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The Development of the Translation Movement

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements of the degree of Master of Arts.

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Abstract

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The development of the translation movement in Islamic history was a long, intricate movement which encompassed a large number of people over a long period of time. It is the objective of this paper to assess the historical setting which gave rise to this movement as well as to evaluate why it was embraced. Moving onward, the paper will then move to a more detailed examination of six translators, in an effort to evaluate their contribution to the movement. While doing this, an inventory will be conducted of the works which were translated in the three disciplines of astrology, philosophy, and medicine by these translators in an attempt to answer the question of why the selection process was so specific and what perhaps were the criteria for these choices.

Résumé

Auteur: Zahra Musaji

Titre: Le developpement du mouvement des tracuctions

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Le développement du mouvement des traductions dans l'histoire Islamique était un mouvement complexe et d'une longue durée qui incorporait beaucoup de personnes pendant longtemps. C'est le but de cette mémoire d'analyser le cadre historique dans lequel se situe l'essor de ce mouvement et aussi d'étudier les raisons pour lesquelles il était si bien poursuivi. Et puis, cette étude examinera le travail de six traducteurs pour mieux comprendre leur contribution à ce mouvement. En même temps, un inventaire des œuvres traduites par ces traducteurs sera présenté dans les trois disciplines de l'astrologie, de la philosophie et du médecine pour mieux répondre à la question suivante: pourquoi le processus de la sélection des textes était tellement précis et quel étaient les critères pour ces choix?

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INTRODUCTION:

The study of the development of the Translation Movement within Islam includes many elements, each of which must be examined separately in order to understand the progression of the movement as a whole. In the following study, I propose to outline some of these elements and examine them carefully in order to gain a clearer understanding of the development of the movement. Therefore, in order to understand what events led up to the translation movement, this study will begin by focusing on the following question: why would the Caliphs of a realm which claimed to possess revealed truth be so welcoming to foreign ideas and knowledge? This is of particular interest since certain places from which this knowledge came, were political and religious rivals of Islam. Hence, in order to attempt an answer to this question, one must first look at the political setting of the Islamic empire over the one hundred year period between 750-850 A.D. (the period of time chosen for this particular study). This examination may then allow one to assess the receptivity of several 'Abbāsid Caliphs to the translated texts.

This initial question leads one to the smaller but equally important question which asks which texts were chosen for translation and why were they

translated? By examining this question, one may be able to assess the degree of importance and influence this foreign knowledge had on the development of subsequent Islamic intellectual development. It is important to note at this point that in this particular study, the focus will be on the disciplines of philosophy, astrology and medicine during the years 750-850 A.D. This is due to the vastness of the translation movement and, therefore, limitations are necessary in order to carefully evaluate the aforementioned aim of this study.

The methodology of the present study will entail an annotated bibliographical survey of the available French and English sources as well as translated original sources. I will then attempt to present a detailed inventory of the works which were translated during the movement in the three selected disciplines by six specific translators. These six men are Thābit ibn Qurra, Ḥunayn ibn Isḥāq, Yūḥannā ibn Māsawayh, Isḥāq ibn Ḥunayn, Qusṭā ibn Lūqā and Yaḥyā bin al-Biṭrīq. At this point, it is important to note that this is not a study of the texts translated themselves, but rather of the historical conditions which led to their selection. Hence, by looking to the translated sources which were chosen and the amount of attention which they received, this will make possible an evaluation of the impact they had on the Caliph and his court. This will be achieved by

examining the role of the aforementioned translators in order to assess their contribution to the movement, since they were usually the ones to decide which works were worthy of translation and which works were not. It is therefore important to look to these men first and establish their significance to the movement as a whole. After each brief description, a detailed account of the works each man translated in each of the three disciplines will be included. This will go alongside the bibliographical survey of modern English and French sources dealing with the translation movement in order to maintain a comprehensive account of not only the events surrounding the translation movement, but also the important works which entered into the Islamic intellectual movement which led to an intellectual explosion of its own.

The first chapter will focus on the historical setting of the 'Abbāsid empire at the start of this movement, approximately 750 A.D., and the reign of al-Manṣūr. From here, a brief historical survey will take place, outlining the reigns of al-Manṣūr's most influential successors who played an important role in the translation movement. In the second chapter a discussion of six translators from this time period will also take place, first profiling the men and then outlining the texts they translated. This will be supplemented by a survey of the modern

scholarship in each area of the most useful and comprehensive texts. At this point, it is important to note that there is a new text that will soon be available which appears to be a comprehensive study of the translation movement in Islam; especially during the reign of the early 'Abbāsid Caliphs. It is written by Dimitri Gutas from Yale University and is entitled *Greek Thought, Arabic Culture*. Perhaps this text would have proved useful and is worth consulting for future reference, however, it was not available to me during the course of my study. With this, I will now turn to the first chapter.

CHAPTER ONE:

To assess the historical transmission of knowledge to the Muslims[1] from Antiquity one needs to familiarize oneself with the historical setting of Islam at that time. As mentioned in the introduction of this study, this thesis will focus on the years between 750 and 850 A.D. particularly during the reigns of the 'Abbāsid Caliphs al-Manṣūr to al-Mutawakkil[2]. The Islamic empire in the years following 750 A.D. was finally beginning to show a sense of cohesion. The 'Abbāsid revolution had recently ended and the Caliphs were working to ensure the loyalty of their subjects. Within the first five years, Abū al- 'Abbās al-Saffāh had died and the throne had been passed on to his brother al-Manṣūr. al-Manṣūr's reign was generally characterized as successful, for the administration and governing of the empire were finally in a state of peace and relative stability[3]. This then produced an environment which was conducive to the blossoming of intellectual pursuits and advances. It was at this period also that the first strong intellectual

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[1] It is important to note that throughout the course of this paper, the terms Muslims and Islamic Scientists are used interchangeably. Although I am aware that none of the translators discussed in this paper were Muslim, (as was the case with many of the court intellectuals), for the sake of brevity, both terms as used in this text will refer to the Islamic scientists. This is due to the fact that surrounding the translators were the Caliphs, 'Ulamā' and other members of the society who were indeed practicing Muslims who were also very involved in this movement.

[2] During this one hundred year period, the following 'Abbasid Caliphs reigned: Abū al- 'Abbās Al-Saffāh (749-754), Abū Ja'far Al-Manṣūr (754-775), Muḥammad al-Mahdī (775-785), Muḥammad al-Hādī (785-786), Hārūn al-Rashīd (786-809), 'Abd Allāh Al-Ma'mūn (813-833), Al-Mu'tasim (833-842), Al-Wāthiq (842-847), Al-Mutawakkil (847-861).

3 see Hugh Kennedy, ***The Prophet and the Age of the Caliphates*** (New York: Longman Group Ltd., 1986), p.133.

influences from other regions began to penetrate into the Muslim world. Generally, al-Manṣūr was quite open to this knowledge[4], but it is at this point that one is inclined to ask the question why? This question in and of itself is difficult to answer but one may come to a clearer understanding of the translation movement by looking to understand what events led up to the translation movement in this particular period.

The Islamic empire, finally beginning to emerge from a long period of hostility and internal strife, began to direct its efforts outward instead of inward[5]. This naturally led to military campaigns outside of the empire in order to conquer other, more vast territories. Even though al-Maṣūr may have been aware of the intellectual achievements of these other cultures, his initial campaigns were of a predominately military nature. However, once encountered, this foreign knowledge which these existing communities had to offer was embraced quite strongly. al-Manṣūr, after recognizing the influence and benefit of having such knowledge, sent

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[4] see De lacy O'leary's *How Greek Science Passed to the Arabs* (London: Routledge & Kegan Paul Ltd.,1964), p.149. where we are told that al-Manṣūr wished to make his capital a city with incredible fame which would radiate through all Islam, therefore, he invited to it a number of distinguished scholars in order to achieve this.

[5] This point is not the whole truth, of course since the 'Abbāsids throughout their reign were faced with uprising by various splinter groups such as the Shia ' and the Kharijites as well as other Schisms which had developed and which were constantly developing. However, the level of internal cohesion which existed at this time and held the empire together was quite strong and consequently allowed for the Caliph to concentrate on military campaigns outside the present realm of Islam instead of focusing his attention on internal conflicts.

campaigns specifically for the purpose of seizing more manuscripts and furthering his knowledge. For example, influenced by his Barmakid vizier, Ḥarūn al Rashīd sent out agents to purchase Greek manuscripts in the Roman empire, a policy which brought a good deal of important material to Baghdad, and this was supplemented by other independent patrons who sent also for transcripts and translators[6].

Before answering the question of how exactly did this knowledge penetrate into Islam, one must first ask why was it allowed to? The Muslims, when they encountered foreign peoples within their newly conquered territories, had heard of the scientific and philosophical achievements of these cultures. Since many of these cultures were in close proximity to the Muslim lands, their influence had been felt through physicians, astronomers and other scientists who had settled nearby[7]. The Muslims may also have thought that embracing this knowledge would empower them and allow them to compete with these pre-existing cultures more equally, as demonstrated in their desire to not only conquer these peoples militarily but also intellectually. It is important to note at this point that when attempting to answer questions concerning motivation, it is difficult to speculate; however, it is

[6] see DeLacy O'leary's *How Greek Science passed to the Arabs* (London: Routledge and Kegan Paul, 1949), p.151.

feasible to assume that the Caliphs recognized the importance of furthering their own limited knowledge of such things in light of their immediate utility. One narrative tells of how the Caliph al-Manṣūr became ill at some point with a gastric disorder and called for one of the physicians employed at Jundishāpūr, Jūrjīs ibn Bukhtīshūʿ (d.771)[8], to treat his ailment. When the physician arrived, al-Manṣūr did all he could to keep him in his court at Baghdad in order to ensure that that level of health care would be available to him from that point onward. Another example is seen in the moving of the Islamic capital from Damascus to Baghdad. We are told that the Caliph al-Manṣūr, while founding the capital of Baghdad, is reported to have consulted with two astrologers[9]. In this case, it is clear why a science such as astrology was welcomed since it was used in determining where to place the city, how long the dynasty would survive and generally, to predict the future. So it is quite clear that the utility of this knowledge was recognized and respected and so became perhaps one of the strongest motivating factors encouraging the sanctioning of the Translation Movement.

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for example, Jundishāpūr was an intellectual centre located in Persia, next door to the learning centre of Baghdad. Hence, many of the scientists from the centre of Jundishāpūr came over frequently and influence the Muslims greatly.

[8] see De Lacy O'Leary, ***How Greek Science Passed to the Arabs*** (London:Routledge & Kegan Paul Ltd., 1964), p.149. which tells of how this physician was first summoned to Baghdad from Jundishāpūr in order to cure al-Manṣūr's ailment and following this, other members of his family were also summoned to Baghdad and there began a family tradition of being the court physicians to the various ruling ʿAbbāsid caliphs.

[9] ***Ibid.*** p.148 These two astrologers were al-Nawbakht, a Persian and Māshāʾllāh ibn Athari, a Persian Jew.

