was at its optimum.³⁴

Damascus is not just historically generous with its wealth, it is generous by nature. It is possibly the city which offered the most welcomes to refugees, more than any other in history. This brief outline by Bianquis captures this. In the 12th century, we find the Andalusian refugees chased from Spain by the Christian reconquest; former inhabitants of Napluse in Palestine fleeing the Franks, the new masters of Palestine; the 13th century witnesses the arrival of Iraqi and Iranian refugees fleeing the Mongol onslaught, and again more refugees from Spain.³⁵ In the 16th century, it is more refugees from Spain, both Muslim and Jewish, seeking the protection of the Ottoman empire, then in the 19th century it is refugees from the Caucasus, Kurds, and Turks fleeing the advance of the Russian armies.³⁶ In the same century, it is the Algerians refusing French colonisation who arrive in large numbers, and so do the Albanians and other Balkan Muslims fleeing nationalist Christian risings.³⁷

²⁸D. Whitehouse: Glass in *Dictionary of the Middle Ages*; op cit; vol 5; pp. 545-8; p. 547.

²⁹D.Whitehouse: Glass; p. 547.

³⁰ P. Soucek; *Islamic*; op cit. p. 608.

³¹ P. Soucek; *Islamic ..* p. 608.

³²Barron Carra de Vaux: *Les Penseurs de l'Islam*; Geuthner, Paris, 1921; vol 2. p. 95.

³³ BCV 95.

³⁴ BCV 95.

³⁵ Thierry Bianquis: Damas in *Grandes Villes Meditteraneenes du Monde Musulman Medieval*; J.C. Garcin editor; Ecole Francaise de Rome; 2000; pp. 37-55; at p. 43.

³⁶ Thierry Bianquis: Damas; at p. 43.

³⁷ Thierry Bianquis: Damas; at p. 43.

Damascus was also at the forefront in providing assistance for education. Nur al-Din, the founder of schools, gave large collections of books to the various libraries.³⁸ Towards the end of his life, the Damascus doctor Muhaddab Eddin Al-Dawhar, who was childless, transformed his house which was located south of the Mosque of the Umayyads into a madrasa for the teaching of medicine.³⁹ He attributed to it waqfs to secure its running, the payment of teachers' salaries and also grants for students and he himself taught there before his death.⁴⁰ He requested that, after his death, Saraf Eddin Ali Ibn Rahbi (d. 1268) - the son of a well known doctor - should be appointed Professor there.⁴¹ During his visit to Damascus, the traveller, Ibn Jubair reported the high number and varied facilities for foreign students and visitors at the Umayyad Mosque, and he himself encourages students from Spain to go east for education.⁴² Ibn Jubair holds that

*"Anyone in the West who seeks success, let him come to this city (Damascus) to study, because assistance here is abundant. The chief thing is that the student here is relieved of all worry about food and lodging, which is a great help."*⁴³

The madrasas, the precursors of our modern university colleges, were first established by the Seljuk leader Nizam al-Mulk (murdered by the Ismailis in 1092). Following his death, madrasas spread so rapidly that at some point in the medieval times, according to Tawtah,⁴⁴ there were 73 colleges in Damascus alone (41 in Jerusalem, 40 in Baghdad, 14 in Aleppo, 13 in Tripoli, 9 in al-Mawsil and 74 in Cairo, in addition to numerous institutions in other cities.)⁴⁵ A later author, writing around 1500, counted about 150 madrasas in Damascus alone.⁴⁶

Shalaby offers an excellent description of one such illustrious madrasa: the al-Nuriyyah al-Kubra in Damascus founded by Nur al-Din, and which was described by Ibn Jubair as one of the best colleges in the world.⁴⁷

*"It is situated in Khatt al-Khawwasin which is now called `al-Khayyarin' and it is about half a mile south West of the Umayyad Mosque. The school has a `monumental' entrance: an arch with an outer door, and a broad passage leading to the court with a second door halfway along. The lintel of the outer door is adorned with the endowment tablet. The school had its Iwan, which then, was the most important place in the Muslim school. It is the equivalent of the modern lecture room, and there where the halaqat were held. Not far from the Iwan was the mosque, which took the significant place in a medieval school. The mosque was also open to other worshippers, and it was thus normal that it was remote from the Iwan. The school also included eight lodges for the students, and the caretaker's lodgings, the latrines, and also a kitchen and dining hall, the food store and the general store for the building. This madrasa, in most parts, still stands up to now."*⁴⁸

³⁸ Ibid, p. 102.

³⁹ A.M. Edde: Les Medecins dans la societe Syrienne du 13 em siecle; in *Annales Islamologiques*; Vol XXIX; pp. 91-109; at p. 96.

⁴⁰ A.M. Edde: les medecins dans la societe Syrienne; at p. 96.

⁴¹ A.M. Edde: les medecins dans la societe Syrienne; at p. 96.

⁴² Ibn Jubair in K.A Totah: *The contribution of the Arabs to education*; New York; Columbia University Press, 1926. p. 45.

⁴³ Ibid.

⁴⁴ Bayard Dodge: *Muslim Education in Medieval times*; The Middle East institute, Washington, D.C. 1962. p. 23.

⁴⁵ J. Pedersen: *The Arabic Book*, tr by G French; Princeton University Press; Princeton, New Jersey (1984). p. 128.

⁴⁶ J. Pedersen, *The Arabic Book*, p. 128.

⁴⁷ Ibn Jubayr: *Al-Rihla* (The Travels of Ibn Jubayr), Tr. R.J.C. Broadhurst, Jonathan Cape, 1952, p. 284.

⁴⁸ In A Shalaby: *History of Muslim Education*. Beirut: Dar al Kashaf, 1954. pp 65-7.

Ibn-Jubair writing about his visit to Damascus in 1184, also said:

*"There is in this city an old and a new hospital. The old hospital was constructed on the same plan as the new one, but it is not as well furnished as the new one. It is situated west of the al-Mukarrem mosque. Both of these constitute a true glory of Islam."*⁴⁹

The first known hospital in Islam was built in Damascus in 706 C.E. by the Ummayyad Caliph: al-Walid Ibn Abd al-Malik. It was to cater for various sorts of patients including the blind, but also the lepers (then, in Europe, and for centuries thereafter, lepers were burnt to death by royal decree.) This hospital was well equipped and well staffed, and was to serve as the model for other hospitals to follow in the region. This is very certainly the first Muslim hospital to have been built.⁵⁰ Al-Walid appointed physicians to staff the hospital and paid them for their services; he ordered that lepers be isolated so that they would not contaminate the other patients in the hospital.⁵¹

Under the Seljuks was added another hospital, located in the quarter known as Bab al-Barid, west of the great mosque, founded by the Seljuk leader Duqaq, towards the end of the 11th century. In the 13th century, it was still standing as Izz Eddin Ibn al-Suwaydi (d. 1291) was working there.⁵²

The most important hospital of the city was to be built much later in 1156 C.E., by Nur al-Din Zangi and it was known as Al-Nuri Hospital. The revenues of the hospital according to al-Maqrizi were due to the fact that Nur-al-Din had made prisoner a European king and had planned to have him executed. But the king paid as his ransom, four forts and 500 000 dinars, and hence he was released.⁵³

On this hospital, the 13th century medical historian, Ibn abi Usaybi'ah wrote:

*"When Nur-al-Din built the Grand Bimaristan he appointed as the director Abul Majd al-Bahilli. This physician went regularly to the hospital to care for the patients, to examine them and to give the necessary orders to the attendants and servants who worked under his direction. After that this physician went to the citadel to examine the dignitaries and the noblemen that were ill. This task completed he returned to the hospital, sat in the liwan (vestibule hall) richly furnished, and commenced his lectures."*⁵⁴

Under the direction of the physician Abu al-Majid al-Bahili, Nur ad-Din equipped the hospital with adequate supplies of food and medication, and donated in addition a large number of medical books to be housed in a special hall serving as library.⁵⁵ Eminent physicians worked at the hospital. Muhadhib ad-Din Ibn an-Naqqash (d. 1178) headed an-Nuri hospital besides serving King Nur ad-Din as chief physician.⁵⁶ His son Najm ad-Din served in the same hospital, then was promoted to the rank of wazir for the Ayyubiyah. Early in the thirteenth century, the physician ad-Dakhwar first served in an-Nuri hospital at a low salary, then, as

⁴⁹ Cited by A Issa Bey: *Histoire des hopitaux en Islam*; Beirut; Dar ar ra'id al'arabi; 1981. p. 191.

