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The Role of Arab-Islamic Civilisation in the Renaissance of Europe

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The foundation of Islam is on knowledge. It candled the light of knowledge in the darkness of Jahiliyah. Its first revelation came with the word "Read." In its light the Messenger of Allah instituted 'Dar-e-Arqam' at Makkah and 'al-Suffah' at Madinah. From there the splendor of knowledge spread out of Arabian Peninsula to Persia and Rome. In the Umayyad period Islam reached to Europe where the West remained under the authority of Christianity/ Catholicism for more than one thousand years, where scientific knowledge was suppressed. This period is known in the history for 'dark ages'. The criterion for Truth and Knowledge, according to Catholics school of Christianity, was Church. Anyhow, Islam approached Europe through Italy from Muslim Spain. There the Muslim Arabs established several Universities where the non-Muslims, too, had the opportunities to acquire knowledge. The members of royal families such as Italy etc. studied in these institutions. Learning, speaking and writing was a matter of pride for them. As Arabic was medium of instruction and research for academic writings, a number of church members would prefer to speak and write in Arabic. The Muslim civilisation not only gave new life to the ancient Greek Philosophy and literature, it also introduced new sciences, and revived other forgotten sciences. This civilisation gave Egypt its glorious position. It was the result of this newly established civilisation that it took out Europe from the dark ages. The movement of learning sciences from the Muslims played influential role in the renascence of Europe. The European countries adopted Muslim philosophy, modern sciences such as medical sciences, Astronomy, meteorology, chemistry and several other sciences. This article, after getting into brief overview of the dark ages of Europe, the beginning of Islamic Civilisation, its reach into Spain will be addressed. The main theme of this article is the influence of Arab Muslim civilisation over European countries in different fields of sciences.

1. THE DARK AGES

Generally period of the "Dark Age" is treated differently by scholars. It is said that this period begins from c. 500 to c. 1050.[1] But "originally a term of opprobrium that identified the 1,000-years period between the end of the Roman Empire and the intellectual Renaissance of the 15th century. The term seems to have originated with renaissance intellectuals such as Rabelais, who referred to this period as one "Gothic night."[2] Anyhow, in this period Europe suffered from economic decline as well as from barbarism. In the early stages the Byzantine Emperor Justinian had the ambition of restoring the Roman Empire, its greatness, as well as the authority of emperor, but this cost him a lot and it doomed to failure.[3]

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The Athens, which was the centre of Philosophy, was academically ruined because of St. Augustan had imposed ban on education and all schools were closed.[4] In the early fifth century King Gaul Clovis (4812-511 AD) was known to ruthless, treacherous, and avaricious. For the next century civil war continued among the Neustria, Austrasia and Burgandi. The Roman civilisation broke down in the sixth century, the unity of Italy was completely destroyed and the Popes had lost their authority and prestige.[5] In the early eight century Emperor Leo, on one hand increased taxes in Italy, and on the other hand took the authority of Church in his hand, which resulted weakening the Emperor.

When the Muslims entered Spain, Christianity was firmly established. "The sixth council of Toledo had enacted that all kings were to swear that they would not suffer the exercise of anyone other religion but the Catholic, and would vigorously enforce the law against all dissentient, while a subsequent law forbade anyone under pain of confiscation of his property and perpetual imprisonment, to call in question the Holy Catholic and Apostolic Church, the Evangelical Institutions, the definition of the Father, the decrees of the Church and the Holy Sacraments".[6]

Thus the Church got power of persecution of Jews, and those people who refused to be baptised, were made subject to severe brutality.[7]According to Shushtry, in the stages where Christianity was in progress in the East, its followers were severely persecuted by the Roman Empire, especially in the Rome itself. This state of persecution continued for almost three centuries, under Trajan, Nero, Marcusa, Aurelius, Caracalla, Deciusa, and Dioletion.[8]