Within the Islamic society of the time there were existing medical and scientific traditions of their own. These included "prophetic medicines" (al-ṭibb al-nabawī) as well as some astrological observations. However, although these traditions did exist, there were certain limitations to what the Prophet allowed. For instance, the Prophet had forbidden cauterization and magic. He did, however, acknowledge the medical properties of certain materials, such as honey and olive oil[10].

Foreign knowledge first came to Islam in the form of a translation movement during the late Umayyad Caliphate. From this point onward there was a steady stream of knowledge entering the Muslim empire. It came from many different areas surrounding the Muslims, the most significant being Byzantium, and the Sassanian realm, as well as from Syria and India[11]. Each culture passed on a significant amount of information to the Muslims, thus helping them to establish an intellectual tradition of their own. The reasons why this knowledge was accepted and given official Caliphal sanction vary. Possible reasons may be seen in the fact that to have knowledge means to have power. However, to base the transmission of knowledge on this alone would be to oversimplify a much greater issue since as

mentioned above, there did exist a specific intellectual tradition within the Islamic society prior to the translation movement. Moreover, it is important to note that there was much initial resistance by the more traditional members of the court who thought that this was the knowledge of infidels and that it should not be openly accepted. However, al-Ma'mūn obviously chose to ignore the opinions of these individuals and followed his own instincts where intellectual development was concerned[12].

At this point it will be useful to trace precisely how the translation movement entered into Islam and the value it had to al-Manṣūr and his court. However, prior to this, it is important to note that the translation movement had begun long before the time period which is discussed in this paper. In fact, the Ummayd Caliphs had started the tradition in the mid-eighth century, slowly patronizing translators. One of the most famous early translators was a Persian convert to Islam named Ibn al-Muqaffa '. Ibn al-Muqaffa ' is best known for his translation of *Khalila wa Dhimna,* (a book of animal fables), into Arabic from the Persian translation of the original Sanskrit version.

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[10] Manfred Ullman, *Islamic Medicine* (Edinburgh: Edinburgh University Press,1978) pp. 1-5.
[11] S.D. Goitein, *Studies in Islamic History and Institutions* (Leiden: E.J. Brill, 1966), p.34.

The infiltration of foreign knowledge into Islam was brought about by many factors, the first of which was the level of military campaigns occurring during this period. It is important to realize that Islam was at a crude state at this time and when it encountered these older, more civilized cultures it wished to refine itself[13]. For instance, the 'Abbāsīds, following in the example of their predecessors, attempted to emulate the old Iranian (Sassanian) court traditions, social structure and also intellectual pursuits of the time. This is seen in the building of Baghdad to emulate the Persian city of Ctesiphon, the implementation of a social order and the translation movement as a whole. The way this was achieved was due to the fact that the countries which the Muslims invaded at the time of conquest were still alive with Greek and Persian heritage and knowledge[14]. For example, the Iranian invasions took place beginning in 634 A.D. and Yazidagird, the last Sassanian ruler was assassinated in 651 A.D.. This meant that the Muslims were exposed to the scientific achievements of these peoples, whether they expected to encounter them or not, quite early on. The second reason was due to the general receptivity of

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[12] It is perhaps possible that al-Ma'mūn 's motivation was due to the utility of these works and hence, felt that this outweighed any possible threat they may have proposed.

[13] The Sasanid and Byzantine cultures which pre-existed Islam were highly refined and had excelled in many areas, however, due to their incessant fighting with each other, this led to their own breakdown and hence, when the Islamic conquests began, they were easily defeated.

Islam which was due to its universalistic and eclectic character[15]; this ensured a certain degree of open-mindedness toward those sciences which were useful, even if they were non-Islamic in origin. The last reason is due to the specific spiritual situation during the first three centuries of Islam, where there was a constant battle for power and religious autonomy between varying splinter groups looking for some sort of theological, rational justification for their positions. This made the influx of Greek ideas and systems of thought both inevitable and fruitful to the religious features of Islam[16].

When specifically examining the actual lines of transmission, one sees foreign knowledge entering into Islam by many different routes. The first of these was through Christian Syriac writers, scholars and scientists; where the works of Greek scientific writers whose books were translated into Arabic and studied by Arab scholars were made the subject of commentaries and summaries[17]. This is generally characterized as the direct route whereby Muslims were made clearly aware of how this knowledge came into their possession. Perhaps too they were

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[14] S.D. Goitein. ***Studies in Islamic History and Institutions*** (Leiden: E.J. Brill, 1966), p.36. with respect to the Persian traditions which they encountered, the Muslims were much less receptive to the social order of the Persians since they had a dualistic tradition that was looked down upon.
[15] Ibid. p.36-39
[16] Ibid. p.36-39

themselves the ones who requested it to be transmitted to themselves through these very means. The specific course through which this knowledge was initially encountered was via the Christian dialect of Aramaic known as Syriac. One sees the steady transfer of Greek scholarship in a modified Syriac form from Edessa across the Persian frontier to Nisibis, whence it ultimately spread through the Nestorian community, and so reached the Arabs[18]. The cultural contribution of the Nestorians was definitely through Jundishāpūr, and the transmission of Greek science to the Arabs took place when the Arab court was established at the newly built city of Baghdad nearby.

Another, more indirect route, is seen through the knowledge the Muslims received through India. (It is important to note that this knowledge probably also originated from Alexandria; however, through various means, such as sea and land trade, it ended up in India). This knowledge was then transmitted to the Muslims through the route from India to Persia[19], and consequently it became more easily accessible and translatable. One instance of this is seen in the

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[17] De Lacy O'Leary, *How Greek Science Passed to the Arabs.* (London: Routledge & Kegan Paul Ltd., 1964), p.2

[18] Ibid. p.47-59.

[19] Ibid. pp.96-119 .This is due to the fact that much of this knowledge passed first from India into Persia, and then, once the Muslim conquest entered into Persian territory, the knowledge was then brought into Islam.

mathematical knowledge obtained from Alexandria by the Indians which was developed further and transmitted to the Arabs in the early days of the 'Abbāsid Caliphate during the later half of the eighth century.

A second example is seen in the existence of Central Asia as a focus of Greek influence, especially in Bactria, which later, when attacked during the Persian wars, transmitted much of this knowledge to the Persians[20]. This was done by the Persians who first conquered this territory and then took over various aspects of social life, and who later managed to acquire much of the most significant works and translated them. This eventually led to the introduction of Greek scholarship into Baghdad. The last example of how this knowledge was transmitted to the Muslims is seen in the influence of Buddhism which had prepared the ground for intercourse with the western world, and was directly responsible for the prominence of the Barmakid family, the leading patrons of Greek knowledge within the 'Abbāsid government[21].

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[20] Ibid. p.104-109.

[21] The Barmakids were a family of Buddhist abbots of Balkh who became Zoroastrians not long before the Muslim conquests. These Persian court *vizīers* were employed in the service of the 'Abbāsīd Caliphs beginning with al-Manṣūr. These *vizīers* were entrusted with both the court maintenance as well as the education of the Caliph's sons. The precedent was set by al-Manṣūr who employed Khālid al Barmakī as his *kātib* or secretary. al-Maḥdī had entrusted the former's son, Yaḥyā with his younger brother Hārūn's affairs when the latter was a youth. During the reign of Hārūn al-Rashīd, the Barmakids began to gain a greater degree of political control within the empire and slowly gained power. They had a number of duties, one of which is the above mentioned tutoring of the Caliph's sons. Other duties included court

When initially exposed to this knowledge, Muslims may have viewed it with suspicion, but given time and understanding, they saw the utility in embracing it. The tracing of the translation movement during early 'Abbāsid times leads us to the areas of early conquest and the ways in which the knowledge entered into Islam. When one reflects back on the aforementioned question of why Islam would need foreign knowledge if it had revealed truth, this forces one to evaluate the role of the Qur'ān in Islam which is a vast topic in itself. However, at the risk of simplifying this important issue, I will say that although the Qur'ān was seen to possess the Word and Truth of God himself, it was insufficient to understand the nature of the universe and its workings. This then would allow one to engage in the pursuit of this foreign knowledge without betraying one's religion. And it is clear that this entire enterprise began due to the lack of satisfaction the Muslims had with the knowledge that existed. Their medical knowledge was quite limited, their astronomical knowledge was not fully developed, and with all the splinter groups that were emerging, a greater and more detailed philosophical knowledge was

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administration and intellectual as well as social administration. The fate of the Barmakids is rather tragic in that initially, they fell out of favour. Shortly thereafter, Ja'far, son of the above mentioned Yaḥyā was unexpectedly put to death. Along with this action, Yaḥyā as well as his other son Faḍl were both imprisoned and both died in confinement. Some of the most useful sources concerning the court practices of the Barmakids include Dominique Sourdel's article in the *EI*2 entitled "al-Barāmika" as well as L Bouvat's book *Les Barmecides* and Sourdel's book *Le vizirat 'abbāside*.

necessary in order to attest to religious superiority. Moreover, Hārūn al-Rashīd obviously condoned the pursuit of this knowledge and therefore, gave it official Caliphal sanction.

The Opposition to the translation movement was initially quite strong and many traditional Muslim scholars were highly agitated when their fellow Muslims embraced the knowledge of those unbelievers they had conquered. Astrology, for instance, was not approved of by many of the members of the traditional Muslim society at that time. There were many who held that due to the fact that all events are the result of the will of God, then it is clear that one's destiny could not be controlled by the stars. However, in response to this criticism, the general way in which this problem was dealt with was to conclude that the stars were no longer regarded as 'rulers' but, rather, indicators which would show beforehand that which God had decreed. As one scholar has noted,

> Not all Muslims approved of astrology. There were many who held that , as all events happen by the will of God, they could not be controlled by the stars. This was admitted, and by it came a modification of astrological theory in orthodox Islam: that the stars were no longer regarded as "rulers" as in pagan astrology, but simply as" indicators" showing beforehand what God had decreed.[22]

[22] see De Lacy, O'Leary, ***How Greek Science Passed to the Arabs*** (Edinburgh: Edinburgh University Press,1978) p.4.

It is also important to realize that Islam during this period did have its own beginning intellectual traditions which encompassed men who were learned in jurisprudence, Prophetic traditions, and Qur'ānic exegesis. These men were universally respected by other members of the Islamic community and never experienced the same ostracism which the scientists and philosophers did (except during the *miḥnah*); the latter who were only tolerated because they were under state protection[23]. Their general problem with the scientists was that they claimed to have knowledge of the truth, as seen in the example of philosophies which came from unbelievers. This was especially problematic since the Traditionalists insisted that the only real truth could be found in the Qur'ān. And this ongoing debate led to increased hostility and division between these two learned groups of men. However, in the words of the famous Muslim philosopher Abū Yusuf al Kindī as noted in Malik Rab Nawaz's text:

> it is fitting to acknowledge the utmost gratitude to those who have contributed even a little to the truth, not to speak of those who have contributed such...We should not be ashamed to acknowledge truth

[23] During the reign of al-Ma'mūn, this situation almost reversed itself where the traditionalists were ostracised and the scientists were supported. This famous event is historically termed the *Miḥna*, or inquisition into the views of the traditionalists. The question of debate was whether or not the Qur'ān was created or if it was eternal. The Mu 'tazila were a group of rationalists who , supported by al-Ma'mūn, endorsed the former doctrine. Any who opposed this doctrine thereafter were imprisoned. One such person was the famous Aḥmad ibn Ḥanbal who was a strong supporter of the eternity of the Qur'ān, stating that it was God's speech and hence, it could not have been created. Due to this opposition, Ḥanbal was imprisoned and he was not released until the reign of al-Mutawakkil who decided to remove the Mu'tazila doctrine from being the official court doctrine. For more information concerning any aspect on the miḥna, see W.M Patton's book, ***Aḥmad ibn Ḥanbal and the miḥna: a biography of the Imām including an account of the Moḥammedan inquisition called the miḥna*** (Leiden: e.J. Brill, 1897).