⁵⁰ A. Isa Bey: *Histoire*; op cit; p. 188.

⁵¹ A. Isa Bey: *Histoire*; op cit; p. 188.

⁵² A.M. Edde: *Les Medecins dans la societe Syrienne*; op cit; pp. 95-6.

⁵³ Al-Maqrizi, *Al-Kitat Wal Athar*, Vol. V, p. 408. Cited by Issa Bey, p. 191.

⁵⁴ Ibn abi Usaybi'ah, *UYun al-Anba fi Tabaqat al-Atibba*, ed. by August Müller, Königsberg, 1884. Vol. II. p. 155.

⁵⁵ S.K. Hamarneh: *Health Sciences in early Islam*, 2 vols, edited by M.A. Anees, vol I, Noor Health Foundation and Zahra Publications, 1983. p. 100.

⁵⁶ S.K. Hamarneh: *Health Sciences in early Islam*; p. 100.

he increased in fame, his income from private practice brought him much wealth and he started a medical school in the city.⁵⁷ In the hospital, too, teaching and discussions on topics related to medicine were conducted.⁵⁸ Many renowned physicians taught at the hospital's medical school, which it is said had elegant rooms, and of course the library mentioned previously. The physicians and practitioners assembled before Nur Eddin Zangi to discuss medical subjects and to listen to the lectures that Abul Majd gave his pupils; these would last three hours.⁵⁹ A number of Muslim physicists graduated from there. Among the well-known students are Ibn Abi Usaybi'ah (1203-1270), the famous medical historian and 'Ala ad-Din Ibn an-Nafis (d.1289) whose discovery of the lesser circulation of the blood marked a new step in better understanding of human physiology and was the earliest explanation until William Harvey (1628).⁶⁰

At the hospital, health provision was universal as noted by Ibn Abi Usaybi'a who relates the story of an eminent Syrian doctor of the 12th century who, after examining the sick in the hospital, went to court to treat the people belonging to the elite.⁶¹

The hospital also innovated in the keeping of patients' records. Ibn Jubayr praised the way in which the administrator kept a register of the patients,⁶² probably the earliest of its kind in the history of hospitals.⁶³ Beside each name, the physician daily listed the patient's requirement of diet and medication after he had made his rounds⁶⁴.

Al-Qalgashandi (1355-1418) affirms that the administrator of an-Nuri hospital in his time was given, as a token of his prestige, title of honour, Shihab ad-Din. He was authorized to exhort the employees to render better service to the patients and each department to execute its duties faithfully and efficiently.⁶⁵

Khalil ibn-Shahine al-Zahiri told about his visit to Damascus :

*"I was accompanied by a distinguished and affable Persian. When he visited the al-Nuri hospital and saw the diets, the utilities and the comforts to be found there, he decided to see for himself, what being a patient was like in that hospital. He pretended illness and was admitted to the hospital. There the medical chief visited him every day and took his pulse and prescribed his diet, consisting of a variety of meats, fat chickens, candies and drinks and fresh fruits. On the third day the doctor told him that such patients were not allowed to stay more than three days, and asked him to leave."*⁶⁶

⁵⁷ S.K. Hamarneh: Health Sciences in early Islam; p. 100.

⁵⁸ Ibn Abi Usaybi'ah: *Tabaqat*, vol 3, op cit; pp 256-7.

⁵⁹ A. Whipple: *The Role of the Nestorians and Muslims in the History of Medicine*. Microfilm-xerography by University Microfilms International Ann Arbor, Michigan, U.S.A. 1977. p. 88.

⁶⁰ Max Meyerhof, 'Ibn an-Nafis and his Theory of the Lesser Circulation,' *ISIS*, 1935, 23 112.

⁶¹ Ibn Abi Usaybi'a ` *Uyun al-anba fi tabaqat al-attiba'*, edited by A. Mueller, Cairo/Konigsberg; 1884, reprint, 1965, p. 628 in F. Micheau: The Scientific Institutions in the Medieval Near East, in *Encyclopaedia of the History of Arabic Science* 3 Vols. Edited by R Rashed; Routledge, London and New York: 1996. vol 3, pp. 985-1007 p. 1001.

⁶² Ibn Jubayr, *Rihlat*, op cit; pp. 283-4.

⁶³ S.K. Hamarneh: Health Sciences; op cit; p. 100.

⁶⁴ Ibn Jubayr, *Rihlat*, op cit; 283-4.

⁶⁵ Ahmad al-Qalgashandi: *Subh al-A 'sha*; Cairo, 1918, vol. 12, 84-85.

⁶⁶ 1 Khalil ibn-Shahine al-Zahiri: *Tableau politique et administratif de la Syrie*, Paris, 1894. Quoted by Issa Bey, p. 192.

It is worth noting that fragments of this hospital's original building which served in promoting public medical care for about seven centuries remain to this day, and is reconstructed to its original design and structure.⁶⁷

A final scholarly institution here is the observatory. At the same time as observations were developed in Baghdad (9th century), they were equally so in Damascus, where another observatory was set up on the outskirts of the city on Mount Qasiyun.⁶⁸ The best able astronomers of the era were brought together at the expense of the sovereign, charged most particularly with proving the data in Ptolemy's *Almagest*, and of making observations of the sun and the moon for one year.⁶⁹ The superintendent at the observatory of Damascus was the scholar Abu Mansur (b. 885).⁷⁰ At that early stage, already, large instruments were gradually being introduced, which in Damascus include a 20 ft quadrant and a 56 ft sextant.⁷¹

The Scholars of Damascus

Abu-I-Fadl Jaafar ibn 'Ali al-Dimishqi is an economist who flourished in Damascus and other places in Syria. He composed in or before 1175 the *Kitab al-ishara ila mahasin al-tijara wa matrifat al-jayyid al-atrad wa radiha wa ghushush al-mudallisin fiha* (Book explaining the benefits of commerce and the knowledge of good and bad qualities [of wares] and the falsifications of counterfeiters).⁷² One of the two manuscripts of it (both Damascene) was completed April 20, 1175. It is a work of great importance dealing not only with the knowledge of many wares and their falsifications, but also with the theory and practice of commerce, and even with economic subjects.⁷³ It examines such questions as the true meaning of wealth or ownership (*haqiqat al-mal*), the various kinds of possessions, the origin and use of money, the means of testing money, how to pack and preserve goods, how to determine their average prices, and how to protect property, whilst the chapters relative to wares contain abundant information on stones and metals, perfumes, textiles, etc., and the connected arts and trades.⁷⁴

Ibn Asakir (d.1176) distinguishes himself with his great History of Damascus: *Tarikh Dimashq*. He lived in Damascus, and taught tradition at the Umayyad Mosque, then in college. The first two volumes of his are devoted to Damascus and its monuments, and the two others, by alphabetical order, give the entries on the main figures of the city: princes, governors, judges, poets...⁷⁵

⁶⁷ S.K. Hamarneh: Health Sciences in early Islam; op cit; p. 100.

