

Book review: How Greek Science Passed to the Arabs
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Commentary on the book

O'Leary writes a fascinating history of a critically important phase in mesopotamian history. After all, it was the Arabs who brought with them into Spain the Arabic versions of the Greek works, from which translations were made into Latin and spread throughout Europe, which was then in its dark age. It is this Greek body of knowledge that brought Europe out of its dark age and into the renaissance - the rebirth or revival.

The question remains: by whom, where, and when was the Greek body of knowledge transmitted to the Arabs themselves. O'Leary tells us:

Greek scientific thought had been in the world for a long time before it reached the Arabs, and during that period it had already spread abroad in various directions. So it is not surprising that it reached the Arabs by more than one route. It came first and in the plainest line through Christian Syriac writers, scholars, and scientists. Then the Arabs applied themselves directly to the original Greek sources and learned over again all they had already learned, correcting and verifying earlier knowledge. Then there came a second channel of transmission indirectly through India, mathematical and astronomical work, all a good deal developed by Indian scholars, but certainly developed from material obtained from Alexandria in the first place. This material had passed to India by the sea route which connected Alexandria with north-west India. Then there was also another line of passage through India which seems to have had its beginnings in the Greek kingdom of Bactria, one of the Asiatic states founded by Alexander the Great, and a land route long kept open between the Greek world and Central Asia, especially with the city of Marw, and

this perhaps connects with a Buddhist medium which at one time promoted intercourse between east and west, though Buddhism as a religion was withdrawing to the Far East when the Arabs reached Central Asia. [pages 2-3].

Chapter II gives a history of how Western Asia came under Greek influence.

Chapter III discusses the Christian Church. A notable passage occurs in the very last paragraph of the Chapter:

It has been disputed whether Muhammad owed most to Jewish or Christian predecessors, apparently he owed a great deal to both. But when we come to the 'Abbasid period when Greek literature and science began to tell upon Arabic thought, there can be no further question. The heritage of Greece was passed on by the Christian Church. [page 46].

This passage leads naturally to Chapter IV, titled the Nestorians. In this chapter O'Leary discusses the Nestorian contribution in the transmission of Greek knowledge to the Arabs. I can only cite briefly, as it is a lengthy chapter. In brief, through the many schools the "Nestorians" (Assyrian Church of the East) founded, including the Schools at Edessa, Nisibis, and Jundi-Shapur, the Greek works were translated into Syriac for use in the curriculums. These works included Theophania, Martyrs of Palestine, and Ecclesiastical History by Eusebius; the Isagoge of Porphyry (an introduction to logic); Aristotle's Hermeneutica and Analytica Priora; and many, many others. O'Leary states:

In the first place Hibha [a Nestorian] had introduced the Aristotelian logic to illustrate and explain the theological teaching of Theodore, of Mopseustia, and that logic remained permanently the necessary introduction to the theological study in all Nestorian education. Ultimately it was the Aristotelian logic which, with the Greek medical, astronomical, and mathematical writers, was passed on to the Arabs. [page 61]

Later, O'Leary states:

Nestorian missions pushed on towards the south and reached the Wadi l-Qura', a little to the north-east of Medina, an outpost of the Romans garrisoned, not by Roman troops, but by auxiliaries of the Qoda' tribes. In the time of Muhammad most of these tribes were Christian, and over the whole wadi were scattered monasteries, cells, and hermitages. From this as their headquarters Nestorian monks wandered through Arabia, visiting the great fairs and preaching to such as were willing to listen to them. Tradition relates that the Prophet as a young man went to Syria and near Bostra was recognized as one predestined to be a prophet by a monk named Nestor (Ibn Sa'd, Itqan, ii, p. 367). Perhaps this may refer to some contact with a Nestorian monk. The chief Christian stronghold in Arabia was the city of Najran, but that was mainly Monophysite. What was called its Ka'ba seems to have been a Christian cathedral. [page 68].

But the most definite link between Nestorians and the Arabs was through Jundi-Shapur. O'Leary states:

From the time of Maraba onwards there is fairly continuous evidence of translation from the Greek and of work in Aristotelian logic. [page 70]

Some examples are:

Maraba II, skilled in Philosophy, medicine, and astronomy, and to have been learned in the wisdom of the Persians, Greeks, and Hebrews, wrote a commentary (in Syriac) on the Dialectics

of Aristotle.

Shem'on of Beth Garmai translated Eusebius' Ecclesiastical History.

Henan-isho' II, Catholicos (Patriarch) from 686 to 701, composed a commentary (again, in Syriac) on Aristotle's Analytica.

