

Seville

Author: Salah Zaimeche PhD
Chief Editor: Lamaan Ball

Release Date: August 2005
Publication ID: 4095

Copyright: © FSTC Limited, 2005

IMPORTANT NOTICE:

All rights, including copyright, in the content of this document are owned or controlled for these purposes by FSTC Limited. In accessing these web pages, you agree that you may only download the content for your own personal non-commercial use. You are not permitted to copy, broadcast, download, store (in any medium), transmit, show or play in public, adapt or change in any way the content of this document for any other purpose whatsoever without the prior written permission of FSTC Limited.

Material may not be copied, reproduced, republished, downloaded, posted, broadcast or transmitted in any way except for your own personal non-commercial home use. Any other use requires the prior written permission of FSTC Limited. You agree not to adapt, alter or create a derivative work from any of the material contained in this document or use it for any other purpose other than for your personal non-commercial use.

FSTC Limited has taken all reasonable care to ensure that pages published in this document and on the MuslimHeritage.com Web Site were accurate at the time of publication or last modification. Web sites are by nature experimental or constantly changing. Hence information published may be for test purposes only, may be out of date, or may be the personal opinion of the author. Readers should always verify information with the appropriate references before relying on it. The views of the authors of this document do not necessarily reflect the views of FSTC Limited.

FSTC Limited takes no responsibility for the consequences of error or for any loss or damage suffered by readers of any of the information published on any pages in this document, and such information does not form any basis of a contract with readers or users of it.

FSTC Limited

9 Conyngham Road, Victoria Park, Manchester, M14 5DX, United Kingdom

Web: <http://www.fstc.co.uk> Email: info@fstc.co.uk

SEVILLE

Seville is a Spanish city located on a meander of the Guadalquivir River, ninety-seven kilometres (sixty miles) from the Atlantic coast at Cadiz. Known as Ishbilya in Arabic, Seville was second to Cordoba in size and importance throughout most of the Islamic period, reaching its maximum extension of 187 hectares (462 acres) and its greatest population (83,000) in the mid twelfth century, when the city was favoured by Almohad dynasts. Until the ninth century, the city was confined to the limits of the primitive Roman oppidum (town).¹

Seville rose to greatness with the Berber Almoravids and Almohads, whose rule of Spain, and North Africa began with the Almoravids under Yusuf Ibn Tashfin in 1088-9. Prior to them ruled the Reyes of the Taifas (roughly 1008-1090), and before them Ibn Abi Al-Mansur (976-1002), and prior to him, Muslim Spain had been ruled by the Umayyads, a branch of the dynasty that, once decimated in the East by the Abbasids in 750, ruled over Spain.

The Muslims had been in Spain for just two centuries when ascended to the throne one of the greatest rulers of Islam, the Umayyad, Abd Al-Rahman III, in the year 912. One of his early measures, noted later on by Ibn Khaldun, was to suppress all taxes not in accordance with Muslim Tradition, and causing justice to be fairly and equally delivered.² Burckardt sums up some of his achievements, noting how Abd al-Rahman III granted Muslim Spain its period of greatest unity and finest flowering; he repelled the Christian kingdoms which had been gaining strength in the north of Spain, and called a halt to the advance of the Fatimids in North Africa.³ He further built monuments of great stature, such as the famed al-Zahra, which at some points, in his very presence at the Friday prayer at the mosque, drew criticism from the religious circle, criticism the sovereign acknowledged but did not repress.⁴

Abd al-Rahman was succeeded in 961 CE by another successful ruler, al-Hakem II, whose early deeds were to personally lead the Muslim armies, and to repulse combined attacks from the North by the Christians and from the south by the Fatimids, and from even further north, attacks from the Vikings.⁵ Unlike his father who delighted in buildings, Al-Hakem delighted in books. He amassed such a collection that was estimated at four hundred thousand volumes, causing works on all subjects to be conveyed to Cordova from every country, however remote, lavishing his treasures in their acquisition, and he was so fond of reading them, that he preferred the company of books to the pleasures of royalty.⁶

The death of Al-Hakem II in 976 heralded the end of Umayyad Spain. In the semi chaos which followed succession, rose to power Ibn Abi Amir, who subsequently will be known as Al-Mansur, and who established

¹ T. Glick: Seville; In *The Dictionary of the Middle Ages*; J.R. Strayer Editor in Chief; Charles Scribner's Sons, N. York; vol 11; pp 213.

² In Al-Maqqari: Nafh Al-Tib. Translated by P.De Gayangos: *The History of the Mohammedan Dynasties in Spain* (extracted from *Nifh Al-Tib* by al-Maqqari); 2 vols; The Oriental Translation Fund; London, 1840-3. vol I; Appendix; xLvii

³ T. Burckhardt: *Moorish Culture in Spain*, George Allen & Unwin, London; 1972; p. 34.

⁴ A. Thomson and M. A. Rahim: *Islam in Andalus*; Taha Publishers; London; 1996; p. 59.

⁵ A. Thomson; op cit; p. 67.

⁶ Al-Maqqari; De Gayangos; op cit; vol 2; p. 169.

his authority in the name of Al-Hakem II's young son, Hisham.⁷ Al-Mansur's deeds were exemplary. He extended the Cordova mosque, built another palace, al-Zahira on the banks of the Wadi al-kebir (Guadalquivir), and then spent the rest of his rule leading his armies into battle against the Christians in the north, two expeditions each year, even taking Santiago de Compostela on his fiftieth expedition.⁸ It is in the year 1002, during his fifty second military expedition that Al-Mansur died.

Al-Mansur was followed by the inept rule of his son. After six years, Muslim Spain disintegrated into thirty of so independent states, the Reyes of Taifas. After the fall of the Umayyad caliphate in Seville (1013), the chief religious judge (Cadi), Abu'l- Qasim ibn Abbad, proclaimed himself ruler (hajib) of an independent Sevillian principality that lasted until the Almoravid conquest of 1091. Its greatest ruler, al-Muqtadid (r. 1042-1069), both enlarged the kingdom and wrote poems praising the city's undoubted grandeur during this period.⁹

The Reyes of Taifas, however, with rare exceptions, such as Al-Mamun of Toledo, were inept and dissolute. As they warred each other, it encouraged the Spanish Christians to launch a war of re-conquest from the North. Muslim states began to fall one after the other. Barbastro was first taken by a coalition of Christian armies, mainly French in 1063. It presaged the future for the Muslims in Christian hands. Scott narrates:

‘The atrocities practiced (at Barbastro) by these Christian barbarians seem incredible. Such was the amount of booty, that an inferior officer is said to have received as his share five hundred loads of merchandise and fifteen hundred maidens. In the general division, as was customary, the master with his households and possessions were delivered to the fortunate soldier, who at once proceeded, by ingenious tortures, to insult the distress of his victim and inflict upon him exquisite pain in order to compel the discovery of hidden treasure. The female members of his family were violated in his presence. His body was plunged into boiling oil. He was hacked with swords and battle axes and his limbs were slowly wasted by fire.’¹⁰

Now the Muslims began to awaken to the threat, and such a threat became even more pressing when Toledo fell in 1085 into Christian hands (see entry in Toledo). Muslim Spain was about to be overwhelmed, and the dangers were of the most severe nature. The Reyes could only rely on the rising Almoravid Berber power in Morocco, but reluctantly, for a gulf separated the debauched Reyes from the very devout Almoravids. The tide of history, the ferocious encounter with Christianity could only favour the latter, and signal the end of the former. The end of one of them, of interest here, Al-Mutamid of Seville is well described by Durant, who in the process, captures every bit of both of the history of the time, treachery, and fall from power in a wonderful passage worth reproducing in its entirety.¹¹ Durant, thus, goes:

‘A more heroic end came to al-Mutamid, Emir of Seville. Like other kinglets of disintegrating Spain, he had for several years paid tribute to Alfonso VI of Castile as a bribe to Christian peace. But a bribe always leaves a balance to be paid on demand. With the sinews of war provided by his prey, Alfonso pounced upon Toledo in 1085; and al-Mutamid perceived that Seville might be next. The city-states of Moslem Spain were now too weakened by class and internecine war to offer any

⁷ A. Thomson: Islam; op cit; p. 69.

⁸ A. Thomson; p. 74.

⁹ T. Glick: Seville; pp 213.

¹⁰ S.P. Scott: *History of the Moorish Empire*; in three volumes; The J.B. Lippincott Company; Philadelphia; 1904. vol 2; p. 156.

adequate resistance. But across the Mediterranean there had arisen a new Moslem dynasty; it was called Almoravid from the marabout or patron saint of north western Africa; founded on religious fanaticism, it had turned almost every man into a soldier of Allah, and its armies had easily conquered all Morocco. At this juncture the Almoravid king Yusuf Ibn Tashfin, a man of courage and cunning, received from the princes of Spain an invitation to rescue them from the Christian dragon of Castile. Yusuf transported his army across the Strait, received reinforcements from Malaga, Granada, and Seville, and met the forces of Alfonso at Zallaka, near Badajoz (1086). Alfonso sent a courtly message to Yusuf: "Tomorrow [Friday] is your holyday, and Sunday is ours; I propose, therefore, that we join battle on Saturday." Yusuf agreed; Alfonso attacked on Friday; al-Mutamid and Yusuf fought well, the Moslems celebrated their holyday with victorious slaughter, and Alfonso barely escaped with 500 men. Yusuf astonished Spain by returning bootyless to Africa.

Four years later he came back. Al-Mutamid had urged him to destroy the power of Alfonso, who was rearming for a fresh assault. Yusuf fought the Christians indecisively, and assumed sovereign power over Moslem Spain. The poor welcomed him, always preferring new masters to old; the intellectual classes opposed him as representing religious reaction; the theologians embraced him. He took Granada without a blow, and delighted the people by abolishing all taxes not prescribed in the Koran ([in] 1090). Al-Mutamid and other emirs joined in a league against him, and formed a holy alliance with Alfonso. Yusuf besieged Cordova; its populace delivered it to him. He surrounded Seville; al-Mutamid fought heroically, saw his son killed, broke down in grief, and surrendered. Now all Andalusia except Saragossa was in Yusuf's hands, and Moslem Spain, ruled from Morocco, was again a province of Africa.

Al-Mutamid was sent as a prisoner to Tangier. While there he received from a local poet, Husri, some verses praising him and asking for a gift. The ruined emir had now only thirty-five ducats (\$87) in all the world; he sent them to Husri with apologies for the smallness of the gift. Al-Mutamid was transferred to Aghmat, and lived there for some time in chains, always in destitution, still writing poetry, till his death (1095).

One of his poems might have served as his epitaph:

*Woo not the world too rashly, for behold,
Beneath the painted silk and broidering,
It is a faithless and inconstant thing.
Listen to me, Mutamid, growing old.
And we—that dreamed youth's blade would never rust,
Hoped wells from the mirage, roses from the sand—
The riddle of the world shall understand
And put on wisdom with the robe of dust.¹²*

It was the end of the Reyes, and the beginning of a new era of Muslim Spain, an era under Berber rule, which was to deliver the finest hours of the city of Seville, a fine hour which brought into combination of the Syrian and Berber genius in equal measures, and which gave us the greatest city of the 12th century.

¹¹ W. Durant: *The Age of faith*, Simon and Shuster, New York; 6th printing; 1950. pp. 306-7.

¹² Translation by D. Smith; in M. Van Doren: *Anthology of World Poetry*; New York; 1928; p. 99. In W. Durant *The Age of op*

Seville: A Mighty, Thriving, Great City

Seville, settled by Syrian junds, was customarily and affectionately referred to by Arab writers and poets of east and west alike as Hims al-Andalus, after the Syrian town of that name.¹³ Seville and its territory was known by the name of Hims, for when the lands were divided among the Arab settlers it fell to the people of Hems, in Syria, whose banner immediately follows that of the people of Damascus in the processions at Medina.¹⁴ Ibn Sa'id, a thirteenth-century writer from Alcalá la Real (Granada), remarked that no eastern cities reminded him of home except for Damascus and Hama, a central Syrian town, and al-Shaqundī called Granada the Damascus of al-Andalus. Not surprisingly, the Damascus scenes in the film "Lawrence of Arabia" were filmed in Seville, a city generally acknowledged to resemble traditional Damascus more than Damascus itself.¹⁵

Most striking of all was the extensive Syrianization of the landscape that took place throughout the eighth century, first, through the settlement of Syrian contingents (junds) in such places as Seville and Valencia; second, through the wholesale importation of Syrian styles by the cadres of Umayyad clients who flocked to the peninsula after 756; third, by the deliberate policy of Umayyad emirs, 'Abd al-Rahmān I in particular.¹⁶ The introduction of Syrian agricultural systems, of hydraulic machinery used in Syria, of Syrian building techniques and decorative motifs, the deliberate importation of vegetation native to Syria -- these were among the many discrete elements that contributed to the Syrianization of Andalusī towns and countryside.¹⁷

And of Syrian Spanish cities, the most beautiful of all, and the greatest by far, was Seville. From the words of an author referred to by the 16th century Muslim writer, al-Maqqari,

Seville is built on the banks of the Guadalquivir, also known by the name of Wadi Kortobah (the river of Cordova). A very handsome bridge of boats, fastened together by means of iron chains, serves as a communication for the people living on the two banks of the river. The city itself is fine and well built; the squares are large, and the market places commodious and abundantly provided with every necessity, as also with articles of trade of the most expensive kind, which afford great gain to the merchants... The Axarafe district contains besides olive groves, a very large population scattered in farm houses, or living in towns and villages, which have also their market places, their baths, fine buildings, and other conveniences and comforts only to be met with in cities of the finest order.¹⁸

The author of *Minhaju-l-fakar* refers to the river that flows through the city:

which has no equal in the world. It is navigable for large vessels, and is always filled with pleasure boats kept by the people, and by fishing or trading vessels; in the opinion of some it surpasses in beauty the Euphrates, the Tigris, and the Nile. Its banks are covered with fruit trees, forming a sort of canopy over the river, so that one may sail in it sheltered from the rays of the sun, and listening

cit; p. 307.

¹³ T. Glick: *Islamic and Christian Spain in the early Middle Ages*, Princeton University Press, New Jersey, 1979. pp 55-6.

¹⁴ Al-Maqqari: *Nafh Al-Tib*. Op cit; p.56.

¹⁵ T. Glick: *Islamic and Christian Spain*. Op cit; p. 56.

¹⁶ T. Glick: *Islamic and Christian Spain*; p. 55.

¹⁷ T. Glick: *Islamic and Christian Spain*; p. 55.

¹⁸ In Al-Maqqari: *Nafh Al-Tib*; op cit; pp.55-6.

to the charming melody of the singing birds. The journey along its banks is equally pleasant, and one may travel the distance of ten parasangs (thirty miles) through clusters of buildings and farm houses, high towers and strong castles, forming a continued city. The tide is perceptible in the river of Seville at a distance of seventy two miles from the sea. It also abounds in fish, of which the daily consumption is almost incredible. The amount of taxes paid by the city of Seville only, during the caliphate of Al-Hakem Ibn Hisham is stated at one hundred and thirty five thousand dinars.¹⁹

Water was central in many other ways, from the erection of the pleasure garden to other urban usages. In Toledo, al-Ma'mūn's garden had a pavilion called *majlis al-nā'ūra*, which raised water from the Tajo to supply elegant fountains in which lions spouted water, in the palace of al-Mu'tamid of Seville, an elephant fountain was likewise supplied by a wheel, described as a dawlab, a synonym which usually connoted an animal-driven wheel.²⁰



Al-Cazar*

Seville itself received its domestic water supply from an arched aqueduct of Roman construction, known in the later Middle Ages as the Canos de Carmona. By the twelfth century this system had fallen into disrepair,

¹⁹ In Al-Maqqari: Nafh Al-Tib. p.56.

²⁰ T. Glick: Islamic and Christian Spain; op cit; p. 237.

