

ROOTS OF ANDALUSIAN ISLAMIC MEDICINE IN THE EUROPEAN CIVILISATION

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ABSTRACT

In the 11th century B.C., the Phoenicians set foot on the Eastern coast of the Iberian peninsula and established several colonies such as Qadiz and Tartusa, followed by Greeks in the 6th century B.C., then by the Carthagenians in the 3rd century B.C., then by the Romans a century later. Thus a mixture of all these civilisations was originated. In the 5th century A.D., Spain was invaded by the 1st Germanic wave, followed by the Eastern Goths who ruled till the Islamic conquest in 711 A.D. A new Islamic Caliphate was formed (when the Omayyad Prince Abdul Rahman fled to Andalusia in 755 A.D.), with Cordova as its capital. The golden era of Islamic Andalusia began under the rule of Caliph Abdul Rahman III (912-961 A.D.), where many cultural centres were established specially in Granada, Cordova, Seville, Toledo etc., which attracted the attention of the European scientists, who came to learn more about these advanced sciences, and consequently translated all the Islamic sciences including medicine, pharmacy etc. into Latin. The most famous pioneer in translation was Gerard of Cremona (of Italian origin), followed by many others, thus all the Islamic sciences helped the Europeans to find their way out from the dark days of the Medieval ages towards the Renaissance era.

The Arabs of the 10th and 11th centuries emancipated their scientific efforts from dependency on foreign research. Their golden age of sciences and literature found its way into Europe as early as the 11th century A.D., mainly through Spain (Andalusia), Palermo (Sicily), Salerno (Italy), and the Crusade wars.

The Latin-speaking people of

Europe heard about the Arabs' great development in sciences specially in medicine, pharmacy, geography, chemistry, mathematics...etc., along whole of the Islamic Empire from the Indian border to the Atlantic ocean. Many Europeans joined its scientific centres, so as to learn as much as possible about these sciences, and hence became devoted disciples to the

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famous Moslem professors in every field.

In Sicily, the effect of the Arab-Islamic sciences was bigger and greater, but intermittent and distorted, whereas in Salerno and Andalusia, the effect was stronger and most beneficial.

During the medieval ages in Europe, the people felt great hunger to knowledge and sciences, but were not satisfied with the books which were in possession of the monks, and so were forced to direct their attention to the Arab books and their translations of the Greek scientific heritage.

Although these Greek books were preserved in the European monasterial libraries, yet the monks were not aware of its value due to their ignorance of the Greek language, and also due to the deserted location of some of these monasteries and difficulty to reach them by many scholars. An example of this difficulty, was the famous book on Astronomy "Magiste" which was written by the famous Alexandrian astronomer Ptolemy (3rd century B.C.), and was known to the Arabs by the name "Al-Magiste". This valuable book was available in several copies in the European monasterial libraries, but was not recognised or identified except from its Arabic translation.

The German states witnessed a

localised renaissance movement in the 9th century A.D., when Alusen (735-804 A.D.) and his pupil Mores (775-856 A.D.) tried to translate some of the Greek books into Latin but were not very successful.

Also the Italian states tried during the 10th century A.D. to send a number of scientific expeditions to Constantinople so as to obtain some of the Greek scientific manuscripts for the purpose of translating them into Latin, but failed out.

So, all the Arab-Islamic sciences were destined to reach Europe only after few centuries through the Crusades, Salerno, Palermo and Andalusia. All these channels were pouring in the European cities of the northern west of the Rhine river, thus the Renaissance schools were established in Germany, Switzerland, France, England, Holland ...etc.

Concerning Andalusia, the Spanish civilisation goes back far into the stone age. Then the Phoenicians arrived crossing the strait of Gibraltar and established many coastal colonies such as Qadiz and Tartus during the 11th century B.C. The ancient Greeks, also a famous sea-faring nation like the Phoenicians formed many colonies in Spain in the 6th century B.C., then the Carthaginians settled later in the 4th century B.C. on the eastern coast of Spain and along the Balearic islands. Later on,

most of the Iberian peninsula and the Balearic isles were occupied by Hamilcar, king of the Carthagenians in the 3rd century B.C. But after the defeat of their king Hanibal in the 3rd Punic War by the rising Roman Empire, the Carthagenians were driven out in 133 B.C. and so Spain became a Roman colony.