In the early period of Renaissance, the Church tried to suppress scientific knowledge and inventions or discoveries. They punished those scholars who had some scientific discoveries bearing different point of views about the adopted dogma of Church. As a result when, for example, Coopernex and Gillelo said that instead of the earth, sun is the centre of our solar system, they were imprisoned and tortured or put to death. Danini was burnt alive because of writing his book "Dialogue Concerning Nature" in 1629. Sir Vatis was also burnt in fire because he believed that Christian beliefs were corrupted prior to Necia Conference.[9]

This was the reason that Muslims invasion was welcomed not only by the slaves, but also by the Christian nobles who found Islam as a safe haven for themselves.

2. THE ARAB—MUSLIM CIVILISATION

Islam in its essence is based on knowledge and contemplation. The first revelation begins with the word 'reading,' 'writing with pen' and 'discovering the unknown'.[10]

After this instruction, the first school was established at Dar al-Arqam at Makkah and then Suffah in Madianah. In these schools, people were given rational grounds for thinking not only about adopting new faith, but also the whole universe was placed before them for their thinking and research, by saying:

> "Verily in the creation of the heaven and the earth, and the alternation of night and day, there are signs for the people of intellect."[11]

The Quran also turned their attention towards other sciences such as human creation and its various stages,[12] 'steal and its benefits,[13] defense technology,[14] and the use of energy towards air space and other planets.[15] Such instructions and guidance gave boost to knowledge and research, to the illiterate Arabs.

"Unsophisticated Arab invaders were able to impose not only themselves but also their language and their culture on the more populous and more civilised conquered territories. Naturally the culture, which developed, was neither purely Arab nor purely Islamic; it drew heavily upon local sources. But the new culture was not just a mixture; it was a new and original creation whose various elements were fused together into a recognisable system. Nevertheless, in its unique assimilative power, its comparative tolerance, its conscious of its own superiority and self-sufficiency, and its automatic view of life and the universe, it was genuinely Arab-Islamic, and Arabic was the chief instrument of culture, Islam the unifying factor in the system."[16] When Islam spread out of the Arabian Peninsula and penetrated in Persia and Roman Empire, a large number of people from different cultures and civilisations entered. There the Umayyad Caliphate took its interest to discover the ignored or forgotten knowledge in Greek, Pehlavi and Sanskrit languages. As studied above, the Roman Catholic Church had forbidden knowledge and scientific discoveries, and restricted knowledge to the clergy by itself. Religion and politics were divided between Church and empire. "But in Islamic culture and studies, it is a sin to draw borderline between the two natural tendencies of man."[17]

This was the reason that Caliph Abdul Malik bin Marwan and then Ma'moon began with the translation of dead and ignored sciences into Arabic. Different sciences such as Philosophy, astrology, astronomy, mathematics and medicine etc. were translated into Arabic from Greek, Syriac, and also from Pehlavi and Sanskrit. This continued during third and fourth centuries of Hijrah/ninth and tenth centuries of Christian Eras, and mostly these were translated by Hunayn ibn Ishaq, Thabit ibn Qurrah and Ibn Muqaffa'.

3. ARAB MUSLIMS CIVILISATION IN EUROPE

When the Abbasids revolted against the Umayyads, their rule ended and the Abbasids came into power. Banu Umayyads were crushed, however, one its family member, Abdur Rahman, succeeded in reaching Spain. There he established his kingdom and "gave to Spain amore splendid era of prosperity and culture that she had ever enjoyed."[18] The Emperor of Constantinople, the king of Germany, Italy, and France sent their ambassadors to Abdur Rahman III.[19] The Muslim entered into every part of the Peninsula and a great number of Christians not only enjoyed religious freedom and participation in the administration, they also adopted the culture of the Muslim invaders and Arabacised themselves.[20]

4. THE INFLUENCE OF ARAB-MUSLIM CIVILISATION IN THE RENAISSANCE OF EUROPE

After the isolation from the rest of the Muslim world, the Arab Spanish Muslim evolved a remarkable culture, which left great impact on European civilisation for almost eight centuries. Some of the remarkable influences are mentioned below:

Influence on the Modern Sciences

If we look back at the history of modern sciences, such as Astronomy, Philosophy, Medical, Chemistry, Mathematics, Algebra and other sciences, their historical study

would need to know Arabic, because these all sciences were in Arabic, written by Arab-Muslim scholars. The importance of Arabic is admitted by Prof. George Sarton of Harvard University, who himself learnt Arabic in Syria for his research. He says that the history of Modern Sciences would remain incomplete without the knowledge of Arabic.[21]

Medical Sciences

In the field of medical, the Arabs had the leading role. They invented chemical pharmacy and were the first founders of these institutions. In this field the most original thinker and physician of the medieval times was Abu Bakr Muhammad Ibn Zakariya, known in the West as Rhazes, (865-925 AD). His encyclopedic work on medicine was translated into Latin in Sicily as early as 1279 and widely used in Europe as a textbook.[22] Among his two hundred works some were published in Venice in 1510 AD.[23]

Ali ibn Abbas flourished fifty years later than Razi. His work about medical, consisting of twenty volumes, was published into Latin in 1227, and printed at Lyons in 1523 by Michel Capella. Ibn Abbas also corrected many errors of Hippocrates and Galen.[24]

Abu Ali Husain ibn Sina, who is known to the West as Avicenna (980-1037), a philosopher and physician, had codified Greco-Arab medical thoughts. His work was translated into Latin in Spain, and soon superseded other medical textbooks.[25] According to Singer Charls Ashworth, it was studied until the 17th century, and even studied in the Medical School of Lonvain University as late as 18th century. Some parts of this book were taught in the University of Brussels, until 1909.[26] Jerad of Krimuna (1114-1187) did the first translation of Canon in Latin. This book was also translated in French, Russian, English and Hebrew.[27]

Abul Qasim al-Zahravi (d. 1122), known to the West as Albucasis, was a physician as well as the founder of the field of surgery. His famous work '*al-Tarsi*' was taught in medical colleges of Europe for centuries. Its first Latin translation was published from Venus in 1497. A famous French scholar Lemark did its French translation, in 1881. It has been translated into English and other European languages.[28]

Astronomy

In the field of astronomy, the Muslim scientists have played a leading role in the renaissance of Europe. "In the Western Europe… the science of astronomy was developed through Muhammad al-Farghani's treatise".[29] He is known in Europe as Alfraganus. His comprehensive treatise remained the most popular work on the subject, especially the *Elements of Astronomy*. It was translated into Latin and Hebrew until the fifteenth century.[30]

Abu al-Hasan invented telescope from a tube, which were used, later on, in the observatories of Maragha and Cairo with great success.[31].

Another famous astronomer is Muhammad Ibn Jabir ibn Sinan al-Battani (855 929-30 AD), known in Latin as Albategnus, is equally placed with Ptolemy.[32]His

astronomical tables, translated into Latin, have provided basis for astronomy in Europe for centuries.[33]

The astronomical and trigonometry tables of Muhammad ibn Musa al-Khawarimi (850 AD), which were revised by Maslama al-Majriti, were translated into Latin.

There are so many other Muslim astronomers such as Abu Musa Jafar, known in the West as Albumasa (786-886 AD), Al-Qabisi (Alcabitius), etc, whom work was translated into Latin.