* source <http://www.greatestcities.com/users/monda/Europe/Spain/Andalusia/Seville/>

but it was restored by the Almohad rulers in 1172.²¹ After taking the city in 1248, the Castilians encountered the system still functioning, and in 1254 Alfonso X ordered a "Master Caxico" (probably a resident Genoese) to "make the water [of the Carmona aqueduct] flow to two fountains in Seville as it used to flow in the time of the Moors."²²

The Almohads, also when building their new main mosque, uncovered the Roman sewer system and altered and enlarged its course.²³

After the sack of the city by Norman pirates in 844, the Umayyad emir Abd al-Rahman II ordered the reconstruction of the walls to include both the old city and the newer suburbs to its east and north. The walls were rebuilt in the early tenth century and again a century later. Finally, in 1170-1171 the Almohad caliph Abu Ya'qub Yusuf, who made Seville his capital, rebuilt the portion of the wall adjacent to the river, after a calamitous flood.²⁴ The Alcazar, or citadel, originally built by Abd al-Rahman II, was restored by the Almohads, who were likewise responsible for building a new main mosque (1172-1176), of which only the minaret, now called the Giralda, still remains. At the time of the conquest of the city by Ferdinand III of Castile (1248), Seville boasted seventy-two mosques.²⁵ The Almohads, in building a new main mosque near the river, to the south of the old urban centre, created a dual economic zoning whereby the export and local economic activities were each confined to specific areas; the Alcaicera, or covered market, where expensive silks were sold for export, was located near the river port.²⁶ The Alhondiga, or flour exchange, supplying the needs of the townspeople, was in the centre of town, near the previous main mosque. Islamic Seville was a centre for the trade, both domestic and overseas, of the olive oil produced in the nearby Aljarafe region.²⁷ A picture of the economic life of Almohad Seville is preserved in the market regulation, or hisba, treatise of Ibn'Abdun, which describes not only a great variety of alimentary trades but also construction, textile, and iron industries (see further down).²⁸

The functional separation of the city into two distinct economic zones has survived unchanged from Almohad times. International trade was centred near the river in the Barrio de la Mar (in fact, a separate jurisdictional entity) and in the so-called Genoese and Castilian quarters, where the Genoese and textile exchanges (Lonja de Genova, Lonja de los Panos) were located, along with the covered market and olive-oil warehouses. The economic life of the city proper continued to be located nearer the city's centre.²⁹

Al-Shaqundi, in his *risala*, says:

I have also heard of the magnificence and good design of its buildings; most of which, not to say all, are abundantly provided with running waters, and spacious courts planted with fruit trees, such as oranges, the lemon, the lime, and the citron tree. The sciences and the arts are cultivated with

²¹ T. Glick: Seville; op cit; pp 214.

²² T. Glick: Seville; pp 214.

²³ T. Glick: Seville; pp 214.

²⁴ T. Glick: Seville; op cit; p 213.

²⁵ T. Glick: Seville; pp 213.

²⁶ T. Glick: Seville; pp 213-4.

²⁷ T. Glick: Seville; pp 213-4.

²⁸ T. Glick: Seville; pp 213-4.

²⁹ T. Glick: Seville; op cit; pp 214.

*more or less ardour, with more or less success; the number of their authors is indeed too considerable to be stated, and their writings too well known to need description.*³⁰

Today, though, a description of such authors and scholars imposes itself, however many there are.



The Giralda, the old minaret of the original Mosque, is 117 metres high and looks out over the city^{*}

The Scholars of Seville

Scott tells that

*The graceful courtesy and deference to the sex, which were the indispensable attributes of every gallant cavalier, in short, the very genius of chivalry, originated among the Spanish Mohammedans. The women of Christian Europe—except in countries influenced by Muslim culture—from the tenth to the fifteenth century received no such social consideration and enjoyed no such educational advantages as did their infidel sisters of the Peninsula.*³¹

³⁰ Al-Shaqundi; *Risala*, in Al-Maqqari: Nafh Al-Tib; op cit; p.56.

^{*} Source <http://www.greatestcities.com/users/monda/Europe/Spain/Andalusia/Seville/>

³¹ S.P. Scott: History; op cit; vol 3; p. 452.

Indeed, it is in Seville, that there came into prominence a number of scholarly women. Valada, a princess of the Almohades, was renowned for her knowledge of poetry and rhetoric; her conversation was remarkable for its depth and brilliancy; and, in the academic contests the capital which attracted the learned and the eloquent from every quarter of the Peninsula, she never failed, whether in prose or in poetical composition, to distance all competitors.³² Algasama and Safia, both of Seville, were also distinguished for poetical and oratorical genius; the latter was unsurpassed for the beauty and perfection of her calligraphy; the splendid illuminations of her manuscripts were the despair of most accomplished artists of the age. The literary attainments of Miriam, the gifted daughter of A1-Faisull, were famous throughout the Peninsula, the caustic wit and satire of her epigrams were said to have been unrivalled.³³

These women were part of large circle of scholars who thrived in their multitude in the city during the Almoravid and Almohad times above all.

Abu Bakr Muhammad ibn Khair ibn 'Umar ibn Khalifa al-Ishbili is a Hispano- Muslim scholar, born in Seville in 1108-1109, studied in Seville and Cordova, and died in Cordova in 1179.³⁴ He compiled a bibliography (Fihrist) containing more than 1400 titles of books composed by Spanish Muslims on every subject, a bibliography which is very precious, as other standard bibliographies of Arabic writings, compiled by Easterners (notably that of Hadji Khalifa) do not give sufficient importance to the Spanish writings.³⁵ This Fihrist was edited by Francisco Codera y Zaidin and Julian Ribera y Tarrago late in the 19th century, vol 10 of which contains the index and a Latin introduction.³⁶

The science of Botany which thrived under the Berber Dynasty of Banu Dhi Nun of Toledo, and their illustrious ruler, Al-Mamun, moved south to Seville following the fall of Toledo to the Christians in 1085. Running south amongst the surviving scholars was Ibn Bassal, whose works in Toledo have been examined under that entry. Ibn Bassal joined the court of Al-Mutamid for whom he created a new royal garden.³⁷ In Seville Ibn Bassal met with Ali Ibn al-Lukuh another scholar of Toledo, who himself was a student and disciple of another famed scholar of Toledo, Ibn Wafid, and also encountered Mohammed B. Hadjadj Al-Ishbilli, also a writer on agronomy.³⁸ It is in Seville, that Ibn Bassal came into contact with the other great botanist of Grenada, al-Tignari, who during his visit to Seville was able to benefit greatly from Ibn Bassal's expertise in the field.³⁹ It is also in Seville that Ibn Bassal and Ibn Lukuh were the masters of the mysterious 'anonymous botanist of Seville,' the author of the '*Umdat al-Tabib fi ma'arifat al-nabat li kuli labib*,' a botanical dictionary, which Colin considers far superior to even the master in the genre, that is Ibn al-Baytar of Malaga.⁴⁰ It seems that this writer could have been Ibn Abdun (not the author of the treatise on Hisba, who lived a century or so earlier; See below), who was at some point part of the diplomatic mission to the Almohad court in Marrakech in 1147.⁴¹

³² S.P. Scott: History; op cit; vol 3; p. 447.

³³ S.P. Scott: History; op cit; vol 3; p. 447.

³⁴ G. Sarton: *Introduction to the History of Science*; 3 vols; The Carnegie Institute of Washington; 1927-48. vol 2; p. 444.

³⁵ G. Sarton: Introduction; op cit; vol 2; p. 444.

³⁶ Francisco Codera y Zaidin and Julian Ribera y Tarrago: *Index librorum de diversis scientiarum ordinibus quos a magistris didicit*; Biblioteca arabico-hispanica, vols. 9 and 10, Saragossa, 1894-1895.

³⁷ G.S. Colin: Filaha; *Encyclopaedia of Islam*: New edition: Leiden; 1986, Vol 2, p. 901.

³⁸ G.S. Colin: Filaha; p. 901.

³⁹ G.S. Colin: Filaha; p. 901.

⁴⁰ G.S. Colin: Filaha; p. 901.

⁴¹ G.S. Colin: Filaha; p. 901.

Another botanist is Abu'l Khair (fl early 12th century), who is the author of a book on farming: *Kitab al-Filaha*. In this treatise, Abu'l Khair proposes four procedures to collect rain water, and other artificially obtained waters.⁴² Abu'l Khair stresses the need for the recuperation of rain water for the reproduction of olive trees by cuttings: before filling the holes, by throwing in small stones at the bottom of the plant so as to preserve moisture, then filling the hole.⁴³

Abu'l Khair also informs on the process of sugar making as conveyed to us by Ibn al-Awwam:

*Here is the process to make sugar: we cut the sugar cane when it has reached its point of maturity.... Then we cut it into small pieces, which are then well crushed inside presses (Ma'asara), or in similar apparatuses. Then is boiled the extract, then allowed to rest for a period of time, then it is sifted through it, before it is cooked again until only a quarter of the initial quantity is left. Then this concentrate is poured into moulds of clay of a special shape, which are then stored in the shade until they harden or crystallise; then the sugar is taken out to dry still in the shade and then is removed. The left over from the sugar cane is not wasted but is instead fed to horses who love it, and which helps them gain in strength and energy.*⁴⁴

Abu Zakariya Yabya Ibn Muhammad Ibn Ahmad Ibn al-'Awwam al-Ishbili is a Hispano-Muslim agriculturist who flourished at Seville about the end of the twelfth century. He wrote a treatise on agriculture, *Kitab al-filaha*, which is the most important Muslim work as well as the most important mediaeval one on the subject.⁴⁵ The treatise divides into two main parts, the first dealing with soils, fertilizers, water, gardens, trees, fruits and their preservation, etc, whilst the second deals with ploughing, the choice of seeds, the seasons and their tasks, grain farming, leguminous plants, small allotments, aromatic plants and industrial plants, harvesting, farming engineering, livestock breeding, poultry, and the treatise ends with a section devoted to veterinary subjects.⁴⁶ The treatise is divided into thirty-four chapters, of which the first thirty deal with agriculture proper, and the last four with cattle and poultry raising and apiculture.⁴⁷ Ibn al-'Awwam's treatise covers 585 plants, and explains the cultivation of more than fifty different fruit trees, besides containing striking observations on the different kinds of soil and manure and their respective properties, on various methods of grafting, on sympathies and antipathies between plants, etc.⁴⁸ Ibn al-Awwam also studies gardening, water variety, irrigation, animal husbandry and bee keeping, the symptoms of many diseases of trees and vines are indicated, as are also methods of cure.⁴⁹ Leclerc makes a very important observation, that in Ibn al-Awwam's work, there is no place for superstition, which is found in every work prior to the Muslims, and including with that figure of the Islamic period, Ibn Wahshiya,⁵⁰ who wrote *Filaha Nabatiya*.

Ibn Al-Awwam innovated further as we hear from him:

⁴² Abu'l- Khair *Kitab al-Filaha*; in . V. Lagardere: *Campagnes et paysans d'Al Andalus*; Maisonneuve; Larose; Paris; 1993; at p. 265.

⁴³ Abu'l- Khair *Kitab al-Filaha*; p. 140 fwd in . V. Lagardere: *Campagnes*; p. 265.

⁴⁴ Ibn al-Awwam; p. 393, in V. Lagardere: *Campagnes*; p. 384.

⁴⁵ G. Sarton: Introduction; op cit; pp. 424-5.

⁴⁶ L. Leclerc: *Histoire de la medecine Arabe*; Paris; 1876; vol 2; p. 111.

⁴⁷ G. Sarton: Introduction; op cit; pp. 424-5.

⁴⁸ G. Sarton: Introduction; vol 2; p. 425.

⁴⁹ G. Sarton: Introduction; vol 2; p. 425.

⁵⁰ L. Leclerc: *Histoire*; op cit; vol 2; p. 110.

*After reading the books on farming legated to us by both Muslim farming manual writers and their ancient predecessors, who wrote on farming under all sorts of conditions, my attention has remained fixed upon whatever is worth in these works. I report the opinions of these authors textually as they have written themselves in their treatises without ever trying or seeking to modify such expressions. As for me, I write nothing which is proper to me without it having been first tried on the ground through experiment and observation.*⁵¹

Thus, once more, we are confronted to this re-occurring and dominant feature and distinction of Islamic science, that is its fundamental reliance upon the observed, and the experimental.

Ibn al-Awwam's work was published in a Spanish translation,⁵² and a French version⁵³ between the end of the eighteenth and the middle of the nineteenth for utilitarian purposes as the techniques it describes were of particular interest to the development of agriculture in both Spain and Algeria.⁵⁴ Both editions and translations were very unsatisfactory, according to Sarton,⁵⁵ an opinion which is shared by Leclerc, who blames the deficiencies on the old age of Clement Mullet pressed by time, and thus stresses the need for a new, better translation of the work.⁵⁶ However, since Leclerc was writing, in 1876, and since Sarton was, early in the 20th century, such translation has not been forthcoming, and reliance is still on the deficient ones by both Banqueri and Mullet. There is an edition of the work into Urdu,⁵⁷ but still none into English, and none into Arabic easily available!

Abu Abbas Ahmad Ibn Muhammad Ibn Mufarraj, often called al-Nabati, or Ibn Rumiya (son of the Christian woman), also al-Hafiz (he who knows the Qur'an and Hadith (Tradition) by heart), is a Hispano-Muslim botanist born in Seville in 1165-6 or 1171-72, and died in Spain, Seville, very probably in ca. 1239-40.⁵⁸ His knowledge of plants was primarily derived from his direct study of them, and he seems to have been interested in them for their own sake, not just for medical purposes.⁵⁹ He was the teacher of his worthy successor, Ibn al-Baytar (see Malaga), with whom he shared the love for plants and the science of botany, and he was part of the group which also included other illustrious figures in the field Abdallah ben Salah and Ibn Al-Hadjadj, of Seville.⁶⁰

He made many botanical excursions in Spain and across the straight; then in ca 1217, he travelled eastwards, in North Africa, Egypt and further on, to complete his botanical investigations and perform the pilgrimage. The Ayyubid sultan Al-Adil (ruled 1199-1218) tried to retain him in Cairo, but al-Nabati remained only long enough to collect the ingredients necessary for the king's treacle, and he then proceeded to Syria and Iraq where he learned to know many plants not grown in the West, and he finally returned to Spain.⁶¹

⁵¹ L. Leclerc: *Histoire*; op cit; vol 2; p. 110-1.

⁵² Joseph A. Banqueri; 2 vols., folio, Madrid 1802.

⁵³ *Le Livre de l'agriculture*, by Clement-Mullet; 2 tomes in 3 vols., Paris 1864-1867.

⁵⁴ J Vernet and J Samso: *Development of Arabic Science in Andalusia*, in *Encyclopedia of the History of Arabic Science*; Edited by Roshdi Rashed; 3 vols; Routledge, London and New York: 1996. Vol 1, pp 243-76., p. 263.

⁵⁵ G. Sarton: *Introduction*; vol 2; p. 425.

⁵⁶ L. Leclerc: *Histoire*; op cit; vol 2; p. 113.

⁵⁷ G.S. Collin: *Filaha*; op cit; p. 902.

⁵⁸ G. Sarton: *Introduction*; op cit; vol 2; p. 650.

⁵⁹ G. Sarton: *Introduction*; op cit; vol 2; p. 651.

⁶⁰ L. Leclerc: *Histoire*; op cit; vol 2; p. 244.

⁶¹ G. Sarton: *Introduction*; op cit; vol 2; p. 651.

He wrote an account of his journey, *Kitab al-Rihla*, which deals primarily with his observations of plants many of which were new, e.g. those relative to plants growing along the shores of the Red Sea.⁶² The *Rihla* is lost, and is only known through some of the writing of Ibn Al-Baytar, who makes over a hundred citations from it, most of the plants cited and described were completely unknown.⁶³ Amongst the plants collected in the Maghrib, most with local names, Leclerc cites their Latin equivalent, *Bunium bulbocastanum*; *Rhamnus alaternus*; *gentianeae*; *Centaurea tinctoriale*; *meum*; etc.⁶⁴

Two other works are ascribed to Ibn Rumiya: *Explanation of the names of simples in Dioscorides*, and *Treatise on the composition of drugs*. Leclerc insists, that instead of following his Muslim or Greek predecessors, Ibn Rumiya made a personal study of the plants, and, like Ibn al-Awwam, relied on observation and experimentation.⁶⁵ He also introduced new methods of investigating the properties and uses of drugs, doing away with the old methods of the Greeks (Galen and others.)