⁶⁸ A.L. Sedillot: *Histoire generale des Arabes*, 2 Vols., Paris, 1877. Vol 2.2, p. 8.

⁶⁹ F. Micheau: The Scientific Institutions in the Medieval Near East, op cit; p. 993.

⁷⁰ B. Hetherington: *A Chronicle of Pre-Telescopic Astronomy*; John Wiley and Sons; Chichester; 1996. p.101.

⁷¹ B. Hetherington: *A Chronicle*; p. 93.

⁷² The text of the MS. dated 1175, kept in the Khedivial Library, Cairo, was published in Cairo, 1318 H. Many extracts are translated into German in Wiedemann's and Ritter.

-Eilhard Wiedemann: Mineralogisches aus einer arabischen Handels- und Warenlehre; Beitrage 30 Sitzungsber. der physik. med. Sozietat, vol. 44, pp. 229-35, Erlangen 1912;

-E. Wiedemann: Kuiturgeschichtliche und klimatologisches aus arabischen Schriftstellern; Archiv fur Geschichte der Naturwiss., vol. 5, 60-61, 1913;

-E. Wiedemann: Aus der arabischen Handels- und Warenlehren von Abu'1 Fadl Beitrage 32, Erlangen Sitzungsber., vol. 45, pp. 34-54, 1914.

-Hellmut Ritter: Ein arabisches Handbuch der Handelswissenschaft; in *Der Islam*, vol. 7, 1-91, 1917;

⁷³ G. Sarton: Introduction; op cit; vol 2; p. 462.

⁷⁴ G. Sarton: Introduction; vol 2; p. 462-3.

⁷⁵ History by C Bouamrane: in C Bouamrane-Louis Gardet: *Panorama de la pensee Islamique*; Sindbad; Paris; 1984; pp 252-

Ibn Abi Usaybia (1203-69) is a Muslim physician and historian of medicine. He was born in Damascus where he studied medicine before emigrating to Cairo; there he was physician at the hospital; he then became physician to the Emir Azeddin in Sarkar.⁷⁶ He obtained different managerial positions at hospitals in both Cairo and near Damascus in Syria; he also studied and classified herbs with Ibn al-Baytar of Malaga, entered into correspondence with Abd al Latif and personally knew many physicians.⁷⁷ He compiled a collection of medical observations which is lost.⁷⁸ He has the distinction of being the first historian of Muslim medicine in his *Lives of the Physicians: Uyun l'Anba fi Tabaqati'l Atiba* ;(Sources of information on the classes of physicians), the first edition of which was published in 1245-6.⁷⁹ Uyun is a series of bio-bibliographies of the most eminent physicians from the earliest times to his own. It was composed near Damascus in 1242, but revised at a later date.⁸⁰ It is our main source for the history of Muslim medicine; it deals with about 400 Muslim physicians, but it also deals with others. It is divided into fifteen chapters:

1. Origins of medicine;
2. Early physicians
3. Greek Physicians
4. Hippocrates and his contemporaries
- 5 Galen and his time
6. Physicians of Alexandria
7. Physicians of the Prophet's time
- 8 Syrian Physicians under the early Abbasids
9. The translators and their patrons
- 10 to 15: the last six chapters deal with the physicians respectively of Iraq; Persia; India; the Maghrib and Spain; Egypt; Syria.⁸¹

Although the work focuses on medicine, it also incorporates the facts relating to such figures, who were not just physicians, but also mathematicians, physicists, astronomers, philosophers or men of encyclopaedic interests; thus, the Uyun is a source of Muslim history of science in general.⁸² The work was edited into Arabic by Imru-l-Qais Ibn al-Tabban in the late 19th century in Cairo,⁸³ and the same text was republished by A. Muller with 162 additional pages, including a German preface, lists of corrections and variations and a complete index in 2 volumes soon after.⁸⁴ There is a more recent edition of the work in Beirut dating from 1957.⁸⁵ Yet, as Sarton perfectly laments, there is no version of this immense work in English.⁸⁶

Ibn Khalikan (d.1282) undertook work on his dictionary whilst acting as a man of the law in Damascus and then in Cairo. Ibn Khalikan originally comes from Irbil where he was born in 1211 and received his education from his father who was a teacher at the madrasa of Irbil, before he continued his studies in Aleppo, followed by Damascus

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⁷⁶ D. Campbell: *Arabian Medicine and its Influence on the Middle Ages*; Philo Press; Amsterdam; 1926; p. 83.

⁷⁷ G. Sarton: Introduction; op cit; vol 2; p. 685.

⁷⁸ G. Sarton: Introduction; op cit; vol 2; p. 685.

⁷⁹ D. Campbell: *Arabian Medicine*; p. 83.

⁸⁰ G. Sarton: Introduction; op cit; vol 2; p. 685.

⁸¹ G. Sarton: Introduction; op cit; vol 2; p. 685.

⁸² G. Sarton: Introduction; op cit; vol 2; p. 685.

⁸³ Ibn Abbi Usaybiya: *Uyun l'Anba fi Tabaqati'l Atiba* edited by Imru-l-Qais Ibn al-Tabban; Cairo; 1882.

⁸⁴ Ibn abi Usaybi'ah: *UYun al-Anba fi Tabaqat al-Atibba*, ed. In 2 vols by August Müller, Königsberg, 1884.

⁸⁵ Ubn Abi Usaybia: *Uyun al-Anba fi Tabaquat al-Attiba*, Beirut, 1957.

⁸⁶ G. Sarton: Introduction; op cit; vol 2; p. 685.

and finally Egypt.⁸⁷ From 1260 to 1270 and also after 1277, he was chief Qadi of Syria with residence in Damascus, where he also taught in various colleges, chiefly at the Aminiya madrasa until his death in 1282 (he had also taught during Baybars' rule in Egypt between 1270-1277 at the Fakhriya madrasa in Cairo).⁸⁸

His major work is entitled *Wafayat al-Ayan*, which is a major biographic work, that includes 865 entries of important personalities, ranked in alphabetical order.⁸⁹ Ibn Khalikan went back to the 3rd century AH/9th century, and covered the whole period up to his time. In every entry he indicated the origin of the person - there were 865 in total - the date of birth if known and date of death.⁹⁰ He gave good accounts on the character of his subject, citing both work and achievements and he took considerable pains to give accurate information, e.g. to trace genealogies, to establish the right spelling of names, to indicate the main traits of each personality and illustrate them by anecdotes, to fix dates of birth and date.⁹¹ He, in fact, omitted many biographies simply because he was unable to ascertain the exact date of death.⁹² Ibn Khalikan's dictionary was continued twice, first by Al-Muwafaq Fadlalah who wrote the *Tali Kitab wafayat al-Ayan*, which contains the biographies of Egyptians and Syrians between 1261 and 1325, and second by Muhammad Ibn Shakir al-Kutubi (d. 1363) who wrote *fawat al-Wafayat* (omissions from the deaths).⁹³

Ibn al-Nafis (b. near Damascus 13th century; d. Cairo Dec 1288.) studied medicine at the Great Nuri hospital in Damascus that was founded by Nur Eddin Zangi. Amongst Ibn al-Nafis' great works is *Kitab al-Shamil fi sinaat al-Tibiyya* (Comprehensive book on the art of medicine), which he wrote in his thirties, and which consisted in 300 volumes of notes, eighty of which only were published. This voluminous work was thought to have been lost until in 1952 when one large but fragmentary volume was discovered among the Islamic manuscripts at Cambridge University.