Many Roman scientists, philosophers, historians were reported to have migrated to Spain, chief among them were Seneca and Quinelian.

In 409 A.D., the first wave of Germanic invasion took place followed by the first West Gothic wave.

Then the Arabs, who in 711 A.D., under the leadership of Tareq ibn Zeyad crossed the strait of Gibraltar and defeated king Fredrick the last of the western Goths and captured Cordova. The commandor Mousa ibn Nosaer joined Tareq in 712 A.D. and both completed the occupation of Southern Spain. During the next few years, the whole of the Iberian peninsula became under Islamic rule, with the exception of Austurias and Basques where the Christians gathered and kept preparing for the re-conquest of Spain. The Arabs crossed the Pyrenees mountains but were defeated in the battle of Tour-Poitiers in 732 A.D. by Charles Martel.

In 755 A.D., the Omayyad prince Abdul Rahman Al-Omawy reached

Andalusia (after his escape from the massacre of the Omayyads by the Abbasids in Damascus), and founded an independent Arab Caliphate in Spain. Cordova was chosen as the capital of the new Islamic Caliphate, and its golden age was during the reign of Abdul Rahman III (912-961 A.D.).

At the beginning of the 11th century A.D., the Omayyad dynasty in Andalusia broke up into 27 petty independent states. Due to the re-conquest of the Christians under the leadership of king Alphonso IV, the Islamic Andalusian kings demanded the help of the Morabitin kings of north Africa, but were defeated. Again, in 1176 A.D., the Mowahhadin came to help in the Andalusian wars, but were also defeated. King Alphonso VIII in 1212 A.D. could drive the Moslems out of most of Spain with the exception of the strong kingdom of Granada, but at last in 1492 A.D., it surrendered to the united forces of Ferdinand and Isabella, and so Spain returned once more to the hands of the Christians.

In Andalusia, there occurred the biggest and most important centre for contacts between the Arab Islamic sciences and the European ideas, covering a period of about eight centuries (from 711-1492 A.D.). The most famous Islamic cities in which Arabic sciences prospered greatly were Cordova, Seville and Granada,

and to a lesser extent Toledo and Castille. There, the strongest intermingle between the Spanish and Islamic cultures was fortified by the every-day life of both populations and also due to the great efforts of the Omayad Caliphs and the Tawaef kings, which helped the Christians, Jews and Moslems to participate together in acquainting the Latins with the Arab-Islamic culture.

Andalusia during the Islamic rule, flourished in agriculture, mineralogy, commerce, industry as well as in medicine, pharmacy...etc. also the cities of Cordova, Seville, Granada, Toledo...etc, became very prosperous in economy as well as in culture, learning, art...etc. (one can still detect Islamic culture in the present population specially in Granada).

During the reign of the Andalusian Caliphs Abdul Rahman III, Al-Hakam and Al-Mansour (from 912-1002 A.D.), the city of Cordova (or Carta-Tuba as was called by the Phoenicians) contained not less than 200,000 houses, one million inhabitants, 600 inns, 900 baths, 600 mosques with preparatory schools attached to them, 17 universities, 70 public libraries...etc.

The famous library of the Caliph Al-Hakam took second place after Alexandria, only contained 225,000 volumes in comparison to 400,000 volumes in Alexandria. There was

hardly a boy or a girl who could not read or write.

Such civilisation could not fail to produce famous physicians and philosophers comparable to those of the Orient. Rhazes, Haly Abbas, Avicenna ...etc. had compares in Abulcasis, Avenzoar, Averroes...etc.

Islamic medicine came to a stand still about 1250 A.D., when superstitions crept in.

Of the leading Islamic physicians and philosophers of Andalusia were :

1. Ibn Wafid (997-1074 A.D.), known to the Latins as Abenguefit. He was born in Toledo, wrote a treatise which was translated into Latin entitled "De Medicamentis Simplicibus."

2. Ibn Maimun (Mousa Ibn Imran) (1135-1204 A.D.), known to the Latins as Maimonides. He was born in southern Spain and spent most of his life in Cairo, serving the Egyptian king Saladin and his sons. He was a physician and a philosopher and had advanced ideas on hygiene.

