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Wilcox, Judith Carol

THE TRANSMISSION AND INFLUENCE OF QUSTA IBN LUQA'S "ON THE
DIFFERENCE BETWEEN SPIRIT AND THE SOUL"

City University of New York

Ph.D. 1985

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THE TRANSMISSION AND INFLUENCE OF QUSTA IBN LUQA'S
"ON THE DIFFERENCE BETWEEN SPIRIT AND THE SOUL"

by

JUDITH WILCOX

A dissertation submitted to the Graduate
Faculty in History in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
The City University of New York

1985

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This manuscript has been read and accepted for the Graduate Faculty in History in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

THE TRANSMISSION AND INFLUENCE OF QUSTA IBN LUQA'S "ON THE DIFFERENCE BETWEEN SPIRIT AND THE SOUL"

by

Judith Wilcox

Advisor: Professor Richard Lemay

"On the Difference between Spirit and the Soul," a brief medical-philosophical tract written around 870 A.D. in Baghdad by the Syrian Christian polymath, Qusta ibn Luqa (d. ca. 912), holds interest for the historian on two counts: (1) The author aims to sum up the most important ideas of the ancient Greek philosophers Plato, Aristotle, Theophrastus and Empedocles, and the physician Galen on the soul and the spirit; and (2) the work was much better known in its Latin version (De differentia spiritus et animae) than in the original Arabic. John of Seville's translation, made in Spain around 1130, accounts for nearly all of the approximately 150 manuscript copies. These are frequently found among the works of Aristotle, where they were read by philosophers, physicians and others who frequently cited the work and sometimes commented upon it. Another Latin version, very rare, uses large parts of John's and retranslates or revises others. This version, approximately one-third shorter, appears to be the work of

Hermann of Carinthia, who probably prepared it before 1143. An anonymous Hebrew version, probably made in the late thirteenth century, also rare, appears to have exerted little influence in Hebrew literature.

The chapters of the present study explore: (1) the life and career of Qusta ibn Luqa, (2) the probable sources for the ideas in the tract, (3) the uses made of it by medieval thinkers, (4) the history of the Latin manuscript tradition, (5) editions of the two Latin versions, (6) an English translation of the John of Seville version, and (7) a history of the Hebrew version together with the Hebrew text, prepared by Shmuel Friedlander. Appendices contain (A) a description of the method followed in preparing the Latin text of John of Seville, with a report on a computer program being developed with Mordechai Friedlander to create a stemma codicum of the manuscripts; and (B) a classified list of the Latin manuscripts.

Acknowledgements

I owe profound thanks to many individuals and institutions for their assistance in the preparation of all the parts of this dissertation. My readers, Professors Phyllis Roberts and Howard Adelson have been generous with their support and advice. At every stage of the research and writing Professor Richard Lemay has stood ready to assist me in checking the Arabic texts and otherwise to lend me the benefit of his experience in this field.

In some of its aspects this has turned out to be a family project. Shmuel Friedlander's generous offer to prepare the Hebrew version afforded a fine opportunity to fill out this study in a way I could not otherwise have undertaken. We would like to thank my mother-in-law, Naomi Friedlander, for her support and my sister-in-law, Ettie Shachar, for her skillful typing of the Hebrew text. The problems of communication between New York and Kibbutz Yifa'at, Israel, were solved by the efforts of my husband, Mordechai Friedlander, who is largely responsible for arranging the apparatus and information supplied by his father. I have my husband also to thank for writing our

COSTA computer program to create a stemma codicum of the manuscripts of the John of Seville version and for preparing the figures and the description of the program's logic at the end of Appendix A. While the conclusions herein are still based upon traditional personal observation and deduction, the project has caused us to think about the filiation of manuscripts in very precise terms and has fired us to solve the problem, insofar as the logic in a program can serve as a method in such a task. One remarkable and unexpected result of this work was my discovery of the second Latin version while coding manuscript information for the program. Also in connection with this project I would like to express my appreciation to Fordham University for the use of its computer facilities in 1983 and 1984.

During a stay in Münster, West Germany, from September, 1978 to December, 1980 I received a great deal of kind and capable assistance from the staff at the library of the Westfälische Wilhelms-Universität and advice from my friends and colleagues at the Institut für Theorie und Geschichte der Medizin. In conversations in 1981 and correspondence since, Professor Hans Daiber of Vrije University in the Netherlands has been generous with

information regarding the author of my text. Here in New York the staffs at the library of the Jewish Theological Seminary of America and the Oriental and Jewish divisions of The New York Public Library have been unfailingly courteous and helpful.

With regard to the preparation of the text of my dissertation, I would like to thank Lila Fudatowitz for her editorial assistance and my friends at the law firm of Friedman, Leeds & Shorenstein of New York City. Their generous loan to me of word processing and other office facilities on evenings and weekends made the tasks of editing and typing infinitely lighter and more pleasant.

I dedicate this work with love to the memory of my parents, Louise Gay Twyford and Harry Anderson Wilcox.

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INTRODUCTION

"On the difference between spirit and the soul" by the Syrian Christian polymath Qusta ibn Luqa (d. ca. 912) is a brief medical-philosophical tract dealing with the nature and functioning of the "ruh" or "spirit", pneuma, the breath-like stuff through which the soul's powers are transmitted to the body, the definitions of the soul according to Plato and Aristotle, and the differences between the spirit and the soul. Written in Baghdad for a learned Moslem patron probably during the last third of the ninth century, the tract aims to summarize the most important ideas on these matters held by the ancient philosophers Plato, Aristotle, Theophrastus and Empedocles, and the physician Galen. Few manuscripts remain in the original Arabic, but it is clear from citations in other works that it was well known in the Arab world. Even more impressive is the evidence for its circulation in the West. Following the tract's translation into Latin in the twelfth century by John of Seville, it was cited by numerous philosophers and other learned men, and statutes from the

middle of the thirteenth century attest to its use in the universities. We know of about one hundred and fifty Latin manuscripts. A Hebrew version, made from the Latin around the beginning of the fourteenth century appears to have had little or no impact on Jewish learning.

Why "On the Difference between Spirit and the Soul" should have made such a place for itself in the intellectual life of both worlds may be seen in the qualities and content of the tract itself and the philosophical trends during the period it was written and disseminated. The ideas, expressed in relatively untechnical and clear language, are concerned with such fundamental philosophical questions as the substantiality and corporeality of the soul, the source and the kinds of motion, the plurality of forms and the relation of body and soul. Important questions of anatomy and physiology are treated too, such as the structure and role of the heart and the vascular system, the structure and function of the brain and nervous system, the seat of sensation and cognition and the effects of body and soul upon one another.

Qusta's tract reflects the desire of the Neoplatonist philosophers to find a harmony between the philosophies of Plato and Aristotle, and it in turn joined the stream of works continuing this tendency through the thirteenth century. Qusta does not say that Plato's and

Aristotle's definitions of the soul do or ought to harmonize, and he does not explicitly contrast the fundamental differences between them. The weight of his arguments, reinforced by Neoplatonic examples, however, clearly make him lean to Platonism on the central points. Perhaps the most significant of the tract's doctrines, at least as far as the Latins were concerned, is that the spirit, a fine corporeal substance, is the mediator between body and soul. Even the anatomical description, by presenting the brain as the source of sensation and thought, upholds the view of Plato that the head rules the body. For most of the ideas presented here Qusta is true to the works by Plato, Aristotle and Galen that he explicitly mentions in his prologue, and he was probably as reliable in adhering to his other sources, the lost works of Theophrastus and Empedocles "on the soul."

The avenues of transmission of Greek learning to the Arabs is a subject that has been well studied in recent years and one that continues to require investigation. Qusta ibn Luqa himself was one of the great figures in the transmission, for he was a prolific and expert translator of Greek scientific texts and the author of dozens of works, most of them scientific and medical, but several also bearing on a variety of other subjects. One of them is a Christian polemic. It is clear simply from reading

the list of his known translations and works and knowing that he worked at the hub of the Arab cultural world that he was as well acquainted with all the intellectual heritage and the trends of his time as any mortal could be. He was a Hellenist and he was a Christian, a bearer of Greek learning and of Christian learning. The content and fate of "On the Difference between Spirit and the Soul" are a reflection of this.

I. QUSTA IBN LUQA

Few details of Qusta ibn Luqa's life have been preserved in contemporary sources, the earliest of which is the account contained in the Fihrist of the great Baghdad bibliographer al-Nadim (d. 987 A.D.). After describing the career of Qusta's older contemporary, the Nestorian Christian translator and physician Hunayn ibn Ishaq (d. 873), whom nowadays we tend to think of first when considering the transmission of Greek learning to the Arabs, al-Nadim begins the main account of Qusta by comparing his qualities and accomplishment favorably with those of Hunayn:

He was Qusta ibn Luqa al-Ba'labakki, who should have come before Hunayn [ibn Ishaq] because of his excellence and genius, as well as his superiority in the profession of medicine, but some colleagues have asked to have Hunayn precede him. Both men were of a superior type.

Qusta translated a quantity of the ancient books. He excelled in many sciences, among which there were medicine, philosophy, geometry, calculation, and music. He was never subject to criticism, being a master of literary style in the Greek tongue and excelling also in Arabic diction. He died in Armenia while staying with some kings there. From there he also replied to Abu 'Isa al-Munajjim in connection with his epistle about

the prophetic mission of Muhammad. . . .
While there he also wrote Paradise in
History.¹

Al-Nadim mentions that as part of a movement under the 'Abbassid caliphs to make the learning of the Greeks available in Arabic, al-Ma'mun (813-833) and his successors sent scholars over into Byzantine territory to search for and bring back manuscripts of Greek scientific and philosophical works. Al-Nadim mentions Qusta among those who made such a trip, though the probable dates for his life indicate that he went after the time of al-Ma'mun. Of the material that he brought to Baghdad Qusta translated some and had some translated for him.² Al-Nadim also mentions that Qusta corrected many translations rendered by others. "He had a good literary style in Greek, Syriac and Arabic."³ In his main entry on Qusta, Al-Nadim lists thirty-three original works by him; elsewhere, as he records the highlights of the transmission of Greek science to Arabic, he mentions Qusta as the translator of various works.⁴

The Spaniard Sa'id of Toledo (1029-1070) mentions "the Syrian Kusta ibn Luka" in his account of the "modern Hellenistic philosophers."⁵ Further information is given from a History of physicians of the Christian 'Ubaydallah b. Jibril, a fragment of which is preserved in

the account given by the biographer al-Qifti (d. 1248).⁶ 'Ubaydallah b. Jibril says that Qusta went to Armenia on the invitation of a certain "Sanharib" who brought him there on account of his excellence in translation and science, and that there he composed "many excellent scientific books which he executed for others," among them a certain Abu al-Ghatrif al-Batriq, a generous man and a friend of science. According to 'Ubaydallah b. Jibril, Qusta died in Armenia and a tomb worthy of a king was erected over his grave. He says further that Qusta was a most excellent author with regard to the comprehensiveness and excellence of his understanding and his conciseness of expression and beauty of language. Al-Qifti himself identifies Qusta as a Melchite, that is, a follower of Orthodox Christianity as it was practiced in the Byzantine Empire, and he tells us that he obtained manuscripts in the days of and on behalf of the 'Abbassid Caliphs and was called to Baghdad to translate them. He mentions further that Qusta was a contemporary of the philosopher al-Kindi. A generation after Al-Qifti, the bibliographer and historian Ibn abi 'Usaybi'ah (d. 1269)⁷ gives an account of Qusta's life based on the earlier sources accompanied by a list of his translations and works longer than those of al-Nadim and al-Qifti. He characterizes Qusta's Ba'labakki parents as "Greek" and mentions that he lived into the time

of the Caliph al-Muqtadir (907-932).⁸ Ibn abi Usaybi'ah's near contemporary, the Christian abul-Farag or Barhebraeus (d. 1289) also did not neglect to mention Qusta in his historical works.⁹

Further information and clarification about Qusta's life must come from a study of his time and what is known about his close contemporaries. This task was undertaken by Giuseppe Gabrieli in an article published in 1912, "Nota Biobibliografica su Qusta ibn Luqa,"¹⁰ the first modern attempt to give a comprehensive account of Qusta's life and works. Gabrieli sketches in appropriate information on the political situation in Baghdad and Armenia and on Qusta's associates and the probable circumstances of his life, and he supplies details about the patrons who are mentioned in the manuscripts of some of Qusta's works. Until Gabrieli's account, the modern notices on Qusta's life tended to consist merely of capsule biographies repeating the information contained in the medieval sources, though some, notably those of Steinschneider and Brockelmann,¹¹ give valuable information on manuscripts and translations as well.

Gabrieli collated the lists of al-Nadim, al-Qifti and Ibn abi Usaybi'ah and compiled a list of sixty-seven original works¹² and a dozen translations of Greek scientific works, which he subjects to the following

classification: the translations, listed alphabetically by author, and then Qusta's original compositions on medicine, mathematical science (arithmetic; geometry; astronomy, astrology and occult science), philosophy, polemic and history, physical and natural sciences, and miscellaneous or indeterminate subjects. For many there is no manuscript. For the others he gives references to translations and to manuscripts available in some of the major libraries of Europe and the Middle East. To these works listed in the medieval sources we can add a few more titles of Qusta's translations from the Greek and a score of other titles of original works, most of them medical. Some of these were cited in secondary works already available to Gabrieli, but he either overlooked these or chose to omit them.¹³ A number of others have been added since his time in the works of modern bibliographers and other scholars.¹⁴

Despite the paucity of hard facts about Qusta's life, ongoing attention to his works is making possible a more complete appreciation of the scope and quality of his achievement, and even some sense of him as an individual. The works themselves are revealing of his erudition and his scientific and philosophical point of view; sometimes even his personal point of view or some clue as to his personal contacts comes through. Modern studies of some of Qusta's

translations have also discussed his qualities as a translator.¹⁵ All of this reveals that he was an intensely learned and versatile, thoroughly Hellenized, Christian participant in the intellectual ferment of late ninth and early tenth century Baghdad, and surely one of the most learned men to enlighten the provinces of early tenth century Armenia.

All the dates of Qusta's life are approximate, but we know he was active between the early 860s during the reign of the Caliph al-Musta'in (861-866), who commissioned some translations from him, and sometime during the reign of al-Muqtadir (908-932), as Ibn abi Usaybi'ah informs us. A birth date of around 830 seems likely, considering that a certain level of development would have been required by the early 860s. In 908, then, Qusta would have been seventy eight, and in fact most scholars have accepted the date of his death as ca. 912 and no later than 923.¹⁶ We know nothing about Qusta's youth and education, but Gabrieli surmises that he spent those years in Ba'labakk (or Heliopolis) in present day Lebanon, learning grammar, literature and languages, the elements of natural science, mathematics and philosophy, before travelling into the Byzantine lands.¹⁷

The fact that Qusta was a Melkite Christian may be significant when we consider that the translation movement

in Baghdad, at its apogee during the period 800-1050, was dominated by Christians, many of whom had the linguistic background and intellectual training to effect the transmission. However, these Christians tended to be Nestorians, one of the great branches of Syrian Christians who had become dissociated from the Orthodox Church in Byzantium and who by now had become the most accepted group of Christians under the 'Abassid Caliphs.¹⁸ One source of their higher education were the numerous ancient monastery schools in the country around Baghdad.¹⁹ This would not have been a likely or prominent source for Qusta's education, though he knew the Scriptures and Patristic writings, as is clear in some of his work. He was thoroughly steeped in Hellenistic philosophy and science and probably enriched his knowledge of Greek and of classical literature and science while travelling in the Byzantine lands. The great center of higher education there was Constantinople with its state supported schools,²⁰ but opportunities were no doubt available in other centers as well.

During the "middle phase" of the translation movement which spanned the period in which Qusta was active in Baghdad, another striking circumstance was that the process was overwhelmingly dominated by physicians and influenced by medical education, also the preserve of

Nestorians. Many of these physicians, including Hunayn ibn Ishaq, were trained at the famous medical school of Jundishapur and found employment in the numerous hospitals established in Baghdad under the 'Abbassid caliphs.²¹ There is no indication yet that he had any connection with the school at Jundishapur or the hospitals of Baghdad, but in this milieu Qusta made a place for himself and in every other respect fit the pattern which developed in learned circles. His fame as a physician is attested to by the accounts of the early biographers and by his numerous medical works, a number of which are cited alongside those of other authorities, ancient and contemporary, in the huge compendium of his famous contemporary, al-Razi (d. 925), al-Hawi (the "Comprehensive Book"). These passages, which vary in length from a few lines to several paragraphs, prove Qusta's breadth of interest and his deep learning in both theory and practice.²² Qusta no doubt practiced medicine and probably counted among his patients the patrons to whom he dedicated some of his medical works. It may be that this learning developed over time upon his moving to Baghdad, for it appears that the early phase of his career there was dominated by his efforts as a translator of mostly scientific and mathematical works of the Greeks.

Three of Qusta's known translations were done at the order of the Caliph al-Musta'in (862-866). These are Hero of Alexandria's "Mechanics," Autolycus' "On the Rising and Setting of the Fixed Stars" and Theodosius' "On the Sphere."²³ Qusta probably came to know his famous contemporaries al-Kindi, Thabit ibn Qurrah, Hunayn ibn Ishaq²⁴ and Ishaq ibn Hunayn during these early years. Ishaq is supposed to have worked with him on the translation of Autolycus' "On the Moving Sphere," and al-Kindi and Thabit are both supposed to have corrected his rendering of Autolycus' "On the Rising and Setting of the Fixed Stars."²⁵ Correcting the translations of others was standard practice during the earlier phase of the translation movement,²⁶ which was ending as Qusta arrived in Baghdad, and it makes seem likely that his early works at court would have been checked by more experienced men. As Ibn Abi Usaybi'ah mentions, Qusta himself corrected many translations of others.²⁷ It is likely that he had the background and the momentum to render some or even all of these steadily through the earlier years of his life in Baghdad, and that he established contact with the Banu Musa, the famous family of scholars and patrons of science, early because of this. He dedicated one of his own scientific works to one of its members.²⁸ The other translations of mathematical and physical works include

Diophantes' Algebra, Aristarchus of Samos' "On the Sizes and Distances of the Sun and Moon," Archimedes' "On the Sphere and Cylinder," with the commentary of Eutochius, Euclid's "Solution of Numerical Problems," and his "Difficulties in the Elements of Geometry," as well as the fourteenth and fifteenth books of Euclid's "Elements" which have been attributed to Hypsikles, and Hypsikles' "Book on Rising Bodies," which was also corrected by al-Kindi; Theodosius' "On the Inhabited world" and "On Days and Nights," and finally, Plato's "On the Fundamentals of Geometry."²⁹

The breadth of Qusta's scientific interests and ability reflected in the translations he rendered is very striking. In the fields of mathematics and astronomy his translations from Greek into Arabic actually correspond in a large degree to those forming the loose canon of works known to historians of Arab science as the "intermediate" books, works recommended for study after one had mastered Euclid's Elements and before one began the study of Ptolemy's Almagest.³⁰ Two of his own treatises, one on the subject of the "intermediate books" and the other, on the Almagest, testify to this.³¹ Other works on the mathematical and physical sciences and astronomy include his "On the Calculation of the Ascendant according to Algebra," "On the Translation of Diophantus' Algebra,"

"Commentary on Three and One-half Tracts of Diophantus' Book on Arithmetic," "On Resolving Problems in the Third Book of Euclid," "On the Proof Achieved by Calculating with Two Errors," "On the Difficult Places in Euclid's Elements," and "On the Figure of the Sphere and Cylinder."³² The book he wrote for abu-l-Hasan 'Ali b. Yahya al-Munağğim, one of the Banu Musa,³³ was an "Introduction to Geometry." In the field of astronomy he wrote "On the Figure and Composition of the Celestial Sphere," manuscripts of which name his patron Ismail b. Bulbul abu-l-Hasan Abdallah b. Yahya, a Persian born vizir under Caliph al-Mu'tamid (870-892).³⁴ He wrote an "Introduction to Astronomy" and "On the Solid Sphere," another work "On the Sphere," and "On the Use of the Spherical Astrolabe." On physics he wrote "On the Burning Mirror," "On the Qarastun Balance," and a mysterious "Book on the Use of the [magic] Instrument on which is Traced the gawami and the natiğ" and "On Weights and Measures."³⁵

Qusta's achievements in the transmission of philosophical learning were also significant, and they tend to reveal his indebtedness to the philosophical school of Alexandria. This had flourished until the seventh century and then played out its existence at Antioch and later at Harran, where its last few disciples finished their studies during Qusta's lifetime.³⁶ A few of the remaining

titles from his list of translations are of philosophical works. He translated Aristotle's "On Generation and Corruption" and the second half of his "Physics," both with the commentaries of two of the most influential of the Greek commentators and philosophers of Aristotle, the Alexandrians John Philoponus and Alexander of Aphrodisias.³⁷ His translation of "On the Opinions of the Philosophers" of Aetius was probably even more momentous in the history of Arab learning, as this is one of the two most complete doxographies, the collections of authoritative statements of philosophers left from the Greek heritage. It was much used by the Arabs for information on the opinions set forth by the Greek philosophers.³⁸

The transmission in which Qusta participated was a many faceted process which went beyond giving Greek scientific and philosophical books an Arabic version. Classical learning was taken over also in its traditional pedagogical format, which was adapted for Arab learning. In this system summaries or epitomes, doxographies, lists of philosophical definitions and accounts of the different Greek schools of philosophy and classifications of the sciences played a prominent part.³⁹ All of these genres are represented among Qusta's works. He wrote a classification of the sciences;⁴⁰ he wrote a collection

of "Proverbs of the Philosophers"; "Explanation of the sects of the Greeks" and "Questions on Definitions according to the Opinions of the Philosophers." On logic he wrote "Introduction to Logic," "On Interpretation" and an "Introduction to Porphyry;" he wrote "On Politics" and a book "On Music."⁴¹ On natural philosophy he wrote "On the Four Elements," "On the Difference between the Rational and Non-rational Animal," "On the Rational Animal,"⁴² "On Indivisible Particles" "On Sleep and Dreaming," "On the Length and Shortness of Life,"⁴³ "On Smells and their Causes," "On the Origin of Hair," "On the Origin of the Black Color of the Ethiopians and Others," "On the Kinds and the Cause of Winds," a "Book on Steam," and "On Colors and Dyes." Hard to classify is a tract "On Beer (or Date Wine?) and Drinking it at Banquets."⁴⁴ Not all of these titles may be linked with Qusta's time in Baghdad, but since this was no doubt the longest and richest part of his career, they are mentioned here unless they can be associated with the time in Armenia.

Qusta's longest list of titles belongs to medicine and it is clear that he was active as a physician and sought after for his medical learning. Attributed to him have been translations of Rufus' Hygiene, the De horoscopis of Asclepius and Galen's Commentary on Hippocrates' Aphorisms.⁴⁵ While in Baghdad he wrote a

medical-ethical work "On the Causes for Diversity among Men," for a certain Abu ali b. Bunan b. al-Harit.⁴⁶ He wrote a book "On Coitus" and a book "On Regimen for Persons on Pilgrimage" for Abu Muhammad al Hasan b. Mahlad b. Garrah, a man of humble birth who became a minister under al-Mutawakkil (847-861) and vizir under al-Mu'tamid (870-892). For Abu Ishaq Ibrahim b. Muhammad b. 'Ubaydallah ibn al-Mudabbir, a vizir and a writer and poet, he composed an "Introduction to Medicine" and a book "On Bloodletting." He wrote "On Paralysis" for a certain Abu Muhammad al-Hasan b. Muhammad. Also written in Baghdad and dedicated to abu Musa 'Isa ibn Farrukhan, a vizir under various caliphs,⁴⁷ was the subject of this study, the medical-philosophical tract that was to become so well-known in Latin, "On the Difference between Spirit and the Soul." Other medical works mentioned in the earlier accounts are "On Strength and Weakness," "On the Pulse and Knowledge of Fever and Kinds of Crisis," "On Critical Days in Acute Illnesses," "On the Liver," "On Antidotes," "On the Movement of the Arteries," "On the Principal Member of the Body," "On Urine," "On Cosmetic," and "On the Baths."⁴⁸

Although Qusta's "On Plague and its Cause" and "On the Conservation of Health," are not on the medieval lists, they were included by Gabrieli in his biobibliography but

dismissed by him as spurious. They are now accepted as genuine, however.⁴⁹ Others of his medical writings, recently discovered by bibliographers, include two works "On Laxatives," "Measures against Colds in Winter," "On Weakness of the Heart," a work "On Dropsy," "Anatomy of the Eye," another work "On the Eye," "On Pain in the Nose," "On Weakness of the Nerves," "On Earache," "On Stomachache" and "On Headache."⁵⁰ Qusta's tract "On Incantations," well known in a medieval Latin version, though omitted in the early bibliographies and Gabrieli's, has been added in the modern ones.⁵¹ Finally, an important contribution of Qusta in the field of medicine is his list of the works of Galen, which has added to our knowledge the title of one lost Galenic work, "On Difficult to Heal Diseases."⁵²

Qusta also was interested in religious questions, and religious tension or pressure was almost certainly a cause for his eventual move to Armenia. It was probably somewhat earlier than his emigration to Armenia that Qusta had a dispute with a certain Nestorian Bishop, Israel of Kaskar.⁵³ The twelfth-century Nestorian historian Mari ibn Sulayman names two Bishops Israel of Kaskar, one who died in or near Baghdad in 871 and another who was made Bishop of Kaskar sometime after 937 and died in 962 a few months after becoming the Nestorian Patriarch (Catholicus) at the age of ninety. Neither of Mari's accounts of these

bishops mentions Qusta, but an abbreviation and prolongation of his history by two fourteenth century authors, 'Amr ibn Matta and Saliba ibn Yuhanna,⁵⁴ does. Here mention of a dispute with "Costa filius Lucae melchita" is made in connection with the second Israel of Kaskar. According to it, sometime after Israel became Bishop, Qusta inquired of him how he justified Christ's having two persons. The account relates Israel's answer in a passage of several lines. Qusta is said to have listened to this in silence, to have bowed to the ground and left without answering.⁵⁵ Since a date falling between 937 and 961 is nearly impossible for Qusta, it is worth considering whether these later chroniclers might have associated this tradition with the latter Bishop of Kaskar in error. The few facts available about the first Israel suggest that this is the case.

It seems that he was the physician Israel Taiphuri who figures in a variant version of a famous anecdote about Hunain ibn Ishaq.⁵⁶ According to the version related by Bar Hebraeus (d. 1286),⁵⁷ some Christian rivals of Hunain created a situation in which Hunain, who adhered to the Iconoclast heresy, was encouraged by Israel to spit on an icon of the Virgin in the presence of the Caliph al-Mutawakkil (849-861). When the Caliph asked the Nestorian Catholicus about the significance of this, the

Catholicus declared that this was not an idol but an image of the mother of the Lord, and that anyone despising it should be excommunicated, whereupon the Caliph demanded that the Catholicus excommunicate Hunain. Hunain was subsequently stripped of his goods, including his library, flogged and imprisoned for several months in the house of the Catholicus. Hunain's own account of the incident names not Israel, but Boktishu ibn Jabril,⁵⁸ scion of a famous family of physicians, as the person who actually created the incident, but it is at least safe to say that Israel was one of the participants.