> and assimilate it from whatever source it comes to us, even if it is brought to us by foreign peoples. For him who seeks the truth there is nothing of higher value than truth[24]

Therefore, it is clear that even after the Qur'ān had been revealed to the Muslims, there was still a strong desire and need to find lesser and more practical truths to help understand one's surroundings.

Al-Manṣūr desired to make Baghdad a city of fame that stood out, and so, he employed a number of distinguished scholars. However, it was under the reign of Hārūn al-Rashid and his son al-Ma'mūn that most of the genuine development took place. Hārūn al-Rashid became Caliph in 786 A.D.. He had been educated in Persia and raised under Persian influence at the hands of Yaḥyā the Barmākid. The Barmākids were a Persian family of court *vizīers* who were entrusted with the responsibility of running the court. Yaḥyā, the second Barmākid employed in the 'Abbāsid court was Hārūn's tutor and consequently, Hārūn gained a great sense of knowledge and respect for the Persian Intellectual tradition. It is for this reason that it is generally stated that throughout his reign Hārūn showed strong Persian sympathies[25]. So it is feasible at this point to conclude that extensive work on the translation of scholarly material began

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[24] see Rab Nawas, Malik's *The Development of Muslim Educational Thought 700-1900* (University of Kansas Thesis, 1965) p.64.

under the reign of Hārūn with the encouragement of his *vizīer* Ja'fār al-Barmāki who, as already mentioned was, along with the succeeding members of his family, a strong supporter of Greek knowledge. As we read,

> An important cultural and artistic achievement is also due to them [the Barmakids]. Indeed they acted as patrons of poets, distributing rewards for their panegyrics through the intermediary of a special office created specifically for the purpose, the *diwān al-shi 'r*; they favoured scholars and gathered theologians and philosophers in their home, in assemblies (*madjālis*) which have remained famous. They encouraged the arts, and as great builders, left numerous palaces in Baghdad, the most famous of which, that of Dja'fār, subsequently became the Caliphal residence.[26]

With this encouragement, the desire of more accurate scientific knowledge led to the preparation of more careful translations and the revision of existing versions, but it also resulted in the compilation of commentaries as well as original treatises based on the Greek authorities with citations illustrated and explained by the original work.

Perhaps the greatest patronage for the translation movement occurred under the rule of al-Ma'mūn the eighth 'Abbāsid Caliph who followed in his father's footsteps in this regard. Al-Ma'mūn is well known as being an independent

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[25] al-Tabari, *Abbasid Authority Affirmed* (Albany: University of New York Press, 1995), vol. 24 pp.47-62.

thinker, and yet this characterization of al-Ma'mūn should not be confused with open-mindedness since he was known to be quite ruthless toward those whose views conflicted with his own. In assessing his contribution one notes his employment of many translators in the intellectual academy which he founded, the *Bayt al-Ḥikma,* in 832 A.D. This centre was well known as for its achievements in both sciences and the arts, such as medicine and philosophy. By this point within Islamic history, the influx of foreign knowledge and ideas into Islam was a well known fact and hence, the knowledge which entered into Islam at this time was generally through individuals who were already learned in these disciplines. (Later, this would include those individuals such as Yaḥyā ibn 'Adī and al-Miskawayhī who would write commentaries and supplements to the texts which had either been translated or were currently being translated). There still was an infiltration of foreign knowledge coming from the regions discussed above, however, the movement at this point had culminated since most of the most important primary sources had already been translated and following the reign of al-Ma'mūn, the movement went into decay. Although the *Bayt al-Ḥikma* continued for centuries after 830 A.D., the patronage for it and its success was never the same. Under the brief reign of the Caliph al-Wāthiq (842-847), the *Bayt al Ḥikma* was no longer supported by the

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[26]see D. Sourdel's "al Baramika" in the *Enclylopaedia of Islam* 2 vol. 2 p.1035.

Caliph and the tradition of translation was slowly losing ground. It was not until the reign of the last Caliph to be discussed in this study, al Mutawakkil (reigned 847-861), that translation was resumed. It is important to note that unlike his predecessor al-Ma'mūn, al-Mutawakkil was not a speculative thinker nor was he at all open to new ideas, in fact he is generally characterized as a strict fanatic in religious matters, (one who is over-enthusiastic, zealous beyond the bounds of reason, especially in politics and religion)[27]. However, he was a great patron of the sciences and it is said that some of the best work of translation was done under his patronage.

It is at this limit in time ca. 861, therefore, that this study will leave off, in order to focus solely on the hundred year period outlined above. A possible general conclusion at this point is that the Muslim empire during this period was undergoing a series of changes and that with these changes came conquest. Naturally, when new cultures and peoples were encountered, elements of their culture were assimilated and in the case of the Islamic conquests, this was no exception. The knowledge which the Muslims gained from their military campaigns and later academic institutions paved the way for a profound intellectual

[27] see footnote 23where al-Mutawakkil is mentioned as having reinstated Aḥmad ibn Ḥanbal back into

tradition within Islam and it will be this point which is further discussed in the succeeding chapter. Therefore, we must now turn our attention to the various translators as well as the texts translated within the above mentioned disciplines in an attempt to gauge their influence on the Islamic tradition itself.

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court favour and removing the progressive, rationalistic doctrine of the Mu 'tazila from the state.

CHAPTER TWO:

The selection of the texts themselves involved a specific process which was undertaken by the various translators who were at the forefront of the translation movement. As outlined in the introduction, I will focus on six specific translators and explore both their backgrounds as well as their translations in an attempt to assess their contribution to the Translation movement. These translators are: Thābit ibn Qurra, Ḥunayn ibn Isḥāq, Yuḥannā ibn Māsawayh, Qusṭā ibn Lūqā, Isḥāq ibn Ḥunayn and Yaḥyā bin al-Biṭrīq. Also, within the three specific disciplines of astrology, medicine and philosophy, one must examine the works which were chosen and then make an attempt to evaluate why they were chosen, i.e., was it their utility or their information or was it simply their reputation which brought those particular texts into the bosom of Islam?

The selection of the texts themselves was a rigorous process which took a great deal of time and effort on the part of the translators, so one may ask why was their taste so discerning? It is clear in some cases that while certain texts were chosen, others were not. This is seen obviously in the example of those disciplines which were deemed important when compared to those which were viewed as irrelevant to Islamic

intellectual advancement. For instance, it is clear that the Islamic scholars did not see poetry, tragic plays or literature in general as being of any importance to their patrons, hence, there was no Caliphal sponsorship of these disciplines[28]. However, the three aforementioned disciplines were among many which were strongly sought after for their information and their usefulness. This then is clearly the point which drove the Muslims to such great lengths in order to increase their knowledge in these areas. Before moving further, it is important to evaluate just what texts were available to the translators since this fact in itself would help to decide which texts would be chosen. Looking back briefly to the first chapter which discusses the lines of transmission more specifically, we must recall that many of the texts which the Islamic scientists encountered were texts which had already passed through an intermediary culture which had previously chosen those texts which they deemed important. As noted in Manfred Ullmann's *Islamic Medicine*:

> The christianization of the colleges in the sixth century also resulted in a shift of syllabus. Whereas previously Greek poetry, tragedy and historiography were taught and explained, as well as philosophy, medicine and the exact sciences, the syllabus was now reduced to the latter subjects because only these were relevant for the new religious beliefs and useful for the life-style. Thus when the Arabs later became the "secondary-modern pupils" of the Greeks, this was not because the

[28] see Michael Dols translation of *Medieval Islamic Medicine* (Berkeley: University of California Press, 1984) p. 8 where he states that the Muslims were generally indifferent to nonscientific literature of antiquity.

> stream of these of these subjects had already dried up. The Arabs could only acquire that part of the Greek corpus of learning which the Christians in Syria and Egypt were then in a position to offer[29].

But among the texts which were chosen, there were many which were left out and it is interesting to see that while according to our knowledge today, modern scholars would make certain choices as to who was important and who was not, in some cases, the Muslims made different choices.

When looking to philosophy, although Aristotle in particular was studied, it is clear that the emphasis of the study of Aristotle within Islamic philosophy was neo-Platonic. As well, there was also some confusion as to the authorship of certain philosophical texts; where it was generally believed that Aristotle wrote certain works whose authors were in fact quite other. In the case of medicine, Galen is given the central role as the exemplary physician even though in the West it is generally agreed and accepted that Hippocrates was the father of medicine. The question one may now ask is why was Galen given this superior position? One answer could be in the fact that although the works of Hippocrates were known and physically available, it may have had to do with what Galen represented to the Islamic scientists. For instance, it is interesting to note that almost all of the Islamic scientists were physicians as well as

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[29] see Manfred Ullman's *Islamic Medicine* (Edinburgh: Edinburgh University Press, 1978) p. 7.

philosophers just as was Galen, hence, this may be one of the reasons as to why Galen was embraced more strongly. Another possible reason may have to do with the fact that Hippocrates was a much more ancient author than Galen. As noted in Ullman's *Islamic Medicine*:

> ...Simply for this reason relatively unimportant Alexandrian commentators were of greater importance for the Arabs than Hippocrates himself, because they were nearer in time and because they presented more simply the contents of the difficult Hippocratic writings dressed up in the spirit of Galen[30].

The discipline of Astrology, which today is seen as little more than common superstition, was seen by the Islamic scientists as a discipline of the utmost importance in determining the future and predicting common events, hence, its obvious interest for rulers. This makes it quite clear that the Muslims had their own definite personal views about what and who was worthy of translation. Within the above mentioned disciplines, the lists of translations and modern commentaries of these translations are in abundance and hence, it is at this point when a selection process of my own is necessary. Therefore, I will now turn to a profile of the aforementioned translators with a discussion and analysis of the works they each translated in the three disciplines mentioned above in order to evaluate their contribution to each.