3. Ibn Zuhr (Abdel Malek ibn Abi Al-Alaa), (1091-1162 A.D.); known to the Latins as Avenzoar. He was born and died in Seville, studied medicine under his father and became the teacher of Ibn Rushd (Averroes) and his great friend afterwards. Ibn Zuhr's family produced six generations of physicians in direct descent. He

served in the court of Al Mowahhadin rulers. Being a pronounced physician, he disdained surgery and surgeons. His chief work was "Al-Taysir fil Modawah wal Tadbir" (facilitation of treatment) was based on his personal experience (since his philosophy was centered round "... experience is the best guide"), in which he discussed bone feeling and the itchmite. This book was translated into Latin by Paravicinus in 1280 A.D., and again in 1490 A.D. causing a great influence on European medicine till the end of the 17th century A.D.

4. Ibn Rushd (Abul Walid Mohammed), (1126-1198 A.D.); He was born in Cordova and obtained both religious and scientific education, became famous as an Aristotelian professor since he highly evaluated Aristotle's works and commented upon them in his books. His famous text "Al-Kulliat fil Tib" (General rules on medicine) that medical encyclopaedia which was translated into Latin under the name "Colliget" in which he recognised the function of the retina and immunity after small-pox infection. This book was highly esteemed in the medieval ages and was a rival to his contemporary Avenzoar's Al-Taysir. Ibn Rushd, known to the Latins as Averroes was the most illustrious member of his great medical family and the most celebrated physician, philosopher and philologist Hispano-Arabic personality, to the extent that his teacher

Avenzoar called him "the greatest physician after Galen", and many scientists were deeply affected by him, such as Ibn Bajjah.

5. Al-Zahrawy (Abul Qasem Khalaf), (936-1013 A.D.), known to the Latins as Abulcasis, was born at Zahraa near Cordova. His famous book "Al-Tasrif" on surgery comprised 30 sections and translated several times into many languages and was the main text book in Europe till the 16th century. He was considered as the most distinguished surgeon in Islam.

6. Ibn Al Khateeb (Lesan Al-Din), (1313-1374 A.D.); He was born in Granada, recognised as a great historian physician and politician. He described the Plague (the black death) in a special treatise "... the existence of contagion is established by experience, study and evidence of the senses by trustworthy reports on transmission by garments, vessels, ear-rings or by persons from the house, or from an infected person, or by infection of a healthy sea-port, or by the immunity of isolated individuals and nomadic-tribes of Africa".

7. Ibn Khatema (Ahmad ibn Ali); He was a physician in Almeria and wrote a book on Plague in 1348 A.D., in which he stated that "... if the first patient expectorated blood or developed pubeos, then the second will do so...". He died in 1368 A.D.

8. Ibn Bajjah (Abu Bakr Mohammad ibn Yahya Al-Sarqosty) (1065–1138 A.D.), born in Saragossa. He travelled to Seville, Granada, Fez...etc., and was excelled in physics; medicine, mathematics, astrology...etc. He was known to the Latins as Avempace.

9. Al-Ghafiqi (Abu Gaafar Ahmad ibn Al-Sayyed), (1165–1233 A.D.), born in Al-Ghafiq near Cordova. He was a famous botanist, travelled to north Africa, Middle East and wrote his famous book "Al-Adwiya Al-Mufradah", which was later quoted almost entirely by ibn Al-Baytar.

10. Ibn Al Baytar (Abu Mohammad Abdullah ibn Ahmad); died in 1248 A.D. He was born in Malaga, and became renowned botanist and wrote his famous book "Al Gamae Li-Mufradat Al-Adwiya wal Aghdhiyah" (Collection of simple drugs), in which he described more than 1400 medicinal drugs and is indeed an extraordinary work, and was very appreciated for over 500 years in most of the European schools.

11. Ibn Juljul (Solayman ibn Hassan); born in 945 A.D. in Cordova. He served in the court of the king Hisham Al-Moayyed Billah. His famous book "Tabaqat Al-Olamaa wal Falasifah" (Grades of physicians and philosophers) was the main source from which Al-Qufti and ibn Abi Usaibea obtained their references and knowledge. He wrote two books on medicaments also.