Before leaving this subject, point is made by Levey, who insists that because of its accumulation of thousands of years of experience, Muslim pharmacology may still bear something of value for modern science.⁶⁶ Medicinal properties, particularly of botanicals known to Muslim physicians and apothecaries, he adds, deserve great attention. Some important medicinal plants prescribed today have been explored with success, and more remains to be done, and clues to valuable drugs, he holds, can be found in the early texts in Arabic.⁶⁷

There is a good number of architects famed for their work in Seville. One of the earliest was Abu Ibrahim b. Aflah ar-Rakham (the marble mason, who in September 1079, completed restoration works at the Mosque of Seville after it had been damaged weeks before.⁶⁸ More renowned, though, is Abu-I-Laith as-Siqilli, who succeeded Ali-Al-Ghumari as architect of the Giralda, which he completed in February 1198.⁶⁹ The Giralda, or minaret, which towered over the mosque of Seville, and still for the most part intact early in the twentieth century, is the principal ornament of its cathedral, and is the greatest monument to its fame.⁷⁰ Scott offers a good non too technical description of the edifice, which is outlined here. The base of Giralda is a square of fifty feet; its original height was three hundred. For eighty seven feet from the foundations the walls are of stone blocks fitted with the greatest nicety, and once polished to the smoothness of glass. The superstructure is of brick, and almost covered with graceful arabesque patterns in terra cotta. Each side is divided into six panels with the designs in bas relief, the panels resting upon ogival arches. In the central panels are a series of ajimezes or Muslim windows, whose compartments are separated by miniature columns of alabaster..... The minaret as originally designed was crowned with battlements, and was surmounted by another tower eight cubits in height, of similar plan but of much more elaborate ornamentation. Above the latter structure rose a bar sustaining four bronze balls of different sizes placed one above the other. The general colour of the building was a brilliant red due to the bricks of which it was principally composed. Within this bright setting the sunken arabesques glowed with all the splendour of the richest damask. The interstitial portions of the designs were painted with scarlet, azure, green, and purple,

⁶² E. H. F. Meyer: *Geschichte der Botanik*, I-IV, Königsberg, 1854-7. vol 3; pp. 233-6.

⁶³ L. Leclerc: *Histoire*; op cit; p. 247.

⁶⁴ L. Leclerc: *Histoire*; op cit; p. 247.

⁶⁵ L. Leclerc: *Histoire*; p. 244.

⁶⁶ M. Levey: *Early Arabic Pharmacology*, Leiden, E.J. Brill, 1973. preface, pp vii-viii.

⁶⁷ M. Levey: *Early Arabic*, op cit, preface, pp vii-viii.

⁶⁸ L.E. Mayer: *Muslim architects and their works*; Albert Gündig; Geneva; 1956; p. 38.

⁶⁹ L.E. Mayer: *Muslim architects*; p. 39.

the parts in relief were gilded..... The interior of the famous minaret presents some extraordinary, not to say unique, architectural features. Its walls are nine feet in thickness at the base, and instead of decreasing in dimensions, become still more solid as they rise, until the capacity of the structure near the summit is but little more than half what it is at the bottom. This ascent is made by thirty five ramps, or inclined planes, resting upon vaults and arches, and supported by a shaft of masonry built in the centre of the tower.⁷¹

Another famed architect who also contributed to the erection of the Giralda, and whose fame is the greatest, is Ahmad B. Baso. He spent his youth in Seville, and in 1160 directed architectural works for the Almohads at Gibraltar, later erecting some public buildings and frontier fortresses in Cordova, then, by 1171-2, at the latest was back in Seville.⁷² In Ramadhan of that year, he began the main mosque and its minaret on which he worked until 1184-5, before in that year, he constructed the Buhaira palace outside the Puerta de Chahuar of Seville.⁷³ It was the Almohad ruler Abu Yaqub Yusuf who delegated the architects Ahmad Ibn Basso and Abd Allah Ibn Amr to build the Great mosque of Seville in 1172-6. Little remains now but the blind pointed horseshoe brick façade with stepped cresting in the Court of Oranges, and two entrances one covered with a Mukarnas vault, and the other with bold stucco carving in the soffit of its arch. The bronze door of the latter has engraved on it floral motifs within hexagonal compartments, an open work door handle with frilled outline, and lettering in Kufic with the formula `The Kingship is Allah's'.⁷⁴ Ibn Basso's work on the Giralda was continued by Ali-Al-Ghumari, and finished by Abu-I-Laith As-Siqilli in 1198.⁷⁵

The subject of Hisba has been looked at in great detail in the entry on Malaga under its author there Al-Saqati. Seville, too, had its author on the same subject: Ibn Abdun Muhammad B. Ahmad. He flourished at the end of the 11th century, and lived under the early Almoravids as he speaks of them as the new masters of the city.⁷⁶ His short treatise, together with that of his contemporary Al-Saqati (of Malaga), is a most valuable source of urban, economic and social life in Muslim Spain in this period.⁷⁷ There is no need to dwell here on this crucial role of the Muhtassib, his tasks and duties, the sources of the function, forms, origins, and much else already well detailed under the entry on Malaga (Al-Saqati).

The treatise by Ibn Abdun is available in French thanks to the labours of Levi Provençal, who edited it and translated it into French, from which the following is extracted to highlight a very interesting point not dealt with anywhere else in the depiction of Islamic civilization, and which relates to the Muhtasib's regulation with regard to prison and prisoners.⁷⁸ Thus goes Ibn Abdun:

`Prisons must be inspected twice or three times a month so as to make sure of the good welfare of the prisoners, and in case the cells become overcrowded. Those who had committed light crimes should be taken out of prison quickly.

⁷⁰ S.P. Scott: History; op cit; vol 2; p. 316.

⁷¹ S.P. Scott: History; op cit; vol 2; pp. 316-9.

⁷² L.E. Mayer: Muslim architects; op cit; p. 42.

⁷³ L.E. Mayer: Muslim architects; p. 42.

⁷⁴ R.A. Jairazbhoy: *An Outline of Islamic Architecture*; Asia Publishing House; Bombay; London; etc; 1972; at p. 95.

⁷⁵ L.E. Mayer: Muslim architects; op cit p. 42.

⁷⁶ F. Gabrieli: Ibn Abdun; in *Encyclopaedia of Islam*; vol 3 of new edition; p. 681.

⁷⁷ F. Gabrieli: Ibn Abdun; p. 681.

⁷⁸ E. Levi Provençal: *Seville Musulmane au debut du XII siecle* (le Traite d'Ibn Abdun sur la vie urbaine et les corps de metiers; Maisonneuve; Paris; 1947. The particular passage on prisons and prisoners is at pp. 39-42.

When relaxed, prisoners ought to be on the days of Ramadhan, or the 10th day of Dhu al-Hidja, or in the middle of Shaaban as these are days of celebration.

People ought not be detained too long in prison, but either the judgments against them must be executed, or they must be freed...

The prison guard ought never take or ask anything from the prisoners... prisoners must not be shackled except for the most dangerous amongst them, and shackled prisoners ought to be freed at the time of prayer and when they need to do it (as to relieve themselves).

Women ought never be imprisoned alongside men. Their guards ought to be chosen amongst older men with a reputable moral and personal life. Women should never be kept too long in prison. Women prisoners are to be released quickly to the care of a matron of good reputation who will receive in exchange a salary from public finance for her work.

Prison guards ought never to be too many. Too many of them, and disorder will spread in the place...

He whomsoever had his hand amputated ought to be released and left to seek people's piety until he heals.

Guards ought never to beat a prisoner out of their own initiative, either to terrorise or to hurt. Nobody is entitled to stop visits to prisoners.

An imam must be put at the disposal of prisoners, and will meet them at the hours of prayers, and will lead in the prayers. This imam will be paid for his services out of public finance.

Nobody is to be executed until the head of the government had been consulted three times in succession.

Agents of authority ought to be banned from using whips; whipping prisoners is utterly forbidden. [Those who] can only deliver such punishment the head of government [are] the prefect of the city, the Cadi (the judge), the Muhtasib and the judge second in command.

Nobody has the right to put anyone in prison without the authorization of the Cadi or the head of the government.⁷⁹

Medical sciences equally thrived in Seville, and one family, the Ibn Zuhr dominated the subject. The ancestor of the Spanish line was named Zuhr, hence the patronymic Ibn Zuhr. The first prominent member of the family was a jurist, Abu Bakr Muhammad Ibn Marwan, who died at Talavera in 1030-1031, at the age of 86. His son, Abu Marwan 'Abd al-Malik, was a great physician, especially famous as a skilful diagnostician, who practiced in Al-Qairawan, Cairo, and finally returning to Spain, settled in Denia where he died in 1077-1078.⁸⁰ This Abu Marwan had a son, Abu-l-'Ala, who is the subject of the present note.

⁷⁹ E. Levi Provençal: *Seville Musulmane*; pp. 39-42.

⁸⁰ G. Sarton: Introduction; op cit; vol 2; p. 231.

Abu-l-'Ala' studied at Cordova at the school of Abu Al-Aina, a doctor who came from the Orient to Spain.⁸¹ He was even more successful as a physician than his father. He was attached to the court of al-Mutamid, the last 'Abbadid king of Seville (ruled from 1068 to 1091), and after the conquest of Seville by the Berber Murabitin (Almoravides) in 1091, he became wazir to the Yusuf ibn Tashfin (who ruled until 1106).⁸² His usual name, Al-wazir Abu-l-'Ala' Zuhr, was corrupted by early Latin translators into Alguazir Albuleizor (and variants). He died in Cordova in 1130-1131, and was buried in Seville.⁸³ His main title to fame is the fact of being Ibn Zuhr's father, but he deserves to be remembered for his own activity. He wrote a number of medical books: *Kitab al-khawass*, Book of (medical) properties; *Kitab al-adwiya-l-mufrada*, Book of simple drugs; *Kitab al-'idah*, Book of explanation; *Kitab hall shukuk al-Razi 'ala kutub Jalinus*, Solution of al-Razi's doubts with regard to Galen's works (which proves if needs be that the Muslims were very critical of Greek science); *Mujarrabat*, Experimental facts (Medical observations); *Maqala fil-radd ala Abu 'A'li ibn Sina fi mawadi' min kitabih fi-l-adwiya-l-mufrada*, Discourse of refutation of a few points in Ibn Sina's book on simple drugs; *Maqala fi basthi lirisala Ya'qub itn Ishaq al-Kindi fi tarkib al-adwiya*, Discourse wherein is explained al-Kindi's letter on the composition of drugs; *Kitab al-nukat al-tibbiya*, Main principles of medicine.⁸⁴ The last named is almost certainly identical with another work of his, the *Tadhkira*, or Reminder, which he wrote for his son 'Abd al-Malik (Avenzoar) when the latter was travelling in Morocco. It is a practical guide containing special references to climatic and pathological conditions in Marrakech; complementary information on various medical subjects; and also deontological advice.⁸⁵ This treatise has sometimes been ascribed, wrongly, to the son.

The best known and most renowned physician of the Muslim Spanish period was Ibn Zuhr (Avenzoar). He was born between 1091 and 1094 in Seville, the most illustrious member of the famous Ibn-Zuhr family that produced six generations of physicians in direct descent.⁸⁶ His full name was Abu Marwan 'Abd al-Malik ibn Abi-l-'Ala' Zuhr, etc. (see his father's name, above). He was often called Abu Marwan Ibn Zuhr, hence the Latin form Abhomeron Avenzoar, or Avenzoar. He was born in Seville about 1091-1094, and died in the same city in 1161-1162.⁸⁷ Ibn Zuhr was not a Jew. This is sufficiently obvious, and need not be stated but for the fact that some good scholars, beginning with Casiri (*Bibliotheca arabico-hispana*, 1760), have maintained erroneously the opposite view.⁸⁸

Among the many distinguished physicians of the Muslim West, he was by far the greatest; he was also the most famous physician of his time, not only among Muslims, but also in Christendom.⁸⁹ He served under the Almoravids, and after them the Almohads (Muwahhid, Unitarians). He became wazir (minister) and physician to 'Abd al-Mu'min (ruled 1130-1163), a ruler well known for his great intelligence, his genius for organization, and his large support to culture and science, and who took Ibn Zuhr at his service.⁹⁰ For many

⁸¹ L. Leclerc: *Histoire*; vol 1; p. 83.

⁸² G. Sarton: *Introduction*; op cit; vol 2; p. 231.

⁸³ G. Sarton: *Introduction*; op cit; vol 2; p. 231.

⁸⁴ F. Wustenfeld: *Geschichte der Arabische Aerzte*; Gottingen; 1840; p.91.

⁸⁵ Gabriel Colin: *La Tedkira d'Abu'l-'Ala'*, publiee et traduite pour la premiere fois (86 p., Publications de la Faculte des lettres d'Alger, 45; Paris 1911); Arabic and French text with technical glossary.

⁸⁶ 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.52.

⁸⁷ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

⁸⁸ G. Sarton: *Introduction*; op cit; vol 2; p. 233.

⁸⁹ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

⁹⁰ L. Leclerc: *Histoire*; op cit; p. 87.

years he was the court physician and vizier to ' Abd-al-Mu'min, founder of the Muwahhid dynasty, and unlike so many of the physicians of that period in Spain, he confined his activities to the field of medicine.⁹¹ Colin has written one of the best, if possibly the best outline of Ibn Zuhr, on his life and work, and which is available in French.⁹²

Ibn Zuhr was formed at the school of his father, and became an eminent practitioner, with great medical experience, never relying on the Ancients (Greek) legacy, but instead, submitting everything to experimentation.⁹³ He wrote six medical texts, of which three are still to be found in a few of the libraries, like the British Museum and the Bibliothèque Nationale.⁹⁴ The three extant works, in chronological order, are as follows:

(1) *Kitab al-iqtisad fi islah al-anfus wal-ajsad*, Book concerning the reformation of souls and bodies, completed in 1121-1122, for the Almoravid prince Ibrahim ibn Yusuf ibn Tashfin—the son of the Yusuf, to whom Abu-l-'Ala' Zuhr had been the wazir. It is a summary of therapeutics and hygiene, composed for the benefit of lay readers. It remained apparently incomplete; it contains fifteen iqtisad; it is probable that the author meant to write a second volume; there would then have been thirty iqtisad. As the title indicates, it treats of souls as well as bodies; the beginning of it is a summary of psychology.⁹⁵

(2) *Kitab al-taysir fi-l-mudawat wal-tadbir*, Book of simplification concerning therapeutics and diet. This is Ibn Zuhr's most important work. It was written at the request of Ibn Rushd, who was a great friend and admirer (though not a disciple); it would seem that they both meant the *Taysir* to be the counterpart of the *Kulliyat* (of Ibn Rushd), the latter dealing with the generalities of medicine, the former with more special topics.⁹⁶ If that be true, the task was certainly very well distributed between them, Ibn Rushd being primarily a philosopher, while the older man, Ibn Zuhr, was first of all a clinician or practitioner. The *Taysir* contains an elaborate study of pathological conditions and relevant therapeutics, the whole being followed by an antidotary or formulary called *Jami'* (meaning Collector—collected recipes), which is sometimes mentioned as a separate work.⁹⁷ The *Taysir* deals with specific medical conditions, among them are pericarditis, pharyngeal paralysis, inflammation of the middle ear, and recommended tracheotomy for laryngeal obstruction.⁹⁸ Ibn Zuhr realized the noxiousness of the air coming from marshes; he was a great advocate of venesection; he examined human ossements.⁹⁹

(3) *Kitab al-aghdiyya*, Book of foodstuffs, composed for the first Almohad caliph, 'Abd al-Mu'min, who ruled from 1130 to 1163. This work treats various kinds of food and their use according to the seasons; simple drugs, and hygiene. It also indicates the usefulness of various bezel stones.¹⁰⁰

Amongst the works which are no longer extant, there is a treatise on cosmetics, reproduced twice by Wustenfeld, under the title *Liber ornamenti*, and under *Liber de decoratione*; a treatise on leprosy, and a memorial addressed to his son on what to do in the treatment of diseases and the use of laxatives.¹⁰¹

⁹¹ A. Whipple: *The Role*, op cit; p.52.

⁹² Gabriel Colin: *Avenzoar, sa vie et ses oeuvres* (200 p., Publications de la Faculte des Lettres d'Alger, vol. 44; Paris 1911.

⁹³ L. Leclerc: *History*; vol 1; op cit; p. 86.

⁹⁴ A. Whipple: *The Role*, op cit; p.52.

⁹⁵ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

⁹⁶ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

⁹⁷ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

⁹⁸ A. Whipple: *The Role*, op cit; p.52.

⁹⁹ G. Sarton: *Introduction*; op cit; vol 2; p. 233.

¹⁰⁰ G. Sarton: *Introduction*; op cit; vol 2; p. 232.

¹⁰¹ F. Wustenfeld: *Geschichte der arabischen Aerzte*; 1840; p.90. L.Leclerc: *Histoire*; op cit; vol 1; pp. 92-3.

