

## Philology and The Great Islamic Civilization: from Judeo-Arabic to The Arabicized Greek Works

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### ABSTRACT

Artikel ini membahas tentang kekhasan sains Islam yang menjadi penanda identitas kemunculan peradaban Islam yang dimulai sejak era kenabian hingga era kekhalifahan Mughal di India dan kekhalifahan bani Umayyah di Andalusia. Peradaban Islam sebenarnya terkait dengan semangat 'Sanskrit cosmopolis' yang teksnya ternyata telah migrasi ke kawasan Arabia sejak era pra-Islam hingga mapannya sains Islam di India pada masa dinasti Mughal di India. Elemen-elemen teks Weda berbahasa Sansekerta dan karya-karya bertradisi Yunani telah mengalami revitalisasi dan memperkaya tradisi keilmuan Islam. Aksara Judeo-Arab yang menjadi penanda tradisi Rabbini sebenarnya tidak dapat dilepaskan dari kontak budaya yang intens dalam ranah keagamaan antara keyahudian dan keislaman yang dimulai sejak era kenabian. Pemanfaatan teori yang digagas oleh Sheldon Pollock dalam tulisan ini memang sangat relevan, terutama terkait 'Sanskrit cosmopolis.' Penelitian ini menggunakan pendekatan kualitatif deskriptif melalui studi pustaka yang relevan dengan kajian manuskrip berbasis bahasa Sansekerta, Ibrani dan Yunani, dan Arab, dan teks-teks yang telah mengalami proses arabisasi dianalisis sesuai kaidah kajian filologis.

**Keyword:** Safaitic inscriptions; Judeo-Arabic; Aryo-Semitic; Arabicized Greek; Maimonides; Averroes

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### NABATAEAN ARABIC SCRIPTS

Islam as a part of Semitic faiths and traditions in the Middle East is not the rituals of a religion in the light of Western scholars, but Islam is the heavenly great civilization of a religion. This research is to reflect the diversity of Islamic civilization of the past. Beginning in Islam's heartland, Medina and ranging from Baghdad, Mesopotamia to the North Africa and Iberia in the West. This research is also to discuss those who developed the scientific thought, philosophy, literature and the mozaik of interfaith dialogue in the paradigm of the Aryo-Semitic texts. What emerges is a fascinating portrait of rich and diverse Islamic societies.

Ahmad al-Jallad has published on inscriptions, writing cultures, and religions of ancient Arabia and their reception in Islamic-period literary sources, as well as on the comparative grammar of the Semitic languages. Ahmad al-Jallad and Karolina Jaworska compiled the Safaitic inscriptions of Arabia Petraea in their book, *A Dictionary of the Safaitic Inscriptions: Studies in Semitic Languages and Linguistics* (Leiden: E.J. Brill, 2019). This book is the first comprehensive dictionary of the Safaitic inscriptions, comprising more than 1,400 lemmata and 1,500 lexical items as an outline of various aspects of the Safaitic writing tradition. The number of subjects of

Safaitic inscriptions is dealing mainly with the prayers and curses. Narratives are often followed by a prayer to the gods to perform the religious rituals.<sup>1</sup> He also published his research, *The Religion and Rituals of the Nomads of Pre-Islamic Arabia: A Reconstruction Based on the Safaitic Inscriptions. Ancient Languages and Civilizations* (Leiden: Brill Academic, 2022). This book presents a reconstruction of pre-Islamic Arabian religion based on epigraphic and archaeological sources. As an author of *The Linguistic Landscape of pre-Islamic Arabia: Context for the Quran* (2020) he identified the Arabic writings based on pre-Islamic inscriptions. As one of modern Western scholars in the 21<sup>st</sup> century, he has many researches on the development of language history in the Middle East before the emergence of Islam. In his researches, he found many evidences of linguistic elements and its orthography which to show a transition period from Nabatean scripts to Arabic letters. In other words, Arabic writings from Nabatean scripts to Arabic letters is a very important to study about the development of orthographic elements in Arabic linguistics diachronically. According to him, until the 5<sup>th</sup> and 6<sup>th</sup> centuries, Arabic inscriptions were in fact written in a mixture of Nabatean and Arabic letters.<sup>2</sup>

### ARABIC WORD IN THE GREEK ORTHOGRAPHY

Herodotus mentioned the goddess' name of Arabians, *Alilāt* (Ἀλιλάτ). The Arabic divine proper name *Allāt* as a feminine form of *Allah* was pronounced *Alilāt* (Ἀλιλάτ) in Ancient Greek version, see *Historiae*, Book I.131.3, and Book III.8.3. Herodotus, however, identifies Ἀραβιοὶ δὲ Ἀλιλάτ (*Aravioi dé Alilát*) which means *Alilāt* as the goddess' name in Arabic which related to the religious discourse of Arabs in pre-Christian era, 5<sup>th</sup> century BCE. It indicates that the name of goddess *Alilāt* in Greek was transmitted from the Arabic language which originally pronounced *Allāt*, and she was really popular and worshipped by the Nabataean Arabs in Arabic liturgy in pre-Islamic times. References to this goddess are found in several Nabataean inscriptions. William Robertson Smith, the author of *Religion of the Semites: the Fundamental Institutions* (Routledge, 2017) mentions that *Allāt* was worshipped by the Nabataeans, the offspring of Ishmael as mother of the gods, and must be identified with the virgin-mother whose worship at Petra is described by St. Ephiphanius the bishop of Salamis (ca. 310 - 403 AD) in his famous work, *Panarion*.<sup>3</sup> The Palmyran inscription of

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<sup>1</sup> Ahmad al-Jallad & Karolina Jaworska, *A Dictionary of the Safaitic Inscriptions: Studies in Semitic Languages and Linguistics* (Leiden: E.J. Brill, 2019), p. 16

<sup>2</sup> Ahmad al-Jallad, 'Linguistic Landscape of pre-Islamic Arabia: Context for the Quran' in Mustafa Shah & Muhammad Abdel Haleem, *The Oxford Handbook of Quranic Studies* (Oxford: Oxford University Press, 2020), p. 111-127

<sup>3</sup> William Robertson Smith, *Religion of the Semites: the Fundamental Institutions. New Introduction by Robert A. Segal* (London & New York: Routledge, 2017), p. 56, cf. Abdul Majid Daryabadi, *Tafsīr al-Qur'ān*.