Abū al-Ḥasan Thābit ibn Qurra al Ḥarrānī

Abū al-Ḥasan Thābit ibn Qurra al-Ḥarrānī, more commonly known as Thābit ibn Qurra was a famous mathematician and astronomer who lived during the 8th century and served in the 'Abbāsid court under the caliphs al-Mutawakkil (d.861) to al-Mu 'taḍid (d.902)[31]. He was born in the year 836 A.D. in Ḥarran, an ancient city in upper Mesopotamia and he originated from a family who were known for their prominence in scholarship. The inhabitants of Ḥarran were know for worshipping the planets[32], however, this group had long renamed themselves "Sabians", i.e., that group of "Pagans" who sought refuge in the Qur'ānic verse, exempting the "Sabians" from persecution[33]. the Qur'ān says:

> Those who believe (in the Qur'ān), And those who follow the Jewish (scriptures), And the Christians and the Sabians,-Any who believe in God And the Last Day, And work righteousness, Shall have their reward With their Lord: on them Shall be no fear, nor shall they grieve[34].

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[31] *Ibid* p.11.
[32] see J. Ruska "Thābit Ibn Ḳurra" *E I I* Vol. 4 p.452.
[33] *Ibid* p.452
[34] see Ibn al-Nadīm's ***Fihrist***. (New York: Columbia University Press, 1970) Vol. Ii p. 784-785.
[35] see ***The Holy Qur'ān*** Translation and commentary by A. Yusuf Ali. (Brentwood: Amana Corp., 1983). s.II v.62 p.33-34

Thābit came from a family of money changers[35] and due to his wealthy status, he was able to seek education for a time in Baghdad where he became quite learned in mathematics and philosophy. After having encountered much of this foreign knowledge, he fell out of favour with his community due to his allegedly liberal philosophical opinions. Thereafter, Thābit moved to Kafratūtha, a town situated in the Mesopotamian region near Dara. On one of his journeys from the Byzantine lands to Baghdad, Thābit was discovered by one of the members of the Banū Mūsā[36], who impressed by the former's knowledge, took him to Baghdad to meet the reigning Caliph al- Mu 'taḍid (d.902 A.D.). The Caliph, also impressed with Thābit's knowledge, appointed him one of his court astronomers[37]. Here is where Thābit composed a great many of his translations and lived out the rest of his life until his death in 901 A.D.

Thābit's accomplishments were a great benefit to the Sabians in Ḥarran as well as elsewhere since his works were so highly regarded. These various texts were

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[35] see J. Ruska "Thābit B. Ḳurra" *EI 1* Vol. 4 p.452.

[36] *Ibid* p.452, and D.H. Hill's "Mūsā, Banū" in the *EI 2* vol. VII pp. 640-641,where the story related to us is that whilst on a journey from Byzantium to Baghdad, Thābit met Muḥammad b. Mūsā b. Shakīr, (one of the Banū Mūsā) who, after recognizing Thābit's knowledge, took him to the Caliph's court. The Banū Mūsā were a group of three brothers, Muḥammad, Aḥmad, and al-Ḥasan, who were among the most important figures in the intellectual life of Baghdad in the 9th century. Under the successors of al-Ma'mūn, the brothers became rich and influential. They devoted much of their wealth and energy in a quest for the works of their predecessors, especially in Greek and Syriac, and sent missions to the lands of the Byzantine empire to seek out manuscripts and bring them to Baghdad.

[37] *Ibid* p.452

said to have been of a very superior level of translation and his contribution to the movement was extremely large.

While Thābit's translations were not as numerous as those of his contemporary Ḥunayn ibn Isḥāq, (discussed below), his contribution to the translation movement was nonetheless quite significant. He was known to be perfectly fluent in Greek, Syriac and Arabic; however, whether he knew Persian well enough to produce good translations of Persian works is unknown[38]. What we do know of Thābit's translations are as follows, with respect to astronomical and mathematical texts:

Euclid's *Elements*

Archimedes' *The Sphere and the Cylinder, On the Measurement of a Circle and The Book of Lemmas*

Apollonius of Perge *Conics, On the Cutting-off of a Ratio, The Determined Section*

Pappus' commentary on the *Plane of spheres* by Ptolemy

Eutocius' *Treatise on Lines*

Archimedes' *The Sphere and the Cylinder*

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[38] see Lucian Leclerc *Histoire de la Médicine* Vol. I (Paris: Ernest Leroux, 1876).p.168.

Nicomachus' *Introduction to the Study of Numbers*

Autolycus' *On a Moving Sphere, On the Rising and Setting of Stars.*

Theodose's *Spheres*

Ptolemy's *Almagest, Geography of the Inhabited Lands (Geographia), a Description of the Earth (Textus de Sphere), and Planetary Hypotheses (Planisphaerium), On the Years*
Menelaus' *The Elements of Geometry*

Epaphroditus' *Commentary on Aristotle's Account of the Halo of the Moon and the Rainbow.*

While Thābit's astronomical and mathematical translations are numerous, his medical and philosophical translations were much less so. He is credited as having translated the following medical texts:

Galen's *Chyme*[39], *On the Better Sect, What one Believes as an Opinion.*

Themistius's *commentary of Natural Healing*

Pythagoras' *Commentary on the Golden Testaments* (partial translation only due to Thābit's death).

Perhaps the most intriguing of the translations for which Thābit was responsible is the "*Alexandrian Corpus*" a philosophical text, which was completed with the collaboration of Qusṭā ibn Lūqā d. circa 922 A.D., Isḥāq ibn Ḥunayn d.910

A.D., and Abū Yūsuf al-Kindī d. circa 873 A.D.[40] This Corpus encompassed the works of minor Greek mathematicians and astronomers and was presumably edited by Theon of Alexandria[41]. The four men worked to translate and revise this text in order to help with the understanding of Ptolemy's ***Almagest*** and Euclid's ***Elements***. This was mentioned by the men in a number of works as being their primary motivating factor.

> The purpose of Thābit and his group, to publish minor works essential for an understanding of the ***Almagest*** and of Euclid's ***Elementia***, appears in several important statements. 1| The title of Thābit's *Tashil al-Majisti...*, 2| A list, in Arabic, of a 'Series of books to be read before the ***Almagest***'...3|a comparable list, in Latin...4|Ten 'original works' mentioned by al-Kindī in his *Risalah fī sina al Batlamyus al-falakiyyah*, of which five appear to be from the Arabic Corpus and which al-Kindī says were "arranged after the *Kitab al-ustuqssat*", that is Euclid's ***Elementia***. 5|Statements in the manuscripts of the type that Autolycus' ***De Sphaera*** was the "fifth intermediary"[42]

Thābit was quite a proficient translator and his contribution to the translation movement was extensive. In fact, in the words of Lucien Leclerc when depicting Thābit ibn Qurra: "Personne plus que lui ne favorisa l'étude des

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[39] Chyme is a semifluid mass of partly digested food after passing from the stomach into the small intestine, where it is digested.
[40] see Francis J. Carmody's ***The Astronomical Works of Thābit B. Qurra*** (Berkely: University of California Press, 1960). p. 20-22.
[41] ***Ibid*** p. 20-22
[42] ***Ibid*** p. 21

mathématiques et des astronomes chez les Arabes"[43] . However, when looking to the modern sources, we find that although Thābit's reputation as a translator is well known, the information provided specifically on his actual contribution is somewhat limited. For instance, the best sources dealing with his translated works are as follows:

The article in the *Encyclopaedia of Islam* (1st ed vol. 4 p. 452) gives important biographical information about Thābit and his life. In Francis J. Carmody's compilation of *The Astronomical Works of Thābit Ibn Qurra*, an adequate mention is made of Thābit's biographical information and a list of his translations is given. In Lucien Leclerc's *Histoire de la Médicine*, Thābit's personal details are given greater mention. For example, his biographical details are much more extensive and a much larger, more comprehensive list of his translations are given. The final, most important source with respect to Thābit's works and biographical details is Ibn al-Nadīm's (d.990 A.D.) *Fihrist*, which presents extensive information on both his biographical details as well as the list of his translations. The rest of the sources, listed in the bibliography of this text , while somewhat useful, are for the most part incomplete in their analysis and specific details about the life and works of Thābit.

[43] see Lucian Leclerc *Histoire de la Médicine Arabe* Vol. I (Paris:Ernest Leroux, 1876). p.172.

Ḥunayn Ibn Isḥāq al 'Ibadī

Abū Zayd Ḥunayn ibn Isḥāq al-'Ibadī (known to the Latin West as Joannitius), is by far the most famous of the Arabic translators. He was a Nestorian Christian born in al-Hirā, a city in the southern region of Baghdad, in 808 A.D.[44] His father was a pharmacist and as his *nisba* points out, he was a descendant of the Arab tribesman who embraced Christianity, and who remained Nestorian Christians even after the rise of Islam.[45] Most accounts tell of him being educated at the prominent Persian school of Jundishāpūr[46], mentioned in the first chapter. He eventually moved to Baghdad around 826 A.D. and studied under the director of the *Bayt al Ḥikma,* Ibn Māsawayh, d 857[47]. Here he remained conducting translations until at one point he was reprimanded for asking too many questions and so was asked to leave by his master. He was well versed in Arabic, the vernacular of his region, and Syriac, his mother tongue. It is also claimed that he knew Persian and during this time while he was away, he was rumored to have traveled to Alexandria where he became proficient in Greek. This gave

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[44] see Michael W. Dols, ***Medieval Islamic Medicine*** (Berkeley: University of California Press, 1984),pp.7 & 8.
[45] see G. Strohmaier, Ḥunayn ibn Isḥāk al- 'Ibadī in *EI 2* Vol. III p. 578 .
[46] *Ibid* p.578
[47] *Ibid* p.578

him an advantage over many of the other translators around him[48] since he was able to work with the primary Greek texts as well as the Syriac translations. When he returned to Baghdad, he was invited to retake his post at the *Bayt al Ḥikma* until on a few future occasions he fell out of favour of the reigning Caliph al Mutawakkil and was imprisoned. It was at this point that his library was confiscated and he is known to have been quite disturbed by this fact[49]. However, nearing the end of his career, he was once again re-instated into the Caliph's favour where he died in the year 873/74 A. D.

Ḥunayn is also well known for his precision in translation where he employed a method of translation which did not simply transcribe the works, but rather, utilized a much less literal form of translation[50]. Instead, Ḥunayn would translate full sentences together rather than individual words in order to maintain the true meaning of the texts. In his own words, Ḥunayn tells us about his translation of Galens's *On Sects*:

> I translated it when I was young from a defective Greek Manuscript; when I was forty, my pupil Hubaysh asked me to correct it after I had collected a number of Greek copies of the same work. I therefore arranged these in such a way that I could build up a correct

[48] *Ibid* pp.578 & 579
[49] See Ibn Khallikan's *Biographical Dictionary*, Vol. I (Paris: Oriental Translation Fund of Great Britain and Ireland, 1842) p.478.
[50] see Ḥunayn ibn Isḥāq's *Questions on Medicine for Scholars* (Cairo: al-Ahram Centre for Scientific Translation, 1980) p.xxi

> copy. I then compared this work with the Syriac text which I corrected, and this is the method I followed in everything I translated[51]

Along with these achievements, Ḥunayn was also a famous physician in his own right who wrote many treatises on diseases of the eye[52]. This then was his main forte--medicine. It is clear from his many translations of medical works as well as his own works on the subject that he greatly excelled in this area and therefore, it is no surprise that he chose to translate the works which he did. However, as noted below, Ḥunayn also translated works from the other two disciplines singled out in this study; nevertheless, it is clear that his claim to fame revolved around his proficiency in medicine. He did not possess the same command of the logical complexities of philosophy or astrology, which is rooted in the deep, complicated mathematical formulae of astronomy. It is probably due to this reason that Ḥunayn devoted most of his attention to the field of medicine. It is very understandable from a utilitarian perspective as to why medical works would be sought after and clearly Ḥunayn shared these views, as seen in his decision to focus on medical texts.