Although he may not have been the first to describe the itch mite (*Acarus scabiei*), Ibn Zuhr was one of the first paracytologists.¹⁰² He was anticipated in this by Ahmad al-Tabari (second half of the tenth century), a few extracts of the *Kitab al-mualaja al-buqratiya* have been translated into German by Mohamed Rihab.¹⁰³

Through Hebrew and Latin translations, Ibn Zuhr's influence upon European medicine was maintained until the end of the seventeenth century.¹⁰⁴ The *Taysir* was promptly translated into Hebrew. There were at least two early Hebrew translations, both anonymous, one of which was known in Italy before 1260.¹⁰⁵ Jacob the Hebrew (Magister Jacobus Hebraeus) translated a Hebrew translation into vulgar language (Venitian?), and this version was turned into Latin by Paravici in 1280-1281. This Latin translation, *Adjumentum de medela et regimine*, was printed in Venice in 1490, 1496, 1497, 1514, 1530; Lyon 1531 (bis); Venice 1554 (?).¹⁰⁶ All of these editions contain both the *Taysir* and the *Kulliyat*. Outside of these complete editions, there appeared also many separate ones: for example, *Libellus Zoar de cura lapidis* (Venice 1497); editions of relevant parts included in the collections *De balneis* (Venice 1553); and *De febribus* (Venice 1594).¹⁰⁷

Another Latin translation of the *Taysir* was made by John of Capua (second half of the thirteenth century); not from the Arabic as has been claimed, but from the Hebrew. (Illustrated MS., Faculty of Medicine, Paris). This translation seems to be more correct than the one which was so often reprinted; yet both are full of errors and obscurities. Sarton insists that a critical edition of the Arabic text, and a good translation based upon it, are badly needed.¹⁰⁸

To complete the history of this great medical dynasty, Ibn Zuhr's only son, Abu Bakr Muhammad ibn 'Abd al-Malik, etc., nicknamed al-Hafid (the grandson), was born in Seville in 1110-1111 (or 1113-1114), and died in 1199. He was a successful physician, but was more famous among his contemporaries as a man of letters and a poet, but a treatise on eye diseases is ascribed to him.¹⁰⁹ Just like his father, after serving the Almoravid rulers, he also served their successors, the Almohads, serving both Abu Yaqub Yussuf al-Mansur, and then Al-Nassir.¹¹⁰ A group of envious dignitaries wrote a letter to Al-Mansur, in which they made serious allegations against Abu Bakr Al-Hafid, but al-Mansur instead had the accusers imprisoned as his confidence in Abu Bakr was boundless.¹¹¹ It is said, that whilst in Morocco, Abu Bakr felt great nostalgia, missing the presence of his family, and wrote verses about his state. Al-Mansur read the verses, and one day when Ibn Zuhr returned home, to his immense joy, he found his family waiting for him, Al-Mansur having had them secretly shipped from Spain.¹¹²

¹⁰² A. Whipple: *The Role*, op cit; p.52.

¹⁰³ Mohamed Rihab: *Archiv für Geschichte der Medizin*, 19, 123-168, 1927; the reference to the itch-mite will be found on p. 134; See *ISIS*; 10, p.119.

¹⁰⁴ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹⁰⁵ M. Steinschneider: *Die hebraischen Übersetzungen des Mittelalters*; 1893; pp.748-52.

¹⁰⁶ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹⁰⁷ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹⁰⁸ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹⁰⁹ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹¹⁰ L. Leclerc: *Histoire*; op cit; p. 93.

¹¹¹ L. Leclerc: *Histoire*; op cit; p. 94.

¹¹² Al-Maqqari quoted by L. Leclerc: *Histoire*; p. 95.

Abu Bakr Ibn Zuhr had also a daughter who became a skilful midwife, as did her own daughter later, delivering the children of the Almohad ruler, Al-Mansur, and his family.¹¹³ This daughter was poisoned at the same time as her uncle, Abu Bakr al-Hafid Ibn Zuhr, in Marrakech in 1199 by a hateful vizier.¹¹⁴

Abu Bakr Muhammad left a son, Abu Muhammad 'Abdallah ibn al-Hafid, born in Seville in 1181-1182, who became also a successful physician in the Almohad service, and just as his father, he died poisoned in 1205-6, and was buried in Seville near his family ancestors.¹¹⁵ He also left two sons who lived in Seville; the youngest, Abu-I-'Ala' Muhammad, was also a physician; he represented the sixth generation of physicians in direct descent in the Ibn Zuhr family.¹¹⁶ There could have been a new generation of Ibn Zuhr's, possibly, but soon, Seville was going to be taken by the Spaniards, and just as their line of scholarship ended, so was going to be that of all Muslim scholarship in the city, ending at precisely the same juncture (in the 1240s).

But it was no loss of one single science the loss of Muslim Seville caused, but all sciences, which thrived in that mighty city, including exact sciences, such as mathematics. One of the mathematicians of Seville is Ibn al-Yasamin al-Ishbilli, one of the so many neglected, and yet accomplished scholars, who had a great impact on the science, an impact brought to general knowledge by the excellent entry on him by A. Djebbar, and out of which the following is derived.¹¹⁷ Ibn al-Yasamin (fl second half of the 12th century; d. 1204) comes originally from North Africa, of Berber descent, and, of Black skin, just as his mother was. He was according to the historian Ibn Said educated in Seville, including on the hands of Ibn Qasim al-Shalubin, who taught him algebra and the science of calculation, an education which was not restricted to mathematics since we know he also became famous in literature and poetry, and also was a legal expert. According to Ibn al-Abar, Ibn Yasamin wrote his famous algebraic poems in Seville, poems which in 1190 he was using in his teaching. Like most scholars of the time, Ibn al-Yasamin was a welcome visitor of the Almohad court, especially under Abu Yusuf Waqub (Al-Mansur) (ruled 1184-1199).

The best known work of Ibn al-Yasamin is a poem of fifty three verses in rajaz meter entitled *Al-Urjuza al-Yasminiya fi'l jabr wal Muqabala* (Poem on Algebra and restoration). In it, Ibn al-Yasamin defines the algebra known in his time: number, root, and sequence, then the six canonical equations of al-Khwarzmi with the processes of solving them, and finally the operation of algebra-the restoration, comparison, multiplication, and division of monomials. This work has been widely read not just in Spain and the Maghrib, but much beyond.

The success of this work led Ibn al-Yasamin to write a second on irrational quadratic numbers and maybe a third on the method of false position, and a fourth work entitled *Talqih al-afkar bi rushum huruf al-ghubar* (Fertilisation of thoughts through the help of dust letters). This latter work is the most important of all for both its quantity as well as quality. It is a book of two hundred folios which contains classic chapters on the science of calculation and geometry, amongst the works of the Muslim West, which have come to us, the only which consolidates these two disciplines. Its importance is also due to the nature of its material and its mathematical tools, which make it an original book and also one which is totally representative of this

¹¹³ L. Leclerc: Histoire; p. 94.

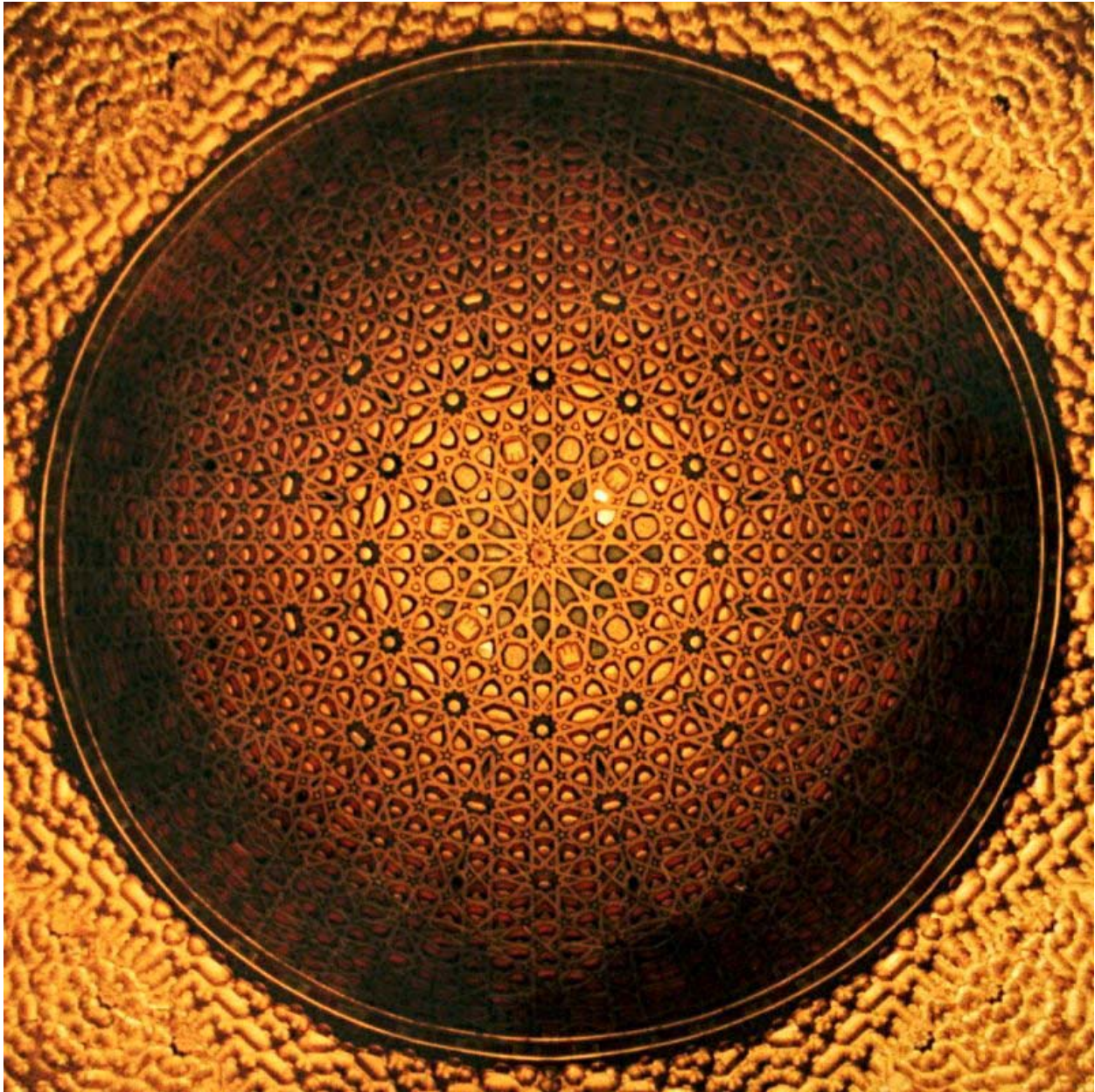
¹¹⁴ L. Leclerc: Histoire; p. 94.

¹¹⁵ G. Sarton: Introduction; op cit; p. 233.

¹¹⁶ G. Sarton: Introduction; op cit; vol 2; p. 233.

¹¹⁷ A. Djebbar: Ibn al-Yasamin; in *Encyclopaedia of the history of Science, technology, and Medicine in Non Western Cultures*; edited by H. Selin; Kluwer Academic Publishers. Dordrecht/Boston/London, 1997; pp. 414-5.

period of transition in which three mathematical traditions were juxtaposed: of the east, Andalus, and the Maghrib, before they became blended in the same mold.¹¹⁸



Cupula in Al-Cazar^{*}

There are some modern studies on Ibn al-Yasamin, which require further explorations so as to understand not just the previous point made by Djebbar, but also understand the situation and role of Islamic mathematics in Spain and their wider impact.¹¹⁹

¹¹⁸ A. Djebbar: Ibn al-Yasamin; p. 415.

* source - <http://primates.ximian.com/~federico/photo/guadec-2002/>

¹¹⁹ See, for instance:

-S. Jalal: *Manzumat Ibn al-yasamin fi amal al-Jabr wal hisab*; Kuwait; Mu'assassat al-Kuyat li taquadhum al-ilmi; 1988.

Seville is by far the best successor to its predecessor, Toledo, and excelled that city in every single science it inherited from it. Thus, with regard to astronomy and instrument construction it even surpassed it, especially with regard to astronomy. It produced two of the greatest figures of the science of astronomy, who laid the foundation of astronomy as we know it today.

Abu Muhammad Jabir ibn Aflah. The astronomer Geber of Latin writers, who should not to be confused with the chemist Geber, Jabir ibn Hayyan (fl. second half of the eighth century). Jabir Ibn Aflah is a Hispano-Muslim astronomer and mathematician, born or lived in Seville; died probably about the middle of the twelfth century (this author is here correcting Sarton (Introduction. Vol2 2; p. 206), who by mistake places Jabir in the 13th century, whilst subsequent Muslim writers of the early 13th century were aware of his writing, which hence makes no sense. Sarton's mistake must be, however, due to lack of attention only, for he correctly lists Jabir in the volume he devotes to the twelfth century).

Jabir wrote a treatise on astronomy, *Kitab al-haiaa*, also called Correction of the Almagest, *Islah al-Majisti*, which was soon translated into Latin by Gherardo Cremonese under the title: *Gebri filii Affla Hispalensis de astronomia libri IX in quibus Ptolemaeum, alioqui doctissimum, emendavit*.¹²⁰ This translation was published by Peter Apian in Nurnberg in 1534, together with the other treatise *Instrumentum primi mobilis*.¹²¹ Subsequent translations of Jabir Ibn Aflah were made into Hebrew by Moses ibn Tibbon in 1274, then again by Jacob ben Mahir (second half of the thirteenth century); this second translation was commenced by Samuel ben Judah and completed in 1335.¹²²

In this work Jabir severely criticised Ptolemy, and correctly asserted that the lower planets, Mercury and Venus have no visible parallaxes.¹²³ Sarton makes the following point, that Jabir criticized vigorously the Ptolemaic theory of planets but did not propose a better one, that the lower planets (Mercury and Venus) at least must have a perceptible parallax; Venus may happen to be exactly on the line joining the sun and the earth.¹²⁴ Sarton's criticism of Jabir for failing to propose something better than Ptolemy despite being severely critical of him misses the main point. The fact is, indeed, science and scholarship advance on the merits of those who criticize, and show the weakness of an established argument, and demonstrate it to be so. Those amongst scholars who highlight and demonstrate the weakness and deficiencies of a previous theory have the great merit of demolishing it, and preparing the ground for their followers to build upon their work. They do not need to do it themselves. Hence, Jabir, by destroying Ptolemaic astronomy and demonstrated its shortcomings, had set the foundations upon which his successors built and gave us modern astronomy. And in this respect, he deserves much more than the dismissive remark, which is, unfortunately, the case for most accounts of Muslim scholarship, even on the part of those who supposedly praise Islamic achievements, always dismissing them in the end as pale accomplishments in comparison to their Greek counterparts.

However, whilst Sarton is only guilty of the mild crime of being somehow dismissive, and whilst he, Sarton, is by far, the most favourable Western scholar to Islamic civilization, others, such as the leading figure of

-M Souissi: *Al-luma al-maradiniya fi sharh al-Yasminiyya*; Kuwait; 198.

T. Zemouli: *Mu'allafat Ibn al-Yasamin ar-riyaddiya*; master thesis; E.N.S. Algiers; 1993..

¹²⁰ H. Suter: *Die Mathematiker und Astronomen der Araber*; 1900; p.119; Nachtrage, 1902; p. 174.

¹²¹ G. Sarton: Introduction; vol 2; p. 206.

¹²² M. Steinschneider: *Ebraische tibersetzen*; 1893; pp. 543, 849.

¹²³ P.K.Hitti: *History of the Arabs*, MacMillan, London, 1970 ed. p. 572.

¹²⁴ G. Sarton: Introduction; op cit; vol 2; p. 206.

Western history of science, Duhem, dismisses Muslim science as pure plagiarism of the Greeks as here with Jabir Ibn Aflah. In his famed, and the textbook of history of science for generations of followers, *Le Systeme du Monde*, Duhem dismisses Jabir's astronomy as simply a translation of Greek astronomy, and pure plagiarism.¹²⁵ Yet, as just established, and as was subsequently made evident by the rare scholars not keen to take Duhem's words as established fact, Jabir Ibn Aflah precisely wrote his work in refutation of Greek astronomy, thus, its very reverse. How can a theory which demolishes another be a plagiarism of it? This is one of many contradictions writers on Islam and Islamic history are guilty of.

