

Arab Translators

Abu Zayd Hunayn ibn Ishaq al-Ibadi (808 - 873)



Hunayn ibn Ishaq is most famous as a translator. He was not a mathematician but trained in medicine and made his original contributions to the subject. However, as the leading translator in the House of Wisdom at one of the most remarkable periods of mathematical revival, his influence on the mathematicians of the time is of sufficient importance to merit his inclusion in this archive. His son Ishaq ibn Hunayn, strongly influenced by his father, is famed for his Arabic translation of Euclid's Elements.

Hunayn's father was Ishaq, a pharmacist from Hira. The family were from a group who had belonged to the Syrian Nestorian Christian Church before the rise of Islam, and Hunayn was brought up as a Christian. Hunayn became skilled in languages as a young man, in particular learning Arabic at Basra and also learning Syriac.

To continue his education Hunayn went to Baghdad to study medicine under the leading teacher of the time. However, after falling out with this teacher, Hunayn left Baghdad and, probably during a period in Alexandria, became an expert in the Greek language. Hunayn returned to Baghdad and established contact with the teacher with whom he had fallen out. The two became firm friends and were close collaborators on medical topics for many years.

Let us go back to a time before Hunayn was born and describe the events which would lead to a remarkable period of scholarship. Harun al-Rashid became the fifth Caliph of the Abbasid dynasty on 14 September 786. He brought culture to his court and tried to establish the intellectual disciplines which at that time were not flourishing in the Arabic world. It was during al-Rashid's reign that the first Arabic translation of Euclid's Elements was made by al-Hajjaj. The first steps began to be taken which would allow Greek knowledge to spread through the Islamic empire, a process in which Hunayn was to play a major role.

Al-Rashid had two sons, the eldest was al-Amin while the younger was al-Ma'mun. Harun al-Rashid died in 809, the year after Hunayn's birth, and there was an armed conflict between his two sons. Al-Ma'mun won the armed struggle, became Caliph and ruled the empire from Baghdad. He continued the patronage of learning started by his father and founded an academy called the House of Wisdom where Greek philosophical and scientific works were translated. It should not be thought that the Arabs who were translating these Greek texts

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simply sat down with a pile of Greek manuscripts and translated them. Most of the difficulty occurred in searching for the manuscripts which were to be translated. In order to find manuscripts of the works of Aristotle and others, al-Ma'mun sent a team of his most learned men to Byzantium. It is thought that Hunayn, being more skilled in the Greek language than any of the other scholars in Baghdad, was on this expedition.

As an example of the lengths that Hunayn went in order to find a particular manuscript we quote his description of a search for a medical manuscript:-

I sought for [the manuscript] earnestly and travelled in search of it in the lands of Mesopotamia, Syria, Palestine and Egypt, until I reached Alexandria, but I was not able to find anything, except about half of it at Damascus.

Al-Ma'mun recruited the most talented men for the House of Wisdom such as al-Khwarizmi, al-Kindi and al-Hajjaj the first translator of Euclid's Elements into Arabic referred to above. There they worked with Hunayn and later also with Thabit ibn Qurra. Hunayn became a close friend of Muhammad Banu Musa although relations between some of the scholars was not good due to rivalry.

In 833 al-Ma'mun died and was succeeded by his brother al-Mu'tasim. The house of Wisdom continued to flourish under successive caliphs. Al-Mu'tasim died in 842 and was succeeded by al-Wathiq:-

Hunayn soon became famous and participated in the scholarly meetings at which physicians and philosophers discussed difficult problems in the presence of Caliph al-Wathiq.

Caliph al-Wathiq was succeeded as Caliph in 847 by al-Mutawakkil who appointed Hunayn to the post of chief physician at his court, a position he held for the rest of his life. Under both these Caliphs internal arguments and rivalry arose between the scholars in the House of Wisdom and Hunayn was most certainly involved in this rivalry. The rivalry could certainly become serious and at one point Hunayn had his library confiscated and he was imprisoned.

Hunayn is important for the many excellent translations of Greek texts which he made into Arabic. In particular he translated Plato and Aristotle. These translations were spread widely through Mesopotamia, Syria and Egypt.