Nabataeans in northwest of the Arabian Peninsula has also been recorded by Suleyman Dost. The text begins with <whb'lt> [Wahballāt], lit., 'a gift of Allāt.' Based on the literary writing of Herodotus and inscriptional evidences, Suleyman Dost also leads to the conclusion that as early as the 5<sup>th</sup> century BCE, *Allāt* was known among the Arabs residing in the regions northwest of the Arabian Peninsula.<sup>4</sup> Herodotus mentions the goddess' name whom the Arabians call *Alilāt* (Ἀλιλάτ) in *Historiae*, Book I.131.3.

καλέουσι δέ Ἀσσύριοι τήν Ἀφροδίτην  
Μύλιττα Ἄραβιοι δέ Ἀλιλάτ, Πέρσαι δέ  
Μίτραν.<sup>5</sup>

(*Mylitta* is the name by which the Assyrians know this goddess, whom the Arabians call *Alilāt* and the Persians call her as *Mitra*).

Some Orientalists perhaps interpret this narrative as a proven text to support the theory of borrowing which related to the origins of the name of *Alilāt* (Ἀλιλάτ) from non-Semitic loanword. This goddess' name was originally called *Mitra* (Μίτρα) in Persian language, and it was later adopted by the Assyrians and they gradually transformed it into the Assyrian dialect which was pronounced as *Mylitta* (Μύλιττα). The Arabs also transformed *Mylitta* (Μύλιττα) in Assyrian dialect into Arabic language through the Semitic phonological correspondence, and the Nabataean Arabs called the goddess' name as *Allāta* (اللات). Finally, the Greeks then pronounced this Arabic name in the Hellenic language as *Alilāt* (Ἀλιλάτ). Studies in Semitic linguistics confirm the history of Assyrian dialect was a part of Akkadian language. Assyrian dialect was indeed spoken in northern Mesopotamia and the Assyrians finally adopted the Persian goddess' name which they pronounced her name as *Mylitta* (Μύλιττα). In fact, *Mitra* (Μίτρα) is a name already used in the religious traditions of Aryans and this divine proper name already recorded in the Vedic Sanskrit and Old Persian languages. Studies in Semitic languages and comparative linguistics prove that Ἀλιλάτ (*Alilāt*) is a Greco-Arabic word, and اللات (*Allāta*) is an Arabic term. Meanwhile, Μύλιττα (*Mylitta*) is an Assyriac word, and Μίτρα (*Mitra*) is an Old Persian term. Interestingly, मित्र (Mitra) is also a Sanskrit word in the Vedas. The Vedic

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*Translation and Commentary of the Holy Quran. Introduction by Syed Abul Hasan Ali Hasani Nadwi, vol. IV* (Lucknow: Academy of Islamic Research and Publications, 2004), p. 247

<sup>4</sup> Suleyman Dost, *Arabian Quran: Towards a Theory of Peninsular Origins. Ph.D – Doctoral Dissertation* (Chicago: University of Chicago, 2014), p. 36-39

<sup>5</sup> Carolus Hude (ed.), *Herodoti Historiae, Volume I. Libre I – IV. Oxford Classical Texts* (Oxford: Oxford University Press, 1967), p. 75

Sanskrit word मित्र (Mitra) is a masculine form, and the feminine form of the word in Indian languages like Marathi is *Maitrin*. In the Sanskrit language, the Rig-veda 1.2.7 & Rig-veda 1.2.8 really confirm मित्र (Mitra) as the Vedic divine proper name in the Old Indic religious discourse.

मित्रं हुवे पूतदक्षं वरुणं च रिशादसम् ।

धियं घृताचीं साधन्ता ॥

ऋतेन मित्रावरुणावृतावृधावृतस्पृशा ।

क्रतुं बृहन्तमाशाथे ॥

*mitram huve pūtadakṣam varuṇam ca riśādasam ।*

*dhiyam ghṛtācīm sādhanā ॥*

*ṛtena mitrāvaruṇāv ṛtāvṛdhāv ṛtasprśā ।*

*kratum bṛhantam āśāthe ॥*

I invoke *Mitra*, of pure vigour, and *Varuṇa*, the devourer of foes;

the joint accomplishers of the act bestowing water (on the earth).

*Mitra* and *Varuṇa*, augmenters of water, dispensers of water,

you connect this perfect rite with its true (reward).<sup>6</sup>

In the light of Aryan tradition, the Vedic text means there is only one god but he is called in many names by the sages. The significance of the verse is that all people are worshipping the same god with various names or forms. Thus, the Sanskrit term मित्र (Mitra) as the Vedic divine proper name in the Old Indic religious discourse is *Mitra* (Mitra) in the Avestan divine proper name, the sacred book of Zoroastrians in Old Persian language. There is no difference between different sects or religions. They are all just different paths to the same goal. E.M. Yamauchi, the author of *Persia and the Bible* (Baker Books, 1996) confirms that the earliest attestation of the Vedic gods is in the inscriptions of *Boghazkoi* which are supposed to have existed 1400 BCE., record the treaties, written in Akkadian between the Hittite king Suppiluliuma (1375 – 1345 BCE.) and the Mitannian king Mattiwaza. And the guarantors of the oath are named as Indra, Mithra, Varuna and Natasya, the names of gods in Rigveda 1.164.46. The first three deities are indeed part of the Indian pantheon, in the Vedic hymns.<sup>7</sup> It is perhaps the first Semitic narrative in the shadow of Indological tradition which it supports the

<sup>6</sup> I Wayan Maswinara (trans.), *Weda Śruti: Rgveda Samhitā. Sākala Sākhā Mandala I, II, III. Bhāṣya of Sāyanācārya* (Surabaya: Paramita, 2008), p. 4

<sup>7</sup> E.M. Yamauchi, *Persia and the Bible* (Grand Rapids, Michigan: Baker Books, 1996), p. 399

theory of Sheldon Polloch concerning the Sanskrit Cosmopolis. Sheldon Pollock, the author of *The Language of the Gods in the World of Men: Sanskrit, Culture and Power in pre-Modern India* (University of California Press, 2006) suggests how Sanskrit travelled the vast distance it did and came to be used for literary and political texts and what such texts meant to the worlds of power in which they are produced.<sup>8</sup> The Sanskrit Cosmopolis, of course, represented the code switching in Semitic linguistics and its religious discourse. Therefore, the Akkadian inscriptions really proved the existence of the Vedic knowledge in the Semitic literary artefacts as an archaeology of the Brahmanic knowledge before the making process of Abrahamic religions: Judaism, Christianity and Islam. Obviously, the existence of the name of god Mithra in the Akkadian writings related to the names of the One Existent in the Vedas which was already adopted from the earliest material, the Rig-veda I.64.46.