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[51] *Ibid* p.xx.
[52] *Ibid* p.i-xxx

Ḥunayn's translations of foreign texts were quite extensive, including works in medicine, philosophy, astronomy, mathematics, magic and oneiromancy.[53] Ḥunayn is credited by Ibn al Nadīm as having translated into Syriac ninety-five works of Galen together with another thirty-nine into Arabic (see Appendix M for the complete list) [54]. One point of interest is that although historically Ḥunayn is credited with having translated certain works, it has been argued that in fact he may have been credited with works that he did not translate. It has been stated that perhaps some of these works were translated by Ḥunayn's nephew Ḥubaysh, whose name, when transcribed, appears to be quite similar to that of Ḥunayn's own. This then could account for the fact that one name could possibly have been mistaken for the other.[55] We are told by Ibn al-Nadīm's in his *Fihrist*:

> It was the good fortune of Ḥunayn [ibn Isḥāq] that the things which Ḥubaysh ibn al-Ḥasan al-A'san, 'Isa ibn Yaḥyā, and others translated into Arabic were attributed to him, Ḥunayn. If we have recourse to the catalogue of Galen's books which Ḥunayn made for 'Alī ibn Yaḥyā, we learn that most of the things which Ḥunayn

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[53] see G. Strohmaier's "Ḥunayn ibn Isḥāk" *EI 2* vol. III p.579.
[54] see Ibn al-Nadim's *Fihrist* (New York: Columbia University Press, 1970) pp.693-694 vol. I This is confirmed by Max Meyerhof in his article " New Light on Ḥunain Ibn Isḥāq and his Period" see Max Meyerhof's "New Light on Ḥunain Ibn Isḥāq and his Period" *ISIS* vol. 8 1926 p.686
[55] see Max Meyerhof's *The book of the Ten Treatises on the Eye Ascribed to Ḥunain Ibn Isḥāq* (Cairo: Government Press, 1928) p.xx.

translated were [translated] into Syriac, although he may have also have corrected and examined the Arabic of other people's translations[56].

Among the books which Ḥunayn is credited as having translated of Galen's are:

On Different Fevers and *On the Types [of Fevers]* into Syriac for his patron Jibrīl and soon after, *On the Natural Faculties*. It is important to note that these texts were some of the earlier texts which Ḥunayn had translated and hence, later on in his career, he had them revised and in some cases, retranslated altogether[57].

On Sects, Distinction, one section, *The Art*, one section, *To Tuthran of the Pulse* one section, *To Glaucus, on setting things in order for the healing of diseases*, two sections, *Anatomy*, *Elements*, one section, *Temperament*, three sections, *Natural Abilities*, three sections, *The Fevers*, two sections, *The Crisis*, three sections, *Days of Crisis*, three sections, *Trick of the Cure*, six sections, *The Voice*, four sections (see Apendix M for the complete list of Galen's works)

Oribasius' *Eustathius* nine sections, *Eunapius*, four sections, *The Seventy Days*

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[56] see Ibn al-Nadim's *Fihrist* (New York: Columbia University Press, 1970) vol. I p.682

[57] see Max Meyerhof's *The Book of Ten Treatises on the Eye Ascribed to Ḥunain Ibn Isḥāq* (Cairo: Government Press,1928) p.xix

In light of his other translations, we are less acquainted with those which Ḥunayn did not specifically mention in his own books. However, we do know of his translations of Hippocrates which included:

The Oath Of Hippocrates, the Aphorisms, with Galen's commentary translated into both Syriac and Arabic. *Fractures, The Joints, Prognosis, The Regimen in Acute Diseases, The Ulcers, On Wounds in the Head, The Four original books of the Epidemics, The Chymes, The Muscles, Need for Respiration* half of it, *Obscure Motions* one section in Arabic, *The Best of Form* Into Syriac and Arabic, *Evil of an Uneven Temperament* one section, *Medical Treatment*, eleven sections, *Born at Seven Months*, one section, *Weakness of Respiration* three sections, *Emaciation*, one section, *The Strength of Nutriments*, three sections, *The Application of Alleviating Medicines*, one section, *Ideas of Erasistratus about the Treatment of Diseases, Hippocrates' Treatment for Acute Diseases*, one section, *To Thrasybulus*, one section, *That the Excellent Physician is a Philosopher*, one section, *The Authentic Book of Hippocrates*, one section, *The Trial of the Physician*, one section, *The Physician, Water and Air, On Nutriment, On Human Nature.*

The Fihrist also tells us that Ḥunayn translated the entire *Synopsis of Oribasius*, as well as his book, *the Seven Books of Paul of Aegina* and *the Herbs and Materia Medica of Dioscurides*. He is also ascribed with having translated a version of Theomnestus' *Veterinary Medicine* and *Surgery*

With respect to Philosophy, Ḥunayn translated the following works:

Aristotle

- The works he translated into Syriac are *the Organon, On Interpretation, On Generation and Corruption* and parts of *the Metaphysics*.
- The works he translated into Arabic are *the Categories, Ethics, Physics*, and revised a former translation of *the Analytics*.

The commentaries of Alexander of Aphrodisias

The Isagoge of Porphyry

Several of Themistius' *Aristotelian commentaries*

Plato's *Politics, Laws, Timeaus* and *The First Mover Does not Move*, one section.

Artemidorus' *Interpretation of a Dream*

Aside from these, there were a number of mathematical and astronomical treatises which Ḥunayn also translated.

Mathematical treatise composed by Eutocius

Autolycus' *On a Moving Sphere*

Euclid's *Elements*

Nicholas of Damascus' *A Summary of Aristotle's Philosophy, The Planets*

Menelaus's *Spheres*

Archimedes' *The Sphere and Cylinder*

Appollonius of Tyana's *Treatise on Astrology*

Artemidorus' *The Interpretation of Songs*

Alexander of Aphrodisias' *The Opuscules*

Themistius' *Commentary on the Book of the soul*

Ptolemy's *The Four*

It is important to realize that the bulk of mathematical and astronomical treatises were translated by Ḥunayn's contemporary, Thābit ibn Qurrā (d.901 A.D.)[58]. Finally, we are told in Ibn al Qifṭī's *Ta'rikh al Ḥukamā*, that Ḥunayn also translated into Arabic the Greek old Testament (*The Septuagint*) which had been previously translated from the

[58] see various references in Ibn al-Nadim's *Fihrist* (New York: Columbia University Press, 1970). Vols I & II

Hebrew[59]. Unfortunately, this work has been lost, as like many of Ḥunayn's other Arabic and Syriac translations.

The sources dealing specifically with Ḥunayn's life as well as his achievements are quite numerous. They deal with many aspects of his life as well as his translations. The most useful of these sources include:

The article on Ḥunayn ibn Isḥāk in the *Encyclopaedia of Islam* 2nd ed vol. III pp.578-580, gives important biographical information concerning Ḥunayn's life as well as the time he spent working under the patronage of ten 'Abbāsid Caliphs. Ḥunayn's book entitled *Questions on Medicine for Scholars*, translated by Paul Ghalioungui, in the biographical section gives both information on Ḥunayn's life as well as a small list of his contribution to the translation movement. However, the list and information, while useful, is somewhat incomplete. Max Meyerhof's Translation of ***The Book of the Ten Treatises on the Eye Ascribed to Ḥunain Ibn Isḥāq*** has, in the introduction, an important section on Ḥunayn's biographical and translation information. The list is incomplete, and yet, it is still useful for in the information it provides. Max Meyerhof's article in *ISIS* entitled "New Light on Ḥunain Ibn Isḥāq and

[59] see Max Meyerhof's ***The Book of the Eye Ascribed to Ḥunain Ibn Isḥāq*** (Cairo: Government Press,

His Period", is an important source which although useful in the biographical information it provides concerning Ḥunayn, deals only with Ḥunayn's translations of Galen's works. However, it does provide a comprehensive list of these works; since as stated by the author, the scope of the article is limited to these works alone. The most useful of the sources which gives information on both Ḥunayn's biographical details as well as a complete list of the texts he translated is that of Ibn al Nadīm's *Fihrist*.

As with Thābit, although the sources concerning Ḥunayn are extremely extensive, they are for the most part, repetitive in their information. As well, while they may mention some of the works which Ḥunayn translated, they are generally incomplete in their analysis.

Abū Zakarīya Yuḥannā ibn Māsawayh

Abū Zakarīya Yuḥannā ibn Māsawayh, known to the Latin west as Mesue Major, was a famous physician and translator of the 9th century. He was employed under the 'Abbāsid caliphs from the time of Ḥarūn al Rashīd to al-Mutawakkil. The son of a pharmacist at Jundishāpūr, Ibn Māsawayh came to Baghdad

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1928) p. xxvii

and studied under the well known physician Jibrīl ibn Baktīshū '[60]. Once under the tutelage of the 'Abbāsid Caliphs, Ibn Māsawayh rose to fame quite quickly, however, this did not go without a negative reaction[61]. His link to the famous Baktīshū ' family was probably the most influential factor of his success since they, like the Barmakids, had developed a family monopoly within the Caliphal circle and hence, they enjoyed a great deal of autonomy as well as fame. Like his mentors, Ibn Māsawayh was also a Nestorian Christian who stayed true to his faith and did not convert to Islam[62]. Due to their link with the Nestorian church, these men were able to keep in touch with Greek learning. This, coupled with the group's former influence from Jundishāpūr, allowed them to master a variety of subjects which would have, in either place alone, been considered polar opposites[63]. This is seen where subjects such as astrology, alchemy, and medicine are given the same status as philosophy. Within the Latin tradition, following the Islamic intellectual development, there was a small degree of controversy as to weather or not Mesue Major was in fact the same person as Ibn Māsawayh[64]. This

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[60] see J. Vadet's "Ibn Māsawayh" p.872 in the EI 2 vol. III where we are told of how the Baktīshū' family had gained a stronghold within the intellectual circle in the 'Abbāsid court.
[61] Ibid. p. 872
[62] Ibid p.872.
[63] The importance of this fact is that in the Nestorian tradition, there was a great deal of Greek influence and this tended to centre around the rationalism seen in the Greek subjects of philosophy, and medicine. At Jundishāpūr, there was a trend to follow subjects such as astrology and mathematics. Although there did exist some overlap in the subjects in both traditions, one does see the experience of these individuals allowing for a much smoother harmony between the two schools.
[64] See J. Vadet's "Ibn Masawayh" in *EI 2* vol. III p.873.

is a point which has been under debate for quite some , however, for the sake of this study, it will be assumed that they are one and the same person.