The story of Israel's career, viewed together with the above episode, will serve to exemplify not only the important cultural, economic and political role that Nestorian Christians played under the Abbassids and their close connection with the court, but also the intimate connection between lay and ecclesiastical and theological concerns among the Nestorians. Israel was one of the eminent Baghdad family of physicians, the Taiphuri,⁵⁹ not as famous as the Boktishu family to which Boktishu ibn Jibril, the other named perpetrator in the incident, belonged. He was one of the very last pupils trained by one of the last masters of the School of Alexandria, a native of Harran. After studying with him, Israel returned to Baghdad⁶⁰ and evidently began to advance himself

in Nestorian affairs. At the same time he was one of those physician-scholars who was involved in the transmission of the Greek learning. Israel's grandfather, 'Abd Allah Taiphuri, was an eminent physician who had commissioned from Hunain several translations from the works of Galen, and Israel is supposed to have suggested to Hunain that he translate into Syriac Galen's "On causes and symptoms". Israel himself is said to have made a translation.⁶¹

The incident concerning Hunain occurred during the reign of Theodosius as Catholicus (852-858). Mari's chronicle records that during his reign Israel was involved in the election of a metropolitan and some bishops.⁶² Israel himself was made Bishop of Kaskar under Theodosius' successor, Sergius (859-871),⁶³ who was raised to that office through the influence of the Caliph al-Mutawakkil.⁶⁴ After the death of Sergius, Israel asserted a claim to the patriarchate, but was fiercely opposed by Enos, the Metropolitan of Mosul. Factions formed and became heated to the point where Israel became the victim of mob violence and died several days after receiving a fatal blow from one of Enos' partisans. The patriarchate remained disputed and unfilled for four years and three months before Israel's rival, Enos was finally elected in 876.⁶⁵ Qusta must have put his question to Israel sometime during the years between his ordination and

his death, which is to say, between 859, the year of Sergius' elevation, and 872. One of the reasons for the opposition to Israel was a doctrinal one in which a question about the person of Christ was at issue,⁶⁶ and since Qusta's question was on a similar point, it might not be too much to suggest that Qusta's meeting with him occurred in Baghdad during the last stormy period of Israel's life, around 871-872.

What is clear is that Israel was well acquainted with Hunain, with court circles and with the Caliph himself, and that his involvement in this personal intrigue against Hunain was also a matter of church politics in which he was able to count on the preferment of Sergius. The stakes in these ecclesiastical politics were high. The Nestorian Church, though a minority (melet), was a wealthy and important one under the Abbassids. The presence of this wealth tended to encourage candidates with political and social, rather than religious interests. The strife which led to Israel's death was merely an extreme instance of the habit of dissension and rivalry which characterized the Nestorian church at this, the high point of its power.⁶⁷ This is not to say that the participants in these struggles were uninterested in religious questions. Israel was the author of a work on "The Basics of Religion,"⁶⁸ and Hunain the author of a

work "Quality of Beliefs of the True Religion"⁶⁹ and a reply to a polemical letter on the subject of Mohammed's prophetic mission written by his old patron, alī b. Yahya al-Munaḡḡim, of the Banu Musa.⁷⁰ Qusta, himself the author of two works on religious subjects, one of them a reply to the same letter addressed by Hunain,⁷¹ was no doubt well acquainted not only with Hunain, but with Israel and all the parties concerned in these religious-political struggles and observed them with interest and, one assumes, prudent detachment.

The decades during which Qusta lived in Baghdad were ones of glory but incipient decline. Baghdad was a city of over one million population, with schools, libraries, hospitals, hundreds of mosques and baths; a city with quarters for rich and poor, with bridges, canals and, markets. However, slipping control of the rulers was beginning to allow physical decline and periodic harm from fire and flood and from the increasingly restless lower classes. Such problems became much more serious in the tenth century but were already evident at the end of the ninth,⁷² and may have encouraged Qusta to consider accepting the invitation to Armenia. We can only surmise the time, the reasons for the move, and the place.

Armenia had been under the domination of the Arabs intermittently from the middle of the seventh century,

where local princes made peace agreements with the Byzantine Empire or the Arabs as expedience dictated. It was continuously under Arab suzerainty from 661, when the Armenian princes submitted to a demand of the Ummayyad Caliph Mu'awiya (661-680) to recognize Arab sovereignty and pay tribute. Rule under the 'Abbassids was burdensome and disturbances and rebellions were frequent, the greatest insurrection occurring in 851-2 during the reign of al-Mutawakkil (847-861). In 861 that ruler recognized Ashot, one of the great Bagratid family, as chief prince of Armenia, that is, the large northern kingdom lying north and west of Lake Van. He ruled as "Prince of Princes" until 890 and was followed by his son Smbat, whose rule was continuously challenged, in particular by the Sadjid family of Adharbaydjan to the southeast. At one point the throne of that part of Armenia was lost to the Bagratids, but it was eventually recovered by them with Byzantine help by 917.⁷³ Despite all these troubles, the lands under the Bagratids enjoyed a flowering of culture in which literature, especially history and ecclesiastical literature, but also natural science and medicine, were cultivated.⁷⁴ A less extensive Armenian principality lying to the south did not suffer such struggles. The Armenian lands also consisted of several other, much smaller, principalities which recognized only nominally the

suzerainty of the Bagratids. The princes of these Armenian lands were usually Christians, although there were also a number of small Arab emirates in southern Armenia.⁷⁵

Gabrieli has tentatively identified Qusta's princely host with 'Abbas b. Smbat, a son of that King Smbat who succeeded his father, Ashot, in 890 as "Prince of Princes," and brother of Smbat's successor, Ashot I, "the Christian." For a time this 'Abbas b. Smbat, who outlived his brother, struggled with his nephew, Smbat I b. Ashot, for the throne. In Gabrieli's view, 'Abbas b. Smbat might very well have carried the title *batriq al-batariqah*, or patrician of patricians--a name which appears in the dedication of some of Qusta's works as "abu Ganim al-'abbas b. Sanbat *batriq al-batariqah*"--, especially because of 'Abbas' pretense to the throne.⁷⁶

The problem of the date Qusta left Baghdad has been addressed by Gabrieli and more recently by Paul Nwyia. Their respective opinions are based on the fact that Qusta is known to have written his "Reply to the Letter of al-Munağğim on the Prophetic Mission of Mohammed" in Armenia. Gabrieli, who believes that the author of this letter is Abu l-Hasan 'Ali b. Yahya the member of the al-Munağğim who died in 897, suggests that he might have invited Qusta to renounce his faith for Islam and thereby to have encouraged his withdrawal to Armenia. He suggests

also that the more temperate climate of Armenia may have attracted Qusta. Gabrieli supposes that he did not leave much after the year 872, on the grounds that it was about that time that two of his translations were completed by al-Kindi and Thabit ibn Qurrah, respectively. Only his distance from Baghdad could explain such a circumstance, Gabrieli says.⁷⁷ Another possible argument for this early date for Qusta's departure may be made from the fact that the two surviving manuscripts of this work include not only the letter of Ibn al-Munaggim and the response of Qusta ibn Luqa, but also a response of Hunayn ibn Ishaq,⁷⁸ who died in 873. Recently Paul Nwyia, who has made a study of this polemical correspondence between al-Munaggim, Qusta and Hunayn, has come forth with an opinion about Qusta's departure date and the composition of the polemic based on a premise opposed to Gabrieli's.

He notes the striking differences between the replies of Qusta and of Hunayn. The latter is much briefer and more prudent in its tone, probably, says Nwyia, because of the bitter memory of the religious difficulties Hunain had had under al-Mutawakkil (847-861). Though restored to the favor of al-Mutawakkil, he did not forget his experience. When his friend and patron al-Munaggim urged him to answer his letter, he agreed with the greatest

reluctance and wrote his answer with the restraint and tact required under the circumstances of his time.⁷⁹

In contrast, Qusta's reply is considerably longer and more forthright, reflecting his relatively secure position far from Baghdad. It is constructed as a point by point refutation of al-Munaggim's arguments, yet fails precisely to match the arguments of the letter sent to Hunain. For this reason Nywia concludes that Qusta was replying to a letter that was similar to, though not the same as, the letter that Hunayn received. Nywia argues that the letter received by Qusta was sent not by its author, whom he believes with Gabrieli to be 'Ali Ibn Yahya (d. 897), but by his son, Abu 'Isa Ahmad (b. 850), many years later. Nywia supposes that Qusta, carrying the letter with him, traveled to Armenia during the reign of the last Caliph under whom he is supposed to have lived, Muqtadir (908-932). Once in Armenia Qusta could and did answer it in the security afforded by his Christian patrons and at his leisure.⁸⁰ This much later date for Qusta's departure is actually supported by Gabrieli's idea that Qusta's host was 'Abbas b. Smbat, who died in the first half of the tenth century.

If Nywia's instincts and reasoning are correct, then we may consider that Qusta's career in Baghdad lasted for several decades, during which period he composed most

of his works, among them perhaps all of his translations and all the mathematical and physical and philosophical works. The spirit and method of Qusta's polemic show that he had lost none of his love of the Greeks or his acuity of intellect, but the list of works besides this one that we can actually link with his time in Armenia argue that the scientific and philosophical oeuvre was perhaps complete. Al-Nadim mentions a certain "Paradise in History", now lost. This was probably an ecclesiastical history or a martyrology.⁸¹ The other works are nearly all medical, and most are dedicated to Abu al-Gitrif al-batriq. They include a book "On Thirst" and a book "On Insomnia", also one "On Infections."⁸² For him he also composed a book in six parts, four of which were works on the humors; the other two may have been his book on the temperaments and his book on soothing unguents.⁸³ He also dedicated his work "On the Levels of Medical Literature" to al Gitrif al-batriq. Qusta wrote a book "On Sudden Death" for another Armenian patron, Abu-l-Hasan Muhammad b. Ahmad, katib batriq al-batariqah, and wrote also for him a work "On Coitus."⁸⁴ For abu Ganim al-'Abbas b. Sbat batriq al-batariqah, believed by Gabrieli to be his princely host, he wrote "On Diet" and "On Blunting of the Teeth."⁸⁵ Qusta's Armenian patrons were clearly most interested in medicine and it may be that authoritative medical works

were the texts most needed. Certainly his achievement was appreciated, proved by the tomb that was erected over his grave. More enduring than this was the knowledge of the Greeks which he translated into Arabic and which he absorbed and recast in his original works. "On the Difference between Spirit and the Soul," written in Baghdad many years before his death, displays some of his qualities as a scholar and his interests as a philosopher.

NOTES TO CHAPTER I

¹Muhammad ibn Ishaq ibn al-Nadim, The Fihrist of al-Nadim, a Tenth Century Survey of Muslim Culture, ed. and trans. Bayard Dodge, 2 vols, Records of Civilization: Sources and Studies, no. 83, (New York: Columbia University Press, 1970), 694-695.

²Ibid., 584-585.

³Ibid., 588.

⁴Ibid., 587, 594, 602-604, 694-695, 743.

⁵Sa'id ibn Ahmad al-Andalusi, Kitab tabakat al-Umam (Livre des Categories des Nations), trans. Regis Blachère (Paris: Larose, 1935).

⁶Portions on Qusta ibn Luqa and others translated into German in A.G. Kapp, "Arabische Uebersetzer und Kommentatoren Euklids, sowie deren math. -naturwiss. Werke auf Grund des Ta'rikh al-Hukama' des Ibn al-Qifti," Isis 22 (1934-35):150-172; 23 (1935):54-99; 24 (1935-1936):37-79; on Qusta ibn Luqa, 24:38-41. Ed. by Julius Lippert, Jamal al-Din Abdul al Hasan 'ali ibn Yusuf al-Qifti, Ta'rikh al Hukama' (Leipzig: Theodor Weicher, 1903), 262.

⁷Ahmad ibn al-Qasim Ibn Abi Usaybi'ah, 'Uyun al-Anba' fi tabaqat al-Atibba, ed. August Müller (Königsberg: Selbstverlag, 1884), Part 1, 244.

⁸According to E. Wiedemann's biographical article "Kosta b. Luka al-ba'albakki" in Encyclopedia of Islam, 1st ed., 2:1081-1083, Ibn Abi Usaybi'ah records that Ibn Salah celebrated Qusta in verse, but this name does not appear in Ibn Abi Usaybi'ah's notice on Qusta.

⁹Bar Hebraeus, Historia Compendiosa Dynastiarum, ed. and trans. from Arabic into Latin by Edward Pocock (Oxford: H. Hall, 1663), 179.

¹⁰Rendiconti della Reale Accademia dei Lincei, 5th ser., 21 (1912-1913):341-382. Other short biographical treatments are E. Wiedemann's, the article by E. Ruth Harvey, "Qusta Ibn Luqa al-Ba'albakki," Dictionary of Scientific Biography 11:244-46., and the less detailed accounts by D. Hill in the Encyclopedia of Islam, 2nd ed., 5:529, and George Sarton, Introduction to the History of Science, Carnegie Institution of Washington Publication no.

376, 3 vols (Baltimore: For the Carnegie Institution of Washington by the Williams and Wilkins Co., 1927), 2:340-341.

¹¹Moritz Steinschneider, Die europäischen Übersetzungen aus dem Arabischen bis Mitte des 17. Jahrhunderts (Vienna: C. Gerold's Sohn, 1904-5); Die arabischen Übersetzungen aus dem Griechischen (Leipzig: O. Harrassowitz, 1893), repr. Graz: Akademische Druck- und Verlagsanstalt, 1960); Die hebräischen Übersetzungen des Mittelalters und die Juden als Dolmetscher (Berlin: Kommissionsverlag des Bibliographischen Bureaus, 1893; repr. Graz: Akademische Druck- und Verlagsanstalt, 1956); and "Übersetzer aus dem Arabischen," Serapeum 31 (1870): 292-3; Carl Brockelmann, Geschichte der arabischen Litteratur, 2 vols. (Weimar: E. Felber, 1898), 1:244-45, 675-76, and Supplement, 3 vols. (Leiden: E.J. Brill, 1937-42), 1:365-66. Among the modern biobibliographers are also Heinrich Suter, "Die Mathematiker und Astronomen der Araber und ihre Werke," Abhandlungen zur Geschichte der mathematischen Wissenschaften 10 (Leipzig, 1900), and "Nachträge und Berichtigungen," 14 (1902):155-185; and Johann Georg Wenrich, De auctorum graecorum versionibus et commentariis syriacis, arabicis, armeniacis Persicisque commentatio (Leipzig: F.C.G. Vogel, 1842).

¹²See note 48.

¹³For example, Qusta's "On Incantations," which has no surviving Arabic version but which was famous in its medieval Latin version. It was published just after De differentia spiritus et animae in the 1536 edition (Basel: Henricus Petrum), 317-320.

¹⁴See Fuat Sezgin, Geschichte des Arabischen Schrifttums (Leiden: E.J. Brill, 1970--), 8 volumes published to date (hereinafter called GAS), 3:270-3 and passim, 5:285-86 and passim, and 6:180-82; and Manfred Ullmann, Die Medizin im Islam, Handbuch der Orientalistik, Abt. 1, Erg. 6, Absch. 1 (Leiden: E.J. Brill), 126-28.

¹⁵Hans Daiber, Aetius Arabus: die Vorsokratiker in arabischer Überlieferung (Wiesbaden: Franz Steiner, 1980), 16-71 has observed that Qusta tried to keep close to the text, but was forced to make syntactic and grammatical changes to make it meaningful. It is clear that Qusta knew Syriac, as al-Nadim attests, and equally clear that Aetius' De placitis philosophorum was translated from the Greek. Sometimes, he notes, there is a fine line between freedom in rendering the translation and making errors, some of which were due also to the faultiness of the Greek text. Jacques Sesiano has made a study of Books 4-7 of Qusta's

translation of Diophantus' Arithmetica, Sources on the History of Mathematical and Physical Science, 3 (Berlin: Springer Verlag, 1982), discusses the quality and general character of the translation at 9 and 65ff.

¹⁶On the probable dates of Qusta's life the recent translator of Qusta's polemic, Paul Nwyia, cites the opinion of the late André d'Alverny, who was working on "On the Difference between Spirit and the Soul" before his death in 1966. Fr. d'Alverny places Qusta's great period of work in the years 860-880, when he no doubt wrote "On the Difference between Spirit and the Soul" for the son of Farrukhan shah, tax collector under al-Mutawakkil (d. 861) and his successors. Fr. d'Alverny believed that Qusta must have attained a certain maturity of talent by around 870. Based on the facts available, his contemporaneity with al-Kindi and his known patrons, it is likely he was born around 830 and died between 910 and 920 at around age 80. Une Correspondance Islamo-chrétienne entre ibn al-Munağğim, Hunayn ibn Ishaq et Qusta ibn Luga, ed. and introd. by Khalil Samir, and trans. and introd. by Paul Nwyia, Patrologia Orientalis, t. 40, fasc. 4, no. 185 (Turnhout, Belgium: Brepols, 1981), 546-547.

¹⁷Gabrieli, "Nota," 379.

¹⁸F.E. Peters, Allah's Commonwealth (New York: Simon & Schuster, 1973), 525-527. According to Peters, the Nestorians were "generally successful in divorcing themselves from the policies of the Byzantine Empire." Their ascendancy among the Christians in Iraq was a process which reached a peak under the Buyids in the 10th and 11th centuries. In the 8th and 9th centuries they were the caliphs' physicians and bankers and as translators and scholars they received generous patronage. The Nestorian Patriarch (Catholicus) had his seat there from around 950.

¹⁹Ibid., 528-529.

²⁰F.E. Peters, Aristotle and the Arabs; The Aristotelian Tradition in Islam (New York: New York University Press, 1968), 23.

²¹Peters, Allah's Commonwealth, 300-301. See also Peters' Aristotle and the Arabs, 45, 163-164.

²²Abu Bakr Muhammad ibn Zakariya al-Razi (Rhazes). Several early printed editions were made of the 13th century Latin version of al-Hawi, called Liber Continens.

²³Gabrieli, "Nota," 352-354.

²⁴Hunayn is mentioned in Qusta's work "On the Diversity of Men" (see n. 46, below) in a way that suggests that they were personally acquainted. The fact that Qusta worked with Ishaq and knew the Banu Musa makes this certain.

²⁵Gabrieli, "Nota," 352-354.

²⁶Abdarrahman Badawi, La Transmission de la philosophie grecque au monde arabe, Etudes de philosophie medievale, 56 (Paris: Librairie Philosophique J. Vrin, 1968), 26-31. On the phases of the translation movement, see also Peters, Aristotle and the Arabs, 59-60, 157-163.

²⁷Uyun al Anba, 244.

²⁸See below, p. 15, and note 33. There is no mention in the accounts that Qusta belonged to one of the "schools" of translators such as that of Hunayn ibn Ishaq and Thabit ibn Qurrah, or that Qusta had the regular patronage of the Banu Musa, as Hunain and Thabit did.

²⁹Gabrieli, "Nota," 352-354.

³⁰See Moritz Steinschneider, "Die 'mittleren Bücher' der Araber und ihre Bearbeiter," Zeitschrift für Mathematik und Physik 10 (1865):467, where Steinschneider provides a list of fourteen Greek scientific works of which eight were translated by Qusta: Theodosius' "On the Inhabited World," "On the Sphere" and "On Days and Nights"; Autolycus' "On the Moving Sphere" and "On the Rising and Setting of the Stars," Archimedes' "On the Sphere and the Cylinder," Aristarchus' "On the Sizes and Distances of the Sun and Moon" and Hypsikles' "On Rising Bodies."

³¹Sezgin, GAS, 4:182.

³²Gabrieli, "Nota," 357-358 and corresponding entries on 345-351.

³³Ibid., 363, 346, 365-366.

³⁴Ibid., 348-349, 363, 364.

³⁵Gabrieli, "Nota," 344-351, 357-359.

³⁶On the School of Alexandria see especially Max Meyerhof, "Von Alexandrien nach Bagdad," Sitzungsberichte der Preussischen Akademie der Wissenschaften--Philosophische Historische Klasse (1930), 389-429, and his "On the Transmission of Greek and Indian Science to the Arabs," Islamic Culture 11 (1937):17-29. See note 60.

³⁷Meyerhof, "Alexandrien nach Baghdad," 352-353.

³⁸Peters, Aristotle and the Arabs, 120-124. This has recently been translated and studied by Hans Daiber, Aetius arabus.

³⁹See Peters' description of the "Eisagoge Complex" in Aristotle and the Arabs, 79-98.

⁴⁰Discovered recently in manuscript by Hans Daiber.

⁴¹Qusta was famed among his contemporaries for his learning in many areas, including music. Gabrieli surmises that a "kitab fi-l-mut'ah (?)" is on music, since no other work on music is listed. "Nota," 359, 649.

⁴²Gabrieli, "Nota," 358, 347; he questions whether this and the preceding one are identical, 347.

⁴³This is not a commentary on Aristotle's work of the same name. Ed. and translated into German by Martin Pelster in a doctoral dissertation at the University of Mainz, Universität medizinhistorisches Institut, 1983.

⁴⁴Gabrieli, "Nota," 359,

⁴⁵None of these is mentioned in the medieval accounts or by Gabrieli. Qusta's purported translation of Rufus's "Hygiene" is mentioned by Ullmann, Die Medizin im Islam, 345 and Sezgin, GAS, 3:67, who mention its citation in the Continens (see n. 22, above) of al-Razi (Rhazes). Harvey's article in the Dictionary of Scientific Biography, 11:246 says that manuscripts of Galen's Commentary" and "On the Horoscope" in Florence ascribe the versions to Qusta.

⁴⁶Gabrieli, "Nota," 358-359, 351. Ed. and French translation by Paul Sbath, "Le Livre des caracteres de Qosta ibn Louqa, grand savant et célèbre medecin chrétien au IXe siècle," Bulletin de l'Institut d'Egypte 23 (1941):103-169.

⁴⁷Gabrieli, "Nota," 363, 355-358, 344-351, 364-373.

⁴⁸Ibid., 355-356, 344-350.

⁴⁹Ibid., 360. They are accepted as genuine by Sezgin, GAS 3:271, and by Ullmann, Die Medizin im Islam, 190, 244.

⁵⁰Sezgin, GAS 3:270-3.

⁵¹Sezgin, GAS 3:273.

⁵²See Max Meyerhof, "Über echte und unechte Schriften Galens," Sitzungsberichte der Preussischen Akademie der Wissenschaft. Phil.-Hist. Kl, 541, and his "Autobiographische Bruchstücke Galens aus arabischen Quellen," Sudhoffs Archiv 22 (1929):82-83; Sezgin, GAS 3:273.

⁵³An ancient town on the lower Tigris, north of Basra. See the article by M. Streck in Encyclopedia of Islam, 1st ed., 2:800-1.

⁵⁴See the description of this source in the Appendix of Peters, Aristotle and the Arabs, 273. 'Amr Ibn Matta/Saliba Ibn Yuhanna, Maris Amri et Slibae de Patriarchis Nestorianorum commentaria, ed. and trans. Henricus Gismondi. Arabic text 1.1, 2.1; Latin translation 1.2 (Mari), 2.2 ('Amr et Saliba), (Rome: Tipografia della Casa Editrice Italiana, 1896-1899) 2.2: 53. Georg Graf noted this encounter first in Die christlich-arabische Literatur bis zur fränkischen Zeit (ende des 11. Jahrhunderts). Strassburger theologische Studien 7 (1905):38, and later in his Geschichte der christlichen arabischen Literatur, 5 vols. (Citta del Vaticano: Biblioteca apostolica vaticana, 1944-53), 2:32.

⁵⁵". . . Dum episcopatum cascarenssem regebat ei aderat Costa filius Lucae melchita a quo interrogatus fuit quodam die, unde sanciebat esse Christum duplicem personam. Respondit Israel:

'Universitas christianorum in hoc consensit esse Christum Verbum Dei ae/p. 54/ternum et hominem sumptum ex nostra substantia: Verbum autem Dei personam esse. Invenimus porro quidquid experimentale est aut intellectuale quadrifariam distinguui: nempe aut essentia generica aut essentia singularis, aut accidens inhaerens substantiae quod per se non subsistit, aut virtus ex virtutibus substantiae. At christianismi foret

eversio esse humanitatem Christi accidens aut virtutem ex virtutibus substantiae, utrumque siquidem per se consistere nequit, et neutrum reperitur seorsum a substantia. Iam vero si Christi humanitas est accidens aut virtus, et accidens ac virtus per se non subsistunt, sane Christi humanitas per se non subsistit. Quod autem per se non subsistit persona id non est, nec substantia. Quod si est essentia generica idest genus, hoc non reperitur sensibile, et quot sunt homines totidem Christi esse deberent. Porro si ex quatuor classibus tres seponuntur, superest quarta quae est illa substantiae singularis quae est persona in se subsistens, ut Abraham, Isaac, Jacob, de quorum genere Christus est, habens ex proprietate personae quidquid habent illi citra peccatum.

Haec quum audisset Costa filius Lucae siluit nil respondens, [sed] osculatus est humum et secessit."
 "Osculatus est humum" means having the face close to the ground.

⁵⁶ See Gotthard Strohmaier, "Hunain ibn Ishaq und die Bilder," Klio, n.s. 43-45 (1965):523-533; G. Gabrieli, "Hunayn Ibn Ishaq," Isis 6 (1924):284-285; B. Hemmerdinger, "Hunain ibn Ishaq et l'Iconoclasme Byzantin," Actes du XIIe Congres international d'Etudes byzantines. Ochride. 10-26 Septembre, 1961 (Belgrade, 1963-1964), 467-9; and the remarks of Franz Rosenthal in "Die arabische Autobiographie," Studia Arabica 1 (1937):15-19.

⁵⁷ Bar Hebraeus, Chronicon ecclesiasticum, ed. and trans. J.W. Abbeloos and T.J. Lamy, 3 vols. (Louvain: 1872-77), 2:198.

⁵⁸ Lucien Leclerc, Histoire de la Medecine Arabe, 2 vols. (Paris: E. Leroux, 1876), 1:141-143, gives Hunain's version. On the Bokhtishu family see D. Sourdel, "Bukhtishu," Encyclopedia of Islam, 2nd ed., 1:1298, and Meyerhof, "New Light on Hunain ibn Ishaq and his Period," Isis 8 (1926):718.

⁵⁹ See al-Nadim, Fihrist, biographical index, 694, 699; Lucien Leclerc, Médecine arabe, 1:119-120; Max Meyerhof, "New Light," 719.

⁶⁰ Max Meyerhof, "Transmission," 20, gives a translation of most of the relevant passage from al-Farabi as preserved by Ibn Abi Usaibi'ah (2:135, lines 14ff):

"Another report written in a fragment of an autobiography of this same al-Farabi, the most prominent Aristotelian philosopher writing in Arabic, is preserved by Ibn Abi Usaibi'a. . . . al-Farabi writes in his (lost) treatise On the First Apparition of Philosophy: "Then [after the arab conquest] the centre of learning was transferred from Alexandria to Antioch where it remained for a long time. At last there was left only one teacher who had two disciples who learned from him and then theyb moved away, taking with them the books. One of them was a man of Harran, the other one of Marw. By the latter were instructed Ibrahim al-Marwazi and Yuhanna' b. Hailan, and by the Harranian the bishop Isra'il and Quwairi. These went to Baghdad. . . ."

The words excluded with the elipsis points are supplied in the German of Meyerhof's "Von Alexandrien Nach Baghdad," 405: "Und Isra'il wurde durch die Religion in Anspruch genommen."

⁶¹LeClerc, Médecine arabe, 1:175.

⁶²Maris Amrae et Slibae, 2.2:41.

⁶³Ibid, 42.

⁶⁴Maris Amrae et Slibae, 1.2:71, and related also in Jean Maurice Fiey, Nisibe metropole syriaque orientale et ses suffragants des origines à nos jours. Corpus scriptorum christianorum orientalium, vol. 388 (Louvain: Catholic University of America and Catholic University of Louvain, 1977), subsidea tome 54:84-85.

⁶⁵Maris Amrae et Slibae, 1.2:72 and 2.2:43, the later version (which says 8 months). A longer account of the events surrounding the incident with Hunain and of Israel's candidacy for the patriarchate in Giuseppe Luigi Assemani, De catholicis seu patriarchis chaldaeorum et Nestorianorum commentarius Historico-Chronologus (Rome: Venantii Monaldini, apud B. Francisium, 1775; repr. Farnborough: Gregg, 1969), 105-106; and Giuseppe Simone Assemani, Bibliotheca orientalis, 10 vols. (Rome: Typis Sacrae Congregationis de Propaganda Fide, 1719-1728) 2:432, 438, 439.

⁶⁶ Maris Amrae et Slibae, 2.2:43. Only this second part mentions the doctrinal question at issue: "Enos vero adveniens sibi dignitatem vindicabat: et alii quidem ei favebant alii autem adversabantur, et adeo progressa est

discordia ut patri filius ac filio pater passim infensus
existeret, quibusdam pro Israele dicentibus, aliis pro Enos
verbera etiam intercesserunt et discissiones vestium."