The data regarding the life and activities of Ibn-al-Nafis are taken from two sources - one from the thesis of Chehade,⁹⁴ the other from an article by Haddad and Khairallah, in which they give translations from the treatise of Ibn-al-Nafis on the pulmonary circulation.⁹⁵ Ibn-al-Nafis followed his medical studies under the tutelage of the great master in Damascus, al-Dahwar, as well as other able physicians in that city.⁹⁶ It is not certain when he migrated to Egypt and settled in Cairo. But it was there that he worked in the al-Nasiri Hospital founded by Salah Eddin, and became the physician-in-chief and later the dean of that institution. The medical historian Ibn-Abi-Usaybi'ah, was undoubtedly a contemporary of Ibn-al-Nafis, for they both had studied together under al-Dahwar in Damascus, and were colleagues in the Nasiri Hospital; while Ibn-al-Nafis was dean, Usaybi'ah was in charge of the ophthalmologic service in that hospital.⁹⁷

Chehade discusses Ibn-al-Nafis' knowledge of the medicine of his day, saying that his knowledge and understanding of the works of Galen and Ibn Sina was vast, but Ibn-al-Nafis, contrary to most of his peers

⁸⁷ G. Sarton: Introduction; op cit; vol 2; p. 1120.

⁸⁸ G. Sarton: Introduction; op cit; vol 2; p. 1120.

⁸⁹ Ibn Khalikan: *Wafayat al-Ayan wa-Anba Abna al-Zaman*, Maymunyah Press, Cairo, 1888. Ibn Khalikan's biographical Dictionary, tr., M. De Slane Duprat, Paris and Allen & Co., London, 1843.

⁹⁰ Ibn Khalikan: *Wafayat al-Ayan wa-Anba...*

⁹¹ G. Sarton: Introduction; op cit; vol 2; p. 1120.

⁹² G. Sarton: Introduction; op cit; vol 2; p. 1120.

⁹³ G. Sarton: Introduction; op cit; vol 2; p. 1120-1.

⁹⁴ A K Chehade, *Ibn-al-Nafis, et la Découverte de la circulation Pulmonaire*, Damascus, 1955.

⁹⁵ S. I. Haddad and A. A. Khairallah: A Forgotten Chapter in the History of the Circulation of the Blood," *Annals of Surgery*. Vol. 404 (July, 1936), pp. 1-8.

⁹⁶ A. Whipple: The Role; op cit; p. 47.

⁹⁷ G. Sarton: Introduction; op cit; vol ii; p. 1099.

and predecessors, was an accurate observer who carefully recorded the facts that he had observed himself.⁹⁸ His love of the truth and his logical mind made him refuse to follow blindly traditional doctrines, which led him to oppose the dogmatic teachings of Galen and Ibn Sina when he considered them false, and did not hesitate to criticize them in definite terms, as had never been done before.⁹⁹ In his *Commentary on the Anatomy of Ibn Sina's Qanun*, in which he discussed the pulmonary circulation, Chehade states that Ibn-al-Nafis' treatise is to be found in a number of manuscripts- in Berlin, Paris, Bologna, Beirut, Damascus, the Escorial, Istanbul, and Oxford.¹⁰⁰

Ibn al-Nafis is the first to have written an accurate account on the pulmonary blood circulation. He antedated the Spaniard, Servetus, and other European anatomists who had been credited with this discovery by three centuries. Meyerhof believes it was a happy hypothesis that Ibn Nafis made his discovery,¹⁰¹ but there are reasons to disagree with that idea because of the definite statements that he makes on the actual anatomy of the heart and the interventricular septum.¹⁰² Chehade believes that Ibn-al-Nafis discovered this circulation after careful observations from dissections in comparative anatomy, which Ibn-al-Nafis considered essential to the understanding of human anatomy.¹⁰³ In Folio IV and Chapter V of his treatise is a discussion on anatomical technique and the instruments to be used in dissecting, where he advised suffocating the animal by submersion to obtain engorgement of the veins; statements, which certainly indicate his interest in dissecting animals, if not in human cadavers.¹⁰⁴

The Greeks, Erisistratus of the Alexandrian School believed that the arteries and the left side of the heart were empty and served to convey the spirit of life to the body, whilst Galen, in the second century, showed that by pricking any artery of a living mammal blood would gush forth.¹⁰⁵ He taught that most of the blood from the right side of the heart passed through invisible pores in the septum to the left side of the heart, where it mixed with air to create spirit and was distributed to the body.¹⁰⁶ He also indicated that a small portion of the blood from the right side passed through the vena arteriosa and then by way of the arteria venosa reached the left side. Therefore Galen seems to have had a vague idea of the pulmonary circulation comprised by his doctrine of the invisible pores in the inter-ventricular septum.¹⁰⁷

In 1553 the Spaniard Michael Servetus described the pulmonary circulation and denied the permeability of the septum, but upheld the Galenic theory that the blood in the arteria venosa was mixed with the inspired air and cleaned the 'soot' by expiration.

Haddad and Khairallah summarize Ibn al-Nafis' discovery as follows:

1. He advises the study of comparative anatomy as an aid to the understanding of human anatomy.
2. On several occasions he hints that he performed dissections, which was very rare among Moslem physicians, and this despite the fact that he denies this in his introduction.

⁹⁸ A K Chehade, *Ibn-al-Nafis, op cit*, 1955.

⁹⁹ A. Whipple: *The Role*; op cit; p. 47.

¹⁰⁰ A K Chehade, *Ibn-al-Nafis, op cit*.

¹⁰¹ M. Meyerhof: *Ibn Nafis*; op cit.

¹⁰² A. Whipple: *The Role*; op cit; p. 47.

¹⁰³ A K Chehade, op cit.

¹⁰⁴ A. Whipple: *The Role*; op cit; p. 48.

¹⁰⁵ Whipple 48.

¹⁰⁶ Whipple 48.

¹⁰⁷ Whipple 48.

3. He is not a blind follower of authority. He has his own convictions, and after careful observation and recording he states these regardless of accepted authority.
4. He classifies man as an air-breathing animal.
5. He uses logic where observation does not suffice.
6. He declares that blood is aerated in the lung and gives a description of the alveoli.
7. He states that the heart is nourished by its own vessels.
8. He gives a definite description of the pulmonary circulation and repeats this more than five times in his text.¹⁰⁸

Haddad and Khairallah, studying Haddad's manuscript of Ibn-al-Nafis in Beirut, made literal translations of the passages in which he describes it as follows:

"In describing the functions of these organs, heart and lungs, we have depended upon true observations (he does not say how he made them) and honest study, regardless of whether or not these fit the theories of those who have preceded us. ...We see fit before starting the discussion of anatomy to write a preface that will help us to understand this science ...

In describing the pulmonary vessels and their structure, Ibn-al-Nafis disagrees with Galen and his predecessors, as the cause of the difference in structure between these vessels and those in other parts of the body.

And we say, and God is all knowing, whereas one of the functions of the heart is the creation of the spirit for very thin blood, strongly miscible with air, so it is necessary to make in the heart very thin blood to make possible the creation of the spirit from the mixture. The place where the spirit is created is in the left cavity, of the two cavities, of the heart. Therefore it is necessary in the heart of man and his like, of those that have lungs, to have another cavity where the blood is thinned, to become fit for the mixture with air. For if the air is mixed with blood while it is still thick it would not make a homogeneous mixture. This cavity where the blood is thinned is the right cavity of the heart. If the blood is thinned in this cavity it must of necessity pass to the left cavity where the spirit is created. But between these two cavities there is no passage as that part of the heart is closed and has no apparent openings, as some believed, and no non-apparent openings fit for the passage of this blood, as Galen believed.