Duhem incidentally is the same leading historian who set his hordes of followers on the following line of thought, that the Muslims burnt Greek science, and yet, few lines down, the same Muslims plagiarized Greek science. Duhem goes, indeed:

*“The revelations of Greek thought on the nature of the exterior world ended with the ‘Almagest,’ (by Ptolemy) which appeared about A.D. 145, and then began the decline of ancient learning. Those of its works that escaped the fires kindled by Mohammedan warriors were subjected to the barren interpretations of Mussulman commentators and, like parched seed, awaited the time when Latin Christianity would furnish a favourable soil in which they could once more flourish and bring forth fruit.”*¹²⁶

If Duhem is to be followed, the Muslims are responsible for one thing, and for its total opposite, both at once. Indeed, according to him the Muslims were fanatic, rampaging hordes, burners of Greek science, and also pale imitators, copiers of the Greeks. They cannot be both, though. How can you copy a book that you have burnt; or convey a science that you have destroyed on first contact? Incidentally, both these conflicting opinions can be found not just with Duhem, but also with his crowd of followers, who pursue the same aberrations.

Back to Jabir, who is specially noted for his work on spherical trigonometry, a science in which the Arabs in general made great advances.¹²⁷ He introduced the equivalent of the formula: $\cos B = \cos a \cdot \sin B$ for a spherical triangle rectangular in C.¹²⁸

Jabir was also the first to design a portable celestial sphere to measure and explain the movements of celestial objects.¹²⁹ The invention of the astronomical instrument called turquet has been ascribed to him.¹³⁰

The point previously made, how after Jabir Ibn Aflah demolished Greek astronomy, rose al-Bitruji, who built on his work and set up the foundations of modern astronomy. Al-Bitruji (known as Alpetragius) was born in Morocco, lived in Seville and died around 1204. His biography is well summed up in the entry by Julio Samsó in the *Dictionary of Scientific Biography*, upon which reliance is made here.¹³¹ Al-Bitruji's '*Kitab-al-Hay'ah*' was popular in thirteenth century Europe, and was translated by the Sicilian based Michael Scot (who was either Irish or Scot) under the title

¹²⁵ A. Duhem: *Le Systeme du monde*; vol. 2, Paris; 1914; pp. 172-179, in G. Sarton: Introduction; vol 2; p. 296.

¹²⁶ P. Duhem: Medieval Physics, in R. Palter edition: *Toward Modern Science*; The Noonday Press; New York; 1961; Vol 1; pp 141-159; Quote at p. 141; This article is a reprint from "Physics, history of," *Catholic Encyclopedia*, XII (1911), pp 47-52.

¹²⁷ W. Montgomery Watt: *The Influence of Islam on Medieval Europe*, Edinburgh University Press; 1972. p. 35.

¹²⁸ Von Braunmuhl: *Geschichte der Trigonometrie*; vol. 1, 1900; pp. 81-3.

¹²⁹ W.M. Watt: Influence, op cit, p. 35.

¹³⁰ R.P. Lorch: The Astronomical Instruments of Jabir Ibn Aflah and the Torquetom; *Centaurus*, 1976; vol 20; pp 11-34.

¹³¹ J. Samsó: Al-Bitruji; in *Dictionary of Scientific Biography*; volume 15; supplement 1; Editor Charles C. Gillispie; Charles Scribner's Sons, New York, 1973 fwd. Pp. 33-6; at p. 33.

'On the Sphere,' and was also translated into Hebrew by Moses Ibn Tibbon in 1259, whilst Yahuda ben Solomon Kohen produced an abridged version.¹³²

According to al-Bitruji, Ibn Tufayl (of Grenada) expounded an astronomical system that differed from Ptolemy's and did not use eccentrics or epicycles, and al-Bitruji was also aware of Jabir Ibn Aflah's criticism of Ptolemy, and of the problems of the order of the spheres of the inferior planets (Jabir's treatise is also one of the ways through which the sine theorem was introduced to Spain.)¹³³ An important aspect of Al-Bitruji's planetary theory is his discussion of the order of the inferior planets. After presenting the history of the subject, he gives the order as moon, Mercury, sun, Venus, Mars, and so on: mercury was slower than the sun, which was slower than Venus. He rejected the objections made to the traditional order (moon, Mercury, Venus, sun) based on the fact that the transits of Mercury and Venus across the sun are not visible. He put it that Mercury and Venus have their own light and do not receive it from the sun, as the moon does. Therefore their transits cannot be perceptible.¹³⁴

Al-Bitruji's astronomical system spread through much of Europe in the 13th century; William the Englishman cited it, and Robert Grosseteste referred to it in many works, even plagiarizing from it in his refutation of the Ptolemaic system.¹³⁵ The impact of al-Bitruji continued down the centuries, at the end of the 15th century impacting upon Simon de Phares, whilst Copernicus, in his *De revolutionibus*, cited his system in connection with theories of the order of the inferior planets.¹³⁶

Seville accounted for a great instrument maker, Mohammed B. Fatuh, who flourished in the early 13th century. He is known for eight works at least. In the year 1212-3, he constructed an astrolabe in Seville, which in 1873 could be found in the French collection of H. Sauvaire, who had acquired it in Cairo, but today's possessor of the object is unknown.¹³⁷ In the year 1216-7 he made a safiha (following in the tradition of al-Zarqali) also in Seville, which was moved between collections, in the Gengia collection, then in the Da Schio collection at Valdagno, and now in the Observatorio Astronomico in Roma, (No 694).¹³⁸ The following year he made another Safiha, also in Seville, which was formerly in the Schultz collection before it was transferred to the French national Library (Bibliotheque Nationale de Paris).¹³⁹ The same year he built an astrolabe in Seville, which is kept in the Collection of Cattaoui Pasha in Cairo, followed two years later (1221-2) by another astrolabe now kept in the Lewis Evans collection in the Museum of the History of Science.¹⁴⁰ In the year 1224, he made an astrolabe in Seville, also kept in the same Lewis collection already cited, then six years after constructed another astrolabe formerly in the Harari collection, and finally in 1236, he made another astrolabe in Seville in the Mensing collection, now in the Alder Planetarium Chicago.¹⁴¹ Just a few years later, Seville fell, and this latter instrument could have been the last the Muslims constructed in Spain.

Seville fell in 1248 to Alfonso of Castile, who made a good use of what he inherited. During the reign of Alfonso el-Sabio (Alfonso the Wise,) King of Castile (1252 to 1284) in Spain, he commissioned works of

¹³² J. Samsó: Al-Bitruji; p. 33.

¹³³ J. Samsó: Al-Bitruji; p. 33.

¹³⁴ J. Samsó: Al-Bitruji; p. 35.

¹³⁵ J. Samsó: Al-Bitruji; p. 35.

¹³⁶ J. Samsó: Al-Bitruji; p. 35.

¹³⁷ L.A. Mayer: *Islamic Astrolabists and their works*; Albert Kundig; Geneva; 1956; p. 64.

¹³⁸ L.A. Mayer: *Islamic Astrolabists*; p. 65.

¹³⁹ L.A. Mayer: *Islamic Astrolabists*; p. 65.

¹⁴⁰ L.A. Mayer: *Islamic Astrolabists*; p. 65-6.

¹⁴¹ L.A. Mayer: *Islamic Astrolabists*; p. 66.

history and science deeply reliant on Muslim sources.¹⁴² And during his reign was produced a collection of treatises on astronomy, and the famed Alphonsine tables; and writings on instruments mostly based on known Muslim works. Alfonso el-Sabio in 1254 established the Latin and Arabic college of Seville. Thus, just as with Toledo, Muslim loss was Christian gain. And this took place in the 13th century when Seville was wrested from the Muslims.

The Loss of Muslim Seville:

The battle of Navas de las Tolosa in 1212, where the Muslim armies of the inept Al-Nasir (ruled 1199-1213) were wiped out, is one of the greatest Muslim defeats in history, heavy in its consequences.¹⁴³ With Almohad control effectively gone by 1223, James the Conqueror of Aragon-Catalonia raided the Valencian border in 1225, seized the island of Majorca in 1229 and the Valencian lands in 1232-1245, and tightened control during subsequent campaigns.¹⁴⁴ Meanwhile, Castile-Leon, under Ferdinand III and his son Alfonso X the Learned, took Cordoba (1236), Murcia (1243-1244 provisionally, (and definitely in 1266); Jaen (1246), then two years later, in 1248, the Muslims lost Seville. Before it fell, though, Seville fought to the bitter end.¹⁴⁵

The siege of Seville lasted seventeen months in one of the most arduous and obstinately contested struggle in the history of the re-conquest,¹⁴⁶ Berbers and Arabs united and equal in fierceness in their resistance to the Christian onslaught. No nation of that period had a more thorough acquaintance with the art of defensive warfare as much as the Muslim defenders of the city, notes Scott. The sudden sally, the skirmish, the night attack, their skill to detect, and their skill to foil the most matured designs of the enemy, and their ramparts equipped with the most formidable engines known to the military science of the age; their catapults able to throw long distances, and with crushing power masses of stone and iron, weighing more than a thousand pounds, whilst their balistas cast a hundred arrows at once, with such a force they transfixed with ease a horse completely sheathed in steel.¹⁴⁷ The siege, however, intensified during the year and the surrounding districts and regions became filled with Christian forces.¹⁴⁸ They captured a large number of the inhabitants and seized some of their children in ships, with which they maintained a tight blockade, kept up bombardments from mangonels and destroyed all amenities, both small and great...¹⁴⁹ The people, according to a chronicler, became dismayed and staggered around like drunkards even though they were not drunk; a great many died of starvation... they began to chew skins; the fighting men among the populace and the ranks of the army perished.¹⁵⁰ It was in the end hunger and despair that had reason of the Muslims, more powerful weapons than all the military appliances by the Christian besiegers, more than the combined efforts of a thoroughly organized hierarchy, and more than the benedictions and indulgences of the Pope.¹⁵¹ Forced to surrender, it was with greatest reluctance the Muslims consented to

¹⁴² P.F. Kennedy: The Muslim sources of Dante? in *The Arab influence in Medieval Europe*, ed D.A. Agius and R. Hitchcock, Ithaca press, 1994, pp. 63-82. p. 72.

¹⁴³ E.L. Provençal: Toledo; in *Encyclopaedia of Islam*; vol 3; first series; pp. 809-12; at p. 811.

¹⁴⁴ R.I. Burns: Spain; In *The Dictionary of the Middle Ages*; J.R. Strayer Editor in Chief; Charles Scribner's Sons; New York; 1980 fwd. vol 11; pp. 383-9; at p. 383.

¹⁴⁵ R.I. Burns: Spain; at p. 383.

¹⁴⁶ S.P. Scott: History; op cit; vol 2; p. 411.

¹⁴⁷ S.P. Scott: History; op cit; vol 2; p. 412.

¹⁴⁸ Ibn al-Idhari: *Al-Bayan al-Mughrib*; ed. A. Huici Miranda; Tetuan; 1963; pp. 381-5; in *Christians and Moors in Spain*; edited by C. Melville and A. Ubaydli; Aris and Phillips Ltd; Warminster; 1992; vol 3; p. 145.

¹⁴⁹ Ibn al-Idhari: *Al-Bayan al-Mughrib*; (in Melville-Ubaydli) p. 145.

¹⁵⁰ Ibn al-Idhari: *Al-Bayan*; p. 145.

¹⁵¹ S.P. Scott: History; op cit; vol 2; p. 413.

give up the great mosque, which with its minaret was both sacred and the most conspicuous monument of the city.¹⁵² The seventeen month siege and the fierce battles for the city, and hunger had their impact. The view of the city after its surrender was all the reverse of what it once was. Ibn Al-Idhari holds:

‘All the population was immersed and floating in a sea of death because of the terrors and agonies that had befallen them, the description and explanation of which would be protracted and would exhaust both pen and paper.’¹⁵³

The surviving Muslims emigrated towards Grenada, and following the occupation, the Mosques were consecrated to Christian worship, whilst in the division of the spoils and the distribution of the riches that once belonged to the Muslims, the Church exercised the privileges of priority.¹⁵⁴

The poet Al-Rundi captures the Muslim sorrow at the loss of the city:

*‘O Hims (Seville), was it your predestined fate when it shot at you-That destruction observed neither pact nor (claims to) protection?
The Tyrannical hand of time has pointed at you-Time never acts justly when it makes a decision.
I did not imagine that the disasters of time would blot out that beauty-Clothing its splendour with darkness.
Your beauty had the charm of youth-But after being stricken it has exchanged for this ugliness and senility.
O Paradise, from whose flowing streams our sins have snatched us-While sorrow and regret attend us.
O you who ask me about the disaster suffered by the Muslims there-Listen that you might hear something that will leave a legacy of deafness.
The Guardians of the Trinity have risen up-Forestall them and rouse your thoughts from heedless slumber.
How many captives have come to have their feet bound in fetters-Shattered, complaining of abasement?
And how many a suckling baby continues to be cast down-Snatched away from his mother, and has weaned in the waves (i.e thrown in the river).’¹⁵⁵*

The consequences of the loss of Seville were far reaching and had permanent effects, for Seville, just like the rest of Muslim Spain lost in the 13th century was never recovered again by the Muslims. Following the capture of the city by the Castilians, the Muslim population was removed, and was replaced by settlers of predominantly Castilian origin; the mosques were granted as churches or houses, with three reserved as synagogues for the Jewish population.¹⁵⁶ The Christian conquest resulted in a severe depopulation of the city, as the displacement of the Muslim residents created many open spaces separating Christian neighbourhoods with relatively low population densities.¹⁵⁷ A small Muslim quarter, housing mainly artisans

¹⁵² S.P. Scott: History; op cit; vol 2; p. 413.

¹⁵³ Ibn al-Idhari: *Al-Bayan*; op cit; p. 149.

¹⁵⁴ S.P. Scott: History; op cit; vol 2; p. 413.

¹⁵⁵ Al-Rundi; in *Christians and Moors in Spain*; edited by C. Melville and A. Ubaydli; op cit; p. 147.

¹⁵⁶ T. Glick: Seville; op cit; pp 214.

¹⁵⁷ T. Glick: Seville; op cit; pp 214.

(masons, weavers, and smiths, in particular), subsisted after the Christian conquest.¹⁵⁸ Post conquest society was characterized by an urban Christian aristocracy whose wealth was based in rural properties, particularly in the Aljarafe district, and by a large number of free burghers, or francos, who were prominent in the textile industry and in local commerce.¹⁵⁹ Overseas trade was in the hands Genoese (who had been established in the city since Almohad times as merchants, armourers, and bankers), and also Florentines, and Castilians, groups who dominated the export trade in wheat, olive oil, hides, and other agricultural products, which turn dominated the overseas commerce.¹⁶⁰

The fate of the Muslims of Seville was the same as that of the rest of Spain. En masse, Muslim populations were regularly moved within Spain whenever the occasion arose. In 1247 James I ordered their expulsion from Aragon. Over 100,000 of them left.¹⁶¹ Newly Christian Majorca seems to have lost the larger part of its Muslims to flight and expulsion, whilst its smaller neighbour, Minorca had its population entirely enslaved.¹⁶² There all but one hundred Muslims were allowed to remain, the rest of the population was rounded up and sold into slavery, temporarily glutting the markets of Ibiza, Valencia and Barcelona.¹⁶³ Cordova at its fall was full of eager Christian land-hunters who seized Muslim farms in the hinterland and drove off the inhabitants.¹⁶⁴ In Valencia, the Muslims at first had to abandon Valencia city, losing nearly everything, whilst the rural proprietors in the city's district had to hold their farms now as mere share tenants at the pleasure of the new Christian owners.¹⁶⁵ In the 1260s, the Guadalquivir valley began to empty of Muslims forced or pressed into exile; just as in Moreria, Carmona and Jerez, in some surviving grants of houses in the towns, the names of former Muslim occupants even specified.¹⁶⁶ The Castilian ruler, Alfonso X, intensified this policy of expulsion, in 1262-3 driving out the inhabitants of Ecija; and expelling the Muslims from Jerez, Arcos, Lebrija and Puerto Santa Maria to secure the safety of his frontier.¹⁶⁷ Any urban Muslims remaining after each early conquest were removed to a suburb outside the main walls.¹⁶⁸ And where they were not expelled, whole Muslim populations, such as those of Valencia, were commandeered by the king to defend fortresses in endangered areas.¹⁶⁹ Even chroniclers least favourable to Muslims, and who were willing to deny true sovereignty to the Muslims, saw the severity of such expulsions `openly contrary to precepts of charity'.¹⁷⁰ The Church saw things differently, though. Thus when the Muslims found their way back to the islands Ibiza and Formentera as freemen, the pope was very much infuriated that they should live alongside Christians in such a way.¹⁷¹

The Muslim lost, thus, city, mosques, properties, business and trades, and soon, began to lose much more else. Soon, the defeated Muslims, and not just in Seville, but in all other places in Spain were forced to

¹⁵⁸ T. Glick: Seville; op cit; pp 214.