The Europeans heard a lot about the great Arabic sciences through the translations of their books into Latin which was done by the famous legendary translator "Constantinus Africanus" (1020-1087 A.D.), who was born in Carthage (in North Africa). Although he was not very talented in Arabic and his Latin was very moderate and with a very limited idea about medicine and other sciences, yet during his long stay in Monte-Cassino monastery in Salerno, Italy, he managed to translate and supervise on the translation of many Arabic books with the help of a group of translators who knew Arabic, Hebrew and Latin far better than him. Of the famous books he translated were Al-Kitab Al-Malaki or Kamel Al-Sinaa by Al-Majusi (Haly Abbas), which he called Liber Constantini (later, a better translation was made by Stephan of Antioch in 1147 A.D. and was called Liber Regius). Also "Maqala fil Malankhulia" by Ishaq ibn Imran (called "Liber Constantini de Malancholia"), "Risala fil Nisyan wal Ilag" by ibn Al-Jazzar (called "Liber de Oblivione"), also "Viaticum pere Grinatis", again written by ibn Al-Jazzar, "Kitab Zad Al-Musafir" (a sketch on general medicine), several writings by Ishaq ibn Solayman Al-Israili (known as Issac Judaeus), several Arabic translations of Hippocrates works such as "Aphorisms", "Prognostica", "Diacta Acutorum", and many books of Galen. Also "the ten treatises on the eye" by Hunayn ibn Ishaq (called Oculis),

"*Liber Experimentorum*" by Rhazis on chemistry.

Struggle between Christendom and Islam began in Spain and Sicily. Toledo fell in 1085 and as it was famous of being the greatest Moslem learning and cultural centre, many European students came to study Arabian medicine and became later on famous physicians and translators of many books on medicine into Latin. Of these were "Adelard of Path", "Petrus Alphonsi", "Gerard of Cremona", "Michael Scot" and many others, including "Domenicus Gundissalinus" (also known as Domingo Gonzalez) and "Joannes Hispalensis".

Many of the monastery monks in Andalusia began to translate many of the Islamic sciences into Latin starting from the 10th century A.D., specially in Rebol and Barcelona monasteries. Most famous of them was "Tibertinus de Tivoli" (of Italian origin), worked in Barcelona and was often known as "the Platonic" owing to his great interest in the works of the Greek philosopher Plato. He translated many books on medicine and astronomy into Latin.

The intermediaries for the translation and learning were the Mozarabs (a mixture of Spanish Arabs and Jews who adopted both Arabic and Jewish customs).

In 1100 A.D., the Bishop "Raymond of Toledo" translated some of

the Arabic medical and scientific books into Latin. He founded under the direction of Archdeacon Dominico Gundisalvi a school of translation in Toledo which flourished till the 13th century A.D.

The English mathematician and philosopher "Adelard of Path" came to Toledo in 1100 A.D., and the Spanish Jew Petrus Alphonsi (later converted to Christianity), both translated many medical books from Arabic into Latin and helped in the spread of the Islamic sciences into England for the first time.

Also the converted Jew "Ibn Dawud" (Avendeath) translated a great number of Islamic books in different sciences into Latin.

Also "Ruffino", a scholar of Alessandria, Italy came and lived in Murcia, Spain and translated into Latin the famous book of Hunayn Ibn Ishaq "Questiones Medicae".

One of the most important translators at that time was "Gerard of Cremona" (1114-1187 A.D.). He was born and died in Cremona in Lombardia, Italy. He came to study in Toledo and later became an important member of its college of translators. In 1160 A.D., he was appointed the Bishop of Toledo and translated more than 92 books into Latin, such as the original works in Greek of Aristoteles, Hippocrates, Galen...etc. He also translated the "Almageste" of Pto-

lemy, "De Intellectu", "De Quinque Essentiis" of Al-Kindi, "De Crepusculis" of Al-Hazen, the "De Motu Accessionis et Recessionis" of Thabit, the "Algebra" by Al-Khawarizmi, "Al-Qanun" by Avicenna (retranslated in 1515 A.D. by Andrea Alpago), "Al-Tasrif" by Al-Zahrawi (remained the basic text, on Surgery in Europe till the 16th century A.D.), and many other books. Gerard of Cremona is regarded as the real father of Arabism in Europe.

"Mark of Toledo" also translated many Arabic works on medicine such as Hippocrates' "On airs, water and places".

"Abraham of Tortosa" and "Simon of Genoa" translated Abulcasis "Al Tasrif" into Latin.