This influence is visible in the names of stars, which are almost Arabic names as below:

English	Arabic
Taurus	Thaur
Aldeberan	*al-dabaran*
Altair	*al-tair*
Delphinus	*al-Fanus*
Denebola	*al-Sunbolah*
Famalhaut	*hamal hout*

Mathematics

The sciences of mathematics, trigonometry/ algebra, in which philosopher/ mathematicians have played leading role, were the source of transmitting and introducing them into the West. The concept of using cipher (zero), the Muslim Arabs transmitted Arabic numerals to Europe. Banu Musa and al-Khwarismi's works of algebra and arithmetic had greatly influenced the sciences and scientists in Europe.[34]

Philosophy

Philosophy is the science which, too, was introduced to Europe by Muslim philosophers. First they translated the works of Greek philosophers into Arabic. But no doubt, these were translated into Latin, and the scholars of Europe first made their acquaintance with philosophy of Aristotle in the twelfth century.

Logic

The Eastern and Western philosophers, both, adopted the Logic of Ibn Sina. In the West, philosopher like Albertus Magnus (1190-1280 AD), who was a great scholastic theologian and philosopher of the middle Ages, was influenced by Ibn Sina. However, his contemporaries regarded him as a sorcerer.[35]

5. DISCOVERIES AND INVENTIONS

Discovery of America

Columbus who is credited for the discovery of America, had influence of the Muslim philosophers. He himself admits that for the discovery of America he got inspiration from the writings of ibn Rushd. As a result, on October 11, 1492, he discovered America.[36]

Discovery of India

The invention of compass facilitated maritime journey. When Vasco de Gama went in the search of India and lost his way, this was an Arab sailor who helped him reaching India. V. Gama himself admits this fact saying:

"This young sailor would use some strange maps, and none of us was able to understand its signs. He was using such tools unknown to Europe. He swiftly made our ship reaching its destination, and then we celebrated this occasion".[37]

First Flight

The first flight is believed was attempted by the Italian artist and scholar Leonard. However, Philip Hitti has admitted that this was a Spanish scholar, Ibn Farnas, who had attempted the experiment of first air flight. He had invented wings through that he had succeeded in flying too high, but while landing, he could not balance himself and he was injured.[38]

The First Scientist

In the field of experimental sciences, Roger Bacon is credited to be the first one. Actually he was student in a Spanish university. He admits himself that he is indebted the Muslims for knowledge. A Western scholar, Robert B. Folt, says that Rogers had only introduced Europe with the Islamic Sciences and their methods; and infects, science is a big gift from the Muslims to the modern civilisation.[39]

Blood Circulation System in Lungs

Though the Western scholarship believes that blood circulation system was discovered and introduced by Miguel Serveto (d. 1556 AD) and Realdo Colombo (d. 1559 AD). However, it is evident from Ibn Nafis's work that he was the founder of this system, some three hundred years prior to formerly mentioned scientists.[40]

Paper Making

The art of paper making also transmitted to Europe through Italy and Spain. This art came to Arabs through a battle with Chines in 751 AD at Talas River, near Tashkent. The Arabs defeated Chines and captured prisoners among who were paper makers. Thus paper manufacturing spread in Samarkand and Baghdad and from there this art was taken to Damascus, Cairo and Morocco, and from there it was introduced in Europe through Italy and Spain.[41]

Other Inventions

Among the other inventions is the watch, and it was invented by Qutubi, Pendulum was invented by Ibn Yusuf, telescope by Abu al-Hasan (as mentioned before), Compass was prepared by Ibn Majid.

Influence on European Languages

Thus the Arabic language influenced other languages such as Spanish, French, Dutch, Portuguese, Russian, and Polish etc. These languages adopted numerous words from Arabic.

The researchers, who have worked on these languages, have calculation of loanwords in these languages. According to them, Spanish had one fourth of the Arabic loan words, Portuguese has adopted 3000 Arabic words, and French has borrowed more than 900 Arabic words. [42] As for the English, it was in the early stage just a dialect of the German language that over the centuries developed into a number of different modern languages, including not only English and German but also Dutch, Icelandic, Norwegian, and Swedish, among others.[43] English, too, has borrowed so many words from other languages that today it is almost impossible to say anything without borrowed words. It is a fact that English has incorporated in it a large number of vocabularies from other languages.[44] In this regard it is influenced from Arabic and has borrowed some one thousand Arabic words.[45]