¹⁵⁹ T. Glick: Seville; pp 214.

¹⁶⁰ T. Glick: Seville; pp 214.

¹⁶¹ W. Durant: The Age of faith, op cit; p.700.

¹⁶² R. I. Burns: Muslims in the Thirteenth Century Realms of Aragon: Interaction and Reaction, in J.M. Powell edition: *Muslims under Latin Rule, 1100-1300*; op cit. pp 57-102; at p.67.

¹⁶³ Felipe Fernandez-Armesto: *Before Columbus: Exploration and Colonisation from the Mediterranean to the Atlantic 1229-1492*; Mac Millan, 1987. p.36.

¹⁶⁴ Felipe Fernandez Armesto: Before Columbus; op cit; p.64.

¹⁶⁵ R. I. Burns: Muslims in the Thirteenth Century; op cit; p.75.

¹⁶⁶ Felipe Fernandez Armesto: Before Columbus; op cit; p.59.

¹⁶⁷ Felipe Fernandez Armesto: Before Columbus; op cit; p.59.

¹⁶⁸ R. I. Burns: Muslims in the Thirteenth Century Realms of Aragon::p.65.

¹⁶⁹ J. Boswell: *The Royal Treasure: Muslim Communities under the crown of Aragon in the fourteenth century*, New Haven, 1977, chap 4.

¹⁷⁰ J. Muldoon: *Popes, lawyers and infidels*; Liverpool, 1979, pp 111-19; Oldradus de Ponte, *Consilia* (Venice, 1571), folios 126-7.

wear a distinctive garb, live in a separate section of each city, and bear especially heavy taxation.¹⁷² The only Muslim artistic elite which remained under Christian rule were men (and women) whose creative genius did not depend on language, and could avoid the political implications inevitable in verbal discourse; in short, masters of the decorative and architectural arts, painters, plasterers, woodcarvers, ceramicists and builders. In those areas, there was no anomaly in receiving Christian patronage.¹⁷³ The sole field of scholarship which offered a living to a Muslim under Christian rule was medicine, for it too was a craft rather than a form of discourse. Yet though there were a few Muslim doctors and many surgeons, it was probably no coincidence that when a scholar at Lerida needed copies of certain medical books in Arabic, Jews and not Muslims were expected to have them; and a popular Muslim eye specialist practicing in Vilafranca del Penedes was a slave, who had obviously been trained elsewhere.¹⁷⁴ Similarly, when Ramon Lull decided to learn Arabic, it was not a Muslim who became his tutor, but a slave whom he had bought specially to teach him.¹⁷⁵

Other than Muslim wealth and civilization and culture, it was Islam, which was targeted mostly for suppression. Muslims were summarily jailed and tortured for refusing to eat pork or drink wine; neighbourhood gossip and surveillance were also introduced mainly to keep an eye on anyone whose clean and neat person betrays that of a Muslim who regularly performed his `ablutions'.¹⁷⁶ Gradually, a series of regulations and edicts squeezed the Muslims on a legal-institutional level; physical elimination, as always, preceded by legal restrictions and measures, as Daniel reminds.¹⁷⁷ Regulations in the way Muslims ought to dress were introduced to help Christians recognize Muslims on sight and thus keep their distance from them.¹⁷⁸ To prevent Muslims from presenting themselves as people of high social positions, the Cortes of Seville in 1252 (art.40) forbade Muslims living in Christian towns to wear certain types of clothing or certain colours.¹⁷⁹ These were extensions to measures introduced earlier. Already, in 1216, four years after the crushing defeat of the Muslims at Las Navas de la Tolosa, the Church Latheran Council passed a measure which obliged both Muslims and Jews to wear distinctive garb, and that meant not just daily humiliation, but also exposure to attacks and murder especially during travel on the insecure high roads.¹⁸⁰ The quarters of the Muslims and the Jews in the towns and cities were also isolated. Walled compounds were established `Juderias' for the Jews and `Moreiras' for the Muslims, both of which were surrounded by a large wall and only had one entrance.¹⁸¹ Any Muslim who had not settled within the Moreiras within eight days had his property forfeited and was liable to whatever punishment the king saw fit, which often took the form of torture and death. Christian women were forbidden to enter the Moreiras (Moreria).¹⁸² Jews and Muslims together suffered worse forms of discrimination. In 1300 the king issued edicts requiring members of both denominations to kneel whenever a priest, carrying a consecrated wafer, passed them on the street, and if they wished to avoid the humiliation they were compelled `to hide' in

¹⁷¹ Felipe Fernandez Armesto: Before Columbus; op cit; p.33.

¹⁷² W. Durant: The Age of faith, op cit; p.700.

¹⁷³ E. Lourie: Anatomy of Ambivalence; Muslims under the crown of Aragon in the late thirteenth century; in E. Lourie: *Crusade and Colonisation; Muslims, Christians and Jews in Medieval Aragon*; Variorum; Aldershot; 1990. pp. 1-75. p. 50.

¹⁷⁴ For Mudejar and Morisco surgeons, see L. Garcia Ballester: *Los Moriscos y la medicina*; Barcelona 1984.

¹⁷⁵ E. Lourie: Anatomy of Ambivalence; op cit. p. 50.

¹⁷⁶ T.B. Irving: Dates, Names and Places: The end of Islamic Spain; in *Revue d'Histoire Maghrebine*; No 61-62; 1991; pp 77-93. p. 81.

¹⁷⁷ N. Daniel: *The Arabs and Medieval Europe*, Longman, Librairies du Liban, 1975. p.254.

¹⁷⁸ J. F. O'Callaghan: The Mujedars of Castile and Portugal in the twelfth and thirteenth centuries in *Muslims under Latin Rule*, edited by J.M. Powell, Princeton University Press, 1990. pp 11-56; p.30.

¹⁷⁹ J. F. O'Callaghan: The Mujedars of Castile: p.30.

¹⁸⁰ A. Thomson and A. M. Rahim: Islam; op cit; p. 115.

¹⁸¹ A. Thomson and A. M. Rahim: Islam; op cit; p. 116-7.

¹⁸² A. Thomson and A. M. Rahim: Islam; op cit; p. 116-7.

their own quarters until the Host had passed.¹⁸³ Both groups were exposed to the vigilantism of their Christian neighbours in enforcing this law. The Muslims visible through open doors and windows, they were reported and fined for not kneeling even in their own homes and workshops.¹⁸⁴ Those caught outside the moreria as the consecrated Host came into view, and who fled for cover in nearby houses to avoid kneeling were denied entry; and were beaten by Christian bystanders.¹⁸⁵ In Aragon the local Christians were making dunghills and building houses not only in the Muslim cemetery, which had existed as far back as memory went, but also in their mosque, whilst in Saragossa, the Muslim cemetery was also used as a cesspit, and even a brothel was opened in the Moreria.¹⁸⁶

Extending these restrictions further, the assembly of Jerez in 1268 (art.30) forbade Christian women to live with Muslims or Jews or to serve them in any way, on penalty of being enslaved.¹⁸⁷ Christian women who had intercourse with Muslims were treated with great severity. In the case of a virgin or widow, the *Siete Partidas* (7.25.10) stipulated that for the first offence, she would lose half her goods, while her lover would be stoned to death.¹⁸⁸ By contrast anyone who raped a Muslim woman escaped with his life but had to pay 10% of the fine due to a Christian victim of the same crime.¹⁸⁹ In the *Cantigas de Santa Maria*, Alfonso X told of a Christian woman who committed adultery with a Muslim slave, but was saved from the flames by the Virgin Mary, while her Muslim paramour was burned.¹⁹⁰ A series of articles of the *Fuero Real* (4.11.1), however, legislated the death penalty for a Christian woman who married a Muslim or a Jew.¹⁹¹ *The Leyes del estilo*, compiled in the late 13th-early 14th century for use in the Castilian royal court, stipulated that the fine for killing a Muslim should be in accordance with local custom, but should not be as great as the fine for Killing a Christian.¹⁹² If custom is to be followed, the *fuero* of Najera in 1076 fixed the fine for killing a Muslim at twelve and a half *solidi*, half the cost of a cow and equal to that of an ass.¹⁹³ The mere accusation of sexual delinquency with Christian women was sufficient cause for a Muslim or a Jew to flee, and false accusations became a convenient method of blackmailing the rich or settling scores.¹⁹⁴ In 1337, the Bishop of Tarragona requested Pope Benedict XII in a letter to empower the nobles to seize and sell the person and property of the Muslims as they were public enemies and infidels.¹⁹⁵

Soon was established the Inquisition to undertake the job of uprooting such a faith by the use of torture and burning at the stake.¹⁹⁶ According to Mariana:

The accusers were not named or made known, nor confronted by the accused (the Muslim), nor was there publication of witnesses... And what was most serious was that because of these secret

¹⁸³ E. Lourie: *Anatomy of Ambivalence; Muslims under the crown of Aragon in the late thirteenth century*; in E. Lourie: *Crusade and Colonisation; Muslims, Christians and Jews in Medieval Aragon*; Variorum; Aldershot; 1990. pp. 1-75. p. 52.

¹⁸⁴ E. Lourie: *Anatomy of Ambivalence*; p. 52.

¹⁸⁵ E. Lourie: *Anatomy of Ambivalence*; p. 52.

¹⁸⁶ E. Lourie: *Anatomy of Ambivalence*; p. 52.

¹⁸⁷ J. F. O'Callaghan: *The Mujedars of Castile*: p.31.

¹⁸⁸ J. F. O'Callaghan: *The Mujedars of Castile*: p.31.

¹⁸⁹ FCuenca, art. 11.22-23, p.316; Fbaeza, art.246, p.105; Fbejar, art.316, p.85; FAlarcon, art.231, p.218; FAlcaraz, art.4.22-23, p.218.

¹⁹⁰ Alfonso X: *Cantigas de Santa Maria*, ed. Walter Mettmann, 2 vols. Vigo, 1981; 1: 601-3, no.186.

¹⁹¹ J. F. O'Callaghan: *The Mujedars of Castile*: p.32.

¹⁹² J. F. O'Callaghan: *The Mujedars of Castile*; p.39.

¹⁹³ J. F. O'Callaghan: *The Mujedars of Castile*: p.39.

¹⁹⁴ E. Lourie: *Anatomy of Ambivalence*; op cit; p. 54.

¹⁹⁵ A. Thomson and A. M. Rahim: *Islam*; op cit; p. 116.

¹⁹⁶ H.C. Lea: *A History of the Inquisition of Spain*, 4 vols; The Mac Millan Company, New York, 1907. See volume three.

*investigations, the Muslims were deprived of the liberty to hear and talk freely, since in all the cities, towns and villages there were persons placed to give information of what went on.*¹⁹⁷

The stake, that is burning a human alive, is too tragic, and maybe not too much worth to go into here in all its horrific details beyond a few facts to enlighten on the condition of Muslims. In 1531, the Valencia tribunal had fifty eight trials for heresy, with some 45 burnings in person, most of whom Muslims.¹⁹⁸ An average of at least one Muslim was burnt alive every week, and this for twelve years, 1528-1540 in the city.¹⁹⁹ At the Seville auto de fe of September 24, 1559, two Muslim apostates were burnt; one had carried Muslims to 'Barbary' and the other had taken his wife and children there.²⁰⁰ A letter to Philip II. from the inquisitors of Saragossa, June 6, 1585, said that in that day five culprits were burnt.²⁰¹ Over the period 1549-1622, the Inquisition of Saragossa had burnt 1,817 men; and 758 women.²⁰² Hernando de Palma, a Muslim, accused of teaching and conducting ceremonies, denied and overcame severe torture, then confessed. He was burnt in Toledo in 1606.²⁰³ The Dominican Inquisitor, Bleda, writing in 1604, commented that: when they are about to be burnt alive, the Muslims always read their Islamic lines, and threw a curse on the Holy Church, and he concluded that, 'they should have their mouths gagged so as to stop them from insulting our true faith'²⁰⁴ The Church often describes Islam as 'spurcicia mahometani,' (Mahommedan filth).²⁰⁵

Throughout the period up to their final elimination in 1609-10, Muslims were regarded as agents of the trans-Mediterranean enemy of Christendom (that is the Turks), were suspected as aliens, were closely watched, and were subjected to indignities.²⁰⁶ They were summarily jailed and tortured for refusing to eat pork or for drinking wine; and surveillance was introduced to keep an eye on anyone who looked neat and clean as that showed they regularly performed their ablutions.²⁰⁷

As aliens, the Muslims survived until their expulsions in 1609-1610.²⁰⁸ The policy was presented to them as concerning only specific groups and regions. Thus, as the promulgation of the Valencia edict of expulsion alarmed both the Muslims in the neighbouring kingdoms, and in order to calm them, Philip, on October 20, 1609, ordered the new viceroy, the marquis of Aytona, to assure them that the matter did not concern them.²⁰⁹ To avoid organised resistance, the removal was to be swift. A first order of the expulsion of the Andalusians and Murcians was signed by Philip III on 9 December 1609, and the modalities for expulsion were made public:

*'the Moriscos were to depart, under the pain of death and confiscation, without trial or sentence... to take with them no money, bullion, jewels or bills of exchange.... just what they could carry.'*²¹⁰

¹⁹⁷ Mariana in H. Kamen: *The Inquisition in Spain*; 1965; p. 53.

¹⁹⁸ Arch.Hist. Nacional, Inquisition de Valencia, Legajos 98, 300.; H.C. Lea: A History of the Inquisition in Spain; op cit;p.358

¹⁹⁹ A. Thomson; M.A. Rahim: Islam; op cit; p.187.

²⁰⁰ H.C. Lea: *The Moriscos of Spain*; Burt Franklin; New York; 1968 reprint. p.189.

²⁰¹ H.C Lea: The Moriscos of Spain; op cit; p.118.

²⁰² Les Morisques et leur temps; *Table ronde Internationale*: 4-7 July 1981; Montpellier; CNRS; Paris; 1983.P. 527

²⁰³ H.C. Lea: A History of the Inquisition in Spain; op cit; pp.199-200.

²⁰⁴ In Rodrigo de Zayas: *Les Morisques et le racisme d'etat*; Edt Les Voies du Sud; Paris, 1992. pp.471-2.

²⁰⁵ E. Lourie: Anatomy of Ambivalence; op cit; p. 57.

²⁰⁶ John P. Dolan: Medieval Christian tolerance and the Muslim world: *The Muslim World*. Vol 51: 1961; pp 280-287. p.284.

²⁰⁷ T.B. Irving: Dates; op cit. p. 81.

²⁰⁸ N. Daniel: The Arabs and mediaeval Europe; op cit; p.254.

²⁰⁹ H. C. Lea: The Moriscos of Spain; op cit; p.337

²¹⁰ H. Lea: The Moriscos of Spain; op cit; p.345

The numbers of those expelled, of course, are disputed by modern Western historians, who in an effort to diminish the scale of the tragedy, put the numbers of such Muslims at just a few thousands.²¹¹ If they are right, it leaves the suspended matter, unresolved to our day: what happened to the millions of Muslims who lived in Spain. In 1492, for instance, the population of Castile was six and three quarter million; in 1700 there were in the entire kingdom of Spain but six million souls.²¹²

In what happened to the Muslims, the Church played the leading part. It follows a long tradition, which goes from the separation advocated by Innocent III (Pope 1198-1216), to the canon by Gregory IX (appointed 1216) warning the king of Portugal not to appoint Muslims or Jews to office,²¹³ to the view by Pope Clement V (pope 1305-1314), that the Muslim presence amidst Christians was `an insult to the Creator'.²¹⁴

And thus is a glimpse of the conditions of Muslims after they lost Spain, conditions it was necessary to bring about so as to illustrate the crucial fact, that under such circumstances, when Muslims were being expelled, impoverished, persecuted, hounded, and their culture banished, it was impossible for them to promote a Muslim civilization any longer. Yet, what we see in historical writing is a different story, which, instead, blames Islam and Muslims themselves for the resulting decline. Somehow just like the criminal blaming his victim for his own crime. And this is the matter looked at now.