The pores of the heart are obliterated, and its body is thick, there is no doubt that the blood when thinned passes in the vena arteriosa to the lung to permeate its substance and mingle with the air, its thin part purified, and then passes in the arteria venosa to reach the left cavity of the heart. Having mixed with the air the blood becomes fit for the creation of the spirit.

What is left of this mixture, less attenuated, the lung uses for its nourishment. This is why the arteriosa is made of thick walls and of two coats, so that what passes through its branches be very thin, and the arteria venosa thin and of one coat. ...Of necessity the cavity which contains this thin blood should be near the liver where the blood is made, and so must be near the right side of the body. Ibn Sina's statement that the heart has three cavities, or ventricles is not correct, as the heart has only two ventricles. Also dissection gives the lie to what they said, as the septum between the two cavities is much thicker than elsewhere, just some blood or spirit pass through and get lost.... Again Ibn Sina's statement that the blood that is on the right side of the heart is to

¹⁰⁸ S. I. Haddad and A. A. Khairallah: A Forgotten Chapter; op cit; pp. 1-8.

nourish the heart is not true at all, for this nourishment of the heart is from the blood that goes through the vessels that permeate the heart.”¹⁰⁹

It is evident, notwithstanding his denial, in the first part of his preamble that Ibn-al-Nafis must have done dissections to have obtained the anatomical facts that he describes.¹¹⁰

Taqi Al-Din Ahmad Ibn Taymiyya (1263-1328) belongs to a family which has provided well known scholars such as his uncle Fakhr Eddin (d. 1225) and his paternal grandfather, Majid Eddin, (d. 1255). It was in Damascus where his father was the director of the Sukkariyya madrasa that he was educated and learnt Muslim sciences.¹¹¹ He succeeded his father in his office and gave his first lesson there in 1284 and in 1285 he began to teach Quranic exegesis at the Umayyad Mosque. During the Mongol invasion of 1300 by Il-khan Ghazan, Ibn Taymiyya was in Damascus preaching resistance.¹¹² The same year another Mongol threat arose, and he was instructed to exhort people to the jihad and went to Cairo to ask the Mamluk sultan Muhammad B. Qalawun to intervene in Syria. He was present at the subsequent victory by the Mamluks on the Mongols in 1303.¹¹³

Ibn Taymiyya is not an advocate of military aggression into the 'House of War' (Dar al-harb) but he argues that Muslims should strive to put their own house in order first. Thus he favours the moral rearmament of the Muslims within their own lands and strong resistance to any external intervention.¹¹⁴

For him, jihad, both spiritual and physical, is a force within Islam which can create a society dedicated to God's service. With Ibn Taymiyya, jihad is replaced by an internal movement within the Dar al-Islam ('House of Islam') itself, both spiritual and physical, hence Ibn Taymiyya lays great emphasis on the greater jihad, the spiritual dimensions of which he outlines in his fatwas on jihad.¹¹⁵ At the same time, whilst stressing the prototypical religious importance of the Prophet's career for those who wish to wage jihad, Ibn Taymiyya is sufficiently a man of his own age to draw parallels between Muhammad's time and contemporary events he encountered.¹¹⁶ Ibn Taymiyya saw that the Muslim world was assailed by external enemies of all kinds,¹¹⁷ and the only solution is to fight jihad so that 'the whole of religion may belong to God'.¹¹⁸ *

The spectre of the Franks in Muslim territory exacerbated his deep-rooted hatred of infidels and heretics and his strong desire to purify Islam and Islamic territory from all extraneous intrusion and corruption. And while the Franks were plainly a spent force by the later thirteenth century, the Mongols were the exact opposite - the most fearsome enemy that the world of Islam had ever encountered, an alien force that had taken over most of the eastern Islamic world and seemed poised to extend its conquests to the West. No

¹⁰⁹ Ibn Nafis in S. I. Haddad and A. A. Khairallah: *A Forgotten Chapter*, pp. 1-8.

¹¹⁰ A. Whipple: *The Role*; op cit; p. 51.

¹¹¹ M. Ben Cheneb: Ibn Taymiyya; in *Encyclopaedia of Islam*; 1st series; vol 2; 1927; pp. 421-3; at p. 421.

¹¹² H. Laoust: Ibn Taymiyya; *Encyclopaedia of Islam*; New Series; vol 3; 1971; pp. 951-5; at p. 951.

¹¹³ H. Laoust: Ibn Taymiyya; p. 951.

¹¹⁴ C. Hillenbrand: *The Crusades; Islamic Perspectives*; Edinburgh; 1999. p. 243.

¹¹⁵ C. Hillenbrand: *The Crusades*; p. 243.

¹¹⁶ C. Hillenbrand: *The Crusades*; p. 243.

¹¹⁷ Ibn Taymiyya, *Majmut fatawa Shaykh al-Islam Ahmad b. Taymiyya*, Riyadh, 1383, vol. XXVIII, pp. 441-4.

¹¹⁸ Ibn Taymiyya, *Majmut fatawa Shaykh al-Islam*, p.442.

* [Ed. This refers to a passage from the Qur'an which is better translated as "[Your] religion is totally for God" and concerns the way that enemies attacking the Muslims were preventing them practicing their religion, in particular praying at the

wonder that Ibn Taymiyya saw it as his responsibility to galvanise the forces of the Islamic faith against such perils.¹¹⁹

Ibn Taymiyya considered religion and the state to be indissolubly linked. Without the coercive power of the state, religion is in danger. Without the discipline of the revealed law, the state becomes a tyrannical organisation. The essential function of the state is to see that justice prevails, to ordain good, and to forbid evil, to bring about, in reality, the reign of unity, and to prepare for the coming of a society devoted to the service of God.¹²⁰

Ibn Taymiyya favours the idea of property, but states that the rich should be friends and partners of the poor and he substitutes the idea of competition with that of cooperation and mutual help. He reminds people that the revealed law condemns those who make riches for their goal to resemble Karun, just as it condemns those whose aim is political power and who wish to be like Pharaoh.¹²¹

Ibn Taymiyya is no stranger to prison, having served many terms under diverse rulers; in 1306 he was imprisoned for over a year, and this was followed by terms in 1308, 1309, 1320, 1321 and in 1326 when he issued a letter that attacked visits to tombs and the cults of saints which led to a two year imprisonment.¹²² Ibn Taymiyya kept writing from prison until his enemies protested to the sultan, who ordered that ink, pens and paper be taken away from him.¹²³ This was a terrible blow to him, and despite prayer and the recitation of the Qur'an, he fell ill and died after twenty days. His funeral in Damascus was attended by 200,000 men and 15,000 women.¹²⁴

Syria has long been a land of great engineers. The entry on Hama highlights this fact. Damascus has also produced great figures in the field, such as Ibn al-Shatir as to be seen further on. It also attracted great engineers, who came, lived, worked, and died in the city. Muhammad B. Ali Rustum Al-Khurasani, who between 1146 and 1169, constructed the clock placed at the Bab Jairun (often called the bab as'aa, (door of the clock) of the Mosque of the Umayyads in Damascus,¹²⁵ which had been burnt down in 1166-7.¹²⁶ This clock was seen and described by travellers such as Ibn Jubayr, in 1184, and also subsequent travellers such as al-Qazwini and Ibn Battuta.