Influence on Religious Literature

The Arabic language has also great impact on Jewish and Christian scholarship. Jews and Christians adopted Arabic as their second language. "Jewish temple would announce their religious programs in Arabic. Also a large number of Jewish literatures were written in Arabic pattern which is evident in the seventeenth century Poetry. Rhymes and meters were introduced to their poetry under Arabic influence".[46]

For understanding the Bible, it was necessary to learn Arabic. "Scholars of Scriptures in the West felt the need for linguistic and dictional interpretation of the scriptures. The first famous man who produced his research works on this topic was Albert Schulton (1686-1750), a Dutch Scholar who wrote his thesis in 1707 entitled: "The use of Arabic in the Interpretation of Scriptures".[47]

Other well-known Orient lists like Edward Peacock and W. Robertson in England and J. Edward Walhousen in Germany studied the scripture in the light of Arabic.[48]

In some part of Spain, Latin was so declined that the Canon of the Spanish Church, and the Bible was translated into Arabic for the use of the Christians.[49]

The bishop of Toledo, Alipandus and Felix, bishop of Urgal in Catalonia, who had declared that Jesus was not the Son of God by nature, "is expressly said to have arrived at these heretical views through the Muhammadans".[50]

The Influence of Arabic on Western Literature

The Arabic influence on Western literature began in the middle Ages through Arabic famous tales *alfa laylah wa laylah* or The One Thousand and One Nights. These were translated in different languages. It was the case of *Sindbad* stories.

The tale written by Chaucer opens on the pattern of Arabic tales.[51] An Egyptian author Mubashshir bin Fatik's work '*Mukhtasar al-Hikam wa Jawami' al-Kalim'* (1053 AD) was translated in Spanish and Latin, by Anthony Woodville. In 1477 AD, for the first time, it was translated into English by William Caxton.[52]

The famous Arabic tales '*Kalilah wa Dimnah*' (The fables of Pilpay) came to Europe in Spanish and Latin Versions. Italian Doni in the middle of 16th century further translated this. Its English version, by Thomas North, came as 'Moral Philosophy of Doni'.[53]

The Spanish Arab scholar Abu Bakr ibn Tufail (d. 1185 AD) has written '*Risalah Hayy ibn Yaqzan*.' Pocock's son Edward Pocock the Younger translated it into English. Its fresh translation was made by the Cambridge Arabist Simon Ockley in 1708 under the *title 'The Improvement of Human Reason*'.[54]

Gebril al-Sabyumi (1577-1648 AD), was a teacher of Arabic and Syriac, also teacher in the Royal School of Paris, where he established branches of Arabic and Syriac. He translated al-Idrisi's famous *work 'Nuzhat al-Mushtaaq fi Dhikr al-Amsaar wa al-Aafaaq*' into Latin.[55]

Al-Mitran Jermanus Farhat (1670-1732 AD), who left from Rome to Spain, was Bishop at Halb, and established a library in Maronia. He had the knowledge of Arabic, Italian, Latin and Syriac, and had around one hundred works in different fields.[56]

Josef Sam' an al- (1687-1768) who graduated from Roma, had learnt different languages such as Arabic, Syriac, Latin, Greek, Hebrew, French and Italian. He compiled an index of the oriental manuscripts for Vatican Library. There is no doubt that this bibliographical index has played an influential role in introducing oriental literature into the West.[57]

Influence on Poetry

As said earlier that Arabic was the main instrument of the Arab-Muslims that influenced the Europe on a great level. They adopted Arabic as their second language. This was the reason that once a Bishop complained saying:

"My fellow Christians delight in the Poems and romances of the Arabs; they study the works of Mohammedan theologians and philosophers, not in order to refute them but to acquire correct and elegant Arabic style. On the other hand, at the mention of the Christian books they disdainfully protest that such works are unworthy of their notice. They pity of it! Christians have forgotten their own tongue and scarce one in thousand can be found to compose in fair Latin a letter to his friend. But when it comes to writing Arabic, how many there is who can express themselves in that language with the great elegance, and even compose verses which surpass in formal correctness those of the Arabs themselves".[58]

Sir William Jones' translation of Arabic poems appeared in 1774 AD in Latin and in 1782 his translation of *Sab'a al-Mu'allaqat* was published.

