

Ibn al-Nafis

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There had been tremendous contributions of Great Muslim Scientists and Great Patrons of Sciences and Research in laying the foundations of modern sciences; without which perhaps the world would still be in the dark ages! Their great visionary, laborious and honest work paved the ways for renaissance, industrialization and superb reforms in educational and social architecture. From Geography, to Social Sciences, from Medicine to Engineering their contributions were simply enormous and gigantic. Not only they contributed new ideas and inventions but they also got rid of wrong information, myths and false beliefs. Unfortunately, however, there is serious lack of awareness among people of the world about all this big bang in the World of Science. As Prince Charles pointed out that there had been tremendous biases against Islam and Muslims due to crusade wars between Muslims and Christian that had led to deliberately masking their great contribution from which West and the World had tremendously benefitted. Hostility, hatred and political and economic factors did not end with concealing their great contributions but they even changed and "mutilated" the very names Great Scientists. This intellectual dishonesty kept the world away from acknowledging their most fundamental contribution to the modern-day sciences. Acknowledgement of their contributions will help nullify false perceptions toward Islam and Muslims and will be an appropriate tribute to these Great Giants in all fields of Sciences and Humanity!

Those Muslims scientists are indeed true role models for the modern generation as their lives show that how they worked day and night for well-being of humanity, science and people; history must remember them in golden words. Learning and benefitting from their most fundamental contributions and inventions without which present marvelous architecture of

scientific world would not be possible is not enough, the students may also learn from their lives how in those medieval ages without computers and electricity etc. these great people were able to measure the diameter of the earth, chalk out the orbits of the stars, carried out most complicated surgeries, made the automatic machines and all sorts of watches and clocks. While living on this planet earth but they had climbed over the stars. Their hard work and superb vision is beyond description. This may lit the candle of courage, hard work, honesty, magnanimity, selflessness and care toward humanity in our students.

One among those Great Giants is renowned Physician **Ibn al-Nafis**.

Introduction

Ala-al-din abu Al-Hassan Ali ibn Abi-Hazm al-Qarshi al-Dimashqi known as **Ibn an-Nis**. He was born in 1213 CE in **Damascus** (capital of Syrian). He did his medical education at medical college "**Bemaristan al-nuri**" in Damascus. Apart from medicine learned jurisprudence, literature and theology but his main subjects of interest were Anatomy and Medicine.

After completing medicine, he went Egypt and worked in Al-Mansuri hospital and became a chief of physicians. Prior to his death, he donated his house and library to Al-mansuri hospital. He also taught jurisprudence in Cairo at al-Masruriyya. He died in Cairo after some days sickness.

Important works:

Ibn an-Nis is mostly famous for being the first to describe the pulmonary circulation of the blood and disproved Gallen's old theory. He described anatomy of the lungs that the lungs are composed of parts, one of which is the bronchi; the second, the branches of the arteria venosa; and the third, the branches of the vena arteriosa, all of them connected by loose porous flesh. He also described the general condition of the

alveoli. He described that the blood comes and leave the lungs gets fresh air from the lungs and bright color to blood is given by lungs not by heart.

He also postulated that nutrition of the heart is extracted from the small vessels passing through its wall which was against Ibn e Sina (Avicenna)'s statement. About pulsation he believed that pulse was a result of heart beat and the arteries contracted and expanded at different times depend upon their distance from the heart; against Galen's theory that the heart pulse is created by arteries tunics.

Ibn al-Nafis was also one of the few physicians at the time, who supported the view that the brain, rather than the heart, was the organ responsible for thinking and sensation. He also described that optic nerves goes to the opposite eye which was against Gallen's theory that optic nerve from right side of the brain goes to right eye and from left side to the left eye.