⁶⁷Aubrey Russell Vine, The Nestorian Churches:
A Concise History of Nestorian Christianity in Asia from
the Persian Schism to the Modern Assyrians (London:
Independent Press Ltd., 1937), 101-107.

⁶⁸Abu-'l-Barakat ibn Kibr (d. 1365), "Der
Katalog der christlichen Schriften in arabischer Sprache
von 'Abu-'l-Barakat," ed. and tr. Wilhelm Riedel, Akademie
der Wissenschaften zu Göttingen. Nachrichten (1902):
685.

⁶⁹Ibid.

⁷⁰Paul Nwyia, Une correspondance, 523.

⁷¹Ibid.

⁷²See the article "Baghdad," by A.A. Duri in
Encyclopedia of Islam, 2nd ed., 1:894-908; also Guy Le
Strange, Baghdad during the Abbasid Caliphate. From
Contemporary Arabic and Persian Sources (Oxford: Clarendon
Press, 1900).

⁷³M. Canard, "Arminiya," Encyclopedia of Islam,
2nd ed., 1:635-637.

⁷⁴Gabrieli, "Nota," 375.

⁷⁵Canard, "Arminiya," 637; Gabrieli, "Nota,"
376-377.

⁷⁶Gabrieli, "Nota," 377.

⁷⁷Gabrieli, "Nota," 380.

⁷⁸Nwyia, Une correspondance, 552-553.

⁷⁹Ibid., 543-546.

⁸⁰Ibid., 538-543.

⁸¹Fihrist, 695. Gabrieli, "Nota," 359, thinks
that this is probably identical with Qusta's polemic,
citing a passage in Assemani's Bibliotheca orientalia, 2:2,

33, regarding the transport of relics of the Apostle Thomas from India to Edessa "quemadmodum refert praestantissimus Constans Lucae filius." However, there is no such incident in Qusta's Reply. The title of "Garden" or "Paradise" often appears attached to church histories. See E. Wallis Budge, ed. and tr. from Syriac, The Paradise or Garden of the Holy Fathers; being Histories of the Anchorites, Recluses, Monks, Coenobites and Ascetic Fathers, including Athanasius, Archbishop of Alexandria, Paladius, Bishop of Helenopolis, Saint Jerome and others (London: Chatto and Windus, 1907). Abu-'l-Barakat, "Katalog," 703, mentions a book entitled "Paradise" (meaning "orchard") by the Melkite 'Abd al-Masih, which contains notices about monks and about the lives and martyrdoms of servants of God. Abu-l-Barakat's entry says that 'Abd al-Masih was also known as Ibn Nuh. This would identify him with the 9th century translator into Syriac and Arabic; possibly "Ibn Nuh" is an error for "Ibn Na'imah"; 'Abd al-Masih ibn Na'imah also was a translator from the Greek. See Al-Nadim, Fihrist, Biog. Index, and 587, 588, 603.

⁸²Gabrieli, "Nota," 363 and 344, where the work is called "Kitab fi-l-a'da," which he translates as a book on "enemies," 358. He says this is a paraphrase of the work of the same name by Pseudo-Plutarch. Bayard Dodge says in his translation of the Fihrist, 695, n. 133: "Al-a'da'" ("enemies") here may mean "infections." Cf. Sezgin, GAS 3:270; Ullmann, Medizin, 128, 244; and Hellmut Ritter and Richard Walzer, Arabische Übersetzungen griechischer Ärzte in stambuler Bibliotheken, Sonderausgabe aus den Sitzungsberichten der Preussischen Akademie der Wissenschaften. Phil.-hist. Kl. 26 (1934), 833. Announcement was made in Zeitschrift der morgenländische Gesellschaft 124 (1974), p. *5*, of a project to publish ten medieval Arab medical works, including this one, initiated by Christolph Bürgel under the auspices of the Orientalisches Seminar of the University of Bern. Professor Hartmut Fähndrich has informed me by letter dated 10/20/84 that "Kitab fi-l'a'da" is still in progress and that he expects it will be published next year.

⁸³Gabrieli, "Nota," 363, 356, 347-348. The work on unguents does not appear at all in Gabrieli's list, though it has been mentioned by other bibliographers. The part supposed to be about the temperaments is not identified by Gabrieli as the work by that name which appears as no. 12 on his classified list (356). This has been translated into German by Erhard Kahle, "Der Traktat über das Zusammenwirken der Naturen des Qusta Ibn Luqa," Fachprosa-Studien. Beiträge zur mittelalterlichen

Wissenschafts- und Geistesgeschichte, ed. Gundolf Keil (Berlin: Erich Schmidt Verlag: 1982), 133-142. Moritz Steinschneider, "Gafiki's Verzeichniss einfacher Heilmittel," Virchows Archiv 85 (1881):164, thought the work on temperaments to be identical with the four works on the humors.

⁸⁴This work on coitus (dedicated to Abu-l-Hasan Muhammad, as opposed to the work on the same subject dedicated to Abu Muh. al-Hasan b. Mahlad in Baghdad) has been edited and translated into German in three parts respectively by Gauss Haydar, Kitab fil bah wa-ma yuhtagu ilaihi min tadbir al-badan fi sti malihi des Qusta Ibn Luqa. 1. Abhandlung (Das Buch über die Kohabitation und die für ihre Ausübung notwendigen Körperlichen Voraussetzungen) (Erlangen and Nuremberg: Univ. Med. Fak., Dissertation, 1973); Najdat Ali Barhoum, Das Buch über die Geschlechtlichkeit (Kitab fi l-bah) von Qusta Ibn Luqa (Erlangen and Nuremberg: Univ. Med. Fak., Dissertation, 1974); and Abdo Fahriddin, Kitab fi l-bah wa ma yuhtagu ilaihi min tadbir al-badan fi sti malihi: Das Buch über die Kohabitation und die für ihre Ausübung notwendigen Körperlichen Voraussetzungen, des Qusta Ibn Luqa. 2. Abhandlung (Munich: Techn. Univ., Fachbereich Medizin. Dissertation, 1978).

⁸⁵Gabrieli, "Nota," 363, 345, 355; "On Blunting of the Teeth" is listed by Sezgin, GAS 3:271.

II. CONTENT AND SOURCES OF "ON THE DIFFERENCE BETWEEN SPIRIT AND THE SOUL"

The Content

In the Latin manuscripts the text "On the Difference between Spirit and the Soul" usually consists of from four to six folios and usually contains two, three or four main divisions or chapters. Qusta states in a prologue that his purpose is to set out an account of the workings of spirit in the human body, then to define the soul and finally, to point out the differences between them. He names as his sources the Timaeus and the Phaedo of Plato; Aristotle's De anima; three works by Galen, On the Usefulness of the Parts of the Body, On Anatomical Procedures, and On the Doctrines of Hippocrates and Plato; and works by Theophrastus and Empedocles, "On the Soul". Qusta aims to be succinct in order to save his patron's time, and he intends moreover to organize his material for easy comprehension, by comparing the spirit and soul only after telling something about each.

The text begins with a definition of spirit as a "subtle body" which is made in the heart and carried in the

arteries or "pulsing veins" throughout the body, vivifying it. It effects life and its characteristic processes in human beings, the breath, pulse, sensation and motion. Qusta describes the heart as having two ventricles or chambers. Of these the one on the right has more blood than spirit, and the one on the left has more spirit than blood. Growing out from the left ventricle are two veins. One of them leads to the lung, and through it the heart can do two things, take in air from which it makes spirit, and also, by the power of its great heat, expel back to the lung smoky waste to be sent from the body. The pulse is made by the contraction of the heart, and it is an indicator of the condition of the heart. The other vein itself is divided in two; these extend respectively to the upper and lower parts of the body, branching out further to carry spirit to and vivify every part. The spirit which comes from the heart and goes directly to the parts of the body is called "vital" spirit.

There is another kind of spirit, too, called "animal" spirit. It is made from the vital spirit that has travelled from the heart up to just under the brain where it has been received by a "net" of bloodvessels and passed on to the brain, where the new spirit is made. Qusta describes the brain as consisting of three parts, two ventricles and a space communicating between them. The

ventricle in the anterior part of the brain itself has two parts, and it is here that the animal spirit is created, as it passes from one part to the other. This refinement makes the spirit suitable for receiving the power of the soul. In the rear of the brain is another, smaller ventricle, which controls memory, and between this and the anterior ventricle is a space. A worm-like piece of flesh is able to regulate the flow of spirit between the front and the rear ventricle; when it traps spirit in the common space the spirit is strengthened as an aid to thinking, which takes place in this middle part of the brain.

Qusta goes on to describe the nervous system. From the ventricles in front of the brain grow seven pairs of nerves, each pair for a different sensory function: to the eyes to effect vision, to the eyelids for their motion, pairs to the tongue and palate respectively, to effect taste, to the eardrum, for hearing, to the viscera to effect sensation there; these nerves return to the uvula [the fleshy piece hanging in back of the mouth near the soft palate]; finally, the seventh pair joins the tongue to give it movement. Other nerves proceed from the rear of the brain and travel through the spine, coming out between the vertebrae to impart motion to all the members of the body. The nerves carry spirit in them, and as proof of this Qusta describes how obstructions of the various nerves

will impede the functioning of the body, causing blindness, deafness or paralysis. Similarly, when one or more of the ventricles of the brain is damaged, its operations are impeded or destroyed. Qusta brings his discussion of spirit to a close by recapitulating his main points about the creation and work of spirit in the body.

The soul, Qusta says, is a difficult subject for discussion and a matter of controversy among the philosophers, but he deems it sufficient for his purpose to confine himself to the definitions given by the greatest of these, Plato and Aristotle. He states that he will take the definitions one at a time and explain them by "probable arguments" and that then he will discuss the powers of the soul. Beginning with Plato's definition of the soul, expressed as an "incorporeal substance moving the body", Qusta explains it word by word: the soul is a substance [a self-standing thing] because it is a unity and immutable in its essence [it remains unchanged by contraries in itself], and it moves a substance, the body, which can only be moved by another substance. It is incorporeal, he asserts, because the qualities of a corporeal body are perceptible but the qualities of the soul are insensible virtues and vices, and likewise the soul is not subject to the senses; moreover, the soul is not a body [not a physical substance], because every body is either animated or not; and

if the soul is a body, it is either animated or not, but for it not to be animated would be absurd. If the soul were animated, we could go on ad infinitum with the argument from the discourse on the soul of the soul "whether the soul (of the soul) is a body or not." If the soul were a body it would have to be a subtle body, fire or air, and if so, it would have to have some virtue setting it apart from these elements, or everything containing those elements would be ensouled; and if it were so set apart by some species particular to it, that species would be soul. Likewise if the soul were a composite body, then the body would be a soul, not a body. Qusta then goes on to discuss the ways the soul moves the body. The body is moved by [a] something moving it, or is moved by [b] its own motion; Qusta gives four examples of this second kind of motion: moving [1] towards something on account of love or [2] away on account of repulsion, [3] natural motion, such as that of a stone by its weight, or motion from something [4] which is "the principal occasion or cause of that which is moved" in the way that craftsmanship moves the craftsman and itself is not moved. Thus the soul moves the body from this second kind of motion, that is, it moves the body and is not itself moved.

Aristotle's definition of the soul follows. Qusta similarly explains it word by word: The soul is the

completion (or actualization) of a potentially living and acting body. Its completion is its reception of form or species, which can occur only in the kind of a body having in itself the disposition to a particular end, (in this case, the reception of the species or soul). The realization of this end (effect) is its reception of form or species. This reception of form, therefore, is the soul.

He goes on to show that the soul (as a perfection) must be received in a natural composite body. There are two kinds of perfection or completion, primary and secondary. To illustrate, Qusta likens the first to a physician's possession of knowledge, and the second to his use of his knowledge in practice. The soul is primary perfection, and exists, for example, in a man who is sleeping; though he lacks sensation, he nevertheless still has a sensible soul. Only a natural body may be ensouled, for the form of a natural body comes from a substance, unlike the form of a non-natural thing like a bench, which is accidental; and the soul furthermore is the form of a composite body such as a tree or animal, as opposed to a simple, elemental one such as fire. As such it is corruptible and needs nutrition and other functions of living bodies. Only this kind of body, one having the possibility of life functions, and therefore of life, may be and is, completed by receiving a soul.

The powers of the soul are themselves often referred to as souls, the vegetative, sensible, and rational. The vegetable [power or soul] is common to all living things, including plants, and it is responsible for the functions of nutrition, attraction, digestion and expulsion; the sensible soul belongs only to beings with powers of sensation and motion, and the rational soul is peculiar to man.

In the final chapter Qusta sets out the differences between the spirit and the soul. He concludes that spirit is a body and the soul is not a body; that spirit perishes with the body when it dies, but the soul does not, though its works perish; that the soul, when in the body, moves it and is responsible for sense and life, that the spirit is the medium through which this is effected, and it itself has no other medium; and finally, that the soul moves the body and is responsible for life, that it is the first cause of these things, while spirit is the secondary cause; and that therefore the spirit is the immediate cause of life in the body and of its sense and motion and acts proper to it, and the soul is the ultimate cause. Qusta ends by explaining that the condition of the spirit and how it works in the body has a direct relation to the temperament or the balance of the elements in the body, from which the spirit is made.

The Sources

Accounting for the sources of "On the Difference between Spirit and the Soul" carries with it some difficulties, for the association of the ideas with the cited works is clear in some cases and in others less so. Moreover, Qusta had access to many of the ideas he expresses in sources other than those he names. As the translator of Aetius' "On the Opinions of the Philosophers," one of the most important of the Greek doxographies, the collections of sayings of the philosophers arranged according to subject, he was well acquainted with what it says about the opinions of Aristotle, Plato, Empedocles and Theophrastus on the soul and its relation with the body.¹ Also, he would have found some points repeated among his cited sources. Aristotle's On the Soul repeats doctrines of Empedocles, and Galen's On the usefulness of the Parts of the Body and On the Doctrines of Hippocrates and Plato repeat his own ideas and those of his predecessors Aristotle, Plato and Empedocles. However, Qusta certainly had access to complete texts of Aristotle's On the Soul and the works of Galen, which he could have read in Greek or the Syriac or Arabic translations of Hunain ibn Ishaq and his school.² Whether Qusta referred to the Timaeus and Phaedo is less certain, for there are no surviving Arabic

versions of Plato's works and the known sources of Platonic material in Arabic are sparse, making it difficult to prove that he could have had full texts even in Greek.³

As for the work of Theophrastus and Empedocles, most of it has been lost, and in the case of the latter only fragments survive. According to the accounts by Diogenes Laertius (3rd c.) and al-Nadim (10th c.),⁴ Theophrastus, the immediate successor of Aristotle, did write a book "On the Soul." This is listed separately from his great "Eighteen Books on Physical Questions," the lost prototype and source for later doxographies, in which he also discussed the soul. Books 3 and 4 of it apparently together went under the title "On the Soul." It is difficult to judge from the few fragments remaining in the writings of other philosophers whether this might be the work to which Qusta refers in his prologue.⁵ No work on the soul has been attributed to the presocratic philosopher Empedocles.⁶

However, a number of pseudepigraphs bearing a mixture of Empedoclean and Neoplatonic ideas appear to have circulated around Qusta's time. It is possible that one of these was entitled "On the soul" and was Qusta's source for "Empedocles."⁷

Qusta's approach to the question of the relation of body and soul owes much to the influence of the schools of Alexandria which dominated philosophical and medical

learning from the third century B.C. up until his time. In medicine and particularly in anatomy, Qusta and his contemporaries relied on the work of Galen, who had established medicine on a basis of demonstrative proof.⁸ Galen had absorbed the brilliant achievements of the third century, B.C. Alexandrian anatomists, especially Praxagoras, who distinguished arteries from veins, Herophilus, who discovered the sensory and motor nerves, and Erisistratus, who made further advances in knowledge of the nerves.⁹ These men also developed the idea of the pneuma or spirit beyond Aristotle's conception by seeing its movement in the arteries and the nerves.¹⁰ By virtue of these researches they had succeeded in discovering the central organ of the body, asserted previously on ethical grounds by Plato, namely the head.¹¹

The philosophical school of Alexandria exerted no less of an influence on Qusta's discussion of the definition of the soul, which reflects the school's Neoplatonic interests and Aristotelian method and agenda: whether the soul was the form of the body, the connection of body and soul, the theory of the faculties of the soul, the motricity of the soul, the general mechanism of sense and the common sense, and the intellect.¹² These ideas played a role in Christian thought, although Christian

thinkers felt bound to reject Neoplatonic notions about the eternity of the world and the transmigration of souls. Possibly some of the ideas were absorbed by Qusta in their Christian form and passed on by him in what was intended to be a scientific tract. For example, the brief "Letter on the Soul Addressed to Tatian" by the third century bishop of Neocaesarea, Gregory Thaumaturgos, answers seven questions about the soul, without reference to Scripture, on philosophical grounds and with the use of logic: whether the soul can be apprehended, whether it exists, whether it is a substance, whether it is incorporeal, whether it is simple or compound, whether it is immortal, and whether it is rational.¹³ Similar questions appear in "On the Nature of Man", by the fifth century Bishop of Edessa, Nemesius, who also considered it necessary to describe the human body in order to understand the soul.¹⁴ Like Qusta's, his description follows Galen and thus embodies in a Christian context the marriage of medicine and philosophy which came to be so marked a feature of the transmission of Greek science to the Arabs in Qusta's time. But there is no clear proof that these similarities with Qusta's tract indicate anything more than an unconscious borrowing from his theologian predecessors. It seems more likely that Qusta based his tract exclusively on the works he names in his prologue.

Anatomy and Physiology

For his description of human anatomy in the first chapter in "On the Difference between Spirit and the Soul" Qusta relies almost entirely on Galen. His description of the human body is far less detailed than is to be found in the three cited works of Galen, but the distinctive features of Galenic anatomy are present.

The features of the heart, with its two ventricles, the branching of the arteries from its left¹⁵ side, and the rete mirabile or "net" of bloodvessels lying at the base of the brain, are characteristic of Galen's scheme. Galen rejected the view of Aristotle that the heart is three chambered.¹⁶ He believed that air is refined in the lung and goes to the right side of the heart and thence to the left through pores in the wall between, details not mentioned by Qusta. Like Galen he says that there is blood and spirit in both of the ventricles, more blood in the right and more spirit in the left, and that blood and spirit is distributed throughout the body by branches from the great artery rising from the left ventricle. The air breathed in goes also to cool the great innate heat of the heart.¹⁷ Qusta also omits mention of the function attributed by Galen to the rete mirabile of elaborating and refining some of the vital spirit coming from the heart into "psychic" or "animal" spirit before it undergoes a

final elaboration in the ventricles of the brain. Qusta mentions this refinement as taking place only in the brain, as the spirit passes from one side of the front ventricle to the other.¹⁸

Qusta's scheme of the seven pairs of sensory nerves radiating from the front of the brain, and several pairs of motor nerves dispersed through the spinal cord also must be attributed to Galen. Among the authorities he cites there are no competing ideas to those of Galen for his descriptions of the nervous system, since Plato and Aristotle had no knowledge of it as such.¹⁹ Qusta's description of the motor nerves is identical with Galen's. However, there are a few discrepancies between their respective distribution of functions to the sensory nerves. Both Galen and Qusta attribute to the first vision. To the second, Galen attributes the motion of the eye, and Qusta the movement of the eyelid. Galen attributes to the third pair sensation in the face, while Qusta attributes to it the sense of taste. According to Galen, the fourth pair is responsible for motion in the face, while this joins the palate according to Qusta. Both Qusta and Galen attribute to the fifth the sense of hearing. Galen says that the sixth is for motion of the tongue and pharynx, while Qusta has it travel down to the viscera to impart to it sensation and then back to the uvula, probably for speech. This

would put them somewhat in agreement as to part of its function.²⁰ On the function of the seventh pair, which is to move the tongue, they are in agreement.²¹

The greatest departure of Galen from the anatomical ideas of Aristotle is his refutation of Aristotle's notion that the nerves and thus sensation and motion and even thought, have their origin in the heart rather than the brain. Galen knew from his learned predecessors the Alexandrians as well as from his own experiments that the psychic functions are really controlled by the brain, and that the brain, not the heart, is the source of the nerves. To show this is one of his chief aims in On the Doctrines of Hippocrates and Plato, where he cites experiments more fully described in On Anatomical Procedures which have demonstrated the effects of damage to the various nerves or the brain²² on sensation, thought and motion. Qusta alludes to these experiments in the first part of his tract, where he discusses the kinds and degree of disability experienced when the spirit in one or more nerves or brain ventricles is obstructed.

Qusta is indebted to Galen for his description of the brain, where the faculties of the soul, namely sensation, motion and the different kinds of mental activity, occur. The localization of these in specific ventricles is a Galenic concept, though it should be added

that Galen attributed some of the activity to the brain substance as well.²³ Qusta follows Galen by placing in the larger double ventricle at the front of the brain the functions of sensation, that is, vision, hearing, taste, touch and smell, and fantasy. Like Galen he also makes the smaller ventricle in the rear of the brain responsible for memory, and the space lying in between responsible for thought, judgment and recollection. Qusta does this without any of the innovations that were to characterize the schemes of the "internal senses" made by later Arab philosophers such as al-Farabi, Avicenna and Averroes, and after them, the Latins.²⁴ Qusta continues to follow Galen in the idea of the "vermis," the worm-like part which regulates the flow of spirit from the front and rear ventricles.²⁵ According to one view, he may have benefited from the work of Nemesis of Emesa, who assigned the faculties of the soul to the ventricles only, rather than the ventricles and the brain substance together, as Galen did, and thereby "spiritualized" and gave a Christian cast to this theory of brain function. Qusta may have also contributed something of his own to the theory of brain function by emphasizing the movement of the spirit in the ventricles.²⁶

In placing the psychic functions in the head Galen and his adherents were in a sense Platonists, since Plato

held that the head is the lord of the body and the seat of the soul,²⁷ though he had no idea of the means by which this rule by the powers of the soul takes place, that is, the nerves.²⁸ Nor does Plato discuss the spirit as here conceived, a fine corporeal body which carries out the soul's powers in living beings. Nevertheless, the idea of the spirit fits in well with Plato's idea of body and soul as separate substances. As far as the creation and description of the spirit are concerned, Qusta also follows Galen or is consistent with his ideas.

The idea that life enters and leaves the body as a sort of breath, inborn or infused from outside, but to be distinguished from the breath taken in by respiration, is very ancient.²⁹ Aristotle, who wrote on the subject in the Historia animalium and some of the Parva naturalia, believed it to be a hot substance which carries the soul's powers in the body. In the following centuries his doctrine of the innate pneuma was used by the physicians of Alexandria to complete the explanation of how sensation takes place,³⁰ that is, by the flow of the pneuma through the arteries and nerves. The idea of the pneuma became an important part of the world view of the Stoics, who identified this fiery substance with the deity.³¹ Galen, like Aristotle, saw the pneuma as a carrier of the powers of the soul, an "instrument"³² made, as

Praxagoras said, in the heart from air drawn into the lung in respiration.³³ Qusta follows Galen in describing two kinds of spirit,³⁴ vital and psychic. However, Qusta's doctrine that the spirit is a medium through which the soul and body are joined comes neither from Galen nor Aristotle.

The Soul and its Powers

Galen's Platonism, expressed in his preference for the head as the ruler of the body, is also evident in his idea of a tripartite soul. According to him, the vegetable soul resides in the liver, the vital soul in the heart, and the intellectual soul in the head.³⁵ He did not commit himself on the questions of what kind of substance the soul is or whether the soul is immortal, as these do not lend themselves to demonstration.³⁶ It is the definitions of Plato and Aristotle, in any case, that interest Qusta. These he gives, together with an explanation and logical exposition from Phaedo, Timaeus and On the Soul, and presumably from works on the soul or doctrines on the soul by Theophrastus and Empedocles. Qusta's discussion of the powers of the soul might have been drawn from any or all of his authorities, while the summing up of the differences between the spirit and the soul appears to be his own creation based on all of them. Unfortunately we cannot

account for every point in the arguments from the sources available today.

According to Qusta, Plato's definition of the soul is "an incorporeal substance moving the body." Although this definition may not be found verbatim in Plato's works, its terms accord well with the doctrines in Phaedo and Timaeus. The main theme of Phaedo is the soul. From its statements that the soul is a unity³⁷ which receives virtues and vices,³⁸ that it is immutable³⁹ and that it moves the body,⁴⁰ Qusta establishes that the soul is a substance, the first part of his proof for the definition. He adds as further proof that the soul also moves a substance, the body. The Phaedo also asserts that the soul must be in a body for it to be alive.⁴¹ However, the idea that the soul is the thing which actually imparts life to the body is more directly stated in the Timaeus: "For everything that partakes of life may be truly called a living being, and the animal . . . partakes of the third kind of soul. . . ." ⁴² The second argument, that the soul is incorporeal because the qualities of a corporeal body are perceptible but the qualities of soul are insensible, finds support in the statement of Timaeus that the soul is invisible and partakes of reason and harmony,⁴³ insensible qualities, while the elements are "visible" bodies, ⁴⁴

The third and fourth parts of Qusta's discussion of Plato's view on the soul, the one proving that the soul is not a body and the one that it moves itself, are not so easy to account for. Qusta says that the soul is not a body because every body is either animated or not, and for the soul not to be animated would be absurd. Likewise, if it were a body, it would have to be a subtle body like one of the two finer elements, air or fire. But if it were, it would have to have some power setting it off from these things, lest it argued that everything containing or consisting of these elements be ensouled; likewise, if it were so set apart by some species peculiar to it, that species would be soul. Finally, if the soul were a composite body, then the body would be a soul and not a body. These arguments are not to be found in Timaeus or Phaedo. However, they were well known to the Neoplatonic philosophers at Alexandria, who used them to reject the materialist conception of the soul held by the Presocratic and the Stoic philosophers. An example of this reasoning may be seen in Nemesisus'⁴⁵ "On the Nature of Man" where he cites the argument from the third century founder of the Neoplatonic school at Alexandria, Ammonius Saccas:

Now, as regards those who assign corporeity to the soul, it suffices to recall the argument of Ammonius, the master of Plotinus, and of Numenius the Pythagorean. It runs thus: bodies, by their absolute nature, are mutable, dissoluble, and,

throughout their extent, divisible indefinitely, without there remaining anything of body that is not thus liable to change. Therefore a body requires some principle keeping it together, assembling its constituents, and (so to express it) binding and holding them in union. And this principle we call soul.

But if the soul is, in any kind of way, corporeal, even though its body were of the most rarefied stuff, the question is, What is the principle that holds it together? For it has been demonstrated that everything corporeal needs a principle of cohesion. And so the argument is carried back indefinitely, until we arrive at an incorporeal soul.⁴⁶

Further on in the chapter--it is not clear whether he is still quoting Ammonius--Nemesius addresses the absurdity of the question of whether the soul is animated:

Further, every body is moved either from without or from within, and if only from without that body is inanimate. If, however, the body is moved from within, it is an animate body. But if the soul is corporeal, and is moved from without, it is inanimate and if from within, it is animate. To call the soul either inanimate or animate is ridiculous. Surely, therefore, the soul is incorporeal.⁴⁷

When Qusta mentions the need to avoid the argument of the "soul of the soul", which can go on ad infinitum, he means this.

The discussion of motion seems even more elusive. It is much more elaborate than any discussion of motion in Timaeus and Phaedo, and it is quite different from the discussion of motion in Aristotle's On the Soul.⁴⁸ Qusta says that the body is either moved by something

moving it or its own motion, and of the second, there are four kinds. Something moves of itself toward something because of love, away from something because of repulsion, by natural motion, as in a stone falling, and finally, as the "principal occasion or cause" of the motion, which moves something and is not itself moved, as craftsmanship moves the craftsman but itself remains unmoved. The last kind of motion is that characteristic of the soul.