Ibn Māsawayh's writings were primarily in Syriac and Arabic. He is well known for being a physician whose main areas of focus were diet and pharmacology. Ibn Māsawayh's largest contribution to the translation movement was twofold. First, he was responsible for the translations of some Greek scientific texts which he utilized at the *Bayt al Ḥikma*, and second, he was famous for his instruction of Ḥunayn ibn Isḥāq, discussed above. One account tells us that Ḥunayn, although instructed by Ibn Māsawayh, soon surpassed the knowledge of his teacher and hence, was dismissed by Ibn Māsawayh[65].

Once brought to Baghdad, Ibn Māsawayh was appointed both as court physician as well as the director of the *Bayt al Ḥikma.* His reputation is centered around his role as court physician to the Caliphs and he is known to have run with this elite crowd after gaining his position. As aforementioned, this status did not go without criticism , however, he continued to enjoy this elevated lifestyle. He is also known to

[65] see G. Strohmaier's "Ḥunayn b. Isḥāk al- 'Ibadī," In *EI 2* Vol. III p. 578.

have been one of the many great translators who was sent to the Byzantine lands in order to find manuscripts for translation. He died in the year 857 in Samarra.

Among his translations which were much less than those of the other two men profiled above, there were the following medical translations:

Hippocrates' *Aphorisims* and *Melancholia*

Galen' s *Book of Fevers*, *On the Pulse*, *Nutriments*, *Prevention of the Harm of Nurtiments*

When looking to the sources dealing with the life and works of Ibn Māsawayh, we note that although he is mentioned in many texts, the information given about him and his contribution to the translation movement is minimal. In many cases, he is depicted as a rather obscure figure, and much of this probably stems from the aforementioned confusion as to his true identity as the Latin Mesue Major. Despite this fact, there is an adequate amount of information from some of the sources to give a relatively good picture of his life as well as his works. Some of the most useful are the article about him in the *Encyclopaedia of Islam 2* vol. III pp. 872-873, where many concise details are given about his life and role at the 'Abbāsid court. There also is Ibn al Nadīm's *Fihrist* which gives both biographical as well as academic details concerning

his life, translations and his works. Two other sources which are much more useful in both their biographical details as well as their lists of Ibn Māsawayh's translations are: Donald Campbell's *Arabian Medicine and its Influence on the Middle Ages* Vol. 1 and Amin Kharirallah's *Outline of Arabic Contributions to Medicine.*

Qusṭā ibn Lūqā al-Ba 'labakkī

Qusṭā ibn Lūqā al-Ba 'labakkī, was the famous medieval scientist and translator who came from the town of Ba 'labakk[66]. He was from a family of Christians and was fluent in Greek, Syriac, and Arabic. With respect to his reputation as a translator, Qusṭā had achieved the same status as Ḥunayn ibn Isḥāq in terms of his ability to translate texts correctly. He was one of those translators, sent to Asia Minor to collect books, many of which he translated[67]. The final part of this life was lived out in Armenia where he was under the patronage of Prince Sanḥarīb while he composed many more scholarly works[68]. Qusṭā died in Armenia in 912/913 A.D. after which a shrine was erected over his grave in order to honor him[69]. His skills spread over the areas of medicine, philosophy, geometry, arithmetic, astronomy, and music with a

[66] Qusṭā may have originated from either Ba 'lbakk or Heliopolis in Syria. see George Sarton's *Introduction to the History of Science* Vol. 1 p. 602.
[67] see Ibn al-Nadīm's *Fihrist.* (New York: Columbia University Press, 1970) p. 1080

particular specialty in medical pathology; And his texts covered areas such as: gout, infectious diseases, insomnia, knowledge of fevers, types of crisis in illness and the pulse.

Among his translations, Qusṭā is known to have translated the following mathematical and astronomical works:

Plato's *The Roots of Geometry*

Euclid's *Elements*

Hypsicles' *Supplement* and *the Ascensions*

Diophantes's *Algebra*

Among his medical translations are:

Account of the Natural Healing original text along with the Commentary of Alexander eight sections

Among his philosophical translation are:

Aristotle's *Opera omnia, Physics, Generation and Corruption*

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[68] see D. Hill's, "Ḳusṭā b Lūḳā" in *EI*2vol V p. 529
[69] Ibid p.529.

the commentary by Alexander of Aphrodisias on Aristotle's Account of the book *Being and Corruption*, first section as well as Alexander and John Philoponus's commentary on *the Physics.*

Plutarch's *Opinions of Nature*, five sections and *the Practice of Truth on the opinions of Philosophy and Physics.*

Hippocrates' *Aphorisms*

Galens's commentary on above

The works of Theodose

Aristarchus of *Samos' Distances of the Sun and Moon*

Among the sources that deal with the life and works of Qusṭā ibn Lūqā , most do not give specific reference to his life. Hence, many of the details provided above are pieced together from various sources. The most useful are Ibn al Nadīm's *Fihrist*, as well as Lucian Leclerc's, *Histoire de la Médicine Arabe* which are helpful in the information they give. First, the *Fihrist* tells us of Qusṭā's personal details, as well as some of his translations. Second, Leclerc's *Histoire* gives us much more specific detail concerning Qusṭā's translations as well as his individual works. Lastly, the least useful of the three works mentioned here, but nevertheless helpful in its biographical information on Qusṭa

is the article in the *Encyclopedia of Islam.* (2nd ed vol. V p 529) entitled "Ḳusṭā ibn Lūḳā.

Abū Yaqūb Isḥāq ibn Ḥunayn ibn Isḥāq al- 'Ibadī

Abū Yaqūb Isḥāq ibn Ḥunayn ibn Isḥāq al- 'Ibadī, the son of the famous Ḥunayn ibn Isḥāq, was himself a celebrated translator. Like his father, his *nisba* tells us that he originated from a group of Nestorian Christians who originated from Hirā[70]. He is well known also as a physician, however, most of his translations were philosophical. Some of these works we know to have been translated with the help of his father, Ḥunayn, however, Isḥāq himself attained a similar level of superiority as did his father[71]. This was especially evident in his knowledge of the many different languages which were required for the translations. We are told that Isḥāq was well versed in Greek, Syriac, Arabic and Persian. Isḥāq was among the group of men who were employed in the school of Ḥunayn, learning the skills of translation. We are told that in terms of his mastery of the Arabic language, he even surpassed the skills of his father[72]. Along with his translations, Isḥāq indulged in writing poetry. This is an interesting point since

[70] see Ibn Khallikan's *Biographical Dictionary* vol. 1 p.188.
[71] see ibn al-Nadim's *Fihrist* pp. 598-599.
[72] Ibid p.672.

although the translators did not consider poetry to be one of those disciplines worthy of translation, clearly they did enjoy it themselves. His other writings were all medical and pharmacological in nature and in fact, in 903 A.D., Isḥāq composed his *Ta'rīkh al-aṭibbā* (*History of Physicians*) which has been described as the first known attempt to write about the beginnings of medicine in connection with the history of philosophy and religion[73]. Isḥāq served the same Caliphs and chiefs whom his father served and during his last days, he was in a preeminent position in the special service of al-Qasīm ibn 'Ubayd Allāh the *vizier* to the 'Abbāsid caliph al-Mu 'taḍid Billāh[74]. We are told that Isḥāq's relationship with al-Qasīm ibn 'Ubayd Allāh was so intimate that he was known to have confided in him those things which Isḥāq would not have confided in any other person. Isḥāq died after suffering from a stroke at Baghdad in 910 A.D. after years of service to both the caliphs as well as to the advancement of the translation movement within Islam.

Among his many philosophical translations were:

Plato's *Sophists* with the commentary of Olympiodorus.

Aristotle's *De Interpretatione* into Arabic (with Ḥunayn), Account of the *Analytica priora*, into Syriac, *Topica* into Syriac as well as Ammonius' and Alexander's

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[73] see G. Stromahier's "Isḥāq b. Ḥunayn" in *EI*2 vol. IV p.110.

commentary on it. *The Rhetorica* into Arabic. Account of the book *On Generation and Corruption* into Arabic. Account of the *Book The Soul* into Arabic, Account of the *Book of Letters* known as the *Divine Things, The Metaphysics* until the letter M, *The Commentaries. the Topics*, Commentaries of Alexander of Aphrodisias and Ammonius. *On Generation and Corruption the Ethics* of Porphyry *The soul* by Themistius

Porphyry's commentary of the *Ethics* and Themistius' commentary on the same.

Alexander of Aphrodisas' *Poetry*

Ptolemy's *Almagest*

Galens' *On Demonstration*, On *the Timeaus* of Plato, *On the types of reasoning, Commentary on Aristotle, The First Mover,*

Among his mathematical and astronomical translations:

Euclid's the *Elements of Geometry, the Data, Optics, Proportions*

Galen's *Book of Planets, on the Medicine of Erasistrate*

Along with his translations, Isḥāq's many original works were also a tremendous contribution to the translation movement. His many works focused

[74] see Ibn Khallikan's *Biographical Dictionary* vol. 1p.188

predominantly on philosophy, the area in which he mostly translated texts and this then allowed him to expand and build upon the existing traditions. Among the sources which deal with him, there are *Ibn Khallikan's Biographical Dictionary* for his biographical details as well as Ibn al-Nadīm's *Fihrist* for a list of his translations and his original works. As well, there is a section on Isḥāq and his biographical details and his translations in Lucien Leclerc's *Histoire*.

Abū Zakarīya Yaḥyā bin al Biṭrīq

Abū Zakarīya Yaḥyā bin al Biṭrīq was a translator who lived during the time of the 'Abbāsid Caliph al Ma'mūn. He went far beyond the merits of his father, al-Biṭrīq in his works and abilities[75](someone with whom he is often confused). We are unfamiliar with his origins since little information regarding his biographical details exists. However, by looking at his name, al-Biṭrīq, we can tell that it originates from the Greek Patricus. This in turn may make it fair to assume that his family originated from somewhere in the former Byzantine empire. Yaḥyā worked in a team of translators under al-Ḥasan b. Sahl al-Sarakhsī (al-Ma'mūn's *vizier*) who had concentrated their

[75] see D.M. Dunlop's "The translations of al-Biṭrīq and Yaḥyā (Yuḥannā) b. al-Biṭrīq" in *Journal of the Royal Asiatic Society* (1959) p 143.

efforts primarily on astrology[76]. He was ordered to translate texts from the books of old. He was also commissioned by al-Ma'mūn to bring ancient scientific books from the Greek territories and to translate those that were found. Yaḥyā is also said to have been a *mawla* or a freedman of al-Ma'mūn[77]. Unlike the other translators profiled in this study, Yaḥyā was not a physician, in fact it was more philosophy which was his forte[78]. We are told that he was charged with the translations particularly of the books of Aristotle and also those of Hippocrates as well. It has been mentioned that perhaps many of his works had been overshadowed by those of Ḥunayn and his contemporaries who are known to have lived approximately sixty years later. However, we do know that Yaḥyā cast his net quite wide, and is credited as perhaps being the first translator of philosophical works in Islam.