When for various reasons, the clock became unworkable, his son Fakhr Eddin, author of a book on astronomical clocks, repaired and improved it.¹²⁷ This son is commonly known as Ibn Al-Saati, born in Damascus where he also flourished, and where he eventually died in 1223.¹²⁸ Ridwan repaired and improved the clock, and in the year 1203, he wrote a book to explain its construction and use. Next to al-Jazari, who was his contemporary, this is the most important source of early Islamic clocks, although the earliest Muslim reference to clocks, oddly, comes from

sacred mosque in Makkah]

¹¹⁹ C. Hillenbrand: *The Crusades; Islamic perspectives*; op cit; p. 243.

¹²⁰ H. Laoust: *Ibn Taymiyya*; op cit; p. 954.

¹²¹ H. Laoust: *Ibn Taymiyya* p. 954.

¹²² M. Ben Cheneb: *Ibn Taymiyya*; op cit; p. 422.

¹²³ M. Ben Cheneb: *Ibn Taymiyya*; p. 422.

¹²⁴ M. Ben Cheneb: *Ibn Taymiyya*; p. 422.

¹²⁵ G. Sarton: *Introduction*; op cit; vol 2; p. 632.

¹²⁶ L.A. Mayer: *Islamic astrolabists and their works*. Albert Kundig; Geneva; 1956; at p. 62.

¹²⁷ L.A. Mayer: *Islamic astrolabists*; p. 62.

¹²⁸ G. Sarton: *Introduction*, op cit; vol 2; p. 631.

the unlikely source of Al-Jahiz (middle 9th century, see entry on Basra) in his book: *Kitab al-Bayawan*.¹²⁹ Ridwan wrote also a commentary on Ibn Sina's *Qanun* and a supplement to the latter's treatise on gripes.¹³⁰

Muhammad B, Ahmad al-Mizzi, was born in 1291, and studied in Cairo under Ibn al-Akfani. He lived in Damascus and worked there until he died in 1349 as a muwaqqit (time keeper) of the rabwa, and then of the Umayyad Mosque. He is the author of several works on astrolabes and quadrants.¹³¹ His quadrants sold for two dinars and more, his astrolabes for 10 dinars and more. In 1326/7 he constructed a quadrant which is now found in the museum of Islamic art of Cairo (No 3092).¹³² In 1326-7, he made a quadrant now found in the British museum (95.11.16.1) In 1333/4, while in Damascus he made a quadrant for Nasur Eddin, which was formerly found in the Collection of Clot Bey, but is now in the Public Library of Leningrad (St Petersburg).¹³³ In the same year he also made another quadrant, once in the octavius Morgan collection, now in the British Museum (88.12-1. 276).¹³⁴ Sarton notes, that judging from the number of manuscripts scattered in many libraries (every large Arab library has at least one of them) his treatises on the construction of instruments enjoyed much popularity.¹³⁵ These treatises are listed by Sarton as follows:

1. *Al-Risala al-Istarlabiya* (on the astrolabe).
2. *Kashf al-Raib fi-l-amal bil-jaib* (the removal of doubt concerning the use of sines); this may refer to the sine quadrant or to the sine calculations implied.
3. *Al-Raudat al-muzhirat fi-l amal bi rub al-muqantarāt* (the flowering gardens concerning the use of the quadrant with parallel circles.)
4. *Al-Risala fi-l (amal bil) mujannaha* on the 'winged' astrolabe, which may be a special kind introduced by the author.
5. *Nazm al-lu'lu al-muhadhdhab fi-l'amal bil rub' al-mujaiyab* (string of golden pearls concerning the use of the sine quadrant), 20 chapters in verse (*arjuza*) with an introduction.
6. *Risala fi-l amal bil rub al-musattar* (one the use of precious and mysterious quadrant).
7. *Mukhtassar fi'l amal bil rub' al-daira* (summary concerning the use of the quadrant of the circle).

Suter also adds two other instruments one on the folded quadrant (*al-Muqantarāt al-matwiya*), and a table for the latitude of Damascus (*Jadawil al-Hisas*).¹³⁶

Ibn al-Shatir: b. Damascus 1305, d. Damascus 1375; was an orphan since childhood, brought up by his grand-father who turned him over to an uncle to rear, the latter teaching him the craft of inlay work with ivory, wood, and mother of pearl for which Damascus is still famous.¹³⁷ His skill in making his own instruments and his ability in ivory mosaics, which earned him the appellative 'the incrutator', is especially mentioned by chroniclers.¹³⁸ In 1314-5 he went to Alexandria in order to study, and for years serving as head muwaqqit at the Umayyad mosque in Damascus, with the duty to regulate astronomically defined

¹²⁹ G. Sarton: Introduction, op cit; vol 2; p. 631.

¹³⁰ G. Sarton: Introduction, op cit; vol 2; p. 631.

¹³¹ L.A. Mayer: Islamic astrolabists; op cit; at p. 61.

¹³² L.A. Mayer: Islamic astrolabists; p. 61.

¹³³ L.A. Mayer: Islamic astrolabists; p. 61.

¹³⁴ L.A. Mayer: Islamic astrolabists; p. 61.

¹³⁵ G. Sarton: Introduction; op cit; vol 3; pp. 696-7.

¹³⁶ H. Suter: *Die mathematiker und Astronomen der Araber und ihre Werke*; Ehrlangen; 1900; p.p 165; 227.

¹³⁷ *The Life and Work of Ibn al-Shatir*; Edited by E.S. Kennedy and I. Ghanem; Institute for the History of Arabic Science; University of Aleppo; 1976; p. 13.

¹³⁸ L.A. Mayer: *Islamic astrolabists and their works*; Albert Kundig; Geneva; 1956. p. 40.

prayer times.¹³⁹ Ibn al-Shatir is a prolific author about scientific instruments, astronomy and mathematics, his most influential work being his *Zij al-Jadid*, composed after the non extant *Taliq al-Arsad*, presumably a report of his observations at Damascus, and the *Nihayat al-Sul*, the exposition of his planetary theory.¹⁴⁰ In 1337 he made two astrolabes for Muhammad ad-Darbandi, one of them to be acquired centuries later by Jomard from the Bibliotheque Nationale of Paris.¹⁴¹ In 1365-6, while muwaqqit in Damascus, he made a sundial with a qibla indicator, which he called Sanduk al-Yawaqit by order of the viceroy of Syria. In the main inscription, his work is characterised as 'composition' (made it and created for the first time) obviously in order to indicate its unusual square form.¹⁴² Ibn al-Shatir continued to make astronomical instruments at an advanced age, for the large sundial for the Mosque of Damascus was constructed by him in 1371.¹⁴³ All his devices are ingenious whereby geometric configurations are constructed mechanically and to scale in order to give numerical solutions to the standard problems of spherical astronomy.¹⁴⁴

The most important contribution of Ibn al-Shatir is his planetary theory. He is critical of his predecessors, notably Nasir Eddin al-Tusi.¹⁴⁵ His models are exactly mathematically identical to those prepared by Copernicus over a century after him, which raised the issue of how Copernicus acquired such elements of information, and their impact on European astronomy.¹⁴⁶ Indeed, the mathematical devices originated by the Muslim predecessors of Copernicus, expressible in modern terms as linkages of constant length vectors rotating at constant angular velocities, are precisely those used by Copernicus.¹⁴⁷ In many instances even the numerical parameters of Ibn al-Shatir and Copernicus are the same, the sole but important difference between the two systems being that Ibn al-Shatir's earth is fixed in space, whereas Copernicus gives an orbit around the sun. In the case of the lunar motion, Ibn al-Shatir corrects Ptolemy, whose imagined moon is made to approach far closer to the earth than does the actual moon. Again, Copernicus's solution is identical with that of Ibn al-Shatir.¹⁴⁸ After noting, as did other Muslim astronomers before him the shortcomings of the Greeks' planetary theory, Ibn Shatir stated:

"I therefore asked Almighty God to give me inspiration and help me invent models that would achieve what was required, and God, may He be praised and exalted, all praise and gratitude to Him - did enable me to devise universal models for the planetary motions in longitude and latitude and all other observable features of their motions, models that were free - thank God - from the doubts surrounding previous models."