इन्द्रं मित्रं वरुणमग्निमाहुर  
थो दिव्यः स सुपर्णो गरुत्मान् ।  
एकं सद्विप्रा बहुधा वदन्त्यग्निं  
यमं मातरिश्वानमाहुः ॥४६॥

*Indram Mitram Varunam Agnim ahur  
atho divyah sa suparno Garutman |  
ekam sad vipra bahudha vadanty  
Agnim Yamam Matarishvanam-ahuh ||*

They call him Indra, Mitra, Varuṇa, Agni, and he is heavenly nobly-winged Garutmān. To what is the Holy One, sages give many a title they call it Agni, Yama, Mātariśvan.<sup>9</sup>



**Figure 1.** Lion Gate in Boghazkoi

<sup>8</sup> Sheldon Pollock, *The Language of the Gods in the World of Men: Sanskrit, Culture and Power in Pre-Modern India* (University of California Press, 2006), p. 11

<sup>9</sup> I Wayan Maswinara (trans.), *Weda Śruti: Rgveda Samhitā. Sākala Sākhā Mandala I, II, III. Bhāṣya of Sāyanācārya* (Surabaya: Paramita, 2008), p. 383

The origins of the goddess' name of *Alilāt* (Ἀλιλάτ) or *Allāta* (ألثت) which is related to the theory of borrowing from non-Semitic loanword, indeed, it is a part of 'Sanskrit Cosmopolis' in the Semitic religious elements in Babylonian times. Meanwhile, the early history of *Yahweh* is also related to the theory of borrowing from non-Semitic loanword, namely the Ancient Egyptian tradition, which was gradually adopted into the Hebraic religious elements in the era of Egyptian exile. The Hebraic divine proper name *Yahweh*, is also derived from ancient Egyptian times. It was the god the Israelites learned from Egyptian people since the life times of Moses (ca. 1391 - 1271 BCE). Rabbinical Judaism calculated a lifespan of Moses the prophet corresponding to 1391 - 1271 BCE. Meanwhile, St. Jerome suggested 1592 BCE as his birth year. Based on the two Egyptian texts, one dated to the period of Amenhotep III (14<sup>th</sup> century BCE), the other to the age of Ramesses II (13<sup>th</sup> century BCE), refer to *Yahu* in the land of the Sosūnomads (*t3 š3šw Yhw*), in which *Yhw*[3] or *Yahu* is a toponym. Hence, the Hebraic divine proper name *Yahweh* is indeed *Yehu* in Ancient Egyptian texts in the life times of Moses. Furthermore, the Hebrew word אַבְרַח (*avrech*) in Genesis 41:43 is rendered by translators 'bow the knee' assuming it to be in anomalous *hiphil* form of the denominative from בָּרַח (*barech*), lit. 'knee' in Hebrew language. It is philologically derived from an Ancient Egyptian word, ΔΠερεκ (*aperek*) which is to be translated 'bow the head.'<sup>10</sup> However, both words refer to the same physical attitude, and the origins of the Hebrew word אַבְרַח (*avrech*) is relating to the Hebrews in the era of Egyptian exile.

מג וַיִּרְכַּב אֹתוֹ, בְּמִרְכַּבַּת הַמִּשְׁנָה 43 And he made him to ride in the second chariot  
אֲשֶׁר-לוֹ, וַיִּקְרְאוּ לְפָנָיו, אַבְרַח; וַנִּתֵּן  
אֹתוֹ, עַל כָּל-אֶרֶץ מִצְרָיִם.  
which he had; and they cried before him: 'Abrech';  
and he set him over all the land of Egypt.

מִד וַיֹּאמֶר פַּרְעֹה אֶל-יוֹסֵף, אֲנִי פַרְעֹה;  
וּבְלִעְדֵיךָ, לֹא-יָרִים אִישׁ אֶת-יָדוֹ וְאֶת-  
רַגְלוֹ--בְּכָל-אֶרֶץ מִצְרָיִם.  
44 And Pharaoh said unto Joseph: 'I am Pharaoh,  
and without thee shall no man lift up his hand or  
his foot in all the land of Egypt.'

Prof. James Barr, the author of *Comparative Philology and the Text of the Old Testament* (Oxford, 1968) and Benjamin J. Noonan, the author of *Non-Semitic Loanwords in the Hebrew Bible: A Lexicon of Language Contact* (Eisenbrauns, 2019) both scrutinize a number of Biblical Hebrew vocabularies which has been derived

<sup>10</sup> Leopold, *Hebrew - English Lexicon: All the Hebrew and Chaldee Words in the Old Testament Scriptures with Their Meanings in English* (London - New York: Samuel Bagster & Sons - Harper & Brothers, 1959), p. vi

from non-Semitic loanwords. According to their researches, the ancient Israelites frequently interacted with speakers of non-Semitic languages, including Ancient Egyptian, Greek, Hittite and Luwian, Hurrian, Old Indic, and Persian or Old Iranian. This linguistic contact led the ancient Israelites to adopt non-Semitic words, many of which appear in the Hebrew Bible. James Barr identified the Hebrew words  $\text{וְרֵד}$  (wered) and  $\text{פֶּסַח}$  (pesach) were non-Semitic origin, the first was derived from Persian word, meaning 'rose', and the second was derived from Egyptian, meaning 'passover.' Some scholars have also suggested explanations from Egyptian, and this can be supported by the Jewish tradition that the Passover originated in Egypt.<sup>11</sup>