"Natural" motion of course belongs to the systems not only of them but to the presocratics. The kinds of motion toward something on account of desire and away from something on account of repulsion or hate are reminiscent of the famous principles in the philosophy of Empedocles of love and strife. Otherwise we cannot account for this discussion of motion.⁴⁹

Qusta's explanation of the powers of the soul is not part of the definitions as such. He says that the powers of the soul give the functions of life in a body that has the disposition for them. These are vegetative powers which enable the body to nourish itself and to grow, to digest food and to eliminate waste, and they belong to every living being from plants on up to man. The sensible soul belongs to animals and to man and it imparts the powers of sensation and motion. Finally, the rational soul is peculiar to man. These points are covered by Aristotle

in particular, but also by Galen and by Plato as well.⁵⁰

The Differences between Spirit and the Soul

Up until the last chapter the content of the tract has been traceable largely to the works of Plato, Aristotle and Galen. Now Qusta draws together the foregoing elements, but it is more than a number of conclusions based on what has been said before. Thus while his first few conclusions, namely that the spirit is a body and the soul is not; that when the body dies, the spirit perishes, but the soul does not, though its works perish; and that the soul, when in the body, moves it and is responsible for sense and life, have been established before, the other points have not. Qusta's idea that the spirit is the medium through which life is effected, itself having no other medium, is something new. In the first section the spirit 'operates' the senses and motion. Similarly the idea that the soul, responsible for sense and life, is their first or ultimate cause, while the spirit, responsible for sense and motion and the other acts proper to life, is their immediate and secondary cause, has not been established. Also his following explanation of how the condition of the body affects the quality of the spirit made from it and thus determines the ability of the soul to act upon the body has not been outlined before, aside from

Qusta's statement in the first chapter that the quality of the animal spirit will affect his mental functions.

The influence of Plato on Qusta is strong, as may be seen in his acceptance of the substantiality of the soul in the Platonic sense and its separateness from the body. Qusta's emphasis on the greater efficacy of finer, more spiritual, spirit is consistent with this view. In his latter conclusions about the mediating role of the spirit and its identity as a secondary cause of life, the influence of Neoplatonism also appears to be involved. It seems that it ^{is} here, in the main, that we must look if we are to account for the influence of Empedocles and Theophrastus on Qusta's tract. Unfortunately, limiting the discussion to what remains of Theophrastus' teachings on the soul leaves little to be said about his influence upon this tract, though the careful observations of some scholars have been helpful at least in arriving at some idea of what a coherent statement of his views would be. The prospect for discovering what doctrines really belong to "Empedocles" is more promising.

Of the genuine Empedocles, only fragments carried in the works of Aristotle and others and in the doxographies came down to the Arabs, as they have to us.⁵¹ Nevertheless, his name was well known to them as the first of the five great philosophers of the Greeks, Empedocles,

Pythagoras, Socrates, Plato and Aristotle, as reported by the Arab historians al-Amiri (10th century) and after him Sa'id al-Andalusi (1029-1070), al-Qifti (d. 1248) and Ibn abi Usaybi'ah (d. 1289).⁵² According to this Near Eastern tradition Empedocles is supposed to have wandered in Eastern lands gathering wisdom, to have studied with a mythical "Luqman" the philosopher, to have been the contemporary of David and even to have inspired some of Solomon's teachings in the book of Ecclesiastes.⁵³ The biographical details in these accounts are accompanied by descriptions of the doctrines or extracts from works ascribed to him. Sources for this material other than the historical works include portions of the tenth century Spanish magical-astrological compendium, "The Goal of the Wise"⁵⁴ and extracts from "The Book of Five Substances" ascribed to Empedocles.⁵⁵

The Neoplatonic content of the doctrines leaves no doubt about the pseudepigraphic character of these lost works. A few observers believe they have traced the pseudo-Empedocles as far back as the fourth century in the writings of the Alexandrian Neoplatonist Ammonius or his disciple Porphyry.⁵⁶ Others have noted its possible connections with other sources of Neoplatonic doctrines, namely Hermetic⁵⁷ and alchemical⁵⁸ writings. David Kaufmann supposes that these, like other Arab

pseudepigraphs, appeared beside the Greek scientific and philosophical literature in translation and misused the "best names of the ancients", which became attached to works "like souls bodies that ill fitted them." At the same time, it appears that the pseudo-Empedoclean writings contained a core of genuine presocratic doctrines with the Neoplatonic ones and that they therefore were not complete forgeries like the Theologia and De causis fostered upon Aristotle.⁵⁹

If their beginnings are dim, it is at least clear that the pseudo-Empedoclean writings originated in the Middle East, were flourishing around the turn of the ninth century and therefore circulated during Qusta's lifetime. We know the titles of no more than half a dozen. On these Albino Nagy and M. Asin Palacios, the only scholars thus far who have attempted to make general studies of the subject, are only in partial agreement. Both list works "On the Falsity of the Spiritual and Corporeal Resurrection", a book on metaphysics, a book of homilies or ascetic sermons and a work on the soul.⁶⁰ The greatest impact of the pseudo-Empedoclean ideas appears to have been in Spain from about the tenth century, where, according to the historian Sa'id al-Andalusi, they played an important part in the philosophy of the mystic Ibn Masarra. While the strong claims for this influence by some historians,

especially M. Asin Palacios, have been called into question by others,⁶¹ there is further evidence connecting pseudo-Empedocles particularly with Spain. The fragments we have from the "Book of Five Substances" were recovered from a thirteenth century collection of extracts of the philosophy of the Spanish Jewish philosopher Ibn Gabirol,⁶² and Picatrix also was written in Spain. Certain passages from the latter especially seem to prove a connection between Qusta's tract and pseudo-Empedocles, and so it is perhaps significant that Kaufman ascribes Picatrix to a pupil of al-Majriti, Abul Hakim al-Kamani, who brought works of Pseudo-Empedocles back to Spain with him after a visit to the Sabians in Harran.⁶³ Harran was the last home of the School of Alexandria, as well as a center of learning for the pagan Sabians. The provenance there of the pseudo-Empedocles as he is found in Picatrix would go far in accounting for a common source for it and Qusta's "On the Difference between Spirit and the Soul."

A number of passages in the work leave this impression. The pseudo-Empedocles in Picatrix, like Qusta, treats the ideas of Plato and Aristotle, and does so in terms similar to Qusta's. One of these passages actually mentions either a work by Empedocles on the soul or a commentary on it. In another passage the idea of the spirit is delineated in a way that virtually forces the

conclusion that Qusta had a similar text at hand. The quotations from Picatrix that follow do not always cite Empedocles, but, with one exception, they appear close by such passages and seem to be a continuation of or are compatible with the ideas stated in them, and are not attributed to anyone else. Others of "Empedocles'" ideas as they appear in the Arab historians and the Book of Five Substances, and to some extent in the genuine Empedocles, support and supplement them.

Ps-Empedocles as he appears in Picatrix, like Qusta, relies on Aristotle for his consideration of the soul, as apparently here:

But Plato thought that the soul is an intellectual substance which moves by itself in conformity with a particular number through harmony. And in another place he says The soul is a substance -- not a body -- which moves the body and is combined with it, by which combination it passes over to join with the body and works in it.⁶⁴

and explicitly here:

But what concerned the excellent philosopher Aristotle, he [Empedocles] also taught: The definition of the soul is that it is the completion (entelechy) of a naturally organic body that is potentially living. He adds the more precise definition "naturally" in order to leave out artificial bodies. He says "organic" because it belongs to mortal bodies which because of their need for nourishment to exist, are subject to passing away. When he says "potential" he means subject to completion in time. And in a commentary to his Book of the Soul it says that it is a formal cause for the breathing body and through the soul it becomes breathing, nourishing itself and feeling.⁶⁵

These suggest that besides the cited works of Plato and Aristotle, Qusta may have been influenced by Ps-Empedocles for his particular treatment of their definitions of the soul. The second passage offers something else, namely apparent proof that a work "on the soul" by ps-Empedocles indeed existed, though it is not clear whether reference is being made to a commentary of Empedocles' "On the Soul." Nevertheless, it attests to the validity of Qusta's citation and the correctness of Nagy's and Asin Palacios' surmise that such a pseudo-Empedoclean work existed.

A passage that does not explicitly cite Empedocles or appear hard by such a citation, nevertheless comes so close to some of the content of Qusta's text that it needs to be considered here, with the suggestion that the author of Picatrix and Qusta used a common text:

The nature of the spirit is, however, a clear one which has been fathomed in speculation: It is a fine body which spreads out in the body from the heart and in the arteries and so operates in the natural heat, respiration and pulse and from the brain spreads out in the nerves and operates sense perception and movement. The spirit goes through the soul, the soul and spirit exist through the reason, the soul is joined with the body and the spirit flows in the body, and its matter is the air. The reason guides the functions of the body; the storehouse of the spirit is the left chamber of the heart. It is the mount of the soul's powers, which circulate through it in the members of the body, created from the finest fiery [components of the] humors, while the body [is created] from the coarsest earthly [ones].⁶⁶

Was this passage part of the work of ps-Empedocles "On the Soul"? Qusta's text omits the description "fiery" from the source of the spirit and does not state that the body is made from coarsest elements; nor does he give the elaborate statement of the interconnections of spirit, body, soul and reason. Since Empedocles is not cited in this passage, perhaps it is rash to suggest that it belongs to him, yet the similarity of its content with that of Qusta's doctrine of the spirit strongly suggests this conclusion. In particular the idea of the mediation of the spirit appears here in a more complete and pervasive form and the imagery of its expression indicates that this was an earlier, more "Platonic" text upon which Qusta drew, rather than the reverse. The passage above interpreting the ideas of Plato similarly lends itself well to the idea of a medium between body and soul. In general, ps-Empedocles here shares with Qusta a tendency to find a harmony between Plato and Aristotle, as in the relatively elevated language of this passage, where the idea of the substantial soul appears beside the soul as form:

And it (the soul) is a power which moves by itself, which holds the body in which it is in order, renewed and alive, lively and in constant motion, spirit from the spirit of the sublime, exalted God, which it has brought forth, it and the intellect, without mediator, and planted both in this body in which they find themselves. They belong to bodies as the light of the sun to its (body); from them rays go out to the body, and

these arrange themselves then to the natural construction [of the body] proportionately to its [difficult] functions, so that feeling, opinion, imagination and thought belongs to them.⁶⁷

The foregoing are only the most striking congruences between ps-Empedocles as seen in Picatrix and Qusta's work. There are a few others: Another extract from pseudo-Empedocles in Picatrix discusses good and bad temperament in the human body and how the soul acting in a body endowed with a good temperament will be free from the "cloudiness of nature" and well-governed, whereas the temperament that tends closer to nature, that is, the elements, will be confused by its close association with the elements in its functions.⁶⁸ Qusta asserts this idea in a lengthy passage at the end of "On the Difference between Spirit and the Soul."

The pseudo-Empedoclean ideas as they are found in the Arab historians and the so-called "Book of Five Substances" complement, if they do not exactly repeat, these ideas. M. Asin Palacios does not believe the latter to be a very valuable addition to our knowledge of pseudo-Empedocles, but he nevertheless includes an explanation of the doctrine in his reconstruction of pseudo-Empedoclean doctrines from the Arab historians. "[T]he system of pseudo-Empedocles supposes five universal substances which emanate from God in this order: primal

matter, intellect, soul, nature and secondary matter."⁶⁹ Primal matter embodies the idea that all substances, including spiritual ones, share a common matter which is not subject to generation and destruction. Asin further notes the conformity of this scheme with that of Plotinus, save only the substitution of the primal matter for the One at the top.⁷⁰ Closely associated with this scheme is the idea of medium, which is expressed in a variety of ways and contexts as pseudo-Empedocles seeks to explain the connection between the fine substances and the body and soul.

The first effect is primal matter. The second effect [caused] through mediation of the latter, is intellect. The third effect [causes] through mediation of both, is the soul. These [three] are simple substances and simple products. After them come compounds.⁷¹

These three substances, simple and spiritual, mix mutually one with another. Each of them comprehends or envelopes that which is below it...this bond of union is not broken, then, until [the light] reaches nature. Then [the direct communication of the light] is interrupted because the sphere of the soul does not envelop the sphere of nature, although the sphere of nature envelopes that of secondary matter, the same as intellect envelopes the soul by means of the light of primal matter and thus diffuses this light over nature....Then there appeared in nature the shell, which resembles neither the soul nor much less the intellect, since it is spiritual and subtle. When the intellect directed its gaze at nature and saw [in it] spirits and pulp within the bodies and the shell....⁷²

The vegetable soul is the shell of the animal and vital soul, which is the shell of the rational

soul, which is the shell of the intellectual soul. All that is below is shell of what is above, and that which is above is pulp or medulla. [Empedocles] sometimes designates the shell and the medulla with the words body and spirit. Thus he says that the vegetative soul is the body of the vital soul, and that the latter is the spirit of the former, and so on successively until it reaches the intellect.⁷³

As Kaufmann observes, each substance contains the other substances in itself.⁷⁴ The "shell" in this scheme appears to be the mediating spirit.⁷⁵

Albino Nagy took a different approach to pseudo-Empedocles, but his results tend to support the main points of this philosophy as extracted by Picatrix and elucidated by Asin Palacios. His work is interesting here particularly for noting Qusta's citation of Empedocles and taking it seriously enough to seek connections between "On the Difference between Spirit and the Soul" and the doctrines of Empedocles. He acknowledges the tenuousness of the Empedoclean philosophy in Arab intellectual currents but endeavors, working from the titles and descriptions of doctrines left in part of the Near Eastern tradition, to find links between them and the doctrines of the presocratic Empedocles.

First Nagy demonstrates Empedocles' belief in (1) the immortality of the soul and especially of the transmigration of the soul; (2) the formation of the soul from the elements and therefore its corruptibility and its

consequent (3) dependence upon the body; and (4) the contradiction, apparently unresolved by Empedocles, that the transmigration of the soul requires its existence after death. He says that Empedocles does not draw the ultimate conclusion that there are two souls, an idea that would later seem heretical to the Arabs.

Nagy supposes that the pseudo-Empedoclean work whose title al-Qifti has preserved as "On the vanity of opinions about spiritual and corporeal resurrection"⁷⁶ concerns certain doctrines which may be traced to the genuine Empedocles, namely the idea that the intelligence resides in the blood and therefore that the soul itself is constituted from the elements. A corollary to this is that variations in the composition of the blood will alter the quality of the soul. In Nagy's view, this conception of the soul, particularly as it was interpreted by the Neoplatonists Porphyry, who took this to mean that the blood is an organon or medium for the soul, and Iamblichus, who saw the spirit as constituted from subtle spherical atoms, elements of the elements, as it were, correspond well to Qusta's definition of spirit as a "corpus subtile."

In this Neoplatonic guise, Nagy says, the doctrine would avoid the heretical implications it would have for Moslems (and, he might have added, Christians). As to the distinction which Qusta makes between the composite and

mortal spirit and the simple and immortal soul, Nagy cites two opposing conceptions of soul to be encountered in Empedocles, a material one residing in the blood and a spiritual one capable of immortality and transmigration, suitable respectively to receive sensible and divine knowledge.⁷⁷ To account for the substance of that divine and immortal soul, Nagy refers to the doctrine of the five substances.

He points out that it was Aristotle who first clearly distinguished between prime matter which is subject to generation and destruction and that which is eternal and invariable. He goes on further to try to answer the question of how a work carrying the idea of the fifth element was attributed to Empedocles in view of the fact that his system was based rather upon the four elements and the principles of love and strife. Nagy again indicates that the gap could have been bridged by the insertion of Neoplatonic views such as were held by Iamblichus and Plutarch that certain atoms are more subtle "elements of the elements" and less material; these ideas, even if not truly Empedoclean, Nagy says, could have inspired later authors, including the Arabs. Nagy also points to the presence among the Pythagoreans and Platonists of the idea of the five elements and concludes that Empedocles might have occupied himself with this subject after all, since

he accepted many Pythagorean doctrines and perhaps even the eleatic one of the double soul of his master, Parmenides. Nagy says that this was perhaps one of Empedocles' earlier ideas, before the maturity of his old age forced him to reconcile the contradictions arising precisely between the nature of the physical elements and those of the soul.⁷⁸

Nagy might have improved his study by considering such medieval sources of the Near Eastern Empedocles as the fragments preserved in the work of the Arab historians al-Sharastani and al-Sharazuri, which his footnotes indicate that he knew. Thus he fails to consider in detail the Neoplatonic ideas carried therein, even though he alludes to the relevant notions of Porphyry and Iamblichus. Further, he does not consider the history of the idea of pneuma and therefore the possible other sources of the doctrine of spirit in Qusta's work. Nagy's work is nevertheless valuable for establishing the fundamentally genuine Empedoclean core of the medieval Arab figure, and his findings are fully compatible with the other researches thus far on the subject.

The connection between the spiritual and the physical which Qusta sought and for which he found an explanation in pseudo-Empedocles apparently eluded the philosopher Theophrastus. What Theophrastus' works might

have contributed to Qusta's discussion remains inaccessible because of the poor survival of his works.

Generally, Theophrastus aimed to explain and make more precise, to complete, what his teacher Aristotle had done. Nevertheless, he also called into question some of the fundamental Aristotelian conceptions of the soul, particularly as they relate to the intellect. Most of these refer to questions outside the scope of Qusta's tract, but a few of his ideas about the soul, as summarized by Eduard Zeller,⁷⁹ appear to be relevant to Qusta's conclusions regarding the relation of body and soul. According to Zeller, while Aristotle relates any movements of the soul to the body, Theophrastus relates only the lower activities of the soul to these movements and sees thought as a movement of the soul. For one thing, it is difficult for him to see how the incorporeal soul can be made to think or be altered by external, corporeal things. He therefore experiences "insuperable difficulties" in relating the lower to the higher powers of the soul. But by making thought, at least, a motion of the soul, Theophrastus moves a little closer to a substantial conception of the soul in the Platonic sense;⁸⁰ this is like the view expressed in Qusta's conclusion that the soul moves the body. Theophrastus' problem in seeing how the incorporeal soul can be altered or moved by the corporeal

is the very one Qusta has sought to resolve in his tract, and Qusta takes his answer, explained by pseudo-Empedocles, to its logical conclusion. His strong statement of the Neoplatonic idea of mediation between the two substances, body and soul, was to give his tract much of its ability to exist and to exert an influence, particularly in the West, in the centuries following; this was probably equally responsible for the decline in its influence afterwards.

NOTES TO CHAPTER II

¹ For a brief and lucid account of the doxographical literature see Peters, Aristotle and the Arabs, 120-129. On the Greek tradition only, see the more technical article by Bernhard Wyss, "Doxographie," Reallexikon für Antike und Christentum, 4:197-210. The archetype and the basis for all the doxographies, including De placitis philosophorum, was Theophrastus' monumental collection of the opinions of the philosophers, "The Eighteen Books of Physical Opinions," of which one of his few surviving works, "On the Senses," was a part. The fourth century Neoplatonist Porphyry wrote a doxography in four books called "History of Philosophers," of which the third and fourth appear still to have existed in Qusta's time, apparently only in Syriac translation. See Franz Altheim and Ruth Stiehl, "New Fragments of Greek Philosophers. I: Empedocles, Democritus, Theophrastus, in Arabic Translation," East and West, n.s., 12 (1961):4-6; also Dimitri Gutas, Greek Wisdom Literature in Arabic Translation: A Study of the Graeco-Arabic Gnomologia, American Oriental Series, 60 (New Haven: American Oriental Society, 1975), for an account of this and other kinds of collections of passages from Greek literature among the Arabs.

² Aristotle, On the Soul, Parva naturalia, On Breath, trans. W.S. Hett, The Loeb Classical Library (Cambridge, Mass.: Harvard University Press, 1964). For details on the Arabic translation see F.E. Peters, Aristoteles arabus. The Oriental Translations and Commentaries on the Aristotelian Corpus. New York University. Department of Classics. Monographs on Mediterranean Antiquity (Leiden: E.J. Brill, 1968), 40-42. See also Richard Walzer, "Aristutalis" in Encyclopedia of Islam, 2nd ed. 1:631-633. The relevant works of Galen are in English translation: Galen, On the Doctrines of Hippocrates and Plato, Corpus Medicorum Graecorum, vol. 4, 2 vols. (Berlin: Akademie-Verlag, 1978); On Anatomical Procedures. De anatomicis administrationibus, trans. Charles Singer, Wellcome Research Institution Historical Medical Museum Publication. New Series, no. 7 (London: Oxford University Press, 1959) (books 1 through part of 9 only, the only ones extant in Greek); and Galen on Anatomical Procedures, the Later Books, trans. W.L.H. Duckworth, M.C. Lyons and B. Towers (Cambridge: Cambridge University Press, 1962) (part of Book 9 and books 10-15, from the Arabic); and On the Usefulness of the Parts of the Body, trans. Margaret Tallmadge May (Ithaca: Cornell University Press, 1968), 2 vols. For Galen in the Arabic tradition, see M. Meyerhof, "New Light on Hunain ibn Ishaq."

³The Collected Dialogues of Plato, ed. Edith Hamilton and Huntington Cairns, Bollingen Series 71 (Princeton: Princeton University Press, 1961). On Plato's genuine and pseudepigraphic works as the Arabs knew them, see Abdarrahman Badawi, Transmission, 35-45. The Arabs had access to many of the dialogues of Plato in the form of digests or summaries such as were made by Galen and al-Farabi (edited and given Latin versions in Plato Arabus, ed. Richard Walzer, Corpus Platonicum Medii Aevi, 3 vols. (London: The Warburg Institute, 1951-1953), and they had some of the sayings of Plato in collections and stories, not to mention the doxographies such as De Placitis philosophorum. See Franz Rosenthal, "On the Knowledge of Plato's Philosophy in the Islamic World," Islamic Culture 14 (1940):387-422; Richard Walzer, "Some Aspects of Platonism in Islamic Philosophy," Recherches sur la tradition platonicienne, Entretiens sur l'antiquité classique, 3 (Geneva: Fondation Hardt, 1955):203-226; and Dimitri Gutas, Greek Wisdom Literature (see index).

⁴Diogenes Laertius, Lives of Eminent Philosophers, trans. R.D. Hicks, The Loeb Classical Library, 2 vols. (Cambridge, Mass.: Harvard University Press, 1966), 1:482-509; al-Nadim, Fihrist, 607.

⁵Themistius (d. ca 388), Simplicius (d. 549) and Priscian Lydus (1st half of the 6th century) are most often mentioned as philosophers whose works carried fragments from these books of Theophrastus. It is not clear what relation they have to the book on the soul listed separately by Diogenes and al-Nadim. O. Regenboden gives a full account of the works of Theophrastus in Pauly & Wissowa, Real Encyclopädie, Suppl. 7:1354-1562; on the soul, see 1398. Eduard Zeller, Aristotle and the Earlier Peripatetics, trans. F.C. Costelloe and J.H. Muirhead, 2 vols. (New York: Longmans, Green & Co., 1897), 2:390, n. 1, notes that Themistius refers to books 4 and 5 of Theophrastus' Physics (i.e., Books on Physical Questions) as "On the Soul." See Themistius, Commentaire sur le Traité De l'âme d'Aristote, traduction de Guillaume de Moerbeke, ed. Gerard Verbeke, Corpus Latinum Commentariorum in Aristotelem Graecorum, t. 1, (Louvain: Publications Universitaires de Louvain, 1957):240. The extant works and fragments of Theophrastus are published in Greek and Latin in the ed. by Fr. Wimmer, Theophrasti Eresii Opera (Paris: A. Firmin Didot, 1866), and those dealing with the intellect in particular have been collected and translated into French in E. Barbotin, La Théorie aristotélicienne de l'intellect d'après Théophraste.

(Louvain: Publications universitaires de Louvain, 1954), 248-273. G. Gabrieli, "La Risalah di Qusta b. Luqa 'sulla differenza tra lo spirito e l'anima'," Atti Rendiconti della Reale Accademia dei Lincei. Classe di scienze morali, storiche e filologiche, Series 5, vol. 19 (1910):625, supposed that Qusta was referring to a commentary on the De anima by Theophrastus.

⁶There is a copious literature on Empedocles (5th century B.C.), of which Hermann Diels, Die Fragmente der Vorsokratiker (Berlin: Weidemann, 1903, and later editions) is the standard source for the fragments. For an English translation and a discussion of many of them, see G.S. Kirk and J.E. Raven, The Presocratic Philosophers; a Critical History with a Selection of Texts (Cambridge: Cambridge University Press, 1957), 356-360 for passages relating to the soul. See also the articles by Carl Joachim Classen in Pauly & Wissowa Real Encyclopädie, Suppl. 12:241-247, and by W. Krantz in Empedokles: antike Gestalt und romantische Neuschöpfung (Zürich: Artemis, 1949), and the review of Krantz's book by Martin Plessner in Archives Internationales d'Histoire des Sciences 4 (1951):511-513.

⁷The pseudo-Empedocles is discussed below.

⁸R. Arnaldez, "Falsafa," Encyclopedia of Islam, 2nd ed., 2:771.

⁹Friedrich Solmsen, "Greek Philosophy and the Discovery of the Nerves," Museum Helveticum 18 (1961): 185.

¹⁰Ibid., 182-4.

¹¹Ibid., 169.

¹²paul Moraux, "Le De anima dans la tradition Grecque. Quelques aspects de l'interprétation du traité, de Théophraste à Themistius," in Aristotle on the Mind and Senses. Proceedings of the Seventh Symposium Aristotelicum. Cambridge [Eng.] (Cambridge: Cambridge University Press, 1978), 281-282.

¹³Hellmut Gätje, Studien zur Überlieferung der aristotelischen Psychologie in Islam, Universitatis Saraviensis. Annales, Reihe: Philosophische Fakultät Bd. 11 (Heidelberg: Carl Winter Universitätsverlag, 1971),

54-68. For Gregory's text, see Gregory Thaumaturgus, "A Topical Discourse by our Holy Father Gregory, Surnamed Thaumaturgus, Bishop of Neo-Caesarea in Pontus, Addressed to Tatian, On the Subject of the Soul," in The Works of Gregory Thaumaturgus, Dionysius of Alexandria and Archelaus, trans. S.D.F. Salmond, Ante-Nicene Christian Library, 20 (Edinburgh, 1871):111-117. In this edition the tract is contained among "Dubious or Spurious Writings," but it now appears to be accepted as genuine. A biographer of Gregorius, Victor Ryssel, in "Zwei neu aufgefundene Schriften der graeco-syrischer Literatur," Rheinisches Museum für Philologie 51 (1896):318, cites a study by J. Dräske, Jahrbuch für Wissenschaftliche Theologie, 39 [N.F. 4], 166ff, which convinces him that it is genuine. The question is reviewed by Hellmut Gätje, "Studien," who gives a German translation of a longer and a shorter version of the Syriac version discovered by Ryssel. According to Giuseppe Furlani, "Contributions to the History of Greek Philosophy in the Orient. Syriac Texts," Journal of the American Oriental Society, 35 (1915), 297, this tract also circulated as a ps-Aristotelian treatise on the soul.

¹⁴Nemesius of Emessa, "On the Nature of Man," in Cyril of Jerusalem and Nemesius of Emesa, trans. William Telfer, The Library of Christian Classics, 4 (Philadelphia: Westminster Press, 1955):203-453.

¹⁵An error made in the Latin translation according to which the arteries branched from the right side of the heart persisted in the Latin manuscripts (See John of Seville's translation, line 46).

¹⁶The likening of a mass of vessels supposed to lie at the base of the human brain to a net (the rete mirabile) is a key idea of Galen's, much discussed by historians of anatomy. The idea is present in all the works that have been cited in Qusta's prologue. Critics of Galen take this idea as an indication that he did not know human as well as he did animal anatomy, on the grounds that the net is present in ungulates but not in human beings. According to M. May, Galen got the idea from Herophilus. (Galen, Parts, 25, 41). However, R. Siegel defends Galen on this point; see the chapter on cerebral bloodflow in his Galen's System of Physiology and Medicine: An Analysis of his Doctrines and Observations on Bloodflow, Respiration, Humors and Internal Diseases (New York: S. Karger, 1968), 109-113. On the heart, see Galen, Parts, May's Introduction, 17.