Historical Myths and Distortions Ruining Islamic History

Seville is an excellent case to expose two amongst the principal myths that ruin Islamic history written by Westerners, and followed by many gullible, inept Muslim historians unable to think and act independently from the Western framework of history, culture and civilization, especially when such framework is neither scientific nor backed by facts, and is fundamentally, systematically, continuously, and rabidly hostile to anything Islamic. These two principal myths have to do:

- First with blaming the Berbers, and the Almoravids and Almohads in particular, as the causes of decline of science and civilization in Spain.
- Second with blaming the decline of Islamic power and civilisation on Islam.

The `Barbaric' forces of darkness: the Almoravids and Almohads:

The Film *El-Cid*, one believes, is one manner by which distortions are turned into reality, just because it is the cinema. In the film, we see the Almoravids and their leader, Ibn Tashfin portrayed as the evil incarnates, burning, looting, slaughtering, betraying, the Almoravids forces of barbarism and fanaticism, cowards, treacherous, and other dark depictions one film can muster. One watches blinks, but one knows, after all, the Indians were wiped out in their tens of millions by the newly arrived White settlers, according to Howitt and Stannard,²¹⁵ and yet in the cinema we see the kind White men being slaughtered by savage

²¹¹ Modern historical authorities such as:

L. Cardaillac; J.P. Dedieu: Introduction a l'Histoire des Morisques; in *Les Morisques et l'Inquisition*: Edited by L. Cardaillac; Publisud; Paris; 1990; pp 11-28.

See also H. Lapeyre: *Geographie de l'Espagne Morisque*; SEVPEN, 1959.

²¹² S.P. Scott: History; op cit; vol 3; p. 321.

²¹³ N. Daniel: *The Arabs and mediaeval Europe*; op cit; p.257.

²¹⁴ V. Green: *A New History of Christianity*, Fwd Rvd Lord Runcie; Sutton Publishing; Stroud; 1996. pp.90-1.

²¹⁵ W. Howitt: *Colonisation and Christianity*. Longman; London; 1838.

D E. Stannard: "Genocide in The Americas" in *The Nation*, October 19, 1992 pp. 430-4;

Indians. One is also used to seeing the Arab character, especially the devout Muslims portrayed as the arch-villain, and the only Arab or Muslims positively portrayed being the one who has sold out, the traitor, the cynics would say. This is admittedly fiction, but the spirit of the crusades is always thriving, despite appearances of fortitude, care and 'civilised' manners, and this is all too normal.

One, however, does not expect Western learning to be tainted by the same. The unfortunate thing, however, is that modern Western learning, above all, to its nearly overwhelming totality, is tainted by the same anti Islamic crusader zeal as that of any modern crusading individual dressed in any sort of apparel, and carrying through the 'civilizing message and message of love and care taken to the fanatic, barbaric Muslims.'

Indeed, to try and reproduce here the calumnies of Islam, its Prophet, the insults, the terrible depictions of Muslims, the distortions, the urge for the destruction of Islam, and so on and so forth, that one finds in Western literature is impossible. It is systematic, absolute, continuous, terrible and very often unbearable for any one reading through it.²¹⁶

To also try to reproduce here the writing and teaching that studies, dwells upon, exaggerates and uses for political and ideological purposes the differences amongst Muslims, into Sunnis, Shias, Kurds, Berbers, Turks, and Arabs, and using one side to defeat and destroy the other, is impossible, and yet tragically it is systematic and is easily observed today either in rhetoric or on the ground. This is impossible for the Muslim scholar to understand, for it is simply repulsive for a Muslim to spread strife amongst people as in the Qur'anic message this is worse than murder.

There is, moreover, absolutely nothing amongst Muslims that can ever approach, let alone compare with this systematic, rabid anti Islamic culture. This systematic anti Islamic rant one reads in scholarly books, never mind the systematic media rant, is difficult for a Muslim to understand, for however angry one is with Western 'scholarly' and media practices, or policies, one would never use one's scholarship to insult the Western people, let alone wish them harm. Never, indeed, would a Muslim, calling himself or herself so, devote their writing to systematic insults of Christianity, or Christians. Never will one find or should find a Muslim visiting the West, then picking on observed instances of Western ills, to then generalize them upon all the Westerners, in an interminable litany of how wretched, evil, corrupt, etc, Westerners and their society are. It will be wrong and evil to do so. Never will a Muslim devote his or her writing to studying the divisions of Western society between Catholics and Protestants, for instance, and then act on them to cause mayhem in Western society. It will be also wrong and evil to do so. And whilst Muslims see the Western public or population as decent and good, but with their bad apples just as the Muslims are, never will one find, nor should one find, a rabid anti Western rant similar to that by which Muslims and Islam are depicted all over, including in learning. Still, though, a Muslim is dutiful to counter attack such rabid, biased, hostile, and distorted depictions of Islam and its diverse peoples, which hides behind the veneer of 'scholarship'. Thus is the object of this brief outline and what follows.

²¹⁶ See, how the anti Islamic rant proceeded at all times of history as shown in the excellent following works:

- N. Daniel: *Islam and the West*; One World; Oxford; 1993.
- N. Daniel: *The Arabs and Medieval Europe*, Longman, Librairies du Liban, 1975.
- R. Kabbani: *Europe's myths of Orient*; Mc Millan; 1986.
- A. Gunny: *Images of Islam in eighteenth century writing*; Grey Seal, London, 1996.

First on the issue looked at here, that is the most succinct sample and manner by which the Almoravids and Almohads are depicted: Like Renan (see entry on Toledo), Charles Andre Julien speaks of Turkish impotence and Berber inertia.²¹⁷ Whilst, Le Bon speaks of:

*‘The Arab race was very delicate and very indulgent, and never departed from a tolerant spirit. However, when in the thirteenth century, the Arabs disappeared from the scene, and power fell in the hands of Turks and Berbers: ‘heavy’ races, ‘brutal’ and ‘brainless,’ intolerance began to rule amongst the Muslims.... Intolerance is the mark of the ‘inferior’ races: Turks and Berbers.*²¹⁸

‘After Maimonides the Jews of Spain, fled the Almohad persecution,’

adds Durant.²¹⁹

‘A New Berber revolution had taken place in North Africa, and a sect of fanatics, called the marabouts, or saints, the Almoravids had conquered the whole country from Algiers to Senegal,’

tells Lane Poole,²²⁰ who adds:

‘When the Almoravids first came over (to Spain) like a cloud of locusts to devour the country thus offered to their appetite, they found the way perfectly open.’²²¹

And: ‘the poets and men of letters who had thriven at the numerous little courts... were disgusted with the savage Berbers, who could not understand their refinements.’²²²

The Christian threat from without, tells us Monroe, favoured the development in al-Andalus of a strict Berber orthodoxy unparalleled in the East, as Goldhizer already noted years ago,²²³ and this led to intellectual stagnation.²²⁴

George Henri Bousquet talks of ‘the congenital impotence of the Berbers to create anything.’²²⁵

And for Fletcher:

‘The Almoravids were outsiders, people of the Bled, unsophisticated tribesmen, materially and culturally impoverished... It is difficult to imagine Ibn Tashfin at the elegant soirees of the Abbadid court of Seville.... The Almoravid leadership were puritan, ascetics, zealots. They saw their role as

²¹⁷ C.A. Julien: History of North Africa, in L.Valensi: *North Africa Before the French Conquest 1790-1830*; trans K.J. Perkins; Africana Publishing Company; London; 1977; p. 115.

²¹⁸ G. Le Bon: *La Civilization des Arabes*; Syracuse; 1884; pp. 447; 453.

²¹⁹ W. Durant: *The Age of faith*, op cit; Chapter XVII; p.395.

²²⁰ S. Lane-Poole: *The Moors in Spain*; Fisher Unwin; London; 1888; p.178.

²²¹ Lane Poole: p.178.

²²² Lane Poole: 181.

²²³ In a lecture delivered before the Hungarian Academy of Sciences in 1876, and published in Budapest in Hungarian by that Academy in 1877. Spanish translation made by F.M. Pareja, ‘Los Arabes espanoles y el Islam,’ *Actas del primer congreso de estudios arabes e islamicos: Cordoba 1962* (Madrid, 1964), pp 3-77.

²²⁴ J.T. Monroe: *The Hispanic-Arabic World*: in: *Americo Castro, and the meaning of Spanish Civilisation*. Edt by Jose Rubia Barcia University of California Press, Berkeley, 1976 pp 69-90. p. 85.

²²⁵ G.H. Bousquet: *Les Berberes*; 1957; in L. Valensi: *North Africa before the French Conquest; 1790-1830*; trans by K. J.

*one of purifying religious observance by the imposition where necessary of the strictest canons of Islamic Orthodoxy.*²²⁶

He, Fletcher, lashes at Anthony Burgess of the daily, The Independent, who on 21 August 1991, wrote and praised the beauty, tolerance and learning of Muslim Spain. In response, Fletcher asks:

*‘Learning? Outside the tiny circles of the princely courts, not a great deal of it could be seen. Good order? Among the feuding Berber tribesmen?...’*²²⁷

Instead, Fletcher tells:

*‘The nostalgia of Maghribi writers, reinforced by the romantic vision of the nineteenth century. This could be flavoured by a dash of Protestant prejudice from the Anglo Saxon world: it can be detected in Lane Poole’s reference to the Inquisition. A powerful mixture! But that is not yet the end of the receipt. In the second half of the twentieth century a new agent of education makes its appearance: the guilt of the liberal conscience, which sees the evils of colonialism-assumed rather than demonstrated-foreshadowed in the Christian conquest of al-Andalus and the persecution of the Moriscos (but not, oddly, in the Moorish conquest and colonisation). Stir the mix well together and issue it free to credulous academics and media persons throughout the Western world. Then pour it generously over the truth...’*²²⁸

Fletcher, thus, corrects older historians, telling that only a maximum of 300,000 Muslims were expelled from Spain in 1609-1610.²²⁹ He insists that they left without harm done to them (which is the very opposite of what earlier historians had asserted.²³⁰) This expulsion is justified on the ground that it only mirrors earlier deeds by the Almoravid Muslims who forcibly deported Christian populations.²³¹

These accounts and cheap assertions un-backed by evidence are crammed with fallacies, which contradict real facts. As amply shown in this article, it is under the Almoravids and Almohads, both condemned in Western writing as equally fanatical, and agents of doom and gloom, that Spain witnessed its greatest flourishing, and that the Almohad capital above all, Seville, produced the best crop of scientists who had the most impact on modern science that possibly no other city in history ever had, possibly with the exception of the other Berber ruled town/city, Toledo, as seen in the entry on Toledo.

The learning Seville, just as Toledo, under its Berber dynasties, is not limited to the tiny circles of the princely courts as Fletcher dismisses in his contemptuous style. Now, if we are told the Almohads were fanatical and against civilization because they repressed philosophical studies, this is another fallacy too. It is a fallacy on two fundamental grounds:

Perkins; Africana Publishing Company; London; 1977. p. 115.

²²⁶ R. Fletcher: *Moorish Spain*; Phoenix; London; 1992; p.108.

²²⁷ R. Fletcher: *Moorish Spain*; p.172.

²²⁸ R. Fletcher: *Moorish Spain*; p.172-3.

²²⁹ R. Fletcher: *Moorish Spain*; p.168.

²³⁰ H.C. Lea: *A History of the Inquisition in Spain*, in four volumes, The MacMillan Company, New York, 1907, volume three, in particular.

H.C. Lea: *The Moriscos of Spain*, Burt Franklin; New York; 1968 reprint.

S.P. Scott: *History of the Moorish*; op cit.

²³¹R. Fletcher: *Moorish Spain*; op cit; p.172.

First, because forbidding some type of writing because it insults Islam does not mean the Almoravids or Almohads did not favour philosophical studies, for they did. The Almohad sovereign, Abd-al-Mumen, *‘the nominal representative of the destroying principle of fanaticism,’* for instance, was the admiring patron of Ibn-Tofail, Ibn-Zohr, and Averroes, three of the greatest writers who ever embellished by their talents the literature of any age.²³² (See also entries on Marrakech and Fes.)

Second, even if the Almohads went to some extremes to forbid certain works, how can that compare to what has marked scholarly life elsewhere, where anyone coming with unacceptable ideas was straight condemned to be burnt at the stake. And history is rich with the thousands of scholars and others who were burnt alive for their ideas or beliefs, and none of them by Islam or the *‘fanatical Berbers’*. Thus, for instance, Victor le Clerc in his Discourse on the state of letters in France in the 14th century, says that as the burning of forbidden books was not enough, it was decided, that in anticipation of the burning of hell-fire, it was necessary to burn authors and their disciples. Thus, in the list, in 1308 were burnt Dolcino of Navarre, who was preaching goodness to community; in 1315 the Cathares of Austria; in 1319, in Marseilles, four brothers from the Third order of the Franciscans, the priests and one archdeacon; in 1322, in Cologne, Walter Lolthard; in 1325, in Girone, Durand de Valdac, Bourgeois of that town, alongside one of his associates; in 1327, in Florence, the poet Cecco d’Ascoli, and in Ascoli itself, Dominique Savi, author of works;..... Why have men of faith in power given the example of barbaric punishments, which bring shame on justice itself? asks Le Clerc²³³

No such a thing was done by the Almohads nor by the Almoravids. It is thus, one of the remarkable facts of modern history, which reshapes reality, turning the burner into the civilized, and instead blames barbaric treatment of scholarship on the Muslim and his faith.

Finally here, back to Fletcher who attacks old Western historians such as Lane Poole for denouncing the intolerance of Western Christendom towards the Muslims. One only answers him and his likes, countless numbers of them thriving today, and busy re-writing the history of Islam and the history of mass extermination of Muslims, that the extracts above depicting the treatment of the Muslims under Christian rule are not the imagination of this author, and had this author wished to dwell on the matter of mistreatment of Muslims and their extermination, and the horrific manners it was done under such rule, it would not have taken a few pages, but a few volumes. The wish, however, of a Muslim historian, such as this author, is to bring out just enough facts to highlight an issue, but not too many to open wounds, or to cause rifts between people of different cultures by dwelling without end on the dark pages of the past. Dark things of the past must illuminate on the past but must not darken our shared future, which is our belief. But if some supposed *‘historians’* are here to rewrite history, it is also our duty to counter them.

The unfortunate fact in modern history is that it does not just condemn Muslims or some of their entities as fanatics who destroyed civilization, we also encounter the problem whereby the very author of the destruction of Islamic civilization condemns and blames Islam for its decline as is now seen.

²³² S.P. Scott: History; op cit; vol 3; p. 431.

²³³ Victor le Clerc (1789-1865) in his Discours sur l’Etat des Lettres en France au XIV e siecle (HL 24, 7-9, 1862). In G. Sarton: Introduction; Volume III; op cit; pp. 22-4.

The Problem of Islamic Decline Through the Instance of Seville

It is indeed remarkable, as seen through the instance of Seville above, how the systematic destruction of Islamic civilization and even presence was carried by the hounding of Islam and Muslims, by torture and burning, banning Arabic, Islamic culture, something widened to all places, and yet, again, modern historians sift through it, cleanse it, and then come out with another history, whereby the very author of all such destructive deeds of Islamic culture and civilization, now blames the destruction on Islam.

Hence, in modern historical accounts we read how, it is, indeed, Islam, which is the cause of decline of civilisation, Islam a force of darkness. Thus, as held by Wiet et al:

“Muslim scholars were showing a certain modification, increasingly at variance with the fanatic monotheism of the Kuran.”²³⁴

And:

“No one wished to give the impression of forcing the pace, for fear of being charged with heresy. The misoneism of Islam is well known. To the mind of the Moslem community, all innovation was suspect and to be deplored as endangering unity or leading to the foundering of the law.”²³⁵

Renan, once more:

“Caliph Al-Mamun (ruled early 9th century), who introduced Greek learning was damned without pity by the theologians. Thus, to please the multitude exited and aroused by the Imams, books were burnt in city centres; books of philosophy and astronomy were thrown down wells; those who cultivated such sciences were called Zandiks, and were beaten in the streets; their houses burnt down, and whenever it suited them to increase their popularity, rulers put these scientists to death.”²³⁶

Or as held by Watt:

“Throughout the centuries the ulema have used their authority to prevent the dissemination of all heretical or non Islamic views, and indeed of whatever deviated from their own teaching and from the Islamic self-image as they conceived it. The suppression or squeezing out of undesirable views has been carried out by methods not unlike those of western totalitarianism. In some Islamic countries at the present time it is virtually impossible for Muslim intellectuals to publish anything at variance with the dominant fundamentalism or traditionalism.”²³⁷

Von Grunebaum, for his part, uses this instance: “Similar is the story told by Tanuhi (d.994),²³⁸ in which, under the impact of a dream, a man tears up Galen's Anatomy as an irreligious book,²³⁹ ...