### LATRIPPA: THE RISE OF ISLAM IN THE BEGINNING

In the early mission of Islam, the prophet came to  $\text{מְדִינָה}$  (*Medinta*), the Aramaic name of Yathrib. The name of Yathrib was an ancient name of Medina, and it was reflecting the historical linguistic elements in the paradigm of philology and socio-historical facts of the time. As an urban city in the light of Roman historians, Yathrib was one of famous linguistic identity markers in the Sabaeen inscriptions. It was linguistically signified through the Ancient South Arabic elements of Yemen. In "Dictionary of Greek and Roman Geography", William Smith confirmed that Lathrippa, a Greco-Arabic term was an ancient name of Medina and Macoraba was also an ancient name of Mecca in Ptolemy's map. The "Geography" which is through discussion on maps and the geographic knowledge of the Greco-Roman world, Ptolemy mentioned a well-known city in Arabia in the era of Romance Empire, Lathrippa. This famous town was geographically placed in the Hejaz, in Arabia Deserta. Yet, Ptolemy mentioned the Hejaz as a part of Arabia Felix. However, Arabia Felix was the Latin name previously used by geographers to describe South Arabia or what is now Yemen, but Ptolemy placed the Hejaz as a part of Arabia Felix.

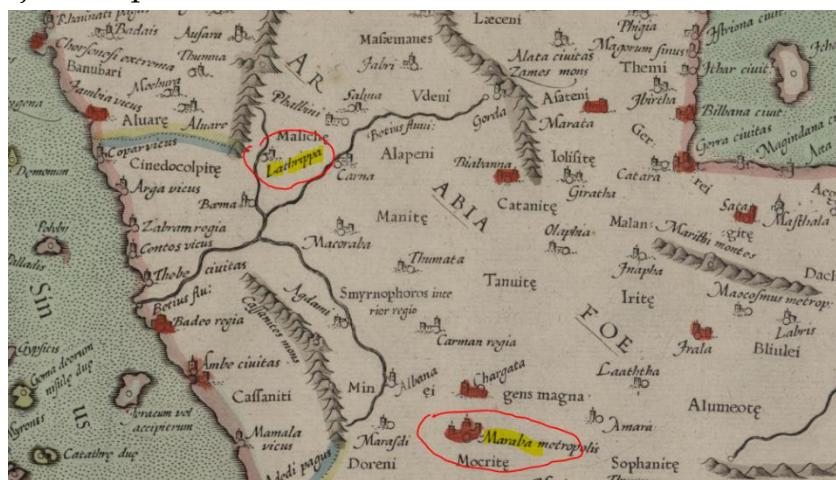
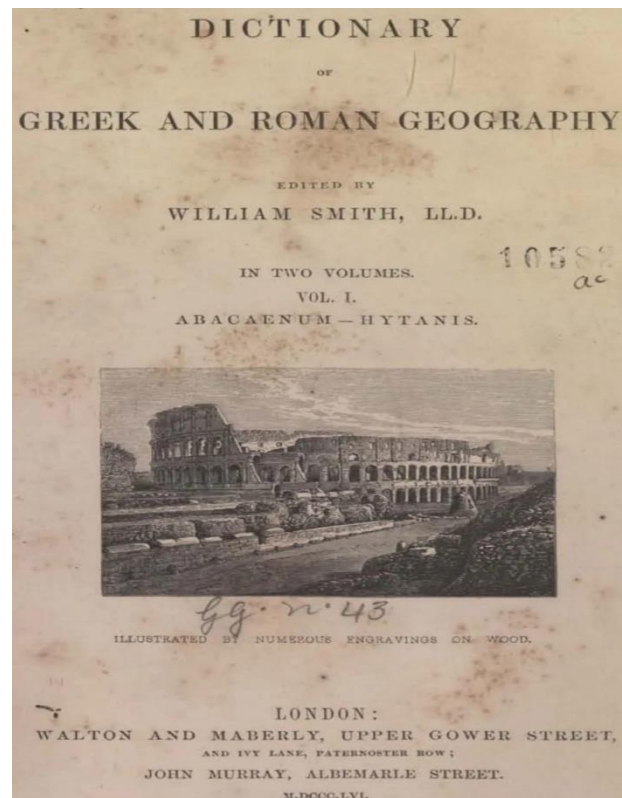


Figure 2. Lathrippa in Ptolemy's Geography (ca. 100 – 170 AD)

<sup>11</sup> James Barr, *Comparative Philology and the Text of the Old Testament* (Oxford: the Clarendon Press, 1968), p. 103-107

Prof. Philip K. Hitti confirmed that Yathrib was possibly these Aramaic-speaking Jews who changed the name Yathrib into Aramaic “Medinta.” Yathrib of the Sabaeen inscriptions, Iathrippa of Ptolemy lay some 300 miles north of Mecca, the Macoraba of Ptolemy.<sup>12</sup> In the era of Islam, the prophet then changed the Aramaic name מדינת (Medinta) into Arabic, אלْمَدِينَة (Al-Madinah). And in the beginning, Medina as an Islami’s heartland, its mission is to make the city to be a great civilization through literacy.



**Figure 3.** The Great Work of Ancient Geography, composed by William Smith based on Ptolemy’s Geography (ca. 100 – 170 AD)

In fact, the prophet sent a diplomatic letter to the Jews in Kheybar in the writing of Judeo-Arabic style, and it was really the writing system of Aramaic in the *Targum*. However, this Judeo-Arabic letter was found by the Jewish scholar, published by Jewish Quarterly Review, Israel. Rabbinic Judaism however claimed that this letter was really an ancient document of Judeo-Arabic writing in the light of philology through “*interne evidentie*.” Indeed, this Judeo-Arabic writing of the prophet was an ancient manuscript than rabbinic texts, composed in Judeo-Arabic by Rav Saadia Gaon. One of the most influential rabbinical personalities of the medieval period was Rabbi Saadia Gaon (ca. 882 – 942 CE.). In the beginning, he was already known as a ‘creator’ of Judeo-Arabic texts, such as the *Tafsir* of Torah in Arabic. In 923 CE., he

<sup>12</sup> Philip K. Hitti, *History of the Arabs from the Earliest Times to the Past* (New York: the Macmillan Company, 1951), p. 103-14



went to the rabbinical center of Torah in Babylon, joining the Talmudic academies of Pumbedita and Sura. He spent six months at the important Torah center in Aleppo, where he wrote his book "Ten Commitments" (*Ibtida Kalamna*) in Judeo-Arabic. To this day, this book is yearly read by Aleppo Jews on the holyday of *Tu BiShvat*.<sup>13</sup>