Another famous translator was the Jew "Abraham ibn Dawud" (died 1180 A.D.), lived in Cordova and translated many of Avicenna's works, whom he admired greatly. When Toledo fell into the hands of the Christians, Abraham fled from Cordova to Toledo, but was killed owing to his refusal to revert into Christianity.

The translation movement continued in Seville up to the 12th century A.D., under the direction of the famous Jewish couple "Eugines of Seville" (Yohanna or Johannis Hispanensis) and "Dominix Gondisalvo" (Ghandalba) who turned into Christi-

anity. The first translated the Arabic scientific and medical texts into Castellano, while the latter translated it into Latin. (the Castellano language of Andalusia was at its beginning of development and used by the Christian Iberians specially in Castille).

Also "Yohanna of Toledo" was busy in Latinisation of the Arabic texts, so did the famous physician "Hispanis of Seville" who, before becoming the Pope Giovanni XI, translated some Arabic books into Latin.

The French priest "Gerbert" visited Andalusia in 980 A.D., joined the Rebol monastery of Catalonia and was very interested in Islamic medical sciences and translated some of them into Latin before he was elected as Pope Sylvester II in 999 A.D. .

The English priest "Robert of Chester" visited Andalusia from 1141 to 1147 A.D. and translated the Holy Quran into Latin and many other Arabic books on physics, medicine, mathematics ... etc.

The ex-King "Alphonso the wise" (Alphonso X, king of Castille) after his forcibly abdication from the throne in 1284 A.D., spent the rest of his life in translating Arabic books into Castellano.

Also the Italian physician "Bromino Latini", who was also the Ambassador of Florence in Toledo in

1260 A.D., translated many Arabic medical books into Latin.

Other famous translators were;
Mousa ibn Taboun and his brothers,
Ibn Shatoub,
Nathan Al-Matoni,
Yahoudha Al-Harzi,
Giovanni de Capoa,
Simon de Genova and many others.

Conclusion:

From the above mentioned facts, one can clearly see, how great was the influence of the Islamic civilisation in Andalusia on the life of the Medieval Europeans which led them through their dark ages to the light of the modern glory which ended in the 20th century's golden glory of inter-planetary communicatios.

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सारांश

यूरोपीय सभ्यता में हस्पानवी इस्लामी चिकित्सापद्धति की जड़ें

—समरि याह्या अल गम्माल

ईसा पूर्व 11 वीं शताब्दी में सामियों ने आईबेरियन प्रायद्वीप के पूर्वी तट पर पैर रखा तथा कई बस्तियों की स्थापना की। इन के पीछे ईसा पूर्व छठी शताब्दी में यूनानी और उनके बाद ईसा पूर्व तीसरी शताब्दी में कार्थाजिनियन, फिर एक शताब्दी पश्चात् रोमन यहां प्रवेश किये। इस प्रकार इन सभी सभ्यताओं के मिलने से एक नई मिश्रित सभ्यता का जन्म हुआ। पांचवी शती ईसवी में हस्पानिया पर पहली जर्मन टुकड़ी का आक्रमण हुआ, जिसके बाद पूर्वी गोथों का आक्रमण हुआ जिन्होंने 711 ईसवी में इस्लामी विजय तक शासन किया। तब एक नई इस्लामी खिलाफत स्थापित हुई। इस्लामी हस्पानिया का स्वर्णयुग खलीफा अब्दुल रहमान तृतीय (912-981 ईसवी) के शासनकाल से प्रारम्भ हुआ, जिसमें बहुत से सांस्कृतिक केन्द्र स्थापित हुए विशेष रूप से ग्रेनेडा, खतंबा, सेविल्ले, तथा टोलेडो..... इत्यादि में। जिसके कारण यूरोपीय वैज्ञानिकों का ध्यान इस ओर आकर्षित हुआ, उन्होंने विज्ञान की विभिन्न अधिक विकसित शाखाओं के विषय में ज्ञान प्राप्त किया और चिकित्साविज्ञान, औषध निर्माण विज्ञान..... इत्यादि सभी इस्लामी विज्ञानों का लेटिन भाषा में भाषान्तर कर दिया। इस प्रकार सभी इस्लामी विज्ञानों द्वारा यूरोपीय लोगों को मध्ययुगीन अन्धकारमय काल से बाहर निकलने में और पुनर्जागरण युग के रास्ते को पाने में सहायता मिली।