Yet for all his contributions, Hunayn was not always treated well by the Khalifate. In one incident, the Khalif Mutawakkil ordered Hunayn to prepare a poison for the Khalif's enemies. When Hunayn refused the Khalif cast him into prison.

Hunayn son Ishaq also contributed, as did his nephew Hubaysh Ibn Al-Hasan. Hubaysh translated the texts of Hippocrates and the botanical work of Dioscorides, "which became the basis of the Arab pharmacopoeia". [page 169]. Another one of Hunayn's pupils was 'Isa Ibn Yahya Ibn Ibrahim. Indeed, "almost all leading scientists of the succeeding generation were pupils of Hunayn".

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Thabit Ibn Qurra (836 - 901)

Thabit Ibn Qurra Ibn Marwan al-Sabi al-Harrani was born in the year 836 C.E. at Harran (present Turkey). As the name indicates he was basically a member of the Sabian sect, but the great Muslim mathematician Muhammad Ibn Musa Ibn Shakir, impressed by his knowledge of languages, and realising his potential for a scientific career, selected him to join the scientific group at Baghdad that was being patronised by the Abbasid Caliphs. There, he studied under the famous Banu Musa brothers. It was in this setting that Thabit contributed to several branches of science, notably mathematics, astronomy and mechanics, in addition to translating a large number of works from Greek to Arabic. Later, he was patronised by the Abbasid Caliph al-M'utadid. After a long career of scholarship, Thabit died at Baghdad in 901 C.E.



Thabit's major contribution lies in mathematics and astronomy. He was instrumental in extending the concept of traditional geometry to geometrical algebra and proposed several theories that led to the development of non-Euclidean geometry, spherical trigonometry, integral calculus and real numbers. He criticised a number of theorems of Euclid's elements and proposed important improvements. He applied arithmetical terminology to geometrical quantities, and studied several aspects of conic sections, notably those of parabola and ellipse. A number of his computations aimed at determining the surfaces and volumes of different types of bodies and constitute, in fact, the processes of integral calculus, as developed later.

In astronomy he was one of the early reformers of Ptolemaic views. He analysed several problems related to the movements of sun and moon and wrote treatises on sun-dials.

In the fields of mechanics and physics he may be recognised as the founder of statics. He examined conditions of equilibrium of bodies, beams and levers.

In addition to translating a large number of books himself, he founded a school of translation and supervised the translation of a further large number of books from Greek to Arabic.

Among Thabit's writings a large number have survived, while several are not extant. Most of the books are on mathematics, followed by astronomy and medicine. The books have been written in Arabic but some are in Syriac. In the Middle Ages, some of his books were translated into Latin by Gherard of Cremona. In recent centuries, a number of his books have been translated into European languages and published.

He carried further the work of the Banu Musa brothers and later his son and grandson continued in this tradition, together with the other members of the

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group. His original books as well as his translations accomplished in the 9th century exerted a positive influence on the development of subsequent scientific research.

Other translators included

Yusuf al-Khuri al-Qass, who translated Archimedes' lost work on triangles from a Syriac version. He also made an Arabic of Galen's *De Simplicibus temperamentis et facultatibus*.

Qusta Ibn Luqa al-Ba'bakki, a Syrian Christian, who translated Hypsicles, Theodosius' *Sphaerica*, Heron's *Mechanics*, Autolycus' *Theophrastus' Meteora*, Galen's catalog of his books, John Philoponus' *on the Physics of Aristotle* and several other works. He also revised the existing translation of Euclid.



Abu Bishr Matta Ibn Yunus al-Qanna'i, who translated Aristotle's *Poetica*

Abu Zakariya Yahya Ibn 'Adi al-Mantiqi, a monophysite, who translated medical and logical works, including the *Prolegomena of Ammonius*, an introduction to Porphyry's *Isagoge*.

To these may be added **Al-Hunayn Ibn Ibrahim Ibn al-Hasan Ibn Khurshid at-Tabari an-Natili**, and the monophysite **Abu 'Ali 'Isa Ibn Ishaq Ibn Zer'a**.

Source : <http://www.loqmantranslations.com/ArabicFacts/ArabTranslators.html>

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