## ISLAMIC CIVILIZATION: ISLAMIC SCHOLARS AND ARABICIZED GREEK

At post-prophetic mission, the Abbasids already promoted the intellectual spirit of Islam through the cross-cultural knowledge, which was reflecting the studies of linguistics, literatures, histories, medicines, etc. At that times, Moslem scholars developed the spirit of Islamic knowledge through the researches of the applied sciences, and one them was Ja'far al-Shadiq. There are many astrological and alchemical treatises ascribed to Ja'far al-Shadiq, see *Fihrist* p. 317; Ibnu Khallikan vol. I/185; de Slane vol. I/300; Hajji Khalfah, *Kashf al-Dzunun 'an Asami ak-Kutub wa al-Funun* (ed.) by Fluegel vol. II (Leipzig, 1837), pp. 581, 604; vol. III (London, 1842), pp. 53, 128. Ironically, those manuscripts which were ascribed to Ja'far al-Shadiq have been discredited by critical modern scholarship such as Philip K. Hitti in his book *History of the Arabs, from the Earliest Times to the Present* (New York, 1951), p. 255 and J. Ruska in his work *Arabische Alchemisten, Ga'far Al-Shadiq der Sechste Imam* (Heidelberg, 1924), pp. 49-59.<sup>14</sup> Yet, they never discredited Ja'far al-Shadiq as the grandest master of Jabir ibn Hayyan, a great Islamic scholar. Even, they never discredited him as the greatest Islamic scientist. Indeed, Philip K. Hitti as a professor of Semitic literature on the William and Annie S. Paton Foundation, Princiton University used and relied on the kitab *Fihrist* as the oldest and best source of information the first in Islam. Based on that book, Philip K. Hitti himself really stated dual information. First, the intellectual genealogy of Abu Musa Jabir ibn Hayyan the alchemist through Ja'far al-Shadiq. Second, the astrological and alchemical treatises were ascribed to Ja'far al-Shadiq. On one hand, the orientalist exactly rejected the astrological and alchemical treatises as the original writings of Ja'far al-Shadiq, but on the other hand, they have examined those original texts in the West. J. Ruska in his work *Arabische Alchemisten, Ga'far Al-Shadiq der Sechste Imam* (Heidelberg, 1924) stated that the rediscovery of the manuscripts in the West which were ascribed to Ja'far al-Shadiq have been discredited by critical modern scholarship. It proves that the orientalist examined the original texts of those manuscripts in 1924 as *terminus ad quem* to indicate an ending period of the existence of those treatises. Meanwhile, the original texts of those treatises were

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<sup>13</sup> Rabbi Yomtov Chaim, *Torah: Original Commentary in Arabic by Rabbi Saadia Gaon* (Jerusalem: Project Saadia Gaon, 2015), p. iii

<sup>14</sup> Philip K. Hitti, *History of the Arabs: From the Earliest Times to the Present* (New York: the Macmillan Company, 1951), p. 255

ascribed to Ja'far al-Shadiq in the kitab *Fihrist* as *terminus ad quo* to indicate a beginning period of the existence of those manuscripts. For further reading, see the work of O'Leary, *Arab Thought and Its Place in History* (Trubner's Oriental Series), Kegan Paul, French Trubner and Co., New York, E.P. Dutton and Co. (1939). However, rediscovering of those ancient manuscripts in the Europe proved the information validity of the kitab *al-Fihrist* as the oldest source of information on the astrological and chemical treatises which were ascribed to Ja'far al-Shadiq in the Arab. For further reading, see the kitab *al-Fihrist*, the fifth discourse: part two on 'the Philosophies and Scholastic Scientists' and the sixth discourse: part five on 'the Jurisprudents'. According to the historians of Islam, the kitab *al-Fihrist* was the work of Muhammad ibn Ishaq al-Nadim, known as Ibnu Nadim.<sup>15</sup> Therefore, the original manuscripts which were ascribed to Ja'far al-Shadiq have been discovered in the West. Even, the orientalist themselves has studied and examined the original manuscripts in astrological and alchemical sciences which were ascribed to Ja'far al-Shadiq. Abu Musa Jabir ibn Hayyan was a Sabi'an who then converted to Islam, descended from the South Arabian tribe al-Azd, and his father died as a martyr to propagate the Islamic teachings, see *Fihrist* pp. 354-355; Qifti pp. 160-161. In the Latin civilization, Jabir ibn Hayyan was known as Geber who the first popularized the Greek term χημεία (*chemeia*) in the West through the Arabicized-Greek word *al-kimiya*, an ancient Egyptian word meaning 'black.' It indicates that Jabir ibn Hayyan knew better some languages such as Arabic, Coptic, Greek and Sanskrit as well as his grandest master, Ja'far al-Shadiq. Ja'far al-Shadiq himself knew better many languages such as the Arabic, Syro-Aramaic, Hebrew and the Greek etc. For further reading, see the kitab *Ma'aniy al-Akhbar*, the work of Abbas al-Qumi. Abu Musa Jabir ibn Hayyan, the grandest disciple of Ja'far al-Shadiq considered the most original and profound Muslim scholar produced in the domain of natural science. Here this Arabic author of the Arab origin, whose spoke in Arabic and knew besides Arabic, Sanskrit - the academic language of Indian civilization, and Greek, the academic language of Roman one. Like his Coptic and Greek forerunners Jabir ibn Hayyan acted on the assumption that base metals such as tin, lead, iron and copper could be transmuted into gold or silver by means of a mysterious substance, to the search for which he devoted his energy. He more clearly recognized and stated the importance of experimentation than any other early alchemist and made noteworthy advance in both the theory and practice of chemistry. In general, Jabir modified the Aristotelian theory of the constituents of metal in a way that survived, with slight alterations, until the beginning of modern chemistry in the eighteenth century. Some two centuries after