¹⁷Galen, Parts, May's Introduction, 50, and Solmsen, "Nerves," 178-180.

¹⁸Galen, Parts, 7.8:347: "The outer air drawn in by the rough arteries receives its first elaboration in the flesh of the lungs, its second thereafter in the heart and arteries, particularly those of the retiform plexus [rete mirabile], and a final one in the ventricles of the encephalon, where its transformation into psychic pneuma is complete."

¹⁹Solmsen, "Nerves," 166, 176.

²⁰The sixth pair of nerves, among other things, governs the muscles around the larynx and contributes to the production of speech. Galen describes its complex route from the viscera and back to the head in Parts, 16.4:691. About the uvula, Galen says in Parts that it "contributes to the volume and beauty of the voice in two ways, namely, that the incoming air is first divided by it, and the violent rush of the air and hence its coldness are broken up. . . . It is also evident that the column [the uvula] contributes greatly toward keeping dust or any other such substance from falling into the larynx (9.11:526-526); ". . . when the voice has once been produced in the larynx, it is amplified by the roof of the mouth lying in front [of the larynx] and acting as a sounding board and by the uvula acting as a plectrum." (7.5:340).

²¹I have relied for this summary of Galen's system of the cranial nerves on Rudolf Siegel, Galen on Sense Perception. His Doctrines, Observations and Experiments on Vision, Hearing, Smell, Taste, Touch and Pain, and their Historical Sources (New York: Karger, 1970), 6-10. See Galen's discussion of the cranial nerves in 9.8:438 and 16.3:685. On the nerves of the spinal medulla, see 16.3,4:687-691. Galen discusses the nervous system in considerably more detail in all three works cited by Qusta, On the Doctrines of Hippocrates and Plato and On Anatomical Procedures and On the Usefulness of the Parts of the Body. Since On Anatomical Procedures is about performing dissections and the language is correspondingly technical and detailed, it seems likely that Qusta relied on the more general and theoretical treatments found in the latter two.

²²See Doctrines, 2:125-165.

²³Galen, Parts, 9.4:433: After being elaborated in the arteries of the rete mirabile, "it falls at once

into the ventricles of the encephalon. . . . And it is not expedient that this should happen only in the ventricles and not in the encephalon as a whole; rather it should happen to the same degree in the encephalon as well."

²⁴See Harry A. Wolfson, "The Internal Senses in Latin, Arabic, and Hebrew Philosophic Texts," Harvard Theological Review 28 (1935) : 69-133.

²⁵John of Seville's version, lines 143-166; Galen, Parts, 8.14:419-422.

²⁶pagel, "Contributions," 95-114. "It seems that ventricular localization in its more elaborate form goes back to him and this explains why the basically Christian doctrine became common to all Arabic and--after Salerno and Toledo--all Western authorities. His book on the difference of soul and spirit is a textbook of physiological psychology, setting out the difference between the Platonic and Aristotelian viewpoints. It is similar to the book of Nemesius in many respects. . . . Costa ben Luca revives a dynamic element, based on valve action in the movement of the pneuma as postulated by Galen. The latter had ascribed it to the vermis of the cerebellum, reflecting the pineal as a possible valve. Arabic authors, notably Ali ben Abbas, thought of this valve as being complex in nature and including besides the cerebellar vermis, the 'red vermis,' i.e., the choroid plexus and pineal." On the subject of conceptions of brain structure see also Albert Karl Walther Sudhoff, "Die Lehre von den Hirnventrikeln in textlicher und graphischer Tradition des Altertums und Mittelalters" (Leipzig: J.A. Barth, 1913), and Edwin Clark and Kenneth Dewhurst, An Illustrated History of Brain Function (Oxford: Sandford Publications, 1972).

²⁷Timaeus, 73c.

²⁸Solmsen, "Nerves," 166.

²⁹See Gerard Verbeke, L'Evolution de la doctrine du pneuma, du stoicisme à s. Augustin (Paris: D. de Brouwer, 1945); on Aristotle's conceptions, see A.L. Peck's Introduction and Appendices A and B to his translation of Generation of Animals, The Loeb Classical Library (London: Cambridge University Press, 1943) and his "The Connate Pneuma, an Essential Factor in Aristotle's Solutions to the Problem of Reproduction and Sensation," in Science, Medicine and History, ed. Edgar Ashworth Underwood, 2 vols. (New York: Oxford University Press,

1953), 1:111-121; Friedrich Solmsen, "Nerves," 175-175, is critical of Peck for the amount of development of the idea of pneuma he reads into Aristotle, however. Thomas C. Allbutt, Greek Medicine in Rome (London: Macmillan & Co., 1921), contains an informative chapter on Pneumatism. An excellent more recent contribution is C.R.S. Harris, The Heart and the Vascular System in Ancient Greek Medicine. From Alcmaeon to Galen (Oxford: Clarendon Press, 1973). Marielene Putscher offers a general survey of the subject to early modern times in Pneuma, Spiritus, Geist. Vorstellungen vom Lebensantrieb in ihren geschichtlichen Wandlungen (Wiesbaden: Steiner, 1973). The particular form of the doctrines on spirit in Islam is discussed by D.B. MacDonald, "The Development of the Idea of Spirit in Islam," Acta Orientalia 9 (1931):307-351.

³⁰Solmsen, "Nerves," 174.

³¹Ibid., 181

³²Galen, Parts, May's Introduction, 46.

³³Solmsen, "Nerves," 178.

³⁴Galen, Parts, 48; while Galen's system implies three kinds of spirit corresponding to the three divisions of the soul, and the third kind of pneuma, the theoretical instrument of the vegetative soul resident in the liver, "was fully accepted by most Galenists later on, but [it] seems never to have figured very largely in Galen's scheme. In fact, the sole reference to it which I have been able to find in his works is equivocal. . . : 'and if there is a natural pneuma, it would be contained in the liver and veins. . . .' [from Methodus Medendi]."

³⁵See Paul Moraux, "Le De anima," 292.

³⁶Ibid., 291.

³⁷Phaedo, 70a.

³⁸Phaedo, 93b.

³⁹Phaedo, 79a, 80b.

⁴⁰Phaedo, 94c,d; that is, that it is "exercising every form of control."

⁴¹Phaedo, 105c,d.

⁴²Timaeus, 77b.

⁴³Timaeus, 37a.

⁴⁴Timaeus, 46d.

⁴⁵See above at note 14.

⁴⁶Nemesius, On the Nature of Man, 261-262. See also Telfer's note 2, 262-263, explaining the probable role of Ammonius' student Numenius and the form of this same argument set out by the late sixth century Alexandrian churchman and philosopher John Philoponus, part of whose commentary on Aristotle's Physics Qusta translated into Arabic. Telfer says further on in the note that he thinks "Nemesius had before him a Neo-Platonic Commentary to Aristotle On the Soul."

⁴⁷Nemesius, On the Nature of Man, 263.

⁴⁸Aristotle, On the Soul, 406a,b.

⁴⁹The issue was discussed in a parallel way with respect to the motion of the stars: What sort of motion can be produced by the heavenly bodies? The motion of the lower body is occasioned, but not directly caused, by that of the higher. See the Introductorium maius of Abu Ma'shar (Augsburg: Erhard Ratdolt, 1489). This idea is perhaps the product of the late Hellenistic (Neoplatonic) tradition.

⁵⁰Plato, Timaeus, 69b-72d; Aristotle, On the Soul, 415b-416b; Galen, Doctrines, 171.

⁵¹See note 6 for bibliographical references. Most important of the doctrines of the genuine Empedocles is his physics based upon four elements combining and separating under the influence of the two principles of love and strife. He had what is generally taken to be a materialist view of the soul, though it appears that he also believed that the intellectual part is immortal.

⁵²Al-Amiri, Al-Amad 'ala'l-Abad, translated in S.M. Stern, "Illusion," 327-333; Sa'id al-Andalusi, Livre des Categories, 58-59; al-Qifti, Ta'rikh al Hukama, translated in A. Nagy, "Alcuni scritti," 319-320.

⁵³For example, Sa'id al-Andalusi, Catégories, 59; see the remarks of Asin Palacios, 44-47.

⁵⁴The tenth century Spanish work of magic and astrology, pseudo-Majriti's "The Goal of the Wise," known in its Latin translation as Picatrix. German translation by Hellmut Ritter and Martin Plessner: "Picatrix"; das Ziel des Weisen, von pseudo-Majriti, Studies of the Warburg Institute, vol. 27 (London: Warburg Institute, University of London, 1962). For convenience I shall refer to this work by its Latin title.

⁵⁵The existence of this book has been recognized from passages carried in the "Book of Religious and Philosophical Sects" of the historian al-Shahrastani (1076-1153), German translation by Theodor Haarbrücker: Al-Shahrastani, Muhammad ibn 'Abd al Karim, Abu-'l'Fath' Muh'ammad asch-Schahrastani's Religionspartheien und Philosophenschulen (Halle: C.A. Schwetschke, 1850-1851), 90-98; the passages on Empedocles are given in S. Munk, Mélanges de Philosophie juive et arabe (Paris: Vrin, 1859), 242-245, and in Miguel Asin Palacios, Abenmasarra y su escuela. Origenes de la filosofia hispano-musulmana, Reale accademia de ciencias morales y politicas (Madrid: Imprenta Iberica, 1914). (All citations herein will be to the translation by E.H. Douglas and H.W. Yoder, The Mystical Philosophy of Ibn Masarra and his Followers (Leiden: E.J. Brill, 1981); see Asin's remarks at 45-46); and a large fragment preserved in Hebrew of a work entitled The Book of Five Substances published in David Kaufmann, Studien über Salomon b. Gabirol. Jahresbericht der Landes-Rabbinerschule in Budapest (Budapest, 1899), who discusses the pseudo-Empedoclean presence in Spain.

⁵⁶Stern, in "Anbaduklis," Encyclopedia of Islam, 2nd ed., 1:484, finds the origin of the ps-Empedocles in Neoplatonic ideas fostered on him, among other ancient Greek philosophers, by the Neoplatonist Ammonius in his "Views of Philosophers." The central point of Altmann and Stiehl in "New Fragments," 4-10, is that the ps-Empedoclean fragments contained in the history of al-Shahrastani are Neoplatonic in origin and probably were taken from Porphyry's lost "History of Philosophers."

⁵⁷Louis Massignon added to Andre-Marie Festugière's La révélation d'Hermès Trismégiste, 3 vols. (Paris: J. Gabalda et cie, 1949), 1:384-400, a list of Hermetic works in Arabic in which the name Empedocles is attached to a Hermetic work (387, 392). Martin Plessner, "Hermès Trismegistus and Arab Science," Studia Islamica 2 (1954):45-59, is doubtful about some of Massignon's conclusions. See also Abdul Afiffi, "The Influence of Hermetic Literature on Moslem Thought," Bulletin of the School of Oriental and African Studies 13.4 (1951): 840-855. Peters also discusses the possible connection

between ps-Empedocles and Hermetic literature in Allah's Commonwealth, 282-284 and 357.

⁵⁸See Picatrix, 186, where the translators indicate connections of the pseudo-Empedocles with Arab alchemical works; Paul Kraus, Jabir ibn Hayyan, contribution à l'histoire des idées scientifiques dans l'Islam, Mémoires présentés à l'Institut d'Egypte, 45 (Cairo, 1942):46 n.2, 137 n.1, 171 n. 2; and Martin Plessner, Vorsokratische Philosophie und griechische Alchemie in arabisch-lateinischer Überlieferung: Studien zu Text und Inhalt der Turba philosophorum. Boethius; Texte und Abhandlungen zur Geschichte der exakten Wissenschaften, 4 (Wiesbaden: F. Steiner, 1975):52-57.

⁵⁹Noted by Solomon Munk, Mélanges, 242, and discussed in depth by Asin Palacios, Ibn Masarra, and Albino Nagy, "Di alcuni scritti attribuiti ad Empedocle," Reale accademia dei Lincei. Rendiconti. Classe di scienze morali storiche e filologiche, Ser. 5, 10 (1901):308ff. He aimed to bring the question of the oriental Empedocles up to date, and bases the organization of most of his article on the long notice given by the 13th century historian al-Qifti, which he gives in translation (319-320).

⁶⁰Nagy and Asin assume the work about the soul on the strength of Qusta's citation of it. Ermenegildo Bertola, Salomon Ibn Gabirol (Avicebron), vita, opere e pensiero. Il Pensiero medioevale, collana di storia della filosofia, ser. 1, 4 (Padua: CEDAM, 1953):65, takes the more cautious view that Empedocles' doctrine on the soul is meant. Nagy, "Alcuni scritti," 344, mentions a work by the thirteenth century Jewish encyclopedist Gerson ben Salomon of a work on eye-color and one by Simon Duran of an Empedoclean work on semen. See also Asin Palacios, Ibn Masarra, 46. Besides the works listed in the text he notes "a volume in which is explained his system about the formation of the cosmos and the union of the human soul with its own world."

⁶¹The works of Munk and Kaufmann are important in this regard. The most outstanding foray in this direction is M. Asin Palacios' Ibn Masarra, in which he reconstructed for the Spanish sufi Ibn Masarra (869-931) a philosophy based upon the traces from the Pseudo-Empedocles. The historical basis for this reconstruction was the statement made by the historian Sa'id of Toledo (d. 1070. See note 52) that doctrines of Empedocles had been adopted by Ibn Masarra. S.M. Stern has challenged Asin Palacios' thesis in "Illusion," 326, saying that Sa'id

of Toledo, who was copying the account of the earlier historian al-Amiri, merely added the passage about Empedocles' influence on Ibn Masarra, and that Asin Palacios did not have enough to base his conclusions upon. Franz Altheim and Ruth Stiehl, in "New Fragments," 9, have also expressed doubt about Asin Palacios' conclusions.

⁶²Bertola discusses ps-Empedocles in relation to Ibn Gabirol in his chapter "Le Fonti," 51-69.

⁶³Kaufmann, "Studien," 11; Martin Plessner in "Die Stellung des Picatrix innerhalb der spanischen Kultur, Actes du IXe Congrès International d'Histoire des Sciences. Barcelona/Madrid 1-7 September, 1959 (Paris: Hermann, 1960), 317, reviews the evidence setting a date for its composition. This he places in the later eleventh century.

⁶⁴Picatrix, 305.

⁶⁵Ibid., 307.

⁶⁶Ibid., 186.

⁶⁷Ibid., 307.

⁶⁸Ibid., 45.

⁶⁹ The so-called "Book of the Five Substances" came to be widely noticed in the last century with the work of Solomon Munk and later of David Kaufmann (see note 55) on the doctrines of the eleventh century Spanish Jewish philosopher Solomon ibn Gabirol. Joseph ibn Palquera, writing in the thirteenth century, comments at the beginning of his collection of extracts from Ibn Gabirol's Fons vitae, that it seems to him that Ibn Gabirol was following the system of Empedocles on the five substances, which is based on the principle that all the spiritual substances have a spiritual matter. Ibn Palquera cites Aristotle's statement in 12 Metaphysics "that the ancients attributed a matter to eternal things, . . . though. . . this could not be the kind of matter which is in things subject to birth and destruction and which can be changed into each other" (cited from the Hebrew text in Munk, Mélanges, aleph 1.10, etc). Munk, Kaufmann and then Nagy demonstrate, on the grounds of historical evidence, that the "Book of Five Substances" of Empedocles would have to be spurious.

⁷⁰Asin, Ibn Masarra, 65-66.

⁷¹Al-Shahrastani, Kitab al-Milal wa'l-Nihal (Book of Religious and Philosophical Sects), ed. William Cureton, 2 vols (London: Society for the Publication of Oriental Texts, 1842), cited and trans. in Asin, Ibn Masarra, 52.

⁷²Al-Shahrazuri, Rawdah al-Afrah, MS 1488 of the Library of Leyden, ff. 13v-14r, cited and trans. in Asin, Ibn Masarra, 53-54.

⁷³Al-Shahrastani, trans. in Asin, Ibn Masarra, 54-55.

⁷⁴Kaufmann, "Studien," 53.

⁷⁵Picatrix, An extract from Picatrix, 296, describes this relation in other terms by relating the four causes of the substances: (1) a cause which is neither potential nor actual but is over both; (2) a cause which is potential and whose cause is actual; (3) a cause which is actual and whose cause is potential; (4) a cause which is actual and whose cause is actual. "These are the causes of the substances, namely, will, intellect, soul, nature and element." The Will is potential in God and actual in the intellect; the intellect is potential in will and actual in soul; the soul is potential in intellect and actual in nature; and nature is potential in soul and actual in element.

⁷⁶See above at note 60.

⁷⁷Nagy, "Alcuni Scritti," 330-344.

⁷⁸Ibid., 341.

⁷⁹Zeller, Aristotle and the Earlier Peripatetics, 2:390-96.

⁸⁰Aristotle evidently came close to Plato's idea of the soul in his Eudemus. See articles by A.H. Chroust, "The Psychology in Aristotle's Lost Dialogue Eudemus or On the Soul," Acta Classica 9 (1966), 49-62, and "Eudemus or On the Soul, a Lost Dialogue of Aristotle on the Immortality of the Soul," Mnemosyne 19 (Ser. 4) fasc. 1 (1966): 17-30.

III. "ON THE DIFFERENCE BETWEEN SPIRIT AND THE SOUL" IN MEDICINE AND PHILOSOPHY

There is evidence that "On the Difference between Spirit and the Soul" was widely known in the Near East by Christians, Moslems and Jews alike, who cited it in medical, philosophical and even historical contexts. There it appears to have been particularly valued for the definitions it gives of the soul and the spirit according to the Greek authorities. Following its translation into Latin in the twelfth century, the book came to be known even better by Western thinkers, who classified it in or copied it among medical, philosophical, "medical-philosophical," and theological works. Considering the many subjects of interest to these men--the structure and role of the brain, the nature and role of the spirit or pneuma, the capacities of the internal senses, the definitions of the soul according to the philosophers and the relation of body and soul, two main areas of thought stand out. The Neoplatonic metaphysics of the tract's doctrines on the relation of soul and body contributed to the important philosophical debate on the plurality of forms, while its anatomy and physiology

further disseminated the ideas of Galen. Among these the localization of the powers of the soul in the ventricles of the brain was perhaps the most important.

A particularly good indication that "On the Difference between Spirit and the Soul" early on had a wide circulation in the Near East is the fact that the tenth century geographer al-Mas'udi quoted from it in his Prairies of Gold. Al-Mas'udi was not a deep thinker but a compiler of information freely available to him in his travels.¹ The passage he repeats is the one at the end of the text detailing the differences between the spirit and the soul. In the same century the Cairo physician and philosopher Isaac Israeli probably cited this definition in his "Book of Definitions."² In the eleventh century, the Christian writer 'Abdallah ibn al-Fadl gave as part of his "Great Book of Useful Things" a synopsis in several paragraphs of Qusta's material on the differences between the spirit and the soul together with that on the organs of the spirit.³ The continuing use of the tract may be seen in the extracts to be found in the later authors Ibn at-Tayyib in his Kitab an-Nukat wa-l-atmar and in the fifteenth century the polymath al-Kafiyadji in his al-Rawh fi 'ilm al-ruh.⁴ Evidence of this kind seems to indicate that Qusta's tract helped form part of the so-called "definition literature" which made Hellenistic

philosophy accessible to the Arabs during its transmission.⁵

The easy, even enthusiastic, acceptance of De differentia spiritus et animae into the Western intellectual tradition can easily be explained by the congeniality of its doctrines with others widely held there and its offer of material taken from venerated authorities not yet available in Latin. Its dualism of soul and body and its assertion of the supremacy of the head in carrying out the powers of the soul were compatible with the tendency to Platonism still dominating the intellectual life of Europe which had been established by the authority of Augustine, the commentary of Macrobius on the Somnium scipionis, and Chalcidius' commentary on the Timaeus, together with works carrying Neoplatonic doctrines.⁶ Moreover, the sources upon which Qusta had drawn were still for the most part untranslated. The first part of Timaeus had been available in Chalcidius' version, and only two other dialogues, the Meno and Phaedo, were translated before the end of the twelfth century, these around 1156 by Henricus Aristippus.⁷ Aristotle's "On the Soul" was translated into Latin only later in the twelfth century,⁸ and of the three works of Galen under consideration, only a truncated and corrupt translation of

On the Usefulness of the Parts of the Body by Burgundio of Pisa in the 1150s was available.⁹

The dual content of anatomical and psychological doctrines gave "On the Difference between Spirit and the Soul" a similarly dual identity, and dual influence. At the outset its character as a "medical-philosophical" work gave it a role, as one historian sees it¹⁰ of "bridging the passage between medical works and those of philosophy which more or less directly influenced the thought of the medieval scholastics." The ideas thus passing these vague boundaries were both anatomical and philosophical.

The influence that De differentia may have exercised on medicine is difficult to substantiate. Generally, the Galenic anatomical ideas it shared with the other medical works of Arab origin or from Arabic transmission were not immediately assimilated by practicing physicians. It is a fact, however, that several of the manuscripts of De differentia appear in collections of medical works, and that the only early printed edition appears with the works of Constantinus Africanus and is there attributed to him.¹¹ Moreover, the works of Aristotle, among which most of the other manuscripts are copied, were read by future physicians when they studied the arts curriculum in the universities.

Some recent contributions to the history of medicine have established the fact that Galenic anatomical ideas did not take hold among practitioners immediately after the translations of medical works in the eleventh century by Constantine the African and those following in the twelfth.¹² For example, among the so-called Salernitan anatomies composed from the mid-twelfth to the early thirteenth century by physicians associated with the School of Salerno, only the later ones mention Galen's characteristic rete mirabile, the network of blood vessels he supposed to be at the base of the brain to receive and transmit the vital spirit.¹³ Galenic influence is present in medicine in the earlier period outside Salerno, however, in the illustration of the arterial system belonging to the set of five anatomical schemata of the various systems of the body, with accompanying text, called the "Funfbilderserie". The rete mirabile is depicted, and in the text the branching of the arteries is compared to that of a tree, as is seen best described in Galen's On the Doctrines of Hippocrates and Plato. These drawings may be dated back to the years between 1158-1165, the date of the earliest known copy of the tract. Since this may antedate the translations of the Galenic works describing the rete,¹⁴ it may be that one of the Constantinian translations such as the Pantegni by Ali ibn Abbas or even

De differentia is its source, although we would not press the argument for the latter.

The reluctance of medical practitioners to accept Galenic doctrines was not due entirely to habit or ignorance. Other ideas competed for acceptance. According to Owsei Temkin:

Criticism of Galen in matters medical was facilitated by the philosophical predilection for Aristotle of Avicenna, Averroes, and Maimonides. For instance, there was at issue Aristotle's claim for the heart as the central seat of vital and mental powers, and Galen's Platonizing opposition, which gave to liver, heart and brain their respective shares of the soul. Galen had proved anatomically that voluntary motion and sensation depended on the nerves originating from the brain and spinal cord. This could hardly be denied. But it could be reconciled with Aristotle's claim for cardiac supremacy by pointing out, as Avicenna did, that the brain could not live if the heart did not fulfill its function. Thus the heart remained the center of life, while the brain and nerves and the liver and veins fulfilled the functions of which they were in charge.¹⁵

Thus it appears that our present evidence for the influence on medicine of De differentia is suggestive, at best. When the ideas of Galen did penetrate, there were other avenues for the same ideas, and these were generally more detailed, and even more accurate. It would be interesting to discover, for example, a description of the heart and arterial system that follows Qusta in describing arterial inception from the right, rather than the left,

side of the heart, as an error perpetuated in the manuscripts of the Latin translation.

In contrast, the doctrines of brain structure and function carried in De differentia spiritus et animae may well have had some impact, as a number of historians of brain anatomy and psychology have indicated. Walter Pagel's observations on Qusta's contribution to the conception of localization and "spiritualization" of the brain functions has already been mentioned.¹⁶ In his Die philosophischen Systeme der spekulativen Theologie im Islam, published in 1912,¹⁷ Max Horten devotes several pages to a description of Qusta's text because, he says, it sums up the most important teachings of the Arabs on pneuma, the capacities of the internal senses and the soul. After giving a detailed, though often erroneous, description of the organs of the pneuma, he particularly overextends himself in suggesting a similarity between the views of al-Farabi and Avicenna and Qusta concerning the internal senses, that is, the faculties of the brain not depending upon the organs of sense. He is only somewhat correct in saying "the teachings about the division of the brain and the localization of the inner senses in them correspond in the essential points with those in al-Farabi, Avicenna, Thomas Aquinas, Albertus Magnus, etc." According to Harry Wolfson, who made a careful study of the ancient

and medieval traditions on the subject,¹⁸ all the Arab, Jewish and Latin systems can be traced ultimately to Aristotle and to Galen,¹⁹ and therefore are essentially similar.

According to Galen, the three powers or faculties of the soul, fantasy, cogitation and memory, are localized respectively in the anterior, middle and posterior ventricles of the brain. Qusta (John, lines 278-282) says that fantasy operates in the first with the external senses, memory with motion in the third, and "thinking and learning and judgment" take place in the middle ventricle. From this, Horten derives the following:

In the part common to the two chambers, which is to say the so-called worm, are localized (1) cogitare (2) intelligere (scientific thinking, deduction and induction). It is of course localized only accidentally, that is, inasmuch as the material vital spirit participates in it. In itself it is immaterial and hence cannot be localized; (3) subjective opinion which judges according to comparison with probability (not with absolute certainty like number 2). Its method of argument is to infer from analogy; (4) particular knowledge to be comparable to common sense and imaginative fantasy; (5) distinguishing good and evil, true and false.²⁰

While Qusta does not say all of this, it does appear that he gives a complete description of the brain function for the standards of the time. A well-known subscriber to the ideas of ventricular structure and localization as given by Qusta is Albertus Magnus.²¹ For his more elaborate

discussion of the internal senses, however, he depended upon Avicenna.²²

Although ventricular structure and the location of the mental functions in the brain were ideas universally accepted by medieval authors,²³ there were aspects of psychological doctrines which required explanation and working out and which became matters of controversy, especially as they were considered in a philosophical rather than a medical vein. Probably De differentia first gained circulation by virtue of its character as one of the so-called medical/philosophical works translated in the eleventh and twelfth centuries. E. Bertola has described how it and several similar works translated from Arabic in the eleventh and twelfth centuries, namely Ali ibn Abbas' Pantegni, Galen's Megategni, Constantinus africanus' De oblivione, Hunain ibn Ishak's (Joannitius) Isagoge to the Microtegni of Galen, Ps-Galen's Verba galieni, passed on and gave a scientific justification of a notion that was important in the anthropological discussions of the twelfth and thirteenth centuries, that the spirit is the mediator between body and soul.²⁴

Among theologians and philosophers during the twelfth and thirteenth centuries, the relation of body and soul was the subject of intense intellectual activity. The very meaning of the word "spirit" underwent an evolution in

which De differentia and other scientific translations made a contribution.²⁵ One of the consequences of the introduction of Aristotle's natural works to the West was to stimulate scholastic philosophers to ponder "whether there are required as many principles or forms, as there are perfections and powers [of the body]".²⁶ Another problem so introduced was that of locating the ruling or principal member of the body, that is, the seat of the soul.