Founded originally as a prisoner camp, Jundi-Shapur had citizens who spoke Greek, Syriac, and Persian. But in the course of time all academic instruction was administered in Syriac [page 71]. It is interesting that even though the people of Jundi-Shapur used the speech of Khuzistan, which was not Syriac, Hebrew nor Persian, the language used in the classroom was Syriac, "as is obvious from the fact that Syriac translations were made for the use of lecturers". [page 72].

Finally, O'Leary states in closing Chapter III:

When Baghdad was founded in 762 the khalif and his court became near neighbors of Jundi-Shapur, and before long court appointments with generous emoluments began to draw Nestorian physicians and teachers from the academy, and in this Harun ar-Rashid's minister Ja'far Ibn Barmak was a leading agent, doing all in his power to introduce Greek science amongst the subjects of the Khalif, Arabs, and Persians. His strongly pro-Greek attitude seems to have been derived from Marw, where his family had settled after removing from Balkh, and in his efforts he was ably assisted by Jibra'il of the Bukhtyishu' family [a famous Assyrian family which produced nine generations of physicians] and his successors from Jundi-Shapur. Thus the Nestorian heritage of Greek scholarship passed from Edessa and Nisibis, through Jundi-Shapur, to Baghdad. [page 72].

Chapter IV discusses the Monophysites (the "Jacobites", or the Syrian Orthodox Church). A detailed history of Monophysitism is given. One of the most well known Monophysite translators was Sergius of Rashayn, "a celebrated physician and philosopher, skilled in Greek and translator into Syriac of various works on medicine, philosophy, astronomy, and theology". [page 83]. Other Monophysite translators were Ya'qub of Surug, Aksenaya (Philoxenos), an alumnus of the school of Edessa, Mara, bishop of Amid.

Chapters VII and VIII discuss the Indian influence via sea and land routes, although this is small in comparison to the Nestorian and Monophysite contributions. As is the case with the Buddhist connection discussed in Chapter IX.

Chapters X and XI are historical and contain little in the way of how Greek knowledge was transmitted to the Arabs.

Chapter XII discusses the various early translators. These included:

Abu Mahammad Ibn al-Muqaffa', a Persian who converted to Islam, although many believed his conversion to be insincere. He translated from Old Persian to Arabic Kalilag wa-Dimnag, which was itself a translation of a Buddhist work brought back from India (along with the game of chess) by the Assyrian Budh.

Al-Hajjaj Ibn Yusuf Ibn Matar Al-Hasib, An Arab, judging from his name, who translated the Almagest and Euclid's Elements.

Yuhanna Ibn Batriq, an Assyrian, who produced the Sirr al-asrar.

'Abd al-Masih Ibn 'Aballah Wa'ima al-Himse, also an Assyrian, who translated the Theology of

Aristotle (but this was an abridged paraphrase of the Enneads by Plotinus).

Abu Yahya al-Batriq, another Assyrian, who translated Ptolemy's Tetrabiblos.

Jibra'il II, son of Bukhtyishu' II, of the prominent Assyrian medical family mentioned above,

Abu Zakariah Yahya Ibn Masawaih, an Assyrian Nestorian. He authored a textbook on Ophthalmology, Daghal al-'ayn (The Disease of the eye).

Hunayn Ibn Ishaq, an Assyrian, son of a Nestorian druggist, was the foremost translator of his time; O'Leary states:

Most of the translators of the next generation received their training from Hunayn or his pupils, so that he stands out as the leading translator of the better type, though some of his versions were afterwards revised by later writers. The complete curriculum of the medical school of Alexandria was thus made available for Arab students. This included a select series of the treatises of Galen which was :

1. De sectis
 2. Ars medica
 3. De Pulsibus ad tirones
 4. Ad Glauconem de medendi methodo
 5. De ossibus ad tirones
 6. De musculorum dissectione
 7. De nervorum dissectione
 8. De venarum arteriarumque dissectione
 9. De elementis secundum Hippocratem
 10. De temperamentis
 11. De facultatibus naturalibus
 12. De causis et symptomatibus
 13. De locis affectis
 14. De pulsibus (four treatises)
 15. De typis (februm)
 16. De crisi
 17. De diebus decretoriis
 18. Methodus medendi
- [pages 166-167]

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. [page 168]

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". [page 170].

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'lbakki, 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.

The salient conclusion which can be drawn from O'Leary's book is that Assyrians played a significant role in the shaping of the Islamic world via the Greek corpus of knowledge.

If this is so, one must then ask the question, what happened to the Christian communities which made them lose this great intellectual enterprise which they had established. One can ask this same question of the Arabs. Sadly, O'Leary's book does not answer this question, and we must look elsewhere for the answer.