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<sup>15</sup> Mehdi Nakosteen, *History of Islamic Origins of Western Education AD. 800-1350 with an Introduction to Medieval Muslim Education* (Colorado: University of Colorado Press, 1964), p. 64

his death, as a street was being rebuilt in Kufah, his laboratory was found and in it a mortar and a large piece of gold were unearthed. Western tradition credits him with the discovery of several chemical compounds not mentioned in the twenty-two surviving Arabic works that bear his name. Hajji Khalfah cites twenty-seven works of Abu Musa Jabir ibn Hayyan, the grandest disciple of Ja'far al-Shadiq, see Paul Kraus' *Jabir ibn Hayyan* vol. I (Cairo, 1943), pp. 3-170. Five of these works ascribed to Jabir were *Kitab al-Rahmah* (the book of Mercy), *Kitab al-Tajmi'* (the book of Concentration), *al-Zibaq al-Sharqi* (the book of Eastern Mercury), *Sandaqa al-Hikmah* (the book of Wisdom Thorax) and *al-Hikmah al-Falsafiyah* (the book of Wisdom of Philosophy) have been published into Latin. Others, *Kitab al-Kimiya* (the book of alchemy) and *Kitab al-Sab'een* were early translated into Latin. *Kitab al-Kimiya* was published by Englished Robert Chester which so-called '*the Book of the Composition of Alchemy* (1444 AD.), and the *Kitab al-Sab'een* was also translated by Gerard Cremona. *Al-Zibaq al-Sharqi* (the book of Eastern Mercury), the book of the Kingdom and the book of Balance were also academically translated into Latin by Berthelot, see George Sarton's *A History of Science*. Meanwhile, the book of *al-Hikmah al-Falsafiyah* was translated by Englished Richard Russel into Latin which so-called *Summa Perfectionis* (1678 AD.). Here, Richard Russel himself early introduced the Latinized-Arabic name of Jabir ibn Hayyan as Geber. Thus, the works to which his name was attached were after the fourteenth century the most influential chemical treatises in both Europe and Asia. Therefore, Jabir ibn Hayyan, the grandest Muslim chemist early introduced the Arabicized Greek term *al-falsafiyah* in both Europe and Arab. Even, he early contributed the Arabic chemical terms in the West. Among several chemical terms which passed into European languages through the Latin language from Arabic works ascribed to Jabir ibn Hayyan, we may note 'alchemy' (*al-kimiya*, which goes back through Greek to an ancient Egyptian/Coptic word meaning 'black'), 'alcohol' (*al-kuhl*), 'elixir' (*al-iksir*, originally Greek), 'alembic' (*al-inbiq*, originally Greek), 'alkali' (*alqali*), 'antimony' (*ithmid*, originally Greek), 'aludel' (*al-uthal*, vessels), 'realgar' (*rahj al-ghar*, the powder of the cave), and 'tutty' (*tutiya*, originally Sanskrit).<sup>16</sup> Later Muslim chemists among the Shiites and Sunnites acclaim Jabir ibn Hayyan as their master. Even, the best among them is the Arabic-writing Persian poet-statesman al-Tughra'i (d. 1121 AD.), famous for his *Lāmiyāt al-'Ajam*, the ode rhyming in alfabeth 'el' for the non-Arabs. The word *turghra'i* means 'chancellor', the one who writes at the top of state papers the elegant flourish containing name and title of the ruler issuing the document, see the work of Ibnu Khallikan vol. I/284. Other, Abu al-Qasim al-'Iraqi who flourished in the second half of the thirteenth century, made very little improvement on his methods. His *al-'Ilm al-Mukhtasab fi Zirā'at al-Dhahab* (knowledge

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<sup>16</sup> Philip K. Hitti, *op.cit.*, p. 579

acquired concerning the cultivation of gold) was edited by Englished by E. J. Holmyard (Paris, 1923). For further readings about the life of Abu al-Qasim, see Hajji Khalifah vol. III/218, vol. V/47, vol. VI/304. They continued the quest for the two alchemical will-o'-the-wisps: the philosopher's stone (*al-kibrit al-ahmar*) and the elixir (*al-iksir*) of life.<sup>17</sup> It proves that European Christian scholars owe so much to Islam, and Islamic civilization in the Middle Ages owes so much to the Islamic scientists. While European intellectual, cultural and commercial life stagnated during the Middle Ages, Arab flourished as the wellspring of science, philosophy and religion and as the world's epicenter of commerce and diplomacy.

### ARYO-SEMITIC TEXTS: SANSKRIT INTO ARABIC

Let us begin to discuss a tradition of "Bayt al-Hikmah Academy" in the Abbaside Empire. In the Golden Ages of Islam in Baghdad, many Moslem scholars have translated Sanskrit works into Arabic and Persian. In 773 AD., the original text of *Brahmasidhanta* (the book of astronomy) which has been written by Brahmaputra, an Aryan-Hindu in Sanskrit, in fact, was translated by Muhammad ibn Ibrahim into Arabic, in the days of Abbaside Chaliph II. Abu 'Abdullah Muhammad ibn Musa (800-847 AD.), known as al-Khawarizmi also translated the Sanskrit book of mathematic and reconstructed it into Arabic, entitled *Kitab al-Jam' wa al-Tariq bi-Hisab al-Hind* (Book of Addition and Subtraction by the Method of Calculation) in the days of Chaliph al-Ma'mun (813-833 AD). His work in Arabic version was lost, but in 1857, "Algomitri de numero indorum", the Latin version of Khawarizmi's (translated by Adelard of Bath in 12<sup>th</sup> century), was rediscovered at Cambridge University Library. This work was published by B. Boncompagni (Rome, 1857). In 1500 AD., Abu Saleh, an Arab-Moslem translated the *Susruta* (the book of medicine) into Persian in the days of Chaliph Harun al-Rashid (786-809 AD.), and the *Rajaniti* (the guidebook of the Kings) into Arabic in 1500 AD.<sup>18</sup> Two hundred years later, Maulana Izzu ibn Khalid Kani also translated Sanskrit vocabularies on Vedic philosophy into Arabic. Also, at "Mughal Academy", in the Golden Ages of India which was always related to the era of Sultan Akbar the Great (1556-1605 AD.) many Moslem scholars in Hindustan have translated Sanskrit works into Persian, such as *Ramayana*, *Mahabharata*, and *Amarakosa* (the book of Sanskrit Dictionary). Sultan Akbar also received the Persian version of *Atharva Veda* (the Holy Book of Hindu), translated by Haji Ibrahim Sirhindi. The grandson of Sultan Akbar the Great, Sultan Dara (son of Shah Jehan) was a Sanskrit scholar, following his grandfather. When he became the King, he also translated many *Upanishads* of Hindu into Persian in 1657 AD which his works were then translated