The German scholar Friedrich Rückert, who was skilled in Arabic and Persian, brought the beauty of Arabic poetry to the West.[59] Likewise, Percy Shelley (1792-1822) composed a poem, which was imitation of the passage of the Antara's qasida.[60]

Another poet Alfred Tennyson (1809-1892) wrote his poem Locksley Hall' and according to him, 'Moallakat' influenced him.[61]

6. MUWASHSHIHAH AND ZAJAL POETRY

The Arab-Muslim poetry in Europe shows that it carries the elements of Eastern Poetry. Spanish–Arabian poetry, especially the *Muwashshehah* and *Zajal* is the type of folk songs. "The most interesting features of Spanish-Arabian poetry are the tenderly romantic feeling which not infrequently appears in the love-songs, a feeling that sometimes anticipates the attitude of medieval chivalry; and in the second place an almost modern sensibility to the beauties of nature".[62]

The French and Spanish people learnt science of music and various type of poetry such as *madih*, *hija'* and *ghazal*, they also learnt the art of rhymes while before this, assonance was considered sufficient.[63]

Louis Viardo, in his work '*History of the Arabs and Burbars in Spain'* admits, saying: "French poetry is composed according to Spanish poetry, which was taken from Arabic poetry, not from the Greek or Roman poetry. We have received the art of poetry and rhymes from Arabs, which reached us through Spain from Marcella and Toulon with Spanish traders".[64]

Ziryab's Influence on Europe

A famous Persian musician in the court of Abd al-Rahman II is Abu al-Hasan Ali ibn Naafi' Ziryaab (born about 785 AD). On the pressure of his teacher Ishaq al Mawsili, he quit Baghdad for Qayrawan. From there he reached the court of Abd al-Rahman I, in Algeciras. He was master in all sciences of music and had learnt by heart more than ten thousand songs.[65]

"He set the fashion in all things appertaining to taste and manners; he fixed the toilets, sanctioned the cuisine, and prescribed what dress should be worn in the different seasons of the year. The king of Spain took him as a model, and his authority was constantly invoked and universally recognised in the country down to the last days of the Moslem rule."[66]

7. CONCLUSION

The above study shows that in the dark ages of Europe, where knowledge was restricted and out of the reach of common people, Islam declared that getting knowledge is duty of every Muslim. Islam not only guided them but also turned their attention towards the discoveries of the universe. On one hand this scientific attitude changed civilisation of the Bedouin Arabs; on the other hand, when it reached Europe, it influenced all of its civilisation. The Arab-Muslim society used Arabic language as the most powerful instrument to influence the European languages, religious aspect, in terms of reading and understanding the scriptures, as well as influencing their thinking about creeds of Roman Catholics. Islam gave them freedom of thoughts, which resulted in 'renaissance' of Europe by throwing away restriction on knowledge imposed by the Catholic Church. These were the Arab-Muslims who laid foundations of the modern sciences such as philosophy, medicine, surgery, astronomy, astrology, logic, poetry, and music etc. The European nations not only translated these books into their languages, but also taught them in their Universities for centuries and using it for their discoveries and inventions. In brief, Europe is indebted to Arab-Muslims for the revival of sciences and civilisation.

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[12]Quran, 23: 14. "Then We made the sperm into a lot We made a (fetus) lump bones and clothed the bones with flesh; then We developed out of it another creature"(Yusuf Ali).
[13]Ibid, 57: 25. "And We sent down Iron, in which is (material for) mighty war, as well as many benefits for mankind."
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