The latter question was addressed by Alfred of Sareshel or Alfredus Anglicus, who wrote his De motu cordis before 1210.²⁷ He was one of the earliest commentators of Aristotle in the West, and De motu cordis was an attempt to assert the biological ideas of Aristotle over the platonizing Galenic physiology. In this he is at odds with some of the ideas of De differentia, asserting, for example, the primacy of the heart over that of the brain,²⁸ but Alfred uses Costa's ideas to support other arguments, such as the mediating role of the spirit.²⁹ The appearance of De motu cordis marks the beginning ascendancy of the doctrine of the heart as seat of the soul. This was the view held in the Arab world, and in the West it came to be reinforced by its support in the writings of Avicenna.³⁰ Even though sensation and thought demonstrably occur in the brain, the heart and blood

are always coming from the heart, the conserver of life.³¹ Alfred is no pure Aristotelian, though. His explanation for how the spirit reaches the members, by irradiation from the brain, is Neoplatonic.³²

De differentia's doctrine of the substantiality of the soul and body and the role of spirit as mediator between them were also salient points in the controversy over the "plurality of forms" or the "unity of form."³³ This reached a peak in the first half of the thirteenth century and figured in the writings of many prominent scholastics. The dispute centered upon the question of whether the various powers of the soul constituted separate substances or whether the human soul is substantially one, as Aristotle's definition of the soul would require. The arguments on the side of the plurality of the forms (souls) had some of their authority from philosophical works originating in or coming through Spain in the twelfth century. In particular three were important for their impact upon the De anima of the Spanish churchman Domenicus Gundissalinus, namely the Fons vitae of the Jewish philosopher Solomon Ibn Gabirol, who was so influenced by the Neoplatonism of the Pseudo-Empedocles,³⁴ Qusta ibn Luqa's De differentia spiritus et animae, and Avicenna's Liber sextum naturalium. Etienne Gilson,³⁵ who has studied the pervasive influence of Avicenna's thought in

the Middle Ages, has said that Avicenna's insistence upon the soul as substance and his refusal to define with Aristotle the soul as the form of the body, was very influential with Gundissalinus.

The direct influence of De differentia upon Gundissalinus may be seen at several points in chapters one and two of his De anima. At the end of chapter one, he gives a description of the kinds of motion very like that to be found in De differentia³⁶ (see John's translation lines 368-386). In chapter two he gives Plato's definition of the soul as it is expressed by Qusta and grafts upon it a particular concern of his about the soul:

Plato animam sic definit dicens: anima est substantia incorporea corpus movens. Quod autem anima sit substantia sic probatur: quicquid recipit contraria, cum sit unum et idem numero, substantia est. Sed anima, manens una et eadem numero, recipit contraria quae sunt virtutes et vitia

He continues, adding:

gaudium et tristitia scientia et ignorantia. Ergo anima substantia est. Item quicquid est, aut est substantia aut accidens. Sed anima non est accidens. Nihil enim quod adveniens constituit et recedens destruit accidens est; sed anima adveniens constituit animal et recedens destruit; ergo anima non est accidens; est igitur substantia.³⁷

He also gives Aristotle's definition of the soul from De differentia:

Aristoteles autem sic se definivit animam, dicens: Anima est prima perfectio corporis naturalis instrumentalis viventis potentialiter.³⁸

There are other passages drawn from De differentia, including the argument that the soul is not a body (see John, line 326). As another instance of use made in Spain of De differentia we mention Hermann of Carinthia and his De essentiis, to be discussed in the next chapter.

Albertus Magnus was perhaps the philosopher who cited Qusta's tract most often.³⁹ With regard to the problem of the plurality of forms, E. Bertola has written of Albert's difficulties in constructing a consistent physiological view using both the ideas of Aristotle and the "substantially neoplatonic" views represented in the pseudo-epigraphic writings and Arab-Jewish heritage. Albertus devotes an entire work, De spiritu et respiratione to the subject of spirit. He recognizes that accepting, as he does, Aristotle's conception of the soul and its relation to the body requires that no mediating spirit is possible. He says that while soul in its essence does not require a medium in its relations with the body, in its operations, it does. While the spirit is not required to unite the body and the soul, however, it is required for the action of the soul on the body for the body's operations. Albertus accepts the definition of the Greek physicians, that the spirit is a body, as is found in De differentia, "spiritus est quoddam corpus subtile". The spirit is an instrument of the soul, necessary on account

of the lack and incapacity of matter, not any lack or incapacity of the soul.⁴⁰

There are numerous indications that De differentia was used by other scholastics. Henricus de Renham⁴¹ and Adam of Buckfeld,⁴² for example, wrote commentaries on De differentia. Further support for the presence of De differentia at Oxford may be seen in three manuscripts of abbreviations of the natural works of Aristotle, nearly complete. Two of these include a similar treatment of De differentia.⁴³ In addition to this influence at Oxford there are a number of clues in the form of other digests and anonymous commentaries and suggestive references to the works of less well documented scholastics, that De differentia was consistently used as authority in the discussions of the thirteenth century.⁴⁴ Among other thirteenth scholars who cited it, we mention also Alexander Hales.⁴⁵ It was taught in the universities⁴⁶ and Bartholomaeus Anglicus cited it in Book 3 of his encyclopedia De proprietatibus rerum.⁴⁷

It appears that the success of Aristotelian ideas in the West from the end of the twelfth century had much to do with the relative decline of De differentia spiritus et animae in the fourteenth. More than half of the manuscripts still extant date from the thirteenth century, the time when its effectiveness in philosophical

discussions must have also reached its height. A curious feature of the manuscripts, considering their great number and their very frequent association with the works of Aristotle, is the relative infrequency with which they are annotated or commented upon. Yet it surely was well known, read and copied, in a few cases, until the fifteenth century.

NOTES TO CHAPTER III

¹Al-Mas'udi, Muruj al-Dhahab, ed. and trans. Barbier de Meynard, Societe asiatique. Collection d'ouvrages orientaux, 9 vols. (Paris: Imprimerie Imperiale, 1871-1874), 3:362-63. In reviewing some theories about the soul, he continues:

"Nous ne parlerons pas non plus de la difference qui existe entre l'ame et l'esprit. Cette difference consiste en ce que l'esprit est un corps, et que l'ame n'en est pas un; en ce que l'esprit est contenu dans le corps, et qu'il n'en est pas de meme de l'ame; en ce que l'esprit, lorsqu'il est separe du corps, devient nul, tandis que l'ame, lorsqu'elle cesse son action par rapport au corps, n'est nullement annihilee dans son essence."

Carl Brockelmann, Encyclopedia of Islam, 1st ed., 3:403, says "he touched on almost all the fields of interest of his time, particularly natural philosophy, ethics and politics, as well as heresiology," and that Muruj al-Dhahab, a condensation of two much larger works now mostly lost, was completed in 947.

²Isaac Israeli, "Liber de diffinitionibus," ed. John Muckle, Archives d'histoire doctrinale et litteraire du moyen age Annee 12-13 (1938), 18-19.

³Georg Graf, "Psychologische Definitionen aus dem 'Grossen Buche des Nutzens' von Abdallah ibn al-Fadl (11. Jahrh.), Clemens Baeumker Festgabe, Beiträge zur Geschichte der Philosophie des Mittelalters. Supplement [1] (1913):74-76, ch. 67 "Über den Unterschied zwischen Geist und Seele," at the end of which Qusta ibn Luqa is named; Graf also translates chapter 11, which deals with the soul, but this does not cite Qusta's formulation.

⁴I am indebted for this information to Dr. Hans Daiber. Ibn at-Tayyib's Kitab an-Nukat wa-l-atmar is to be found in MS Istambul. Nuruosmaniye 3610, ff. 125-126 and MS. Escorial 888, ff. 85v-86. On Abu'l-Farag 'Abdallah ibn at-Tayyib al-'Iraqi, see Georg Graf, Arabischen Literatur 2:160-177. On al-Kafiyadji, see Encyclopedia of Islam, 2nd ed., 4:414.

⁵peters, Aristotle and the Arabs, 99-103

⁶See Raymond Klibansky, The Continuity of the Platonic Tradition in the Middle Ages. Outlines of a Corpus platonicum medii aevi, New ed. (Milwood, New York: Kraus International Publications, 1982; first published 1939), 27-29.

⁷See Charles H. Haskins, "The Sicilian Translators of the Twelfth Century," in Studies in the History of Mediaeval Science (New York: Frederick Ungar Publishing Co., 1960. First published 1924), 166-168.

⁸Lorenzo Minio-Paluello, "Jacobus Venetus Grecus, Canonist and Translator of Aristotle," Traditio 8 (1952):265-304.

⁹This was called De iuvamentis membrorum. Galen, Parts, M. May, in her introduction to Galen, Parts, 6, says that this was the only version available until Peter of Abano's attempt from the Greek around 1310, and a little later, in 1317, Niccolo da Reggio's translation.

¹⁰Ermenegildo Bertola, "Le Fonti medico-filosofiche della dottrina dello 'spirito'," Sophia 26 (1958):50.

¹¹Basel, 1536.

¹²Ynez O'Neill, "The Fünfbilderserie Reconsidered," Bulletin of the History of Medicine 43 (1969):240, in considering the possible origins of the Fünfbilderserie, speaks of the "irregular and dilatory assimilation of Galenic ideas by medical practitioners" reflected in the content of the four so-called Salernitan anatomies dating from the mid twelfth to early thirteenth centuries, and in the content of the anatomies of Ricardus Anglicus from the late twelfth century. Only a few of these, among the later ones, mention the rete mirabile, and this in a way to indicate an imperfect assimilation of the Galenic anatomy.

¹³Ibid.

¹⁴Clarke and Dewhurst, An Illustrated History of Brain Function, 8, point out that the rete is described in De iuvamentis membrorum.

¹⁵Owsei Temkin, Galenism, The Rise and Decline of a Medical Philosophy (Ithaca: Cornell University Press, 1973), 120-121.

¹⁶see Chapter 2, note 26, above.

¹⁷2nd ed. (Bonn: F. Cohen, 1912), 179-189.

¹⁸Harry A. Wolfson, "The Internal Senses in Latin, Arabic and Hebrew Philosophic Texts," Harvard Theological Review 28 (1935), 69-133.

¹⁹Karl Sudhoff, Die Lehre von den Hirnventrikeln in textlicher und graphischer Tradition des Altertums und Mittelalters (Leipzig: J.A. Barth, 1913), 153-4, however, traces ventricular localization as well as discovery of the ventricles further back, to Galen's Alexandrian predecessors.

²⁰Horten, Theologie, 181.

²¹According to Nicholas Steneck, "Albert the Great on the Classification and Localization of the Internal Senses," Isis 65 (1974):206, Albertus used Qusta as the source for most of his description of the brain, with its three cells responsible, respectively, for imagination, reasoning and memory, and the motor nerves originating in the rear ventricle. For these ideas Steneck cites Albertus' De animalibus 12.2.4 and De Spiritu [et respiratione] 1.2.4.

²²Wolfson, "Senses," 116-120.

²³pagel, "Contributions," 103.

²⁴Bertola, "Fonti," 57, notes the simplicity and a precision of expression in De differentia and remarks that the physiological element has undergone a philosophic elaboration. By bringing in the definitions of the soul of Plato and Aristotle, Qusta has stressed the spirituality of the soul; spirit, in contraposition to the soul, is plainly mediating in function. We see in Qusta, says Bertola, a doctrine philosophically more complete. The spirit is affirmed explicitly to be a mediating and necessary element between body and soul; it is still corporeal and is defined as 'causa propinquior' of motion while the soul is 'causa longior.' "Perhaps even more than Ali ibn Abbas and Hunain ibn Ishaq, was the doctrine of Costa to introduce to the Latin world the doctrine of the spirit as the mediating element between body and soul."

²⁵According to M.D. Chenu, "Spiritus. Le Vocabulaire de l'âme au XIIe siècle," Revue des Sciences Philosophiques et Théologiques 41 (1957):210, 230, the very word "spirit" was undergoing an evolution because of its wide use and richness, its irreducibility to a stable definition. It was no accident, he says, that De differentia was circulating at the same time as the tracts of the Cistercians Alcher, De spiritu et animae, and Acharð, De discretione animae, spiritus et mentis. He remarks that De differentia introduced a number of philosophical concepts according to the Platonic-Aristotelian syncretism (209) and notes its usefulness in making the formal distinction between body and soul (212) and its use in a totally physiological sense (219). For Chenu, the tract and its content appears to be suggestive only, for it is not discussed in any detail as he traces the uses and distinctions of "spirit" and other psychological terms from ancient times and in the works of medieval theologians. He does not cite any specific influence of De differentia on any of the works he discusses. In a similar study Pierre Michaud-Quantin details the involvement of theologians and philosophers from the schools of St. Victor and of Chartres in the matter of spirit. "La Classification des puissances de l'âme au XIIe siècle," Revue du Moyen Age Latin 5 (1949):15-34.

²⁶Daniel A. Callus, "The Origin of the Problem of the Unity of Form," The Thomist 24 (1961):259.

²⁷Clemens Baeumker, Die Stellung des Alfred von Sareshal (Alfredus Anglicus) und seiner Schrift De motu cordis in der Wissenschaft des beginnenden 13. Jahrhundert. Sitzungsbericht der Bayer. Akademie d. Wissensch. Philos. philol. u. hist. Kl. Jahrgang 1913, Abh. 9 (Munich: Bayerische Akademie der Wissenschaft, 1913):25.

²⁸Alfredus Anglicus, Des Alfredus von Sareshal Schrift De motu cordis, ed. Clemens Baeumker. Beiträge zur Geschichte der Philosophie des Mittelalters. Bd. 23, Heft 1-2 (Münster: Aschendorff, 1923):45, 68-69.

²⁹Ibid., 37-38.

³⁰pagel, "Contributions," 103.

³¹Alfredus, De motu, 45.

³²Ibid., 46. On Alfred's Neoplatonism, see Baeumker, "Die Stellung," 48-64.

³³Except where otherwise noted, I am relying on Callus, "Unity," for the material on this subject.

³⁴See Bertola, Salomon Ibn Gabirol, 170; see also the chapter "Le Fonti," 51-69.

³⁵ Etienne Gilson, "Les sources Greco-Arabes de l'Augustinisme avicennisant," Archives d'Histoire Doctrinale et Littéraire 4 (1929):83.

³⁶Domenicus Gundissalinus, "The Treatise De anima of Domenicus Gundissalinus," ed. J.T. Muckle, with an introduction by Etienne Gilson, Mediaeval Studies 2 (1940): 36.

³⁷Ibid., 37.

³⁸Ibid., 40.

³⁹I have found citations in the following, all to be found in Albertus Magnus, Opera omnia, ed. Bernhard Geyer, 40 vols. (Münster: Aschendorff, 1951--): Super Dionysii mysticam theologiam et epistulas, Cap. 2, 37.1:65; Liber primus de anima, Lib. 1, Tr. 2, cap. 13, 7:52; De natura et origine animae, Tr. 2, cap. 2, 12:22; Quaestiones super de animalibus, Lib. 16, Qu. 8. 12:279; and Lib. 3, Qu. 5, 12:126.

⁴⁰E. Bertola, "La Dottrina dello 'spirito' in Alberto Magno," Sophia 19 (1951):306-316, says that Albertus understood by Aristotle's conception of the soul "it is not possible to include the mediation of spirit [here where body and soul are substantially one rather than diverse]." Bertola cites from Summa de creaturis, Q. 86, Part 2 and Q. 41; Liber de spiritu et respiratione; see 308, 309, 311, in particular, for indications of the influence of De differentia.

A similar solution to this problem was reached by Thomas Aquinas, according to Bertola, "La dottrina dello 'spirito' in S. Tommaso d'Aquino," Sophia 21 (1953):29-35. He did not feel a need to reconcile the bi-substantial doctrine of the Platonists with the new Aristotelian principle of monosubstantiality. However, being a more rigid Aristotelian, he is in some difficulty in dealing with the question of spirit and the problem of union of soul and body. He solves this by giving spirit the task of imparting motion to a being, not as a mediator

between two substances but as the immediate cause of the movement of the members of the body, or of transmisson of powers of the soul. Unlike Albert, Thomas was not preoccupied with physiological questions, but we may find his views in the Commentary on the Sentences, Contra gentiles, and Summa theologiae.

⁴¹Charles Lohr, "Medieval Latin Aristotle Commentaries," Traditio 24 (1968):228.

⁴²Ibid., (1967), 323. Callus, "Unity," 283, speaks of Buckfeld's concern with the problem of unity of form.

⁴³D.A. Callus, "The Introduction of Aristotelian Learning to Oxford," Proceedings of the British Academy 29 (1943):275. The omission from these of only the Meteorica and De caelo et mundo indicate that almost all of Aristotle's natural philosophy was current in the schools about the middle of the thirteenth century. De differentia appears among them, so we may assume that they formed part of the curriculum.

⁴⁴Anonymous commentaries upon it attest further to its influence: These include one by Ps-Thomas Aquinas, a "tabula" in the collections of Cambridge University, manuscripts at Venice, the Bodeleian (Simon?), at Oriel College, Oxford, and at Erfurt.

⁴⁵See Ermenegildo Bertola, "La dottrina dello 'spirito' in Alessandro di Hales," Sophia 23 (1955): 184-191.

⁴⁶Hastings Rashdall, The Universities of Europe in the Middle Ages, ed. F.M. Powicke and A.B. Emden, 3 vols. (Oxford: Clarendon Press, 1936), 1:442-3, states that a Paris University statute of 1255 lists De differentia along with the works of Aristotle upon which the Masters of Arts were required to lecture; Alexander Birkenmajer, "Classement des ouvrages," 15, relates that this situation obtained for Paris and Oxford in 1270.

⁴⁷Bartholomaeus Anglicus, On the Properties of Soul and Body. De proprietatibus rerum libri III et IV, ed. R. James Long (Toronto: Pontifical Institute of Mediaeval Studies, 1979), 54.

IV. THE LATIN TRADITION

The Latin version, De differentia spiritus et animae, was to give Qusta's tract the opportunity for its greatest influence. The extant Latin manuscripts number more than 150, in marked contrast to the half dozen copies and fragments of the original Arabic and the two manuscripts of a medieval Hebrew version.¹ John of Seville made a translation in Spain during the first third of the twelfth century, and shortly thereafter another translator, probably Hermann of Carinthia, made a version based upon it. This second version, however, had nothing of the impact of John's original, to judge from the fact that only a few manuscripts of it remain. The great interest in De differentia did not persist into early modern times, however, for it never appeared in any early printed edition of the works of Aristotle. It had only one early printed edition and that was among works of Constantine the African, to whom it was attributed.² A modern edition based on three manuscripts was published by Carl Sigismund Barach in 1878.³ Another modern edition

of the Latin as well as the Arabic and Hebrew versions had been planned by Albino Nagy before his untimely death in 1902. Giuseppe Gabrieli was able to continue this work with his publication of an Arabic text in 1910, but he never realized his plan similarly to produce a new Latin version.⁴

The manuscripts of De differentia spiritus et animae sometimes appear in codices among medical, and, rarely, theological works, but the great majority of them appeared with philosophical works, most particularly those of the Corpus aristotelicum; there they usually occupied a place among the Parva naturalia, and more often than not they were associated with the versions of Aristotle's works known as the "corpus vetustius", that is, the versions which were made in the first wave of translations, usually from the Arabic.⁵ Sometimes the tract appeared anonymously or was attributed variously to Augustine, Avicenna or Aristotle himself or perhaps to the eleventh century translator of medical works from Arabic into Latin, Constantinus Africanus⁶, but there is clear evidence that its authorship and the identity of its translator could not often have been in doubt. Rubrics attached to the beginning or colophons at the end of some of the oldest copies and in many of the later ones name the author, Costa ben Luca or, frequently, "Constabulus", and its translator,

Johannes Hispalensis. Since the overwhelming majority of the manuscripts of the work carry John of Seville's translation or a relatively minor revision of it, the whole of the following discussion, except where "Hermann's version" is explicitly referred to, will concern itself with problems encountered in exploring the textual history of John of Seville's translation.

Following is a discussion of each of the two major versions and their authors; then a discussion of a theory of two versions of John's text put forth by the editors of Aristotles Latinus; then a breakdown of the various revisions or groups of John's text which have emerged in the course of this analysis.⁷

Herman of Carinthia's Version

We know of the version that we are ascribing to Hermann of Carinthia through three manuscripts, discovered only recently in the course of this research. One only has the complete text, Geneva, Bodmer 1341, ff. 242v-245r, which appears to date from about the mid thirteenth century; the other two are fragments which appear to date from the first half of the thirteenth century: Assisi Communal Library 298, ff. 99v-105v, which begins with John's version and then finishes with approximately the last third of Hermann's text; and Naples National Library VIII.F.31, ff. 3v-4r, which contains the first two chapters

only, that is, up to the chapter beginning "Narrare" (line 294) in the John of Seville version. Since both the complete manuscript and the Naples fragment lack the characteristic prologue, we may assume until we have evidence to the contrary that this circumstance is typical of Hermann's version. Only one of the manuscripts of the John of Seville version has no prologue, and the printed edition of 1536 lacks the first two-thirds of the prologue. Otherwise it is always present.

The differences between the second version and John's are significant enough to warrant calling it a "version," though it was clearly prepared on the basis of the translation of John of Seville. In many portions the language is identical to it or nearly so, and the beginning of the new version, "Spiritus igitur est corpus subtile",⁸ is so similar to the other, "Spiritus est quoddam corpus subtile", that it is small wonder that the existence of this other version has gone unnoticed for so long. To conclude otherwise, that John's version was originally based on this, would force a conclusion that is unwarranted by the evidence and which is inconsistent with what is known about John of Seville; we have no twelfth century manuscripts of this version to support the notion that this version could have preceded John's, and John was no mere reviser.

Why from among the various medieval translators from Arabic to Latin should Hermann of Carinthia be considered as the author of this version? Herman and John have been linked together with other works⁹, notably Abu Ma'shar's Introductorium maius in astronomiam. According to Richard Lemay, the translation Herman made of this work reveals few, if any, traces of his having consulted the earlier translation of the same work by John of Seville,¹⁰ so in this respect the present case would be an exception. However, Hermann used his own translation of the Introductorium maius in his De essentiis, as he used De differentia spiritus et animae.¹¹ It is clear that he is quoting from the new version rather than John's.

De essentiis:

"Aristoteles vero in libro de anima sic:
'Anima est' ait 'perfectio corporis naturalis
instrumentalis potentia viventis. Et alibi:
Anima est perfectio corporis agentis et
viventis potentia.¹²

New version:

Transeo ad aristotelem principem philosophorum.
Anima inquit est perfectio corporis agentis
et viventis potentialiter in libro suo de
anima. Et aliter: Anima est perfectio corporis
naturalis instrumenti viventis
potentialiter.¹³

John's version:

"Nunc tractemus de expositione diffinitionis
aristotilis philosophi. Aristotiles philosophus
ita diffinivit animam: ut diceret quod esset
perfectio corporis agentis et viventis potenti-
aliter. In libro autem aristotelis quem fecit
de anima, talis est diffinitio: Anima est per-
fectio corporis naturalis instrumentalis
viventis potentialiter.¹⁴

A further bit of evidence that the origin of the passage quoted in De essentiis is the new version is the fact that the last word, "potentia", is present as a variant in the Assisi fragment of the new version, and thus may be associated with that version. The other manuscripts of both versions have "potentialiter." The use of what was probably his own version of De differentia in his work De essentiis, completed in 1143, indicates that the new version was also completed by then. Since the date of John's translation might well have been a dozen or more years earlier,¹⁵ it seems that Hermann's version was made during that period.

Hermann's philosophy and style of translation has been remarked upon by students of his life and works, who have pointed out that Hermann had an express dislike for the prolixity of the Arabic language and was wont to reduce this in favor of more graceful Latin and elimination of the repetitious and superfluous, to achieve a "remarkable terseness"¹⁶ of style. Where the text is substantially revised or retranslated, the tendency is always to make the Latin more graceful, to condense, and sometimes even to eliminate material, so that the text is somewhat shorter. For example, the new version usually omits the transliterations of Arabic words so often encountered in the anatomi

cal portions of John's version, and usually omits also the expression "verbi gratia". Substantial passages are omitted, for example, where Qusta describes disabilities following on the cutting of the flow of spirit to the members. The result is that the length of the new version is about two thirds that of John's. Hermann's style is further marked by considerable use of the passive periphrastic construction, of postpositives and a certain "ingenuity of vocabulary."¹⁷

As his friend and co-translator, Robert of Chester, pointed out to him, this put him in danger of losing credibility among potential users of his work, and in fact within his lifetime some of his translations became less popular than those of his more literal colleagues.¹⁸ This version scarcely survived at all. Despite its obscurity and incompleteness as a true translation, Hermann's version is interesting because its existence amplifies our knowledge of his work. Moreover, some of its passages point to the early origin of one of the manuscript traditions of John of Seville's translation.¹⁹

John of Seville's Version

There can be no doubt, and there scarcely ever has been a doubt, that John of Seville was the Latin translator of De differentia spiritus et animae from the original Arabic of "Costa ben Luca." Of the more than 140 Latin

manuscripts that we have seen, about twenty (some MSS are incomplete) carry a colophon or an ascriptive passage at the beginning of the work naming "Iohannes Hispalensis" or "Hispanus"²⁰ as the translator. One of these manuscripts, Edinburgh National Library of Scotland Advoc. 18.6.11, ff. 104v-108r, is of particular interest in this regard because it dates from the first half of the twelfth century and is the earliest one known,²¹ and it further names John as translator in a colophon in the form that John himself used in his early works, "interpretatus a iohanne hispalensi et limiensi", that is, John of Seville and of Limia.²² From this and the fact that this manuscript appears in the codex with a manuscript of John's earliest known translation, that of the medical portion of the Secreta secretorum, it appears that the translation of De differentia spiritus et animae might be numbered among John's earliest.²³ The Edinburgh manuscript leaves no doubt that John was the translator of the work and that the form of the text contained therein must conform closely to the translation belonging to him. The manuscript is not perfect; it has, besides some grammatical errors and garbled words, some omissions of passages that appear to be the result of error, since the Arabic manuscripts support passages that are supplied by the other manuscripts. More important, it has some variants that are unique with it or,

in some cases, carried by only a few other manuscripts of later date. Most of the extant manuscripts conform more closely to another manuscript of nearly even date, Brussels Royal Library 2772-89, ff.77r-82v, which has been chosen as the base text in the present edition. The abandonment by this and nearly every other manuscript of certain readings in the Edinburgh manuscript in favor of less prolix ones suggests that John's original version was subjected to a minor revision at a very early date, and that this revision remained the standard in the manuscript tradition.

The evident desire of some copyist or translator to remove these passages serves to highlight the outstanding characteristic of John of Seville's method and style of translation, a tendency to render the Arabic literally to the point of slavishness, so that none of the meaning might be lost.²⁴

The "Hispalensis" and "Anonymous" Versions

Before discussing the various traditions of John of Seville's version, it remains to put to rest the thesis of two versions as it is presented in Aristoteles Latinus. This was first offered by Ezio Franceschini and incorporated into the format of Aristoteles Latinus, which he co-edited. According to this theory, manuscripts of John of Seville's original translation may be distinguished from those of a later, anonymous, revision. The

Introduction explains that the classification "translatio hispalensis" has been given to texts that have an attribution to John of Seville as translator and it gives as the incipit for that version "Interrogasti me de differentia spiritus et anime".²⁵ The classification "recensio anonyma" has been given to texts that typically do not name the translator, and its incipit is given as "Interrogasti me, honoret te deus, de differentia que est inter spiritum et animam".²⁶ Other differences between the texts are implied in samples provided from the exemplars of the two versions. In these, which are printed in facing columns, the prologue of the text is given in full, together with a few lines of the text; a much shorter passage is reproduced from the end of text. Significant variants are set in italics. Most striking are the first few lines, the addition of several lines in the prologue of the "anonymous" version and similarly the presence of an additional passage at the end of the "anonymous" text. The editors have further noted extensive "contamination" among the manuscripts.²⁷

Upon examination of the manuscripts it is clear that the thesis of the two versions in the form that it is put forth by the editors of Aristoteles Latinus needs to be revised, if not abandoned. Leaving aside the existence of Hermann's version, of which they were not aware,

the manuscript evidence points to the conclusion that the classifications "anonymous" and "hispalensis" need to be reversed: The original translation by John of Seville must be identified with the version set forth as "anonymous", that is, the one with the longer prologue and extra passage at the end and the characteristic incipit "Interrogasti me, honoret te deus, de differentia que est inter spiritum et animam"; and an "anonymous" version, if it exists, must therefore be sought among the many manuscripts having some or all of the characteristics indicated in the sample given by Aristoteles Latinus for the "hispalensis" version. Moreover, given the complexity of the patterns of variants to be observed in those manuscripts, the criteria for any such classification need to be redefined.