<sup>17</sup> Philip K. Hitti, *ibid.*, p. 380-381

<sup>18</sup> Mat Muller, *Chips from the German Workshop* (Delhi: Motilal Benazisiden, 1968), p. 23,125,150.

into French by Anquetil Duperron. These translations, however, are first original works in the West by which the Western scholars studied the Vedic literatures to understand the episteme of Brahmins in India. In the days of Shah Jehan himself, the Sanskrit book "Bijaganit", the work of Bhaskara, was translated into Persian in 1634 AD. By a permission of Maharaj Sawai Jai Singh II (1686-1743 AD.), a Hindu scholar, Jagannath of Jaipur territory in 1652 AD., also translated *Euclid's Elements* into Sanskrit, entitled "Rekhaganita" through the Arabic version *Tahrir al-Uqlida*. According to Prabhakar Machwe, a linguist of India, this Arabic version was translated by an Arab-Moslem, Muhammad ibn Muhammad ibn al-Hassan al-Tusi (1201-1274 AD.), known as Nasiruddin al-Tusi from original Greek version.<sup>19</sup> Other, Abu Rayhan Muhammad ibn Ahmad al-Biruni (973-1050 AD.), a Sanskrit scholar of Persian-Moslem has already translated the Arabic books into Sanskrit too such as; *Euclid's Elements*, *Ptolemy's Almagest*, and "On the Construction of the Astrolab" for Hindus, and at the same time, translated the Sanskrit books into Arabic, such as *Yoga Sutras* of Patanjali, *Varatha Mihira*, *Karana Tilak* and *Samkhya* philosophy. There is a problem here, did al-Biruni's work influence Nasiruddin al-Tusi's although his work was based and translated from Greek version? Actually, it has a crucial issue among contemporary Moslem scholars. Al-Biruni was also interested in Sanskrit meters, and in the way the Hindu used arithmetic in their metrical system.<sup>20</sup> What is clearer is that his travels and training gave him the ability to translate from Sanskrit and that he could also work in Greek, Hebrew and Syriac. The eleventh century has even been called 'the age of Biruni', his genius comparable to that of Archimedes (d. 212 CE.), Leonardo da Vinci (d. 1519 CE.), and Gottfried Leibniz (d. 1716 EC.).<sup>21</sup>

When Moslem scholars developed the free market of ideas of Sanskrit sciences of India into Arabic knowledge through the academic system of translation in the era of Baghdad Academy (132-640 H/750-1242 AD), they also indirectly derived the writing system of Devanagari numerals to complete the writing system of Arabic numerals. It indicates that the influence of Devanagari numerals has actually changed the system of Arab episteme from their main-stream. In the study of linguistic, Arabic script belongs to Semitic family, and the Semitic characters are always written from left to right, including its numerals, such as Hebrew, Amharic, and Aramaic numerals. But,

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<sup>19</sup> J.F. Staal, *A Reader on the Sanskrit Grammars* (Massachusetts: The Met Press, 1972), p. 21,127,153-154,157. Cf. Mohaini Mohamed, *Matematikawan Muslim Terkemuka* (Jakarta: Salemba Teknika, 2001), p.69

<sup>20</sup> J.F. Staal, *A Reader on the Sanskrit Grammars* (Massachusetts: The Met Press, 1972), pp. 21,127,153-154,157. Cf. Mohaini Mohamed, *Matematikawan Muslim Terkemuka* (Jakarta: Salemba Teknika, 2001), p.69

<sup>21</sup> Chase F. Robinson, *Islamic Civilization in Thirty Lives. The First 1,000 Years* (New York: Thames & Hudson, p. 113-114

in Arabic has actually been divided into two different writing systems. Arabic script runs from right to left on a horizontal line, in contrast to Arabic numerals, which are written from left to right on a horizontal line. Also, there is a similar style of numeral form which indicates that Arabic numerals were originally adopted from Devanagari although in numeral order has no parallel. In other words, the Arabic numerals might be considered as *the Arabized Devanagari-numerals*, because the Arabic numeral system resembles that of Devanagari. Meanwhile, the Western scholars also affirmed that Latin numerals have already derived from Devanagari. Therefore, in order to get a clear description, let me give the readers a general idea of how the formation of numerals change from Devanagari to Hindi, and from Devanagari to Arabic, also from Devanagari to Gurmukhi.

Arabic	Hindi	Devanagari	Gurmukhi
0	०	०	੦
1	१	१	੧
2	२	२	੨
3	३	३	੩
4	४/६	४	੪
5	५/੦	५	੫
6	६/੬	६	੬
7	੭	੭	੭
8	੮	੮	੮
9	੯	੯	੯
10	੧੦	੧੦	੧੦

In the era of Mughal Academy, in fact, Haji Ibrahim Sirhindi & Sultan Dara have translated and transformed the spiritual knowledge of Holy Vedantas, such as Sanskrit *Atharva Veda & Upanishads* of Hindu in the mind-set of Moslems. Of course, it raised a question, whether it is possible to identify them as the quasi-Moslems (half-Moslem and half-Hindu)? Again, on one hand, some Moslems (known as “fundamentalist”) regarded that Nasiruddin al-Tusi is considered as a “half-Christian half-Moslem” because of his work which was studied from Greek language, and the other hand, Ibn Ahmad al-Biruni was also regarded as a “half-Hindu half-Moslem” because of his works in Sanskrit. Do we still identify them as the quasi-Moslems? Jawaharlal Nehru also affirmed during the Moghul period large numbers of Hindus wrote books in Persian which was the official court language of Persian-Moslems. Some of these books became classics of their kind. At the same time, Moslem scholars

translated Sanskrit books into Persian and wrote in Hindi. Two of the best-known Hindi poets are Malik Mohammad Jaisi who wrote the “Patmāvat” and Abdul Rahim Khānkhāna, one of the premier nobles of Akbar’s court and son of his guardian. Khānkhāna was a scholar in Arabic, Persian, and Sanskrit, and his Hindi poetry is of a high quality. There are many notable books written by the early Moslems in Hindi. The most famous of these writers was Amir Khusrau. He was a poet of the first rank in Persian, and he also knew a Vedic-Sanskrit language and its sacred texts. He was a great musician and introduced many innovations in Indian music. He is also said to have invented the *sitar*. The popular stringed instrument of India. So far, Nehru affirmed that the great majority of Moslems in India were converts from Hinduism, partly because of long contact, but Hindus and Moslems in India developed numerous common traits, habits, ways of living, and common traditions. They lived together as one people and spoke the same language as the common origin, the Hindi.<sup>22</sup>