With Ibn al-Shatir we come to the near dreary end of Muslim scholarship and brilliance in Damascus with hardly any figure of worth coming to the fore afterwards. This was due to the fact that, soon after this scholar (Ibn al-Shatir), Timur the Lame entered the city with his hordes and inflicted on it worse woes than the crusaders themselves did. This is part of the final issue discussed here.

¹³⁹ L.A. Mayer: *Islamic astrolabists*. p. 40.

¹⁴⁰ The Life and Work of Ibn al-Shatir; op cit; p. 13.

¹⁴¹ L.A. Mayer: *Islamic astrolabists*. Op cit; p. 41.

¹⁴² L.A. Mayer: *Islamic astrolabists*. p. 41.

¹⁴³ The Life and Work of Ibn al-Shatir; op cit; p. 13.

¹⁴⁴ The Life and Work of Ibn al-Shatir; p. 14.

¹⁴⁵ The Life and Work of Ibn al-Shatir; p. 14.

¹⁴⁶ George Saliba explains this matter at:

<http://www.columbia.edu/~gas1/project/visions/case1/sci.1.html>

¹⁴⁷ The Life and Work of Ibn al-Shatir; op cit; p. 14.

¹⁴⁸ The Life and Work of Ibn al-Shatir; p. 14.

Fallacious Explanations of Decline of Islamic civilisation: The Instance from Damascus

It is needless here to dwell too long on this issue of fallacious writing of the history of Islam, its civilisation, and its decline, as it has been examined in one particular article on this site (The Myths), and is touched upon in other articles on other cities, in relation to their specific history. It ought to be remembered, that generally, historians and writers dealing with Islam, with the rarest exceptions, do two things: one after the other, they eliminate anything positive with regard to Islam, and instead attribute everything negative to it. And whilst they alter facts, they also suppress from bibliographies and even from general knowledge, any sources - including Western ones - which narrate anything favourable of Islam. And so we end up with the picture of an inept Muslim nation that plagiarised all its civilisation and sciences from others, and also that of a barbaric nation guilty of the worst crimes past and present. As for the decline of Islamic civilisation, of course, such writing also blames it on Islam.

Thus, here, we look at this issue again, by focusing on the specific case of Damascus, to once more show the fallacies surrounding the decline of Islamic civilisation.

Very briefly here, we restate the argument which blames Islam for the decline of Islamic civilisation. Toland in the *Doutes sur les Religions*, translated from an English text in 1739, claims that Prophet Muhammad (PBUH) ordered his followers to be ignorant:

*"because he clearly saw that the spirit of inquiry would not favour him. This is how Islam maintained itself."*¹⁴⁹

Diderot, equally, in a *letter of 30 October 1759*, held that the Prophet was the greatest enemy of reason; that he could not read or write, and so this encouraged Muslims to hate and have contempt for knowledge, which in turn secured the survival of Islam.¹⁵⁰ Diderot also asserts that in the time of Caliph al-Mamun, people were heard shouting for his death because he had fostered science at the expense of the 'holy ignorance' of the faithful believers.¹⁵¹

J.D. Bate (1836-1923), who served as a missionary in India (1865-1897) and who also contributed many articles to the *Missionary Herald* and the *Baptist magazine*, held that:

*"Islam reduces to a state of degradation every civilised state over which it obtains ascendancy and renders impossible the social and moral elevation, beyond a certain point, of even the most degraded people. Wherever Islam has obtained the sole ascendancy, the vast induction of twelve centuries tells one uniform tale - that the ascendancy has been the death knell of all progress and the signal for general stagnation."*¹⁵²

Von Grunebaum tells us:

¹⁴⁹ in A. Gunny: *Images of Islam in eighteenth century writing*, Grey Seal, London, 1996. p.95.

¹⁵⁰ D. Diderot: *Oeuvres Completes*, Vol VIII, Paris; 1975. at p. 230.

¹⁵¹ A. Gunny: *Images of Islam*; op cit; 168.

¹⁵² J.D. Bate: *The Claims of Ishmael*; London; W. Allen; 1884; p. 301.

*"From the orthodox viewpoint nothing was lost and perhaps a great deal gained when in the later Middle Ages Islamic civilisation prepared to renounce the foreign sciences that could not but appear as dangerous distractions. The retrenchment of intellectual scope must have seemed a small price to pay for the preservation of the original religious experience. Not only substance but method as well came under suspicion."*¹⁵³

More recently, another academic, Huff asks himself:

"why didn't Arabic science give rise to modern science; and why did it go into decline beginning in the twelfth century?"

before he gives the answer:

*"A common formulation of the negative influence of religious forces on scientific advance suggests that the twelfth and thirteenth centuries witnessed the rise of mysticism as a social movement. This in turn spawned religious intolerance, especially for the natural sciences and the substitution of the pursuit of the occult sciences in place of the study of the Greek and rational sciences."*¹⁵⁴

Then, of course are blamed the Seljuk Turks, the Mamluks, the Berbers, Al-Ghazali, Al-Ashari, the Ottomans... in an array of aggressive rhetoric already seen in other articles on this site and it is needless repeat these points here.¹⁵⁵

No Western historian today would blame anybody else other than these malefic forces that caused the decline of Islam and its power. They would not blame the Mongols. Nor would they blame Timur the Lame. And of course, they will never blame the crusades or the papacy for the destruction of Islamic power and civilisation. There are even Western historians today who tell us that in fact the Mongols only killed few thousands of people to discourage others from resisting, and even that the Mongols promoted science. Yet, looking at reality and older historical sources, whilst focusing on the specific instance of Damascus, we see something completely different.

First and foremost, the Islamic civilisation declined in the 13th century onwards, because in that century it faced and suffered, at once, mass destruction and killings as a result of the crusader and Mongol destruction in the East; including Damascus, which was repeatedly devastated. The Christian-Mongol alliance, which is examined under the coming entry on Baghdad,¹⁵⁶ had devastating consequences for Damascus.¹⁵⁷ At the taking of the city, in 1260, three Christian leaders (the Mongol commander Kitbogha, the King of Armenia and the Crusader Count Bohemund VI of Antioch) rode through the streets and forced the Muslim population to bow to the cross.¹⁵⁸ Bohemond VI, whose father-in-law, the king of Armenia, had convinced him to join with the Mongols, had Mass sung in the Mosque of the Umayyads; the other mosques he had defiled by donkeys, wine was scattered on the walls, with grease of fresh pork, and salt, and the

¹⁵³ G.E. Von Grunebaum: *Islam*, Greenwood Press, Publishers, 1961. p.118.

¹⁵⁴ T.E. Huff: *The Rise of Early Modern Science*, Cambridge University Press, 1993. pp. 52-3.

¹⁵⁵ See also E. Renan: *Averroes et l'Averroisme*, in *Discours et Conference*, Paris, Calman Levy, 1919. p. iii; E. Ashtor: *A Social and Economic History of the Near East in the Middle Ages*, Collins; London; 1976. etc.