The case for reversal of the supposed classifications rests upon the manuscripts' lack of conformity with one of the criteria set out by Aristoteles Latinus. We have already mentioned the importance of our earliest manuscript, Edinburgh National Library of Scotland, Advoc. 18.6.11, ff. 104v-108r, which dates from approximately the mid 12th century. This manuscript is not classified in Aristoteles Latinus but shares the characteristics of the "anonymous" classification, that is, the longer prologue, the additional passage at the end of the work, and some of the characteristic language given in the samples; neverthe-

less the Edinburgh manuscript names as translator in its colophon "johannes hispalensis et limiensis", the characteristic appellation John gave in his earlier translations and which indisputably links him with this manuscript and the form of the text contained therein. Further, nearly every other manuscript that names John as translator is of this type defined as "anonymous" in Aristoteles Latinus.²⁸ Very few manuscripts with the other readings so name John, or anyone, as translator, and of these, none is among the earliest of the extant manuscripts.

The second conclusion, the need for new criteria for any classification of a major revision in John's translation, rests upon observation of the complexity of the remaining manuscript tradition. Many of the manuscripts contain several if not most of the supposedly characteristic readings of the sample text with the short prologue and the text ending that goes with it, even when they do not have a short prologue or when they omit the last passage of the other version. They have, for example, the expression "honoret te deus" in the incipit. It appears, then, that the very form given as characteristic for one of the versions must be reevaluated and an answer sought to the question: If texts resembling the (misnamed) "hispalensis" version really constitute a

revision, what is the original form of this revision? Does the presence of a truncated version of the prologue and the omission of the last passage of the longer version belong to this "revision", or does it represent the last stage of a process in which a revision changing several readings of John's original (but not the length of the prologue or omitting the last passage) was further tampered with until the form with the shorter prologue and the omission of the last passage emerged? Does the extensive "contamination" mentioned by Aristoteles Latinus account for the presence of the characteristic "hispalensis" readings in many of the "anonymous" type manuscripts and the reverse; or can some natural explanation of the filiation of the manuscripts account for these phenomena?

The classifications outlined in Aristoteles Latinus and the need to address the thesis set forth therein has shaped the method of the present analysis to a great degree, and the conclusion reached in this investigation is that the story of the "revisions" of the text is more complex than that of an original version and a readily identifiable revision by someone unknown. We have worked over fifty of the 140 Latin manuscripts we have seen. After devising a means of comparing their readings, first by a chart and then more particularly with computer assistance, the details of which are set out in Appendix A, we feel we

can now tentatively classify some of them in several minor revisions, as follows.:

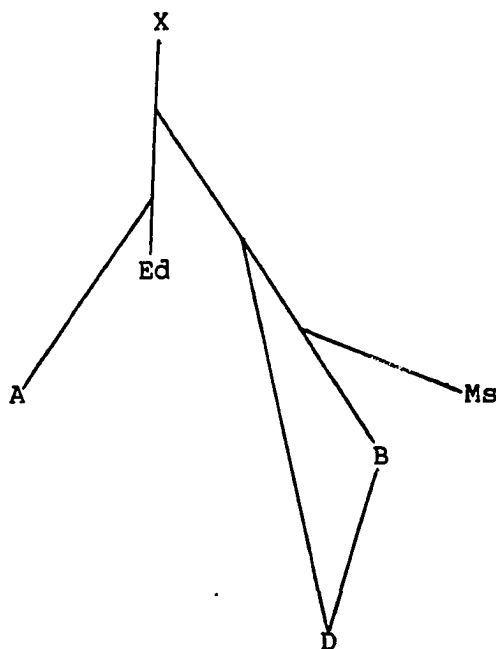
Ms: A revision from the earliest version represented by the Edinburgh manuscript substantially like Ms. Brussels Royal Library 2772-89, ff. 77r-82v. This and others like it restore some passages omitted from the Edinburgh ms. Some missing passages from the Brussels ms have likewise been restored from the Edinburgh and other manuscripts. This and several other manuscripts (Group "C" in Appendix B) have along rubric identifying the text and ascribing the translation to John of Seville "for Archbishop Raymond of Toledo." The wording of this, quite different from that in the colophon of the Edinburgh manuscript (which bears the mark of John's own signature) is a further indication that this text may have been revised and then attributed to John in a fashion reflecting his career many years after the actual time of translation. Generally, the manuscripts in Group B seem to belong to this main tradition also.

A: A revision also probably from the earliest tradition characterized by many, though not all, of the particular readings to be found in Ms Avranches BM 232, ff. 77v-81v and including the tradition represented in the Basel, 1536 edition. These correspond to Group "I" in Appendix B.

B: A revision featuring the shorter prologue and probably characteristically omitting also the last passage of the original translation (called "Hispalensis" in Aristoteles Latinus), or possibly a revision including one of these characteristics and developing eventually into Group "E," "M" or "J" represented in Appendix B.

D: A revision conflating features of revision B and the Ms version. Represented by Group "D" in Appendix B.

These families appear to be related to each other as follows:



An examination of the versions of Hermann and John has revealed very little, if any, indication that later

manuscripts of either influenced the other. There are, of course, too few manuscripts of Hermann's version to be certain of this. Among the manuscripts of John's version, however, what similarities there are in the readings of the two versions may be traced to this relatively small and distinctive group of the manuscripts of John's version. Avranches, Municipal Library MS. 232, ff. 77v-81v, is one of the earliest manuscripts and appears to date from the late twelfth or early thirteenth century. We have classified about half a dozen of the other manuscripts with it, and the text that was printed in the 1536 Basel edition of De differentia belongs with this group as well.²⁹

Was this family influenced by readings from Hermann's version? Or, when Hermann made his revision, did he have before him a manuscript of John's version which resembled the ones in this group? It seems probable that this is the case.

A number of striking similarities between the unusual variants in this group and the corresponding readings of Hermann's text seem to be otherwise inexplicable. For example, at line 404 of John's version the Avranches group, like Hermann's version (lines 279-280) call Aristotle "principem philosophorum".³⁰ It appears then, that that the readings in this group, which form an

apparently thoughtful pattern, emerged in the manuscript tradition at a very early date, before Hermann made his own version in the years before 1143. On the basis of this and further evidence which will be given below, we feel that this group represents a very early, minor but deliberate revision of the original text of John. One could argue that the original reviser of this group made his changes while glancing at a copy of Hermann's version as he copied John's, but this seems unlikely. Surely more substantial changes from Hermann's version would have crept into this family under such circumstances.

FOOTNOTES TO CHAPTER IV

¹We know of three complete manuscripts of the Arabic version, and a fourth has been reported to be held in the University Library in Kazan, Th. Menzel, "Das heutige Russland und die Orientalistik. II.," Der Islam 17 (1928):94 and cited in Carl Brockelmann, Geschichte der arabischen Litteratur. Supplement, 3 vols. (Leyden, 1937), 1:366. Brockelmann also mentions a fragment in [Istanbul] Ayasofya 2457,6, cited from Martin Plessner, "Beiträge zur islamischen Literaturgeschichte," Islamica 4 (1931): 527. The three other Arabic manuscripts have been individually edited and published in this century: Gotha MS. 1158 (with Italian translation) by Giuseppe Gabrieli, "La Risalah," 622-655; MS. Jerusalem Khalidiyyah by Louis Cheikho, "Risālah fi'l-farq baina ar-ruh wan-nafs," al-Masriq 14 (1911):94-109; and MS. [Istanbul] Ahmad III Mejmū'at-al-rasail, no. 3483 by Ziya Ülken, Ibn Sina risaleleri. Les opuscules d'Ibn Sina (Ankara: Türk tarih kurumu Basimevi, 1953). For a description of the Hebrew manuscripts, see Chapter 7.

²F.E. Crantz, A Bibliography of Aristotle Editions 1501-1600 (Baden-Baden: Koerner, 1971), has no mention of editions of De differentia among the works of Aristotle, and I have found no editions reported in the literature except the one of Basel, 1536. This early printed edition has been reproduced in Marielene Putscher, Pneuma, Spiritus, Geist, 145-150.

³C. S. Barach, "Excerpta e libro Alfred Anglici de motu cordis item Costa-Ben-Lucae de differentia animae et spiritus liber translatus a Johanne Hispalensi," Bibliotheca philosophorum medie aetatis 2 (Innsbruck: Wagner, 1878):120-139.

⁴Gabrieli, "La Risalah," 622.

⁵On the transmission of the Parva naturalia, which were, in fact, first translated from the Greek, see Georges Lacombe, "Medieval Latin Versions of the Parva naturalia," New Scholasticism 5 (1931):289-311, and Sybil Douglas Wingate, The Medieval Latin Versions of the Aristotelian Scientific Corpus, with Special Reference to the Biological Works (London: The Courier Press, 1931),

45. Lacombe's classification of Aristotle texts into old and new versions is given in Aristoteles Latinus. Codices. 3 vols., 1 and 2 ed. by Georges Lacombe, Ezio Franceschini and Alexander Birkenmajer (Rome, 1939 and Cambridge, 1947); 3 ed. by Lorenzo Minio-Paluello (Bruges-Paris, 1961). See the Introduction in vol. 1 for the editors' explanation. L. Minio-Paluello discusses the probable identity of the first translator from the Greek in "Jacobus Venetus Grecus," 265-304.

⁶Alexander Birkenmajer included De differentia in the tenth class of works to be considered for the then-projected Aristoteles Latinus, in his Prolegomena in Aristotelem latinum. Classement des ouvrages attribués a Aristote par le moyen age latin (Cracow: Imprimerie de l'Université de Cracovie, 1932), 15. This tenth class would include works translated from the Arabic which were sometimes attributed to Aristotle, but which are well known to have other authors. As a result of this scheme, manuscripts of De differentia were more or less consistently included as a part of the project, even, in some cases, where a codex containing De differentia does not include genuine works of Aristotle. It appears likely that the manuscripts of De differentia included in Aristoteles Latinus account for most of the extant manuscripts of De differentia. To date we have been able to find few besides these. The association of De differentia with the name of St. Augustine doubtless stems from the similarity of this with the title of the ps-Augustinian "De spiritu et anima," considered to be the work of Alcher of Clairvaux. Doctrines similar to Qusta's were carried in the translations of Constantine; De differentia, moreover, appeared in its only early printed version among the works of Constantine and was attributed to him there.

⁷A detailed description of the method devised for classifying the manuscripts will be found in Appendix A.

⁸The "igitur" seems to suggest that something preceded the text or was intended to precede the text, however.

⁹Richard Lemay, Abu Ma'shar and Latin Aristotelianism in the Twelfth Century: The Recovery of Aristotle's Natural Philosophy through Arabic Astrology, Publication of the Faculty of Arts and Sciences, Oriental Series, no. 38 (Beirut: American University of Beirut, 1962), 16-40.

¹⁰Ibid.

¹¹Noted by M. Alonso, "Traducciones de Juan Hispano," 139 and Theodore Silverstein, "Hermann of Carinthia and Greek: a Problem in the 'New Science' of the Twelfth Century," Medioevo e Rinascimento--Studi in onore di B. Nardi (Florence: Sansoni, 1955), 688-692. De essentiis has since received a critical edition from Charles Burnett, Hermann of Carinthia De essentiis, a Critical Edition, with Translation and Commentary, (Leiden: E.J. Brill, 1982).

¹²De essentiis, Burnett ed. 71E,F; Alonso. De essentiis, p.74, 3-5. Immediately preceding this passage is "Plato quidem im Cadone, 'Anima est' inquit 'substantia incorporea corpus movens.'" Cf. John's translation, lines 10 and 308-309, and Hermann's, lines 204-205, together with the lines given in notes 13 and 14.

¹³Lines 279-284.

¹⁴Lines 402-409.

¹⁵See note 11.

¹⁶Lemay, Abu Ma'shar, 33. Sheila Low Beer has also analyzed Hermann's style in relation to his works: "Hermann of Carinthia: The Liber imbrium, the Fatidica and the De Indagatione cordis," (The City University of New York, Dissertation, 1979), 88-97. Burnett discusses the matter briefly, 55-56.

¹⁷Low Beer, "Hermann of Carinthia," 89, 91.

¹⁸Lemay, Abu Ma'shar, 21.

¹⁹See the remarks at the end of this chapter.

²⁰On the debate over the identity or lack of it of the translator(s) variously known as Johannes Hispalensis, Johannes Hispanus, Johannes Ibn Daud or Ibn Daud (Avendauth), see Lynn Thorndike, "John of Seville," Speculum 34 (1959):20-38; Richard Lemay "Dans l'Espagne du XIIe Siecle. Les Traductions de l'Arabe au Latin," Annales, Economies, Societes, Civilisations (1963), especially 647-54; Marie-Therese D'Alverny, "Avendauth?" in Homenaje a Millas Vallicrosa, 2 vols. (Barcelona: Consejo Superior de

Investigaciones Científicas, 1954), 1:19-43; and the articles by Manuel Alonso in Al-Andalus: "Notas sobre los traductores toledanos Domingo Gundisalvo y Juan Hispano" 8 (1943):155-188; "Traducciones del arabe al latin por Juan Hispano (Ibn Dawud)," 17 (1952):129-151; and "Juan Sevillano," 18 (1953):17-49. Alonso's argument that a "John of Spain" as translator of philosophical works, including De differentia, is another person than "John of Seville," the translator of numerous astrological and other scientific works, is refuted by the frequent appellation Johannes Hispalensis in the manuscripts where the translator of De differentia is named. I agree with Thorndike that an original appellation of "Hispalensis" is more likely to have been corrupted into "Hispanus" or that the latter is a variation of the former and the two men are the same ("John of Seville," 22-29; 22-24), rather than the reverse, as Alonso argues ("Juan Sevillano," 18). Moreover, Alonso's argument that John of Spain is associated with Toledo while John of Seville and Limia never is ("Juan Sevillano," 26-26), is refuted by the evidence in MS Edinburgh National Library of Scotland Advoc. 18.6.11 itself, where the colophon of De differentia names "iohannes ispalensis et limiensis," while numerous other manuscripts carry the name of iohannes hispalensis and the information that the work is dedicated to Archbishop Raymond of Toledo.

²¹Description in Aristoteles Latinus, no. 1913.

²²For an account of the details of John's life and an explanation of this designation, see Richard Lemay, "Dans l'Espagne," 647-54.

²³M.Th. D'Alverny has suggested this in "Translations and Translators," in Robert L. Benson, ed., Renaissance and Renewal in the Twelfth Century (Cambridge, Mass.: Harvard University Press, 1982):446, on the grounds that it appears together with John's earliest known translation, that of part of the ps-Aristotelian Secreta secretorum, which he dedicated to a certain Queen T. of Spain and which is assumed to have been done before her death in 1130. It may be that De differentia was translated early in John's career and later dedicated to Raymond of Toledo by John or merely assumed by a rubricator to have been so dedicated. According to her, 445, this is unique in indicating the patronage for translations to Archbishop Raymond of Toledo, for it appears that the period of such patronage falls more in that of his successor, Iohannes (1152-66).

²⁴According to Thorndike, "John of Seville," 26, "The method of translation thus disclosed [of the Secreta secretorum for T. of Spain] fits John of Seville almost to a T, since he is noted in his later astrological renditions from the Arabic for literal and word-for-word translation, and even for following the Arabic sentence structure and word order, so that his translations have even been called slavish." For a discussion of John's method of translation and his qualities as a translator, see Richard Lemay, Abu Ma'shar, 15-40 and passim (see index).

²⁵Aristoteles Latinus, 1:16.

²⁶Aristoteles Latinus, 1:15,16.

²⁷In the years since the publication of the first volume of Aristoteles Latinus this thesis has been avoided by M. Alonso, "Traducciones," 136, denied by Ermenegildo Bertola, "Le Traduzioni delle opere filosofiche arabo-giudaiche nei secoli XII e XIII," Studi di filosofia in onore di Francesco Olgiati (Milan: Societa editrice vita e pensiero, 1962), 270, and accepted by Richard Lemay, "Gerard of Cremona," Dictionary of Scientific Biography, 15 (Supplement 1):175, 190.

²⁸The identification appears in a long rubric, almost always at the beginning of the text, whose wording is different from the colophon in the Edinburgh manuscript. This feature exists in and was omitted from the sample for the "anonymous" version in Aristoteles Latinus, Paris BN lat. 6325, f. 167v.

²⁹This is the text which Alonso quoted to support his remarks about the debt of De essentiis to De differentia, "Traducciones," 139.

³⁰The new version has "Transeo ad aristotelem principem philosophorum. Anima inquit est perfectio corporis." (Hermann, lines 279-281).

V. DE DIFFERENTIA SPIRITUS ET ANIMAE:
THE LATIN TEXTS OF JOHN OF SEVILLE AND
THAT ATTRIBUTED TO HERMANN OF CARINTHIA

The need for a new edition has long been evident. C.S Barach's version of 1878 is based upon a mere three manuscripts, not among the earliest, and he made no attempt to account further for the manuscript tradition. Many of the variants follow the tradition of the "D" manuscripts in the present classification, and to that extent they may be considered as legitimate. Besides these general failures in his method, there are numerous faults in the text that go beyond the choice of manuscripts. In many places there are words missing or added, lines omitted, phrases added. For example, at J[ohn's version line] 23/B[arach]121, Barach reads "dictas" for "duas;" at J199/B127, he reads "conjunctas" for "commixtus;" at J221/B128 he reads "dissectionem venae" for "directionem naturae." Frequently where a variant is given in the notes Barach has chosen the less correct one, as where at J457/B135 he prefers "nutrimentum" over "incrementum."

These are not variants that appear in any of the main versions which are represented in the apparatus to the present text. Among the longer passages omitted are those at J178-180/B127 (line 2) at "intelligendum": "idest ut sit fortior in cogitatione et intellectu, providentia et cogitatione"; and at J316-318/B131 (line 15), at "vicia": "cum sit una numero ut anima platonis que inmutabilis in suo essentia recipit virtutes ac vicia." At many other points in the text glosses remain, as at J202/B127 (line 21), after "palato": "ad hoc, ut ibi fiat augmentatio delectionis in gustu." Examples could be multiplied.

The present texts, presented on facing pages, have been emended as little as possible, to the extent of retaining the medieval spelling where it is understandable and where all the early manuscripts are witnesses to a particular reading. In the revision ascribed to Hermann of Carinthia, an emendation has been made occasionally where the nearly identical language of John's version has suggested it. Modern punctuation has been supplied for easier comprehension and for uniformity where none exists in the manuscript tradition. The chapter divisions of the older manuscripts have been retained in the case of John's

version and the chapter divisions of the Geneva manuscript stand in the second version. The corresponding pages in the Barach edition have been supplied in the margins. The apparatus for Hermann's version follows that for John's at the end of the texts.

The text of John of Seville's version is based on MS Brussels Royal Library 2772-89, ff. 72r-82v, with corrections made from MS Edinburgh National Library of Scotland Advoc. 18.6.11, ff. 104v-108r and MS Avranches Municipal Library 232, ff. 77v-81v, where the Brussels text has been lacking with reference to the Arabic version or where these manuscripts have supplied more grammatical variants.

Although we believe that the Edinburgh manuscript contains the earliest existing version of John of Seville's translation, we have preferred the Brussels manuscript as being very close to it in time and its readings; the few passages that set the two apart have been all but lost to the later manuscript tradition and would have been scarcely known to the text's users. All of the significant variants of the Edinburgh manuscript have been preserved in the apparatus.

Because of its antiquity the Avranches manuscript has also been consulted as a check on the above named. However, as is outlined in Chapter 4, we

have considered this more as an exemplar of a particular early-developing family of the manuscripts.

The Avranches manuscript has a number of variants not shared by others in its family; thus its readings in the present apparatus are usually preserved under the siglum "A", which stands for the family of "Revision A." In order to give only the characteristic readings of the group, Avranches BM 232 has been compared with two others in its family. When the Avranches manuscript is cited in its own right, the siglum "Av" is used.

"Revision B" and "Revision D" have been handled in the same way as "Revision A." Three manuscripts from each family have been compared and only the characteristic readings, those shared by all three, have been preserved in the apparatus.

The manuscripts are:

[Ms] Brussels Royal Library 2772-89, ff. 77r-82v is a manuscript of the twelfth century, parchment, written in a neat gothic with lines filling the width of the page. Margins are narrow, corrections few. There are no glosses or marginal notes. Simple initial capitals appear frequently in the left margin, with larger ones appearing at the three chapter headings. A table of contents for the codex reveals

accompanying works of mostly ecclesiastical and theological subjects.

[Ed] Edinburgh. National Library of Scotland. Advoc. MS. 18.6.11, ff. 104v-108r. A manuscript dated by Aristoteles Latinus (no. 1913) "before the mid twelfth century." The lines are long and the margins extremely narrow. There are few corrections and no marginal notes. The context is medical, including works by Galen and Isaac Israeli, and Secreta secretorum, another of John of Seville's translations. This manuscript bears the mark of John himself inasmuch as it identifies him as translator in a colophon with the words: "Perfectus est liber Costaben luce in spiritus et anima differentia. Translatus a iohanne hispalensis et limiensis. Sit laus deo per infinita secula. Amen."

[Av] Avranches. Municipal Library 232, ff. 77v-81v. This appears to date from the late twelfth or early thirteenth century. It is a small neat copy in an angular gothic script, with lines across the page. The margins, moderately wide, feature numerous corrections and small descriptive rubrics as keys to the text. It has the long rubric belonging to the Brussels manuscript but it has in addition before that, the words "In dei nomine et eius auxilio," and

above the first line "differentia inter animam et spiritum." The other items in the codex are for the most part philosophical works by Aristotle and others.

[A] ("Revision A"--represented in Group I in Appendix B): Av, above, read together with:

(2) Paris, Bibliotheque Nationale, lat. 16.613, ff. 60v-67v (13th cent.); and

(3) Brussels Royal Library II. 2558 (2898), ff. 112v-116v (13th. cent.)

[B] ("Revision B"--represented in Group E of Appendix B; closely related to Groups M and J):

(1) Baltimore. H. Walter's Library, no. 66, ff. 125v-132r. This appears to be one of the earliest of this family, perhaps dating from the early 13th century. Format is modest, with long lines and a few large plain capitals at chapter headings. The margins are wide and contain frequent corrections to omissions in the text. Smaller interlinear corrections also are frequent. The upper right hand corners of recto folios have the title, "de differentia spiritus et anime." This and nearly every other manuscript with the short prologue) lacks the informative rubric attached to the Brussels (Ms) and Avaranches Manuscripts. Other works in the codex are philosophical, largely works of Aristotle, but also several others by

Alkindi, Alfred of Sareshel and others.

(2) Paris, Bibliotheque Nationale, lat.
16.082, ff. 305v-311r.

(3) Wolfenbüttel, Herzog August Bibliothek,
Cod.-Guelf 577 Helmst., 112v-115v.

[D] ("Revision D" -- represented by Group D in
Appendix B).

(1) Bologna. University Library, lat. 1180
(2344), ff. 222v-228v. This perhaps dates from the
middle of the thirteenth century (Aristoteles Latinus
dates it before the middle of the century). It is
written in a very neat gothic script, with lines
traversing the page. It lacks corrections, and there
are no notes in the broad margins. The other works in
the codex are by Aristotle and Ps-Aristotle.

(2) Vatican latin 2074, ff. 126r-133v.

(3) Vatican Borghesiani 127, 210v-214r.

Hermann's text is based upon MS Geneva Bodmer
s.n. (formerly Leipzig University Library 1341)
ff. 242v-245r, the only manuscript we know of contain-
ing the entire text. It has been possible to check
most of the text against one or the other of two frag-
ments; MS Naples National Library VIII.F.31,

ff. 3v-4r covers the beginning of the translation, through chapter II (to line 194), and MS Assisi Communal Library 298, ff. 104r-105v carries the latter third of Hermann's version (from line 255). Therefore there are about sixty lines in the middle of the text for which we have only the Bodmer manuscript as authority.

All the variants from the two partial manuscripts save spelling, repeated passages and some word-order variants, have been supplied. The John of Seville version has been used as a further check in selecting readings or emending the text; variants from the Assisi and Naples fragments have been preferred when they have agreed with the John of Seville version:

[MS] Geneva. Bodmer s.n. (formerly Leipzig, University Library 1341), ff. 242v-245r, appears to date from about the middle of the 13th century. It is neatly done in an angular gothic, with ample spaces between the lines. The folios feature one moderately wide column with wide margins. Other works in the codex are philosophical, largely works of Aristotle, but also including commentaries by Alexander of Aphrodisias and others. Red and blue capitals set off

seven text divisions, beginning with the first word.
The prologue is not included in this manuscript.

[K] Assisi. Communal Library, ff. 99v-105v,
contains the second version in approximately the last
third of the text. The first part contains the John
of Seville version. It is a manuscript from the first
half of the thirteenth century. The lines are long,
with chapters set off by large capitals. There are
some blocks of marginal notes, and interlinear glosses
are frequent. The top lines have ornate ascenders
reminiscent of chancery hands.

[P] Naples, National Library VIII.F.31, ff. 3v-4r.
(corrected from 35 in Aristoteles Latinus entry).
This appears to date from the first half of the
thirteenth century, and contains the first part of the
text, about the spirit and its instruments. It is set
in double columns and has a relatively messy
appearance, with many interlinear glosses and
corrections. The margins contain many elaborate
schemata. The works in the codex are philosophical
and medical.

John of Seville

B120 /77r/ Incipit liber differentie inter animam et
spiritum quem consta ben luce cuidam amico suo scrip-
tori cuiusdam regis edidit et iohannes hispalensis ex
arabico in latinum Raimundo toletano archiepiscopo
5 transtulit.

Interrogasti me, honoret te deus, de
differentia que est inter spiritum et animam, et ut
tibi scriberem quid antiqui dixerint in ea; et ecce
scribo tibi quedam collectiva que excerpsi de libro
10 platonis qui vocatur cadon et eius libro qui vocatur
tymeus et ex libris aristotelis philosophi et
theofra(s)ti ac benededis in animam; ex libro quoque
galieni quem fecit de concordia quarumdam sententiarum
gloriosissimi ypocratis atque platonis et ex libro
15 eiusdem galieni quem fecit in opere chirurgie et in
utilitate membrorum. Et usus sum in eo maxima
brevitate, quia novi te variis negotiis occupatum et
in operibus regis valde sollicitum, et quia pre
angustia temporis impossibile est tibi in huiusmodi
20 libris aspicere. Et credo quia hec que scripsi tue
B121 sufficient, petitioni deo auxiliante, maxime cum sis
in scientia naturarum peritus, et nunc incipiens
dicam; quia qui voluerit scire differentiam inter duas

Hermann of Carinthia

[PROLOGUE LACKING]

/242v/ Spiritus igitur est corpus subtile quod
in humano corpore oritur ex corde et fertur in venis
pulsus ad vivificandum corpus, et operatur vitam et
hanelitum et pulsum; et similiter oritur ex cerebro in
nervis et operatur motum et sensum. Et sunt quidem in 5
corde, duo ventriculi sive vacuitates, una quidem in
dextra et alia in sinistra eius parte; et in hiis
duobus ventriculis continetur spiritus et sanguis.
Unde in dextro ventriculo est sanguis plusquam
spiritus; in sinistro autem per contrarium. Et ex 10
ventriculo dextro procedunt due vene, quarum altera

res necesse est primum scire quid sit unaquaque earum,
25 quia impossibile est ut aliquid sciat differentiam
duarum rerum nisi sciat quid sit unaquaque earum. Et
habita scientia uniuscuiusque earum poterit scire
earum differentiam; et quia volumus patefacere anime
spiritusque differentiam, necesse est ut primum
30 loquamur de anima et spiritu, postea de differentia
que est inter utrumque. Et incipiamus a spiritu, ut
sit opus levius; postea sequatur locutio de anima.