Among his philosophical translations, we are aware of the following works:

Aristotle's *Politics, De Caelo et Mundo, De Anima, Meterologica* and *Historia Animalium* into Syriac

An apocryphal work formerly ascribed to Aristotle entitled *Secretum Secretorum.*

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[76] see "The translation of Greek Materials into Arabic" in *The Cambridge history of Arabic Literature, Religion, learning and Science in the 'Abbāsid Period.*(New York: Cambridge University Press, 1990) p.482.
[77] see D.M. Dunlop's "The Translation of al-Biṭrīq and Yaḥyā (Yuḥannā) b. al-Biṭrīq" in *Journal of the Royal Asiatic Society* (1959) p.142.
[78] Ibid. p. 141.

Plato's *Timaeus*

Among his medical translations, we are aware of:

Galen's *Serapion, De Theriaca ad Pisonem*

Hippocrates' *On the Signs of Death*

And the only mathematical text we know of Yuḥannā bin al-Biṭrīq translating is:

Ptolemy's *Tetrabiblon*

Among the texts which deal with Yuḥannā al-Biṭrīq as well as his works, there are very few sources which tell us about him and his life. The most useful are two articles, one which deals specifically with his life, defining his role in the translation movement as well as describing his distinction from his father, (someone with whom he has been frequently mistaken). This article is Dunlop's "The translations of al-Biṭrīq and Yaḥyā (Yuḥannā) b. al-Biṭriq" *in Journal of the Royal Asiatic Society* (1959) pp. 140-150. The second article is "The Translation of Greek Materials into Arabic" in *The Cambridge History of Arabic Literature, Religion, Learning and Science in the 'Abbāsid Period.* This second article is much more limited in its scope on Yuḥannā al-Biṭriq and it is only useful since it gives us a list of his translations.

At this point it is clear that the role and contribution of the above mentioned translators was extremely large. Although they were under the direct patronage of the Caliphs, it is evident that without their skills and expertise not only in translation itself, but also in the subject areas discussed above, they would not have been able to make the texts available to their successors to study from and to comment on. As well as aforementioned, their selective process is what decided which text would be the ones to pass on to subsequent generations of scholars. It is also important at this point to reiterate that although the translation movement is commonly termed the translation movement in Islam, all the translators profiled above were of non-Muslim origin. This is important since it helps us recognize the social situation of the Muslims at that time and allows us to conclude that knowledge as well as the knowledgeable, despite it/their origin were fairly openly embrace for the pursuit of truth and information.

Conclusion

When looking back to the events which surrounded the translation movement one notes many factors which led to its patronage. Among the most obvious were clearly political, utilitarian and simply a quest for knowledge. Beginning with the first point, i.e., the political motivation which led to the translation movement, one needs to refresh oneself with the political setting at the time of its commencement. For instance, just following the 'Abāssid revolution, there came the manifestation of various splinter groups which were making political cohesion within the 'Abāssid empire almost an impossibility. At this point, there were disputes of many natures, however, one of the most important was that of the right to succession. The 'Abāssids had attempted to legitimize their authority by claiming their decendance from the *Bayt al Muḥammad*, however, this was not enough. By the influence of foreign philosophy with its various logical arguments which allowed for increased dialogue in the area of dialectic theology, the 'Abāssids were able to come up with a supportive theological argument concerning their right to legitimate rule

From a utilitarian perspective, the tutelage for this knowledge is quite understandable. When reflecting on any one of the three disciplines of astrology, philosophy and medicine, one sees how each could have been useful. Astrology

generally was welcomed for its 'ability' to predict future events and gauge the personality of people. Philosophy as mentioned above allowed for the refining of Muslim religious thought to the point where no subject was left untouched by the future Islamic philosophers. And with respect to the discipline of medicine, it is probably quite self evident as to why any culture would wish to extend its medical knowledge and expertise.

The last reason as to why the translation movement was probably so strongly embraced was simply the age old quest for knowledge undertaken by many cultures in an attempt to emulate the achievements of its predecessors In the case of the Islamic scientists, they clearly had a desire to learn and incorporate the ideas of those older, more refined cultures, since the Muslims wished to compete with these cultures on a more even ground. Militarily, they had already proved their dominance by successful conquests, however, it is fair to assume that they also wished to compete on intellectual grounds as well and thus, the translation movement was strongly endorsed.

Once the translation movement was initiated, the selection process of the sources themselves was done according to various factors. The first, and probably the most evident reason for the selection process was the availability of the sources to

the Muslims at that time. The other reason goes back to the utility of the knowledge to the Muslims. For instance, if a source was not useful, even if it was otherwise important, it was not selected for translation.

The contribution of the translators to the movement was also very important since they were the ones to decide what was to be translated and what was not. Hence, every advancement made within the Islamic Intellectual tradition can be awarded to the translators since they were responsible for choosing, translating and learning from the texts they encountered.

Therefore, due to all the above factors, it is clear why the translation movement was embraced. It is also important to mention the ramifications of this movement. First, the Islamic Intellectual tradition exploded out of this initial effort and continued on for many years to come. As well, much of the knowledge which was passed on to medieval Europe was that which the Muslims had encountered, translated and commented on. Therefore, it is evident that the translation movement was not only useful to those Muslims during the early 'Abbāsid caliphate who wished to refine themselves as well as their culture and knowledge, but for years to follow, it also radiated to many areas West of Baghdad. This enabled future generations of Muslims

and non-Muslims alike to not only have access to these ancient texts, (some of which were no longer extant in their original form), but to benefit from the Muslims' efforts at understanding these texts in a possible attempt to refine the cultures to which they belonged to also.

The following appendices contain a list of all the most significant ancient authors mentioned throughout the course of this thesis as well as many of their most significant works. Although many of the following texts were never translated into Arabic (or Syriac), for the sake of completion, they will be listed here.

Appendix A

Apollonius of Perga

Apollonius of Perga's most important text that we know of is his *Konika.* This text has been translated into English, Latin and Arabic also. His other texts are:

On the Cutting-off of a Ratio

On the Cutting-off of an Area

On Determinate Section

On Tangencies

On Plane Loci

On Vergings

On the dodecahedronn and the icosahedron

Principles of Mathematics

On the Cochlias

On unordered irrationals

Measurement of a circle

Continued multiplications

On the Burning Mirror

Appendix B

Apollonius of Tyana

Among his works are what is commonly termed *The Letters of Apollonius of Tyana* and his *Treatise on Astrology*

Appendix C

Archimedes

Among the works of Archimedes which were translated into both English and Latin are as follows. Those texts which were translated into Arabic will be noted with an asterisk.

*On the Sphere and the Cylinder**

commentaries include those by Eutocius of Ascalan

Measurement of a Circle

*On Conids and Spheroids**

On Spirals

On the Equilibrium of Planes

The Sand-Reckoner

Quadrature of the Parabola

On Floating Bodies

*Book of Lemmas**

The Cattle-Problem

Appendix D

Aristarchus of Samos

The work of his which we have is the *Distances of the Sun and Moon*

Appendix E

Aristotle

The following is a list of Aristotle's texts, as classified by Bekker together with some of the most significant commentaries of these texts. All the texts of Aristotle listed below have been translated from the original Greek into both Latin and English and those texts with an asterisk next to them were also translated into Arabic.

*Categoriae, Categories**

commentaries include those by: Porphyry, Stephanus of Alexandria, John Philoponus, Ammonius, Themistius, Theophrastus, Simplicus, Theon of Alexandria and Iamblichus (which may be a false attribution).

*De Interpretatione,On Interptetation**

commentaries include Alexander of Aphrodisias who's commentary is non-extant, John Philoponus, Iamblichus, Porphyry, the epitome of Stephanus and a rare commentary of Galen which is non-extant.

*Analytica Priora,Prior Analytics **

commentaries include those of Alexander of Aphrodisias, Alexander of Ammonius, Themistius and John Philoponus.

*Analytica Posteriora,Posterior Analytics**

commentaries include those of Themistius, Porphyry, Alexander of Aphrodisias who's is non-extant, and Johns Philoponus.

*Topica, Topics**

partial commentaries by Alexander of Aphrodisias, Porphyry, Ammonius, and Jonh Philoponus

*Sophistici Elenchi,Sophistical Refutations**

*Physica, Physics**

commentaries include those of Alexander of Aphrodisias Porphyry ,John Philoponus, John Philoponus and Themistius.

*De Caelo, On the Heavens**

There exists a partial commentary by Alexander of Aphrodisias and a full commentary by Themistius

*De Generatione et Corruptione, On Generation and Corruption**

Commentaries include, Alexander of Aphrodisias, Olympiodorus, Themistius, and John Philoponus

*Meterologica, Meteorology**

commentaries include those of Olympiodorus and Alexander of Aphrodisias

*De Anima, On the Soul**

commentaries include those of Themistius, Olympiodorus, John Philoponus, Nicholas of Damascus and Simplicius

De Sensu, On Sense

De Memoria , On Memory

De Somno, On Sleep

De Insomniis, On Dreams

De Iuventute et Senectute, On Youth and Old Age

*De Partibus Animalium, Parts of Animals**

commentaries include that by John Philoponus

*De Motu Animalium, Movement of Animals**

*De Generatione Animalium, Generation of Animals**

*Metaphysica, Metaphysics**

commentaries include those by Alexander of Aphrodisias, Themistius, and Syrianus

*Ethica Nicomachea, Nichomachean Ethics**

*Ethica Eudemia, Eudemian Ethics**

commentaries include a complete commentary by Porphyry and a partial one by Themistius

Politica, Politics (translated into Syriac)

*Rhetorica, Rhetoric**

*Poetica, Poetics**

There is a discourse of Themistius on it, however there is also an opinion that it is falsely attributed to him.

Appendix F

Artemidorus

The works which we have of his is the ***Oneirocritica, On the Interpretation of Dreams*** and ***The Interpretation of Songs***

Appendix G

Autolycus

Autolycus' two books are *On a moving sphere* and his two part book *On rising and settings of stars*. Both these books have been translated into English and Latin and Arabic

Appendix H

Dioscurides

His texts, the *De Materia Medica* and *Herbs* have been translated into English, Latin and Arabic.

Appendix I

Diophantes of Alexandria

His books include the *Arithmetica, Algebra* and *On Polygonal Numbers* both of which have been translated into English, Latin and Arabic.

Appendix J

Epaphroditus

Among his works is his Commentary on Aristotle's Account of *the Halo of the Moon and Rainbow.*

Appendix K

Euclid

The following is a list of Euclid's texts along with the most significant commentaries. All the texts have been translated into both English and Latin and those texts which were translated into Arabic are noted with an asterisk.

The *Elements**

commentaries include those of Nichomachus, Pappus of Alexandria, and Theon of Alexandria

The *Data*

The *Porisms**

The *Conics**

The *Surface Loci*

The *Optics**

Appendix L

Eutocius

Among his texts are his *Treatise on Lines* and *Mathematical Treatise*, both which exist in English and Arabic.

Appendix M

Galen

The following is a list of Galen's texts as classified by Meyerhof. All the texts have been translated into English and Arabic (except those texts which were lost which are noted with an asterisk). Those texts given with a Latin title were also translated into Latin.