²³⁴G.Wiet; V. Elisseeff; P. Wolff; and J. Naudu: *History of Mankind*; Vol 3: The Great medieval Civilisations; Trsltd from the French; George Allen &Unwin Ltd; UNESCO; 1975. p.568.

²³⁵ G. Wiet et all: *History*; p.547.

²³⁶ E. Renan: *L'Islamisme et la Science*; Conference at the Sorbonne given on 29 March 1883; in *Oeuvres Completes*; Calman Levy; Paris; 1947 edition; vol 1; p. 955.

²³⁷ W. M. Watt: *Muslim-Christian encounters*; Routledge; London; 1991; p.44.

²³⁸ Tanuhi: *Nishwar al-muhadara*, II, trans D.S. Margoliouth, *Islamic Culture*, V (1931), 171 (no 2).

In the view of Hitti, a Christian Arab, and otherwise fervent admirer of 'Arab Civilisation':²⁴⁰

*'Modernisation on the intellectual spiritual level involves secularisation. Secularisation means more than separation between church and state. It replaces providential interpretation of historic events and current happenings to the individual with rational interpretation based on physical and psychological forces. Hardly a current issue of an Arabic newspaper lacks repeated mention of the name of Allah in connection with reports of birth and death, sickness and health, fortune and calamity success or failure, a relic of bygone thinking.'*²⁴¹

Yet, as amply shown by the instance of every single city of scholarship of Islam on this site, decline in Islamic civilization followed precisely and exactly its destruction by the invaders, whether Mongols or crusaders, or Timur, or the Christian forces in Spain. How can civilization remain in a Muslim city or region after all the scholars, and very often the whole population has been put to the sword, or Islamic culture hounded off. It is one of those incredible forms of writing one finds in Western writing blinded to even the most basic, the most obvious of facts.

And here, in the instance of Seville, the city, which under Islam produced one of the brightest civilizations in history. Amongst its scholarship, if one quotes Sarton, and names at random, names such as the philosophers al-Baytalyusi and Ibn Bajja, the astronomer Jabir ibn Aflah, the geographer Muhammad al-Zuhri, the physicians of the Ibn Zuhri family, the historian Ibn Bashkuwal, and the jurists Ibn al-Arabi and Abu Bakr al-Turtushi, Ibn Tumart... most of these men; Sarton notes, lived and worked for a time in Seville.²⁴² It is also Seville, which gave al-Bitruji, Ibn Yasamin, Nohammed B. Fatuh, and the scholars cited above and the countless more not cited. All these names came in the decades before the Muslim loss of Seville. After 1248, the year Seville fell, not a single name of Muslim scholarship arose or was allowed to arise. How can, indeed, Seville produce Muslim science when it has been lost by the Muslims, and its population expelled or murdered; and the same for Valencia, which suffered the same fate in 1238, and the mighty Cordova, in 1236, and nearly the whole of Spain. And it was the same for Baghdad, which was lost in 1258, and its million people slaughtered by the Mongol-crusader alliance; and Damascus which suffered the same fate in 1260, and Aleppo which suffered the same fate the same year, and Merw, Bukhara, Khwarizm, and the thriving cities of culture of Islam, which gave us Al-Khwarizmi, and Ibn Sina, and many more, all devastated by the Mongols in 1219-2; and how can the scholars of Jerusalem produce scholarship when they are dead, the city's whole population slaughtered in 1099, and its scholars stoned or tortured to death, and the same for each place and city of Islamic scholarship, all devastated or lost by Islam during those terrible times, in the 13th century above all. This fact is clearly evident for any person, however incompetent, to sift through history and find. Yet, modern Western 'historians,' in their near totality ignore all this, and tell us that the decline of Islam in the 13th century was due to the malefic forces of 'Islamic obscurantism,' which they see in Sunni Islam, the Berbers, and Islam, the faith itself. This distortion is so gross that it is not the genius of this author to unravel, but is here for any one however lame historically to reject, for indeed, it is so gross. And yet, however gross, it is taught, and it persists, and it is 'scholarly.'

²³⁹ G.E. Von Grunebaum: *Islam*, Greenwood Press, Publishers, 1961. note xix . p.250.

²⁴⁰ P.K. Hitti: *History of the Arabs*, Macmillan, London, 1970 edit.

²⁴¹ P.K. Hitti: *Islam and the West: An Historical, Cultural survey*, Princeton, 1962. p. 93.

²⁴² G Sarton: Introduction, Vol II, op cit; p.148.

Rather than causing decline, Islam, was in fact, the spur which led to science, these lines from Scott suffice as a fitting conclusion and illustration of this:

'Society has progressed far beyond that intellectual stage when the comet was dreaded as a harbinger of universal misfortune; when the appearance of the pestilence was considered a manifestation of the wrath of the Almighty; when superstitious fear transformed every floating mist into a cloak for goblins; regarded every rustling of the foliage as an evidence of super-natural presence; saw in every ebullition of gaseous water a mysterious phenomenon, in every subterranean rumble an omen of sinister and portentous augury. This emancipation of the human intellect, this impetus to every expression of material progress, cannot be attributed to ecclesiastical inspiration. They were not a product of the Crusades. They were not the effect of the Reformation" They are not the work of Christianity, whose policy has indeed been constantly inimical to their toleration or encouragement. They are a legitimate consequence of the liberal policy adopted and perpetuated by the Umayyad Caliphs throughout their magnificent empire, whose civilization was the wonder, as its-power was the dread, of mediaeval Europe.'

Modern science unquestionably owes everything; to Arab genius. From the mass of debased superstitions, mummeries, and fetishism, entertained and cultivated by the Bedouin, emerged, as has been seen, a thorough knowledge of the mutual relations of the different parts of the universe and a familiarity with the wonderful phenomena of Nature. From the study of astrology astronomy was evolved; from alchemy, chemistry; from geomancy, geography; from magic, natural philosophy. The principles of government by law were established. Anthropomorphism was discarded. It was no longer attempted to control the inexorable operation of physical agencies by prayers and incantations. In one especially important respect the Moslems differed from their European predecessors. The Roman system and the Gothic polity were founded entirely upon force; Arabic power was largely controlled by intellectual conditions. With this great people the love of scientific investigation was an absorbing passion. It pervaded every department of government, every occupation of life, every branch of study... The cultivation of letters, the prosecution of experiments were, for eight centuries, the most prominent characteristics of the Arab race, the highest distinction of Muslim sovereigns. It is far from creditable to modern civilization, indebted for its existence to these pursuits, to ignore such claims to gratitude and renown, through prejudice against the religious principles of those who engaged in them. Surely in all literature there exists no nobler or more elevated sentiment than that expressed in the saying of Mohammed, "A mind without culture is like a body without a soul, and glory does not consist in riches, but in knowledge."²⁴³

²⁴³ S.P. Scott: History; op cit; vol 3; pp. 531-3.

Bibliography

- Alfonso X: *Cantigas de Santa Maria*, ed. Walter Mettmann, 2 vols. Vigo, 1981.
- Felipe Fernandez-Armesto: *Before Columbus: Exploration and Colonisation from the Mediterranean to the Atlantic 1229-1492*; Mac Millan, 1987.
- Ibn Awwam Le Livre de l'agriculture*, by Clement-Mullet; 2 tomes in 3 vols., Paris 1864-1867.
- L. Garcia Ballester: *Los Moriscos y la medicina*; Barcelona 1984.
- J. Boswell: *The Royal Treasure: Muslim Communities under the crown of Aragon in the fourteenth century*, New Haven, 1977, chap 4.
- T. Burckhardt: *Moorish Culture in Spain*, George Allen & Unwin, London; 1972.
- R.I. Burns: Spain; In *The Dictionary of the Middle Ages*; J.R. Strayer Editor in Chief; Charles Scribner's Sons; New York; 1980 fwd. vol 11; pp. 374-83.
- L. Cardaillac; J.P. Dedieu: Introduction a l'Histoire des Morisques; in *Les Morisques et l'Inquisition*: Edited by L. Cardaillac; Publisud; Paris; 1990; pp 11-28.
- Francisco Codera y Zaidin and Julian Ribera y Tarrago: *Index librorum de diversis scientiarum ordinibus quos a magistris didicit*; Biblioteca arabico-hispanica, vols. 9 and 10, Saragossa, 1894-1895.
- G.S. Colin: Filaha; *Encyclopaedia of Islam*: New edition: Leiden; 1986, Vol 2.
- Gabriel Colin: *La Tedkira d'Abu'l-'Ala'*, publiee et traduite pour la premiere fois (86 p., Publications de la Faculte des lettres d'Alger, 45; Paris 1911); Arabic and French text with technical glossary.
- Gabriel Colin: *Avenzoar, sa vie et ses oeuvres* (200 p., Publications de la Faculte des Lettres d'Alger, vol. 44; Paris 1911.
- N.Daniel: *Islam and the West*; One World; Oxford; 1993.
- N. Daniel: *The Arabs and Medieval Europe*, Longman, Librairies du Liban, 1975.
- A. Djebbar: Ibn al-Yasamin; in *Encyclopaedia of the history of Science, technology, and Medicine in Non Western Cultures*; edited by H. Selin; Kluwer Academic Publishers. Dordrecht/Boston/London, 1997; pp. 414-5.
- John P. Dolan: Medieval Christian tolerance and the Muslim world: *The Muslim World*. Vol 51: 1961; pp 280-287.
- A. Duhem: *Le Systeme du monde*; vol. 2, Paris; 1914.
- P. Duhem: Medieval Physics, in R. Palter edition: *Toward Modern Science*; The Noonday Press; New York; 1961; Vol 1; pp 141-159; Quote at p. 141; a reprint from "Physics, history of," *Catholic Encyclopedia*, XII (1911), pp 47-52.
- W. Durant: *The Age of faith*, Simon and Shuster, New York; 6th printing; 1950.
- F. Gabrieli: Ibn Abdun; in *Encyclopaedia of Islam*; Leyden; vol 3 of New Edition.
- T. Glick: Seville; In *The Dictionary of the Middle Ages*; J.R. Strayer Editor in Chief; Charles Scribner's Sons, N. York; vol 11.
- T.Glick: *Islamic and Christian Spain in the early Middle Ages*, Princeton University Press, New Jersey, 1979.
- V. Green: *A New History of Christianity*; Fwd Rvd Lord Runcie; Sutton Publishing; Stroud; 1996.
- A. Gunny: *Images of Islam in eighteenth century writing*; Grey Seal, London, 1996.
- P.K.Hitti: *History of the Arabs*, MacMillan, London, 1970 ed.
- P.K. Hitti: *Islam and the West: An Historical, Cultural survey*, Princeton, 1962.
- T.B. Irving: Dates, Names and Places: The end of Islamic Spain; in *Revue d'Histoire Maghrebine*; No 61-62; 1991; pp 77-93.
- R.A. Jairazbhoy: *An Outline of Islamic Architecture*; Asia Publishing House; Bombay; London; etc; 1972.
- R. Kabbani: *Europe's myths of Orient*; Mc Millan; 1986.

- H. Kamen: *The Inquisition in Spain*; 1965.
- P.F. Kennedy: The Muslim sources of Dante? in *The Arab influence in Medieval Europe*, ed. D.A. Agius and R. Hitchcock, Ithaca press, 1994, pp. 63-82.
- V. Lagardere: *Campagnes et paysans d'Al Andalus*; Maisonneuve; Larose; Paris; 1993.
- S. Lane-Poole: *The Moors in Spain*; Fisher Unwin; London; 1888.
- H. Lapeyre: *Geographie de l'Espagne Morisque*; SEVPEN, 1959.
- H.C. Lea: *The Moriscos of Spain*; Burt Franklin; New York; 1968 reprint.
- H.C. Lea: *A History of the Inquisition of Spain*, 4 vols; The Mac Millan Company, New York, 1907.
- L. Leclerc: *Histoire de la Medecine Arabe*; Paris; 1876.
- M. Levey: *Early Arabic Pharmacology*, Leiden, E.J. Brill,, 1973.
- E. Levi Provençal: *Seville Musulmane au debut du XII siecle* (le Traite d'Ibn Abdun sur la vie urbaine et les corps de metiers; Maisonneuve; Paris; 1947.
- E.L. Provençal: Toledo; in *Encyclopaedia of Islam*; vol 3; first series; pp. 809-12.
- R.P. Lorch: The Astronomical Instruments of Jabir Ibn Aflah and the Torquetom; *Centaurus*, 1976; vol 20; pp 11-34.
- E. Lourie: Anatomy of Ambivalence; Muslims under the crown of Aragon in the late thirteenth century; in E. Lourie: *Crusade and Colonisation; Muslims, Christians and Jews in Medieval Aragon*; Variorum; Aldershot; 1990. pp. 1-75.
- Al-Maqqari: *Nafh Al-Tib*. Translated by P.De Gayangos: *The History of the Mohammedan Dynasties in Spain* (extracted from *Nifh Al-Tib* by al-Maqqari); 2 vols; The Oriental Translation Fund; London, 1840-3.
- L.E. Mayer: *Muslim architects and their works*; Albert Gundig; Geneva; 1956.
- L.A. Mayer: *Islamic Astrolabists and their works*; Albert Kundig; Geneva; 1956.
- E. H. F. Meyer: *Geschichte der Botanik*, I-IV, Königsberg, 1854-7. vol 3.
- J.T. Monroe: The Hispanic-Arabic World: in: *Americo Castro, and the meaning of Spanish Civilisation*. Ed. by Jose Rubia Barcia University of California Press, Berkeley, 1976 pp 69-90.
- J. Muldoon: *Popes, lawyers and infidels*; Liverpool, 1979, pp 111-19.
- J. F. O'Callaghan: The Mujedars of Castile and Portugal in the twelfth and thirteenth centuries in *Muslims under Latin Rule*, edited by J.M. Powell, Princeton University Press, 1990. pp 11-56;
- E. Renan: L'Islamisme et la Science; Conference at the Sorbonne given on 29 March 1883; in *Oeuvres Completes*; Calman Levy; Paris; 1947 edition; vol 1.
- Mohamed Rihab: *Archiv fur Geschichte der Medizin*, 19, 1927; pp. 123-67.
- G. Sarton: *Introduction to the History of Science*; 3 vols; The Carnegie Institute of Washington; 1927-48.
- J. Samsó: Al-Bitruji; in *Dictionary of Scientific Biography*; volume 15; supplement 1; Editor Charles C. Gillispie; Charles Scribner's Sons, New York, 1973 fwd. Pp. 33-6;
- S.P. Scott: *History of the Moorish Empire*; in three volumes; The J.B. Lippincott Company; Philadelphia; 1904.
- C. Singer: *A Short History of Scientific ideas to 1900*; Oxford University Press; 1959.
- M. Steinschneider: *Die hebraischen Übersetzungen des Mittelalters*; 1893; pp.748-52.
- H. Suter: *Die Mathematiker und Astronomen der Araber*; 1900; p.119; Nachtrage, 1902.
- A. Thomson and M. A. Rahim: *Islam in Andalus*; Taha Publishers; London; 1996.
- L. Valensi: *North Africa before the French Conquest; 1790-1830*; trans by K. J. Perkins; Africana Publishing Company; London; 1977.
- J Vernet and J Samsó: Development of Arabic Science in Andalusia, in *Encyclopaedia of the History of Arabic Science*; Edited by R Rashed; 3 vols; Routledge, London and New York: 1996. Vol 1, pp 243-76.
- Von Braumuhl: *Geschichte der Trigonometrie*; vol. 1, 1900.

- G.E. Von Grunebaum: *Islam*, Greenwood Press, Publishers, 1961.
- W. M. Watt: *Muslim-Christian encounters*; Routledge; London; 1991.
- W. Montgomery Watt: *The Influence of Islam on Medieval Europe*, Edinburgh University Press; 1972.
- G.Wiet; V. Elisseeff; P. Wolff; and J. Naudu: *History of Mankind*; Vol 3: The Great medieval Civilisations; Trsltd from the French; George Allen &Unwin Ltd; UNESCO; 1975.
- 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.52.
- F. Wustefeld: *Geschichte der Arabische Aerzte*; Gottingen; 1840.
- Rodrigo de Zayas: *Les Morisques et le racisme d'etat*; Edt Les Voies du Sud; Paris, 1992.