Writings

More than **110** volumes of books were written by an-Nis in his lifetime. He wrote **Kitab al-Shamil fi 'I-Sina'a al-Tibbiyya** (Comprehensive Book in the Art of Medicine) around his 30s. It comprised 300 volumes of notes, but only 80 of these were published. His writings are cataloged in many libraries around the world, including the Cambridge University Library, the Bodleian Library, and the Lane Medical Library at Stanford University. His longest book was **Al-Shamil fi al-Tibb**, having 300 volumes left incomplete upon his death. Some other famous books written by him are **The Summary of Law (Mujaz al-Qanun)**, **Kitab al-Mukhtar fi al-Aghdhiya**(was on dietics),**Sharh Tabi'at al-Insan li-Buqrat** ("Commentary on Hippocrates' 'Nature of Man'"); **Sharh Tashrih al-Qanun** ("Commentary on Anatomy in Books I and II of Ibn Sina's Kitab al-Qanun"), in four parts: "A Commentary on Generalities, "A Commentary on Materia Medicine and Compound Drugs," "A Commentary on "Head-to-Toe Diseases" and a Commentary on Diseases which are Not Specific to Certain Organs, and many more. His **Al-Risalah al-Kamiliyyah fi al-Sirah al-**

Nabawiyyah, translated in the West under the title *Theologus Autodidactus*, is claimed by some to be the first theological novel.

Discovery of pulmonary circulation:

Ibn al-Nafis mostly famous for being the first to describe the pulmonary circulation of the blood. He disproved Galen's thousand-year-old theory which was believed to be true before his theory. He proved his theory by valid experimental and theoretical facts which was a great achievement at that time. Ibn al-Nafis clearly stated that the "blood in the right ventricle of the heart must reach the left ventricle by way of the lungs alone and not through a passage connecting the ventricle, for this he is has been called the **Father of circulatory physiology**, and "**the greatest physiologist of the Middle Ages**."

It is said that he was influenced by Hunayn Ibn Ishaq and Ibn e Sina (Avicenna). A lot of Muslim scientists as well as many western scientists were influenced by ibn al-Nafis. According to some resources Renaldo Columbo and William Harvey were influenced by him.

The Muslim scientists at their time were at the peak of development. They observed things at their depth. They did experiments. The main thing was that they were truthful and sincere in their work. They did not copy other's works and give it their own name. They discovered new things and founded modern sciences. Now their knowledge is benefitting billions!

Our knowledge of science today is built upon thousands of years of work accumulated throughout ancient civilizations. The historical "collective learning" by people of different languages, faiths and cultures has laid the foundation for modern science. In today's tension-ridden world, insights from our past can highlight how Muslim civilizations have been historically interdependent, providing inspiration to further promote inventions and modern studies.

Science in the medieval Islamic world was the science developed and practiced during the Islamic Golden Age under the Umayyads of Qurtubah (Córdoba), the Abbasids of Seville, the Samanids, the Ziyarids, Buyid Persia,

Tamerlane's Transoxiana, the Abbasid Caliphate and beyond, spanning the period c. 800 to 1429. Islamic scientific achievements encompassed a wide range of subject areas, especially astronomy, mathematics, and medicine. Islamic society paid careful attention to medicine, following a hadith enjoining the preservation of good health. Its physicians inherited knowledge and traditional medical beliefs from the civilizations of classical Greece, Rome, Syria, Persia and India.

The main cause of this boom in science during the golden ages (middle ages) was because of the true following of Islam and practicing of the Golden principles of Quran. If we see Quran is the most versatile book which stresses from morals to advanced scientific research and spirituality. Every aspect of life is covered by it, in various verses of Quran it is explained how the modern research and technology is important for human and working on it is also a part of worshipping Allah Almighty. In surah Rome verse no. 9 Allah said that

"Have they not travelled through the earth and observed how was the end of those before them? They were greater than them in power, and they ploughed the earth and built it up more than they have built it up, and their messengers came to them with clear evidence. And Allah would not ever have wronged them, but they were wronging themselves."

As you can see that in above-quoted ayah Allah Almighty is saying haven't they travelled through the earth and found out the mysteries what Allah has placed for the humans for those who understand the signals of Allah.

This inspiring declaration of the Qur'an stimulated the Muslims in the medieval period to research and investigate nature and natural phenomena that resulted in laying the foundation of practical science. The Greek science before them was mostly theoretical. One of the most remarkable things about the Qur'an is that it contains many Ayath (verses), which correctly describe natural phenomena in various disciplines such as human embryology, meteorology, astronomy, geology, and

oceanography. Many of the processes and functions mentioned in the Qur'an have been discovered only recently. Some examples are the Big-Bang Theory, Sex Chromosomes, Sex determination, solar orbit, human embryology, etc. However, the Qur'an is not meant to be a **"Textbook of Science"**.

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