1 *Libris propriis*

2 *De Ordine Librorum suorum*

3 *De Sectis*

4 *Ars Medica*

5 *De Pulsibys ad Tirones*

6 *Ad Glauconem de Medendi Methodo*

7 *De Ossibus ad Tiromes*

8 *De Musculorum Dissectione*

9 *De Nervorum Dissectione*

10 *De Venarum Arteriarumque Dissectione*

11 *De Elementis secundum Hippocratem*

12. *De Temperamentis*

13 *De Facultatibus Naturalibus, On the Natural Faculties*

14 *De Causis et Symptomatibus*

15.*De Locis affectis*

16 *De Pulsibus*

17 *De Typis Febrium), On Types of Fevers*

18.*De Crisibus*

19 *De Diebus Decretoriis*

20 *Methodus Medendi*

21 *De Anatomicis Administrationibus*

22 *Epitome Librorum Antomicorum Marini*

commentaries include that by Orbasius

23 *De Epitome Librorum Anatomicorum Lyci*

24 *De Anatomica Dissensione*

this book is lost

25 *De Vivorm Anatome*

26 *De Anatome Mortuorum*

27 *De Hippocratis Anatome*

28 *De Drasistrati Anatome*

29 *Ignorata a Lycone in Anatomia*

30 *Adversus Lycum*

31 *De Uteri Dissectione*

32 *On the Artuclation of the First Vertebra* *

33 *De Natura Humana (possible Latin title), On the Difference of Homogenous Parts of the Human Body*

34 *Vocalium Instumentorum Dissectio*

35 *De Anatomia Oculorum*

36 *De Motu Thoracis et Pulmonis*

37 *De Causis Respirationis*

38 *De Voce et Anhelitu*

39 *De Motu Musculorum*

40 *On the Heterodoxy*

41 *De Usu Puleuum*

42 *De Respirationis Usu*

43 *An in Arteriis Natura Sanguis Contineatur*

44 *De Prgantium Medicanemtorum Facultate*

45 *De Consuetudine*

46 *De Placitis Hippocratis et Platonis*

47 *De Motibus Manifestis et Obscuris*

48 *De Instrumento Odoratus*

49 *De Usu Partium Corporis Humani*

50 *De Optima Corporis Nostri Constitution*

51 *De Bono Habitu*

52 *De Inaequali Intemperie*

53 *De Simplicium Medicamentorum Temperamentis et Facultatibus*

54 *On the diagnosis of the affections of the eyes*

55 *De Morborum Tmporibus*

56 *De Pentudine*

57 *De Tumoribus praeter Naturam*

58 *De Causis Procatarcticis*

59 *De Causis Continentibus*

60 *De Tremore, Palpatatione, Rigore et Convulsione*

61 *De Partibys Artis Medicae*

62 *De Semine*

63 *De Septimestri Partu*

64 *De Atra bile*

65 *Adversus Eos qui de typis scripserunt*

66 *Synopsis Librorum Suorum de Pulsibus*

67 *De Pulsibus adversus Archigenem*

68 *De Difficultate Respirationis*

69 *De Praenotione*

70 *Synopsis Methodi Medendi*

71 *De Venaesectione adversus Erasistratum*

72 *De Marcore (Marasmo)*

73 *Pro Puero Epileptico Consilium*

74 *De Alimentorum Facultatibus*

75 *De Attenuante Victus Ratione*

76 *De Probis Pravisque Alimentorum Sucus*

77 *O the Ideas of Erasistratos about the Treatment of Diseases*

78 *De Deaeta Acutorum (Moborum) Secundum Hippocratem*

79 *De Compositione Medicamentorum secundum Genera, secundum Locus*

80 *De Remediis Parabilibus*

81 *De Antidotis*

82 *De Theriaca ad Pamphilianum*

83 *De Theriaca ad Pisonem*

84 *De Tuenda Sanitate*

85 *Ad Thrasybylum*

86 *De Parve Pilae Exercitio*

87 *In Hippocratis jusjurandum Commentarius*

88 *In Hippocratis Aphorismos Commentarii*

89 *In Hippocratus Librum De Fracturis Comm.*

90 *In Hippocratis Prognosticon Commentarii*

91 *In Hippocratis Prognosticon Coommentarii*

92 *In Hippocratis De Deaeta Acutorum Libros Comm.*

93 *In Hippocratis De Ulceribus Librum Comm.*

94 *In Hippocraies De Capitis Vulneribus Librum Comment*

95 *In Hippocratis De Morbis Popularibus Libr. Comm.*

96 *In Hippocratis De Humoribus Libr. Comm.*

97 *In Hippocratis praedictionum Libr. Comm.*

98 *In Hippocratis De Officina Medici Comment*

99 *In Hippocratis De Aere, Aquis it Locis Comm.*

100 *In Hippocratis De Alimento Libr. Comm.*

101 *In Hippocratis De Foetus Natura Libr. Comm.*

102 *In Hippocratis De Natura Ilumana Libr. comm.*

103 *Quod Optimus Medicus sit quoque Philosophus*

104 *De Genuinis Scriptis Hippocratis*

105 *On the Inquiry into the Justice of the Criticism leveled by Quintus against the supporters of Hippocrates' teaching concerning the four Qualities*

106 *De Comate secundum Hippocratem*

107 *Dictionum Obsoletarum Hipporatis Explicatio*

108 *De Substantia Animae secundum Asclepiadem*

109 *De Experientia Medica*

110 *Oratio Suasoria ad Artes*

111 *De Subfiguratione Empirica*

112 *On the Examination of the Best Physician*

113 *De Propriis Placitis*

114 *De Nominibus medicinalibus*

115 *De Demonstratione Libri X V*

116 *De Principiis ex Suppositione*

117 *De Artium Constitutione*

118 *De Propriorum Cuique Affectuum et Peccatorum Dignotione*

119 *De Moribus Libri IV*

120 *De Indolentia*

121. *That the Best People take Advantage of their Enemies*

122. *De Iis Quae Medice scripta sunt in Platonis Timaeo*

123 *Quod Animi Mores Corporis Temperamenta sequantur*

124 *Platonicorum Dialogorum Compendia VIII*

125 *In Primum Movens Immotum*

126 *Institutio Logica*

127 *De Syllogismorum Numero*

128 *In Alterum Aristotelis De Interpretatione Libtum*

129 *Ad Eos qui Voce Soloecissantes reprehendunt*

Appendix N

Hippocrates

The following is a list of the "Hippocratic Collection" as classified by Adams. All the works have been translated into English, and those texts given with a corresponding Latin title were also translated into Latin. Those texts which were translated into Arabic will be noted by an asterisk. At this point, it is important to note that within the text of the above thesis, there are certain apocryphal texts which were wrongfully ascribed to Hippocrates and hence, are not included in this list.

1.*De aere**

2.*aquis, et locis**

3.*Prognosticon**

4.*De dioeta (regimine) acutorum**

5.*De morbis popularibus I-VII**

6.*Aphorisimi**

7.*De natura hominis**

8.*De octimestri partu**

9.*De genitura**

10.*De septimanis**

11.*Proeceptiones**

12.*Epistula ad Thessalum**

13.*Testamentum**

14.*Prognostica (De indiciis mortis)**

15.*De pustulis et apostematibus significantibus mortem**

16.*De situ regionum et dispositione anni temporum**

17.*Opera varia**

18.*Excerpta varia**

Appendix O

Hypsicles

His most important texts are, *On Risings, Suppliment* and *the Ascensions* which has been translated into both English and Latin.

Appendix P

Menelaus

He wrote a trigonometrical work, *Sphaerica*, which is extant only in Arabic and *The Elements of Geometry*

Appendix Q

Nicholas of Damascus

Among his most important texts are *The Planets* as well as a commentary of Aristotle both of which exist in English and Arabic.

Appendix R

Nichomachus

His most important text is his *Introduction to the Study of Numbers* which exists in English and Arabic.

Appendix S

Oribasius

Among his most important texts is the *Eustathius, The Seventy Days* and *Synopsis*, all of which exist in English and Arabic.

Appendix T

Paul of Aegina

His most important text is his *7 Books*, which exists in both English and Arabic.

Appendix U

Plato

The following is a list of Plato's works as classified by Copleston along with the most significant commentaries on these works. Each text has been translated into both Latin and English and those texts which were translated into Arabic will be indicated with an asterisk.

I The Socratic Period

a. *Apology*

b. *Crito*

c. *Euthyphron*

d. *Laches*

e. *Ion*

f. *Protagoras*

g. *Charmides*

h. *Lysis*

l. *Republic*

II The Transition Period

a. *Georgias*

b. *Meno*

c. *Euthydemus*

d. *Hippias I*

e. *Hippias II*

f. *Cratylus*

g. *Menexenus*

III Period of Maturity

a. *Symposium*

b. *Phaedo*

c. *Republic*

d. *Phaedrus*

e. *Timeaus**

commentaries include those by Proclus, Galen and Chalcidius

IV. Works of Old Age

a. *Theaetetus*

b. *Parmenides**

commentaries include those by Plotinus, Syrianus and Proclus

c. *Sophistes**

d. *Laws and Epinomis**

e. *Letters*

f. *Politics**

Some of the other significant commentaries on the works of Plato were written by those men who embraced his philosophy and carried on his tradition into the philosophical tradition which we now know as neo-Platonism. These men were Plotinus, Plutarch, Proclus, Iamblichus and Porphry.

Appendix V

Plotinus

The *Ennedes*, written by Plotinus is a significant text in many respects. First, it has been translated into both English as well as Latin. And second, although it had been translated into Arabic it is important to note that the Arabs had mistaken it for a work of Aristotle's, whom they named the "greek shaykh".

Among his other works which were not translated into Arabic are: ***That the Intelligibles are not outside the Intellect, On the Good,*** and ***On our Allotted Guardian Spirit.***

Appendix W

Plutarch

Besides being a famous commentator, Plutarch did write texts of his own. Among his most important texts are his *Moralia* which encompasses 187 books of which we today possess less than half (portions were translated into Syriac and Latin and English) and his *Lives* which encompasses 40 books.

Appendix X

Porphyry

Along with his aforementioned commentaries on the works of Aristotle, Porphyry is known to have written *Against the Christians* and the *Isagoge*.

Appendix Y

Ptolemy

The following is al list of Ptolemy's texts all of which have been translated into both English and Latin. Those texts which were translated into Arabic are noted with an asterisk.

*Optics**

*Planisphaerium**, a commentary exists by Pappus.

*Almagest**

Geographia

*Cosmographia**

*Cataglogue of the Stars**

*Textus de Sphera**

*Tetrabiblon**

Appendix Z

Pythagoras

Among Pythogoras' most significant texts listed below, only the first three are still extant, and it is important to note that there is some debate as to whether or not he did in fact write these texts at all.

On Nature

On Education

On Politics

On the Soul

On Piety

Helothales, the Father of Epicharmus of Cos

Croton

Triagmi

Scopiads

Appendix AA

Theodose

Among his most important text which we have today is his *Spheres*, which exists in English and Arabic.

Appendix BB

Theomnestus

His most important texts which we have today is his *Vetenary Medicine and Surgery*

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