### IBERIA ACADEMY: AVERROES THE ARISTOTELIAN

Averroes (Ibn Rushd) was born in the southern Iberian city of Cordoba, Spain in 1126 CE., to a family of distinguished men of law working, mainly within the Maliki school of jurisprudence which was the dominant strain of legal thinking in the western Islamic world. Averroes was a radical Aristotelian who followed lines of argumentation and held doctrines that were incompatible with revealed religion.<sup>23</sup> As a philosopher, Abul Walid Muhammad ibn Ahmad ibn Rushd (Averros) was really working within an intellectual framework assembled by Greek physics and metaphysics on the other hand, and Islamic scriptural traditions on the other. His famous *Talhis* on “Aristotle’s Nicomachean Ethics” in Arabic was really disappeared, but this day, we can reread it in the version of the Arabic translation from the Hebrew with its critical edition and collation with the Greek text, entitle “*Abul al-Walid Muhammad ibn Ahmad ibn Muhammad ibn Ahmad ibn Rushd: Talhis Akhlaq Aresto - al-Akhlaq ila Nikomachus* (2018), composed by Prof. Dr. Ahmad Shahlan, Faculte des Lettres et des Sciences Humaines, Mohammed V, Agdal - Marocco.

Ibn Rushd’s disciple in the Jewish world was the great Talmudist and philosopher Rabbi Moshe ben Maymon (1135-1204 CE.) who is usually known as Maimonides. Like Ibn Rushd, Moshe ben Maimon was native of Cordoba, the capital of Muslim Spain. He wrote his famous treatise in Judeo-Arabic, דלאלה אלחאירין (*Dalalah al-Khairin*). This famous work was then translated into Hebrew, entitle מורה נבוכים (*Morech*

<sup>22</sup> Jawaharlal Nehru, *The Discovery of India* (Calcutta: Signet Press, 1945), p. 257 - 283

<sup>23</sup> Chase F. Robinson, *op.cit.*, p. 170 – 171

*Nevuchim*), lit. “the Guide for the Perplexed.” Amazingly, in the book, Maimonides published a creed of 13 articles that was markedly similar to Averros’.<sup>24</sup>

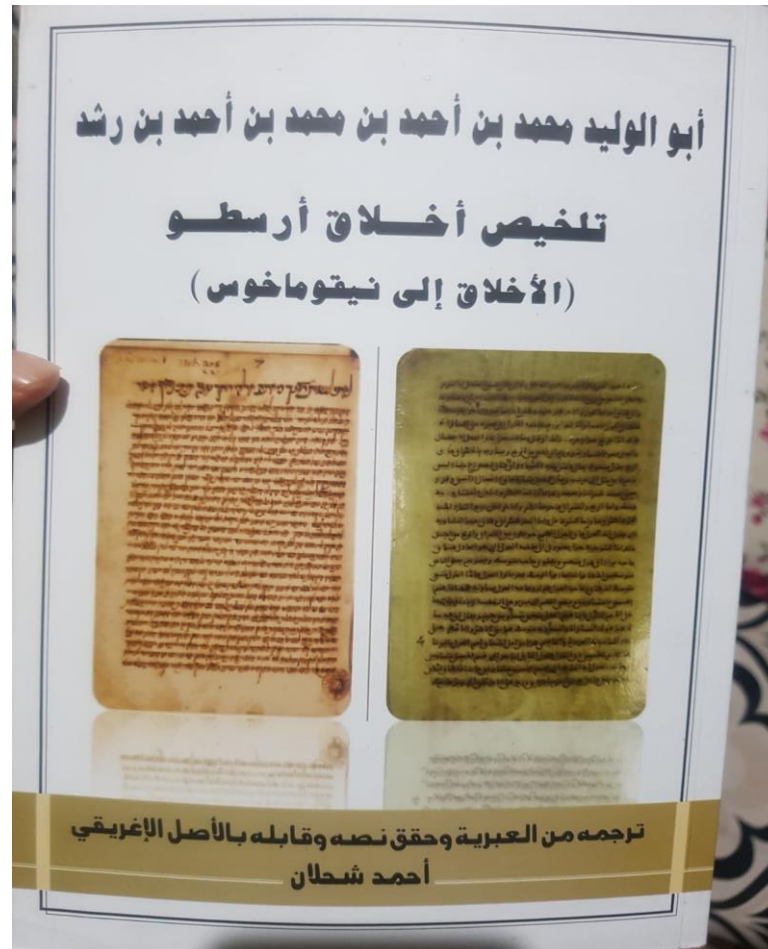


Figure 4. Averroes' work, Nicomachean Ethics.

## CONCLUSION

Many of the contributions of Muslim thinkers, theologians, and scientists have been overlooked. Yet, we have to prove their contributions through the philological researches from the Judeo-Arabic texts to the Arabicized Greek works. The great Islamic civilization, however, represents a basic framework for the Islamic sciences from the beginning of the lifetimes of the prophet to the Umayyad caliphs of the West and the Mughal caliphs in India. Concurrent with development of literary writings, theological, physical, chemical and mathematical sciences was the flourishing of the Islamic sciences in the centuries after the death of the prophet.

In the beginning, the Sanskrit cosmopolis represented the Vedic knowledge in the Semitic world. Yet, the Semitization of Vedas exactly enriched Islamic sciences and treatises on a board range of topics. The Semitization of Vedas, however, manifested

<sup>24</sup> Karen Amstrong, *A History of God* (New York: Ballantine Book, 1994), p.194



in the literary network from pre-Islamic times to the rise of Islam in the beginning, and the Islamic scribes reformulated the Vedic texts and the Arabicized Greek works in the paradigm of Islam such as Aryo-Semitic texts which were the Sanskrit episteme into Arabic and the Aristotelian texts of Averroes.

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