

ABU YUSUF AL-KINDI (801 – 873)

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ABU YUSUF YAQUB IBN ISHAQ AL-SABBAH AL KINDI came from a wealthy and influential Arab family from the region around Kufa (south of Baghdad). His father, like his grandfather, ruled there as the Caliph's governor. The family's wealth and influence ensured a comprehensive education, which was followed by studies in Baghdad. The reputation of his special erudition quickly spread, so that the Caliph AL-MAMUN appointed him – together with the three BANU MUSA brothers and MOHAMMED AL-KHWARIZMI – to the newly founded *House of Wisdom*.



The enlightened ruler commissioned them to translate scientific writings from various cultures into Arabic. AL KINDI was mainly concerned with the philosophical writings of the Greeks and due to his wealth, he was able to pay the translators for this – he himself (although without knowledge of Greek) took care of smoothing the translated texts. He supplemented these edits with commentaries, and eventually produced his own philosophical writings, so that AL KINDI later received the honorary name of "first philosopher of the Arab world".

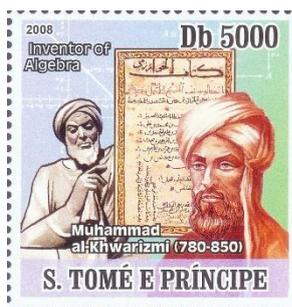
AL KINDI was also able to continue his work under the rule of the following caliph, AL-MUTASIM, brother of AL-MAMUN; he also enjoyed the confidence of this ruler and at times even took care of the education of his son Ahmed.

This changed dramatically from the year 842, when orthodox caliphs came to power: Funding for research and teaching was cut, non-Muslim groups were persecuted, synagogues and churches in Baghdad were destroyed. AL KINDI's assets and personal library were temporarily confiscated, some sources even report that he is imprisoned – possibly he is "only" the victim of an intrigue on the part of the BANU MUSA brothers.



No details are known about the further years of AL KINDI's life; presumably he was able to continue – with restrictions – to devote himself to his studies and students. The total number of writings he produced (mostly of a shorter nature) probably exceeded 250.

The polymath's interests were very varied: he wrote 32 treatises on geometry (several commentaries on EUCLID's *Elements*, including a theory of parallels in which he investigated the possibility of whether two non-parallel straight lines must necessarily intersect) and eleven writings on arithmetic. Like MOHAMMED AL-KHWARIZMI, he recognised the advantages of the decimal place value system and propagated its use through "instructional letters" on arithmetical procedures for his students.



He also wrote on logic (summarising the logic of ARISTOTLE and later commentators), on physics and astronomy, but also on topics from geography, medicine and pharmacology, art and music theory. Most of his writings were lost; several works were translated into Latin in the Middle Ages.



Surprisingly, works thought to be lost were rediscovered in the 20th century, including a "treatise on the decipherment of coded messages" in 1987. In the 'School of Wisdom', Islamic theologians had begun to study the texts of the Koran, also with regard to their choice of words, in order to find out whether all the texts could actually be attributed to the Prophet and at what time they could have been written.

They went so far as to study the frequency of individual letters and combinations of letters. In his treatise, AL KINDI examined in detail the phonetics and syntax of the Arabic language as well as the frequency distribution of letters. Then he wrote:

"One way to decipher a coded message, provided we know its language, is to find another plaintext in the same language long enough to fill one or two sheets of paper, and then count how often each letter occurs. ... Then we look at the ciphertext we want to decode and also rank its symbols. We find the most frequent symbol and give it the shape of the "first" letter of the plaintext sample, the second most frequent symbol becomes the "second" letter ... Until we have assigned all the symbols of the cryptogram we want to decode in this way." (from SIMON SINGH, *Secret Messages*).

In his writings on the natural sciences, AL KINDI stressed the importance of experimentation for scientific knowledge, and in particular he emphasised quantitative observations. He confronted the alchemists and denied the possibility of producing gold and silver from less valuable metals.

Inspired by the experiments of ABU MUSA DSCHABIR IBN HAYYAN (known in Europe as GEBER), he distilled pure alcohol (ethanol). He experimented with perfumes and wrote recipes according to which valuable, expensive substances could be replaced by cheaper ones (some sources therefore call him the "father of the perfume industry"). In his medical writings he introduced a (mathematical) scaling for the concentration of medicines.



In the context of editing translations of Greek philosophers, AL KINDI dealt primarily with the works of ARISTOTLE and the New PLATONISTS.

As he was the first Arab philosopher, standard philosophical terms were shaped and introduced into the Arabic language through the translations and especially through his writing *On the Definitions and Description of Things*. The concern of his own philosophical writings was to show that philosophy and (Islamic) religion could be compatible.



Philosophy was for him the recognition of the true nature of things; for this, in his view, man may use all sources that can help him: "We need not be ashamed to acquire truth ... wherever it comes from, ... even from foreign peoples ...", he wrote in his book *On First Philosophy* especially aimed at the orthodox clergy.

For him there was no real difference between metaphysics and theology – both, in his opinion, serve the knowledge of God. Nevertheless, he avoided conflict with the teachings of Islam, for example regarding the resurrection of the dead and the *Last Judgement*, and admitted divine revelation as a possible source of human knowledge. Contrary to the Greek tradition, he argued that creation came from nothing (*creatio ex nihilo*) and that time and space are finite.

However, the fact that his writings as a whole did not have a lasting effect is mainly due to the following two reasons: First, it was the political balance of power – many of his seemingly free-thinking views displeased the militant orthodox clergy, and he was repeatedly forced to prove his orthodoxy. Ultimately, these tensions between autonomous thought and the claim to truth of the Koranic revelation meant that philosophy could not really develop in Islam.

Then later, in the 13th century, numerous libraries were destroyed by the Mongol invaders and with them many of AL KINDI's writings.

Above all, however, the fact that subsequent scholars such as ABU NASR AL-FARABI (870-950) and ABU ALI AL-HUSAIN IBN SINA (980-1037, also known in Europe as AVICENNA) outshone his light and had a greater influence through their writings played a role.





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