

The Islamic Golden Age (part 1 of 2)

Description: The lesson will discuss the 'Golden Age' of Islamic sciences and the contributions of Muslims to our civilization.

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Objectives

- To learn the meaning of the term 'Islamic science'.
- To appreciate the basic history of Muslim contribution to civilization.
- To learn about Muslim contributions to medicine.

Introduction

'If there is much misunderstanding in the West about the nature of Islam, there is also much ignorance about the debt our own culture and civilization owe to the Islamic world. It is a failure which stems, I think, from the strait-jacket of history which we have inherited.' - Prince Charles in a speech at Oxford University, 27 October 1993

Islam is not opposed to education and the allegation that it does is unfounded. History proves beyond doubt that no religion has ever sparked scientific progress like Islam did. Islam has never been a barrier to science and progress.



The term "Islamic Science" means the sciences developed by Muslims from the second century onwards. Muslim scientists made significant contributions in the field of mathematics, astronomy, geography, physics, and medicine.

History

History of science in Europe and the West acknowledges work done by the Greek and Roman scholars until 300 CE and then it picks up the trail in 1500 CE, the beginning of Renaissance, but it conveniently skips the social, political, and scientific achievements between 300-1500 CE which happens to contain the 'Golden Age' of Islamic sciences from 700-1500 CE.

During this period, artists, engineers, scholars, poets, philosophers, geographers and traders in the Islamic world contributed to agriculture, the arts, economics, industry, law, literature, navigation, philosophy, sciences, sociology, and technology, both by preserving earlier traditions and by adding inventions and innovations of their own. Also at that time the Muslim world became a major intellectual center for science, philosophy, medicine and education. In Baghdad they established the "House of Wisdom", where scholars, both Muslim and non-Muslim, sought to gather and translate the world's knowledge into Arabic in the Translation Movement. Many classic works of antiquity that would otherwise have been forgotten were translated into Arabic and later in turn translated into Turkish, Sindhi, Persian, Hebrew and Latin. Knowledge was synthesized from works originating in ancient Mesopotamia, Ancient Rome, China, India, Persia, Ancient Egypt, North Africa, Ancient Greece and Byzantine civilizations. Rival Muslim dynasties such as the Fatimids of Egypt and the Umayyads of al-Andalus were also major intellectual centers with cities such as Cairo and Córdoba rivaling Baghdad. The Islamic empire was the first truly universal civilization, which brought together for the first time peoples as diverse as the Chinese, the Indians, the people of the Middle East and North Africa, black Africans, and white Europeans. A major innovation of this period was paper - originally a secret tightly guarded by the Chinese. The art of papermaking was obtained from prisoners taken at the Battle of Talas (751 AD), and spread to the Islamic cities of Samarkand and Baghdad. The Arabs improved upon the Chinese techniques of using mulberry bark by using starch to account for the Muslim preference for pens vs. the Chinese for brushes. By 900 AD there were hundreds of shops employing scribes and binders for books in Baghdad and public libraries began to become established. From here paper-making spread west to Morocco and then to Spain and from there to Europe in the 13th century. One of the greatest Muslim contribution was in the field of medicine.

Medicine

Early Arabs came in touch with the Greek, Iranian, and Indian medical systems. Muslims studied and preserved them. Caliph al-Mamoon had Greek medical books translated into Arabic. Soon, new medical textbooks were being used all over the Islamic lands. They wrote manuals on medicine and surgery and laid the foundations of the European renaissance. Some achievements:

- In 1168 CE, in Baghdad alone there were 60 medical institutions.
- Mustansiriyya Medical College of Baghdad was housed in magnificent buildings, it's

library had rare scientific books, and a large dining hall to serve students. Nurses served the sick and the patients. The larger hospitals in major cities were teaching centers as well. Each hospital had separate wards for males and females.

- Abdul-Lateef was a famous Muslim writer on anatomy. He dissected the human body in the 11th century to get more knowledge about human anatomy.
- In physiology, Burhan ud-Din wrote that blood contained sugar, 300 years before Sir William Harvey.
- Ibn an-Nafees was the first to describe the two circulatory systems, aortic and pulmonary, three centuries before William Harvey of France discovered it!
- Ibn Abi Hazm of Damascus explained the theory of blood circulation in detail and proved that food is fuel for maintaining body heat.
- Ar-Razi, known in the European world as Rhazes, was one of the greatest Muslim physicians who discovered acid in the stomach. He is said to have used alcohol for the first time as an antiseptic
- In the Middle Ages, you could buy a famous ointment in France. It was said to cure almost anything, which of course it did not. It was known as Blanc de Rhazes, after this Muslim physician, Ar-Razi. What's interesting is not the ointment itself, but the name. French shop-keepers were aware that with Razi's name, people would buy it. It shows the extent to which Europeans trusted medicines from the Muslim world.
- Ar-Razi wrote the earliest book on infectious disease in which he explained the difference between measles and small pox. Two of his other books were translated into Latin and were used as standard textbooks in Western Europe in the Middle Ages. Ar-Razi wrote some 175 books. His 23 volume medical encyclopedia remained a standard medical reference in Europe for several centuries.
- Ibn Sina (Avicenna to the Europeans) explained the process of digestion and discovered that the secretions in the mouth mixed and digested. All this was long before it was known in the West. The theory of germs causing disease was developed by Arab scientists. Ibn Sina excelled in bacteriology, the basis of modern day science of germs.
- For the first time, Ibn Sina, suggested that affected vessels should be removed in the operation for the treatment of cancer. He discovered meningitis and the way epidemics are spread.
- Ibn Sina's works are the crowning achievement of early Islamic medicine. The West called him, the 'Prince of Physicians.' His book, *Qanun fit-Tibb*, or The Canon, is without doubt the most famous of all medical books in the entire history of medicine! It was taught for several hundred years in the West. It's Latin translations appeared about a 100 years after his death. It was printed 36 times in the 15th and 16th centuries, more than many modern medical textbooks!
- Abul-Faraj discovered the channels in the nerves that carried sensation.

- Muslims in Turkey were treating smallpox with vaccinations in 1679. Lady Montague, the wife of the British Ambassador to Turkey brought it to Europe.
- Baha ud-Dawla discovered hay fever in 1507, centuries before it was discovered by the Europeans.
- Abul-Hasan at-Tabari was the first physician who taught the world about scabies. First one to find out tuberculosis was an infection.
- Abul-Qasim az-Zahrawi, known in the West as Abulcasis, invented several surgical instruments, removed cataracts, and perfected many surgical procedures.
- Ibn Zuhr, known in the West as Avenzoar, was born in Seville, he started stitching wounds with silk threads!
- Anesthesia was applied by Muslim doctors to keep the patient unconscious for as long as seven days while undergoing major operations.
- Eye-surgery was also highly developed. Ar-Razi was the first one to give an account of the operation for cataracts.
- Muslim doctors even prescribed glasses of various power for defective vision.

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