¹⁵⁶ See, for instance:

P. Pelliot: *Mongols and Popes; 13th and 14th centuries*; Paris; 1922.

¹⁵⁷ See Baron G. D'Ohsson: *Histoire des Mongols*, in four volumes; Les Freres Van Cleef; la Haye and Amsterdam; 1834; vol 3, above all.

¹⁵⁸ J. J. Saunders: *A History of Medieval Islam*; Routledge; London; 1965. p. 182.

excrement of his men.¹⁵⁹ The systematic slaughter of the Muslim population soon followed, and spread throughout Syria, the accounts of such mass slaughter and devastation are possibly unparalleled in world history.¹⁶⁰

The Mongol-Christian alliance remained for decades until both were destroyed by first, Baybars and the Mamluk successors in the early 14th century.¹⁶¹ Until then, Syria and Damascus, in particular, were regularly devastated. During 1299-1300, for instance, the Mongols devastated more Syrian towns and cities. Virtually the whole of al-Salihiyya suburb to the north of Damascus was pillaged and burned. Many important buildings were destroyed and the population was plundered and murdered.¹⁶² Many hospitals and madrasas were destroyed. Inside the city, the area around the citadel was severely damaged and important schools were burned. The outlying villages suffered, too.¹⁶³

Just as Syria began to recover from these deadly onslaughts, in came the worst of all of them: Timur. The arrival of Timur Lang (The Lame) at the end of the century (14th) finished any chance of recovery of the Muslim East after the Crusader Mongol onslaught. Timur is Muslim by name, one of those drunkard Muslims, who are equally at ease in mass murdering fellow Muslims and collaborating with the enemy. It was he, Timur, who, in 1402, stopped the Ottomans led by Bayazid in their swift advance. Timur was allied with not just France, but also with England and Castile, both before and after his overthrow of Bayazid.¹⁶⁴ He attacked the Ottomans from the rear just as the Venetians broke their peace treaties with the Ottomans.¹⁶⁵ Timur had also received embassies from both Byzantium and France, which were inciting him to enter war against Bayazid.¹⁶⁶ At the decisive battle of Angora, on 28 July 1402, which placed Timur against the Ottomans, Bayazid was betrayed by local contingents who en masse deserted to Timur's side during the battle.¹⁶⁷ Bayazid was defeated, taken prisoner and put in a cage; his capital Bursa taken and burnt down.¹⁶⁸ Timur then compelled Bayazid's wife to pour out his wine in the presence of her husband, no longer 'the Thunderbolt' of Islam.¹⁶⁹ At the battle with Bayazid, Timur had invited the Castilian embassies, that included Enrique Payo de Soto and Hernan Sanchez de Palazuelos, at their head, to watch the fierce battle.¹⁷⁰ The embassy returned to Castile with the news of this immense victory by Timur, which avenged previous Ottoman victories against Christianity.¹⁷¹

Prior to his war against Bayazid, Timur had already devastated the rest of the Muslim lands in the late 1380s-1390s. In 1388 he invaded northern India and destroyed the Turkish armies; then in 1398 sacked

¹⁵⁹ Jean Richard: *La Papauté et les Missions d'Orient au Moyen Age*; Ecole Française de Rome; Palais Farnese; 1977. p.99.
¹⁶⁰ See Baron G. D'Ohsson: *Histoire des Mongols*, in four volumes; Les Freres Van Cleef; la Haye and Amsterdam; 1834; vol 3, above all.
¹⁶¹ Baron G. D'Ohsson: *Histoire des Mongols*, op cit.
¹⁶² I.M. Lapidus: *Muslim Cities in the later Middle Ages*; Harvard University Press; Cambridge Mass; 1967.pp.19-20. p. 13.
¹⁶³ I.M. Lapidus: *Muslim cities*; op cit. p. 13.
¹⁶⁴ D. Vaughan: *Europe and the Turk*; Liverpool University press; 1954. p. 205.
¹⁶⁵ Rodrigo de Zayas: *Les Morisques et le racisme d'etat*; Edt Les Voies du Sud; Paris, 1992. p. 135.
¹⁶⁶ R. De Zayas: *Les Morisques*; op cit; p. 135.
¹⁶⁷ P. Wittek: The Ottoman Turks-from an emirate of march warriors to an empire: in *The Islamic World and the West*. editor A. R. Lewis; John Wiley and Sons; London; 1970; pp 106-118. p.115.
¹⁶⁸ Sir Edwin Pears: The Ottoman Turks to the fall of Constantinople. In *The Cambridge Medieval History*, Cambridge University Press, 1923; Vol IV: Edited by J. R. Tanner, C. W. Previte; Z.N. Brooke, 1923. , pp 653-705. p.682.
¹⁶⁹ William Miller: The Balkan States; *The Cambridge Medieval History*, Vol IV: Edited by J. R. Tanner et al; op cit, pp 552-593. p.562.
¹⁷⁰ R. De Zayas: *Les Morisques*; p. 136.
¹⁷¹ R. De Zayas: *Les Morisques*; p. 136.

Delhi, massacred its inhabitants, and carried the treasure of the sultans home to Transoxania.¹⁷² Political conditions in northern India remained chaotic for a long time thereafter; and many cities in ruin.¹⁷³ Everywhere his hordes went, farms, orchards, irrigation works, dams, schools... were razed to the ground.¹⁷⁴ In Siwas, Timur had 120,000 people massacred, and in Aleppo, in Syria, and in Baghdad, it was another huge massacre, sparing none, regardless of age or sex.¹⁷⁵ Timur even ordered his men to trample children reading the Qur'an.¹⁷⁶

It is Damascus, the last beacon of Islamic civilisation in the East other than Cairo, which was destroyed for good by Timur. Here is the narration by the historian Gibbon,

*"Abandoned by their prince, the inhabitants of Damascus still defended their walls; and Timur consented to raise the siege, if they would adorn his retreat with a gift or ransom; each article of nine pieces. But no sooner had he introduced himself into the city, under colour of a truce, than he perfidiously violated the treaty; imposed a contribution of ten millions of gold;... and after a period of seven centuries, Damascus (including the Great Mosque) was reduced to ashes. The losses and fatigues of the campaign obliged Timur to renounce the conquest of Palestine and Egypt; but in his return to the Euphrates he delivered Aleppo to the flames... but I shall briefly mention that he erected on the ruins of Baghdad a pyramid of ninety thousand heads."*¹⁷⁷

Once Damascus was devastated, it was just yet another terrible loss for the civilisation of Islam, which had seen Baghdad burnt to the ground, one million of its people slaughtered in 1258; Aleppo, too, devastated and its population slaughtered, in 1260 and then during Timur's invasion; the glorious cities such as Merv, Bukhara, Nishapur, and others razed to the ground in 1219-22 by Genghis Khan; Cordova lost in 1236, Valencia lost in 1238, Seville, lost in 1248, and the rest of Spain, too, all but Grenada, lost for good to Islam. Now with Damascus gone, Muslim civilisation, which once shone from China to the Atlantic, now had dimmed. Only the light of Cairo remained bright.

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¹⁷² E.R. Wolf: *Europe and the people without History*; University of California Press; Berkeley; 1982. p. 45.

¹⁷³ E.R. Wolf: *Europe*. p. 45.

¹⁷⁴ N. Smith: *A History of Dams*, The Chaucer Press, London,1971; p. 86.

¹⁷⁵ Sir Edwin Pears: *The Ottoman Turks*; op cit; pp.679-80.

¹⁷⁶ Sir Edwin Pears: *The Ottoman Turks*.p.684.

¹⁷⁷ E. Gibbon: *The Decline and Fall of the Roman Empire*; Chapter LXV; Part II.

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