Spiritus est quoddam corpus subtile quod in
humano corpore oritur ex corde et fertur in
35 assurianet, idest in venis pulsus ad vivificandum
corpus, operaturque vitam et anelitum atque pulsum; et
similiter oritur ex cerebro in nervis et operatur
sensum atque motum. Et quidem ex laudabilibus
medicorum atque philosophorum de his qui in corporibus
40 viventium usi sunt opere chirurgie putaverunt quod in
corde sunt duo ventriculi vel concavitates, una
scilicet in dextra parte eius et alia in sinistra, et
in his duobus ventriculis continentur sanguis et
spiritus; sed in dextro ventriculo plus est de
45 sanguine quam de spiritu; in sinistro vero plus
spiritus quam sanguinis. Et ex ventriculo dextro

vadit ad pulmonem, et per eam fit hanelitus cordi.
 Cor enim colligitur atque extenditur, et per eius
 extensionem et collectionem fit totius corporis pulsus
 propterea igitur pulsus cordis signat passiones 15
 proprias tam equales quam inequales atque diversas que
 ex cordis impedimento accidunt sive a se ipso vel a
 quibusdam sibi vicinis sive per compassionem. Cor,
 igitur, cum extenditur, attrahit per predictam venam a
 pulmone partem aeris qui ingreditur ad pulmonem per 20
 hanelitum ad refrigerandum naturalem calorem qui in eo
 est, ut sit hoc nutrimentum vel magis iuvamentum
 spiritus qui continetur in eius ventriculis; cum
 colligitur cor, pulsat per ipsam ad pulmonem quicquid
 generatur in eo vaporum fumosorum hos quoque expellit 25
 ab ignito calore qui in eo est, et pulmo eosdem eicit
 a corde; et hecque vena vocatur pulsus. Altera quoque
 vena in ipso ortu suo ex corde dividitur in duo,
 quorum unum ascendit petens superiora cordis et
 procedunt ex eo rami a pectore usque ad extrema 30
 capitis, per quos vivificatur hec pars corporis;
 altera quoque petens inferiora corporis descendit ad
 extremitates corporis pedum ad hiis igitur ramis

procedunt due vene, una quarum vadit ad pulmonem, et
B122 fit per eam anelitus cordis. /77v/ Cor enim
colligitur atque extenditur, et per extensionem eius
50 atque collectionem fit pulsus totius corporis, et ideo
pulsus indicat esse cordis, idest eius passiones
proprietas tam equales quam inequales atque diversas,
que fiunt causa diversi impedimenti eiusdem cordis
quod accidit ei a semetipso vel a quibusdam membris
55 sibi vicinis. Cor ergo cum extenditur attrahit per
predictam venam ex pulmone partem aeris qui ingreditur
ad pulmonem per anelitum ad refrigerandum calorem
naturalem qui est in eo ut sit hoc nutrimentum vel
sustentatio eiusdem spiritus qui continetur in eis
60 ventriculis. Et cum cor colligitur, pulsat per ipsam
venam ad pulmonem quicquid generatur in eo vaporum
fumosorum et expellit eos ab ignito calore qui est in
eo, et pulmo expellit eos a corpore, et hec vena
vocatur pulsus. Alteram vero venam vocant arabes
65 alabhar, et hec vena in ipso ortu suo ex corde
dividitur in duas divisiones quarum una ascendit
petens superiora corporis; et procedunt ex ea rami a
pectore usque ad extrema capitis per quos vivificatur
pars hec corporis. Et altera petens inferiora
70 corporis descenditque usque ad extremitates pedum, et
procedunt ex ea rami per quos vivificatur pars

inferior vita constat. Hec igitur vene in totum
corpus dispartite pulsus vocatur et hec est causa vite 35
corporis humani propinquior, per hoc quod tribuit
unicuique membro de spiritu qui est in ventriculo
cordis sinistro, et indicium quo probatur quod vita
humana que fit per hunc spiritum est quod etiam liquet
in exitu qui dicitur anime a corpore. Tunc enim fit 40
motus ventris et oris labiorum quoque et pectoris; in
illis enim fit quasi singultus et saltus et hanelitus,
et hec omnia vulgus vocavit arabice armaza, idest
decisionem vel exitum anime; eius quoque exitus a
corpore fit per iter ipse quo ingreditur ad ipsum aer. 45
Egreditur enim a ventriculis cordis ad pulmonem per
venam quamdam quam superius determinavimus que transit
a corde ad pulmonem ut attrahat aera et extrahat
vaporem fumi, et ex pulmone per cannale pulmonis,
idest per guttur, ad os transit. Eius quoque exitus 50
fit ex ore tempore motus oris quando scilicet
aperitur os, et non potest amplius a se claudi, sed
iam necesse est ut claudatur propter annulationem
vite post ab eo separat spiritum. Causa autem qua
egreditur hic spiritus a corpore et causa mortis et 55
causa velocitatis sive tarditatis eius exitus, levitas

inferior humani corporis; et rami utriusque partis
vene predictae qui dispertiti sunt per reliquum corpus
B123 vocantur surienet, idest pulsus, et hec est causa vite
75 humani corporis propinquior, per hoc quod tribuit
unicuique membro de spiritu qui est in ventriculo
cordis sinistro; et inditium quo probatur quod vita
humana fit per spiritum hunc est quod videtur de exitu
eiusdem spiritus in hora mortis motus, scilicet
80 ventris et oris labrorum quoque ac pectoris, illud
scilicet quod fit quasi singultus et saltus atque
altus anelitus; et vulgus vocat hec omnia arabice
annaza, idest recessio vel exitus anime, et eius
exitus a corpore fit per ipsum iter quo ingreditur ad
85 ipsum aer quia egreditur a ventriculis cordis ad
pulmonem per venam quam supra diximus que transit a
corde in pulmonem ut attrahat aerem et extrahat
vaporem fumi; et ex pulmone per calamus pulmonis,
idest per guttur, transit ad os et eius exitus ex ore
90 fit tempore motus oris, quando scilicet aperitur os,
et iam a se non potest claudi; sed necesse est iam ut
claudatur propter anulationem vite post exitum
eiusdem spiritus ab eo. Causa autem qua egreditur hic
spiritus a corpore, idest causa mortis et causa
95 velocitatis sive tarditatis eius exitus, levitas

scilicet mortis sive gravitas eius, et apparitio eius
in quibusdam hominum vel occultatio in aliis, causa
quoque subitanee mortis et cetera talia, aliena sunt a
libro isto, quia maioris sunt inquisitionis et 60
indigent primis propositionibus et argumentis
probabilibus ex libris pluribus medicorum artis,
quorum expositio prolixa est, et ideo dimisimus nunc
eorum commemorationem. Patet igitur ex hiis quod vita
fit per hunc spiritum qui est in ventriculis cordis et 65
quod pulsus et hanelitus sint constituti ad aptationem
eiusdem spiritus ad refrigerandum eum per aerem a
foris venientem, et per expulsum vaporum et
fumositatis ab eo. Sic igitur spiritus qui est in
ventriculis cordis /243r/ fit causa vite et hanelitus 70
et pulsus, et hec sciri oportet de spiritu vitali
cuius origo a corde est.

Spiritus vero procedens a cerebro transit ad
corporis cetera membra et vocatur animalis, cuius
supplementum spiritus est qui est in ventriculis 75
cordis quia divisiones [partis surien], idest pulsus,
qui mittitur a corde in inferiores partes corporis,
cum pervenerint omnes ad os capitis et penetraverint
illud, coniunguntur omnis ad invicem componuntur et

scilicet mortis sive eius gravitas et apparitio eius
in quibusdam hominum vel occultatio eius in aliis,
/78r/ causa quoque subitanee mortis et cetera talia,
aliena sunt a libro isto quia maioris inquisitionis
100 sunt et indigent primis propositionibus et argumentis
probabilibus ex pluribus libris medicorum artis quorum
expositio prolixa est, et ideo dimisimus nunc eorum
commemorationem. Patet autem per hoc quod diximus
quod vita sit per hunc spiritum qui est in ventriculis
105 cordis et quod pulsus atque anelitus sint constituti
ad adaptationem eiusdem spiritus: ad refrigerandum
scilicet eum per aerem qui ingreditur ad eum de foris
et per expulsum vaporum fumositatis ab eo. Iam igitur
B124 patet quod spiritus qui est in ventriculis cordis sit
110 causa vite et anelitus atque pulsus, et hoc est quod
necesse est sciri de spiritu vitali, cuius emanatio
est ex corde. Spiritus vero qui procedit a cerebro et
transit ad cetera corporis membra, vocatur animalis,
cuius nutrimentum vel sustentatio est spiritus qui fit
115 in ventriculis cordis, quia divisiones partis surien,
idest pulsus qui vocatur alabhar qui mittitur a corde
in superiores partes corporis, cum pervenerint omnes
ad os capitis et penetraverint illud, coniunguntur
omnes ad invicem et componuntur et contextuntur ad

contexuntur ad instar rethis et de ipsis pulsibus 80
contextis extenditur quedam pars sub cerebro interiora
cerebri petens apta ad recipiendum animalem spiritum
tradens ei spiritum de spiritu vitali qui est in
cordis ventriculis. Cerebrum vero dividitur in duas
divisiones quarum una est anterior, que etiam maior 85
est, et altera posterior; et in illa anteriori sunt
duo ventriculi habentes introitum ad commune spacium
quod est in medio cerebri. In posteriori vero habetur
uno ventriculus faciens iter ad supradictum spacium
quod est commune utrisque ventriculis qui sunt in 90
anteriori cerebro; pulsus ergo subtiles qui mittuntur
a rete quod est sub cerebro ad interiora cerebri, cum
pervenerint ad aliquam ventriculorum qui sunt in
cerebro anteriori, perducunt ad eum spiritum vitalem
qui inde transiens ad alium ventriculum subtiliatur et 95
purgatur et eo aptatur ad recipiendum virtutem anime;
et hoc ei fit quasi digestio et conversio in quemdam
spiritum subtiliorem et clariorem. Deinde transit ab
ipsis ventriculis in spacium, et de spacio in
ventriculum cerebri posteriorem, et per ipsum meatum 100
quo vadit, ad commune spacium quod est in medio
cerebri ad posteriorem. Et in ipso transitu, idest

120 instar texture retis, et de ipsis pulsibus contextis
extenditur quedam pars sub cerebro petens inferiora
cerebri apta ad recipiendum spiritum animale, tradens
ei spiritum de spiritu vitali quem diximus esse in
ventriculis cordis. Cerebrum vero dividitur in duas
125 divisiones quarum una est anterior, que est maior, et
altera posterior. Et in illa anteriori duo sunt
ventriculi habentes introitum ad commune spatium quod
est in medio cerebri. In posteriori vero habetur unus
B125 ventriculis faciens iter ad supradictum spacium quod
130 est commune utrisque ventriculis qui sunt in anteriori
cerebro. Pulsus ergo subtiles qui mittuntur a rete
quod est sub cerebro ad interiora cerebri, cum
pervenerint ad aliquem ventriculum qui sunt in cerebro
anteriori, perducunt ad eum spiritum vitalem qui inde
135 transiens ad alium ventriculum efficitur ibi subtilior
et purgatur atque aptatur ad recipiendum virtutem
anime, et hoc fit ei quasi digestio et conversio in
quemdam spiritum subtiliorem atque clariorem. Deinde
transit ab ipsis ventriculis in spatium et de spatio
140 in ventriculum cerebri posteriorem per ipsum meatum
quo vadit a communi spatio quod est in medio cerebri
ad posteriorem. Et in ipso transitu, idest introitu

introitu, per quem vadit spiritus, habetur particula
quedam de corpore cerebri vermi similis, que elevatur
et deponitur in ipso itinere. Hac igitur particula 105
elevata, aperitur foramen quod est inter commune
spacium quod iungitur ventriculis et in ventriculum
posterioris cerebri; cum vero deposita, fuerit
clauditur. Quod cum apertum fuerit foramen, transit
spiritus de anteriori cerebro ad posterioris ad 110
memorie operationem. Eodem clauso, nec transit
spiritus ad [posterius], nec est preteritorum
recordatio, nec quesitorum prompta responsio.
Corporis autem vermi assimilati apertio in hominibus
varia est in celeritate et tarditate; unde tardiores 115
et celiores fiunt memorie; unde accidit ei qui vult
recordari alicuius rei ut caput teneat inclinatum vel
inclinatum retroducat et fixis oculis sursum
suspiciat, ut hoc positio in aparitione foraminis
cooperetur cum spiritus per ipsum sursum ascendat. 120

per quem vadit spiritus, habetur quoddam pitacium,
idest quedam particula de corpore cerebri similis
145 vermi que elevatur et deponitur /78v/ in ipso itinere;
cumque fuerit hec particula elevata, aperitur foramen
quod est inter commune spatium quod iungitur
ventriculis et ventriculum posterioris cerebri; cum
vero deposita, fuerit clauditur. Cum ergo apertum
150 fuerit foramen transit spiritus de anteriori cerebro
ad posterius, et hoc non fit nisi cum necesse fuerit
recordari alicuius rei que tradita est oblivioni
tempore, scilicet quo fit cogitatio in preteritis. Si
vero foramen non fuerit apertum nec transierit
155 spiritus ad posterius cerebrum, non recordatur homo
nec aderit ei responsio eorum de quibus interrogatur.
Illa autem apertio foraminis que fit per elevationem
illius corporis quod assimilatur vermi est diversa in
hominibus in celeritate ac tarditate; fit enim hec in
160 quibusdam tardius et ideo fiunt tarde memorie et tardi
B126 ad respondendum multum cogitantes. Et ideo accidit ei
qui vult recordari alicuius rei ut caput suum valde
mergat vel inclinando illud retrovertat et inmotis
oculis sursum aspiciat ut hec positio vel figura sit
165 ei quasi auxiliatrix ad aperiendum predictum foramen
et ut ipsum corpus vermile possit sursum elevari.

Intellectus enim sive ymaginatio, idest cogitatio,
providentia atque cognitio, fit per spiritum qui est
in ventriculo priori et medio; spiritus autem medii
ventriculi in hominibus est diversus. In quibusdam
enim est subtilis et clarus, et hic est rationalis 125
cogitans dispositor et bone cognitionis. In aliis

Intellectus enim et cogitatio, providentia atque
cognitio fit per spiritum qui est in ventriculo qui
participatur illis duobus ventriculis qui sunt in
170 anteriori cerebro. Cum ergo homo cogitaverit vel
aliquid previderit, necesse est ut meatus, idest iter
vel foramen quod est inter commune spatium quod
iungitur illis duobus ventriculis qui sunt in
anteriori parte capitis et ventriculum qui est in
175 posteriori eius, clausus fit ut spiritus videlicet qui
est in communi spatio possit facere moras ut
B127 confortetur et sit hoc ei quasi augmentum fortitudinis
ad cogitandum et intelligendum, idest ut sit fortior
in cogitatione et intellectu, providentia ac
180 cogitatione. Et ideo accidit ei qui cogitat mergere
caput ad terram et multum aspicere eam et incurvet
quasi scriberet aliquam scripturam vel describeret in
ea aliquas figuras, ut sit hoc quasi auxilium ad
deponendum illud corpus quod diximus esse simile
185 vermiculo super foramen illius decursus per quem
transit spiritus ad posteriora capitis. Spiritus
autem qui est in eo spatio, idest in ventriculo medio,
est in hominibus diversus. In quibusdam enim est
subtilis et clarus, et hic erit rationalis cogitans
190 dispositor et bone cogitationis; et in quibusdam erit

econtrario, eritque fatuus, improvidus, incertus et delunans.

Ex ventriculo autem anterioris procedunt .vii.
paria nervorum, ex quibus unum par ad oculos 130
descendit, et inde fit visus; hii autem per ceteris
sunt concavi, ut spiritus qui per hos mittitur esset
et plurimus et sufficiens et clarus ab omni ammixtione
purus. Secunda par ad palpebras demittitur. Tertium
lingue iungitur, unde fit gustandi sensus. Quartum 135
vero iungitur palato propter gustandi plenior
sensum. Quintum iungitur tympano auris, et per hoc
fit auditus. Sextum vero descendit in intestina,
prestans eas tactum, a quo quodam particule ad uvam
veniunt, ut per eas ad superiora ligetur. Septimum 140
lingue iungitur, ut inde moveatur. Simile /243v/
quoque operantur hii nervi per spiritum qui a cerebro
ad inferiora derivatur membra. Huius quoque rei
indiciu est cum ab aliquo accidenti obstruitur meatus
spiritus cuiusque parum prohibetur spiritus ne membrum 145
excitet secundum suam naturam eiusque membri perit
utilitas, ut albedo que colligitur in oculo posita
inter spiritum et cristalla oidon (?) cecum; operatur

econtrario, eritque hic talis amens et irrationalis,
levis atque stultus. Et ex ventriculo cerebri
anterioris procedunt .vii. paria /79r/ nervorum ex
quibus unum par, idest duo nervi ab anterioribus
195 venientes ventriculis, iunguntur oculis, et fit visus
per eos, et isti inter ceteros nervos sunt concavi
quia necesse est visui ut spiritus qui mittitur ad eum
esset multus collectus sufficiens atque clarus et
nulli alii corpori commixtus. Et aliud par nervorum
200 iungitur coopertorio oculorum, idest palpebris.
Tercium iungitur lingue, et per hoc fit sensus gustus.
Quartum iungitur palato. Quintum iungitur tympano
auris, et per hoc fit sensus auditus. Sextum
descendit ad exta, prestans eis sensum, et revertitur
205 ex eo quedam pars ad uvam, movens eam ut colligatur
sursum. Septimum iungitur lingue, per quod movetur,
et similiter operantur hi nervi per spiritum qui
B128 transit in eis ex cerebro ad hec membra. Et inditium
huius rei est quia cum acciderit aliquod accidens
210 obstruitur meatus spiritus qui est in aliquo horum
nervorum, et prohibetur ipse spiritus ne pertingat ad
membrum et annullatur opus eiusdem membri, ut aqua que
colligitur in oculo que cum separat inter spiritum qui
est in nervo et aspectum operatur cecitatem, et veluti

sic quoque et humores seu vapores cura auris tympanum
locati spiritum impediunt et surdum faciunt; sic 150
quoque in ceteris sensibus. Hos igitur seu a
medicamine seu nature directione aperui si fiat, reddit
membro prioris utilitatis integritas et sit sanum
atque equale. Procedunt quoque a posteriori cerebro
nervi per colli regionem descendentes ad spine nodos 155
in multa nervorum paria divisi per quem fit membrorum
motus, manuum quoque et pedum et omnis corporis.
Cuius rei argumentum est quia quando aliquis nervus
decursum patitur unde annullatur motus illius membri
cui marcebatur aut debilitatur et destruitur quod fit 160
secundum quantitatem impedimenti in nervo facti; unde
sepius manus contracta sana et integra apparet cum
omnis impedimenti causa lateat nec tamen sentit nec

215 commixtiones, idest mali humores et vapores qui
claudunt et separant inter spiritum ipsum et tympanum
auris vel instrumentum odoratus aut instrumentum
gustus sive instrumentum tactus, operatur surditatem
aut destructionem gustus aut odoratus aut tactus.

220 Cumque aperti fuerint ipsi meatus aut per medicamentum
aut per directionem nature reluctantem, scilicet natura
contra infirmitatem, redit membrum ad opus suum et
efficitur sanum atque equale. Procedit quoque ex
parte cerebri posterioris anucha, que est pars

225 cerebri, et descendit per os colli in omne alfecar,
qui sunt nodi spine, et disperguntur ex eo multa paria
nervorum inter unumquodque alfecar, scilicet unum par
transiens ad alaadal, que est quedam caro commixta
venis, per quam fit motus membrorum. Erit per hoc

230 motus manuum et pedum ac totius corporis; cuius rei
indiciu est quia si aliquando aliquis ex his nervis
passus fuerit aliquod impedimentum abscisionem
scilicet vel vulnus, aut clausi fuerint decursus qui

B129 sunt in eo, annullatur motus ipsius membri cui

235 mittebatur aut debilitatur vel destruitur, et hoc fit
secundum quantitatem impimenti quod passus est idem
nervus. Videmus namque manum contracti sanum et
integram et alicuius causa impimenti non apparet in

movetur. Is quoque decursus cum a detenti-medicamine
deiectus fuerit et via spiritui fuerit reddita; redit 165
et membro suo operatio non cause malignitas curatione
fuerit prestantior vel membra invalida vel vim
medicaminis non ferant. Amplius accidit quoque
spiritum omnium ventriculorum vel quorundam impediri
vel ex mala complexione vel ex humorum vel vaporum 170
commixtione et per hoc fit operationum omnium vel
quarundam destructio. Cum ergo spiritus in
anterioribus cerebri aliquod impedimentum vel
corruptionem passus fuerit fit sensuum diminutio ut
inegressis ab alveo quibus visus impeditur et in quo 175
colera rufa vel eius vapor ad caput recipet quo
spiritui visus debilitatur. Idem et in ceteris
sensibus. Idem quoque impedimentum si in medio fiat

ea et tamen nichil sentit nec movetur. Et cum
240 huiusmodi infirmitates curate fuerint per aliquod
medicamentum quo possint aperiri decursus cerebri ut
sunt medicamina que purgant decursus membrorum et
aperiunt ipsas clausuras, revertitur ad eadem membra
sensus atque motus si ipsa infirmitas iam non
245 transierit mensuram curationis et ipsa membra non
fuerint adeo debilitata ut non possint sustinere
pondus curationis. Et fortassis accidit spiritui qui
est in omnibus ventriculis vel in quibusdam ex eis
aliquod impedimentum ex mala complexione vel
250 commixtione malorum vaporum et propter hoc destruuntur
actus eiusdem membri. Verbi gratia: Cum ille
spiritus tantum qui est in anterioribus ventriculis
aliquod impedimentum vel corruptionem passus fuerit,
fit ex hoc destructio sensuum quemadmodum accidit ei
255 qui ingreditur balneum et ibi moras facit: obscurantur
enim oculi eius et nichil videt; aut quemadmodum
accidit ei in quo excitatur colera rufa et eius vapor
ascenderit ad caput eius iunctusque fuerit vapor
spiritui qui est in eius cerebro anteriori: similiter
260 obscuratur visus eius et non videt aliquid, et
similiter accidit auditui ceterisque sensibus. Verbi
gratia: Si affuerit impedimentum in parte cerebri

cerebro utroque extremo incolumi destruitur cogitatio
et discretio marcent tum motus et sensus equales ut in 180
melancolica promptum est valitudine, qui est commixtio
vel turbatio rationis et destructio cognitionis. Idem
et impedimentum fit in posteriore, et fit memorie
lesio sive priorem ostensa. Si autem impedimentum
fuerit in toto cerebro fiet quoque impedimentum in 185
cogitatione motu et sensu ut in epilepticis et
similibus. Probatur ergo ex hoc quod spiritus
anterior operatur sensui omnem et phantasiam, medius
autem cogitationem et cognitionem et providentiam,
ultimus memoriam et motum. Constat itaque ex hiis 190
omnibus, quod in homine duo sunt spiritus: vitalis
dicens, cuius nutrimentum et regimentum est aer, et
eius animatio est ex corde a quo per pulsum ad reliquum

media et cetera partes eiusdem cerebri fuerint
incolumes, destruitur cogitatio et cognitio tantum et
265 remanent sensus ac motus equales, ut illud quod
accidit in melancolica infirmitate, que est commixtio
B130 vel turbatio rationis et destructio cognitionis; et si
fuerit impedimentum in parte cerebri superiori,
destruitur memoria tantum et erunt ceteri actus
270 hominis equales, idest recti. Si vero fuerit
impedimentum in duobus ex his ventriculis aut in
tribus et occupaverit totum cerebrum, erit
impedimentum in cognitione et in sensu atque motu
universaliter, ut illud quod accidit caducis et his
275 similibus. Probatur ergo per hoc quod diximus
certissime, quod ille spiritus qui est in anterioribus
ventriculis operatur sensus, idest visum, auditum,
gustum, odoratum et tactum, et cum his operatur
athagil, quam greci vocant fantasiam, et quod spiritus
280 qui est in ventriculo medio operatur cogitationem et
cognitionem atque providentiam; et spiritus qui est in
posteriori ventriculo operatur motum et memoriam.
Constat igitur ex his omnibus quod in humano corpore
sunt duo spiritus, unus qui vocatur vitalis, cuius
285 nutrimentum vel sustentatio est aer, et eius emanatio
est ex corde, et inde mittitur per pulsus ad reliquum

corpus decurrit et operatur vitam, et pulsum et
hanelitum est; et alter ab anima animalis qui in 195
cerebro operatur, cuius supplementum est vitalis
faciens in cerebro cogitationem, memoriam et
providentiam. Decurrit idem per nervos ad membra
subiecta sensum et motum faciens.

Scribere aliquid de anima certissime grave 200
[est] et valde difficile, quod approbat discors
philosophorum sententia platonis et aristotelis.
Sufficit ergo in tam ardua reie et profunda
diffinitiones eorum interpretari. Anima, inquit
plato, est substantia incorporea corpus movens. 205

corpus et operatur vitam, pulsum atque anhelitum; et
alter qui ab anima dicitur animalis, qui operatur in
ipso cerebro, cuius nutrimentum est spiritus vitalis,
290 et eius emanatio est ex cerebro, et operatur in ipso
cerebro cognitionem et memoriam atque providentiam, et
ex eo mittitur per nervos ad cetera membra ut operatur
sensum atque motum.

Narrare aliquid de anima certissime grave est
295 valde et difficile, et hoc testatur diversitas et
discordia /79v/ precipuorum philosophorum, platonis
scilicet atque aristotilis et gerosii necnon benededis
et eorum similiter qui post illos venerunt; sed nos
commemoremus utrasque diffinitiones quibus
300 diffinierunt eam plato et aristotiles et ipsarum
B131 diffinitionum expositionem. Et in expositione
uniuscuiusque partis earum utamur argumentis
probabilibus et sequatur hec narratio virtutem anime,
quia hec sufficiens erit in hoc loco et possibile erit
305 nobis ex eo patefacere intentionem nostram, scilicet
differentiam que est inter animam et spiritum.
Dicamus itaque quod plato philosophus diffinivit
animam sic: Anima, inquit, est substantia incorporea
movens corpus. Aristotiles vero in diffinitione anime

Aristotelis autem sic: Anima, inquit, est perfectio
corporis /244r/ agentis et viventis potentialiter. A
diffinitione platonis incipio, et quod anima fit
substantia probo: Quicquid recipit opposita cum unum
sit numero et immutabile in sui essentia, substantia 210
est; sed anima recipit et virtutes et vicia cum sit
una numero; anima igitur recipit opposita; est igitur
substantia. Item, quicquid movet substantiam est
substantia; sed [anima] movet corpus; ergo est
substantia. Patet itaque ex premissis quod anima est 215
substantia. Quod anima fit incorporea, sic potest
patere: Omnis corporis qualitates sunt perceptibiles,
et cuius qualitates corporeo sensu non percipiuntur
est pro certo incorporeum. Qualitates autem anime
virtutes et vicia sunt insensibilia; anima igitur est 220
incorporea. Item, omne corpus alicui subiacet
sensuum; anima autem nulla omnino; anima igitur non
est corpus. Item, omne corpus aut est animatum aut

310 ait sic: Anima est perfectio corporis agentis et
viventis potentialiter. Nunc autem exponamus has duas
diffinitiones, et incipiamus a prima, que est
platonis. Ostendamusque quod anima sit substantia, et
dicamus quia quicquid recipit opposita cum sit unum
315 numero et immutabile in sua essentia est substantia;
sed anima recipit virtutes ac vitia cum sit una
numero. Ut anima platonis, que inmutabilis est in sua
essentia recipit virtutes ac vitia, que sunt opposita;
anima igitur recipit opposita cum sit una numero et
320 inmutabilis in sua essentia, et ita est substantia.
Et item dicamus quicquid movet substantiam est
substantia, et anima movet corpus; corpus autem est
substantia; anima igitur est substantia. Et quia iam
manifestum est argumentis patentibus quod anima sit
325 substantia, nunc ostendamus quod anima sit incorporea,
et dicamus: Uniuscuiusque corporis qualitates sunt
perceptibiles, et cuius qualitates non percipiuntur a
corporeo sensu incorporeum est. Qualitates autem
anime sunt virtutes ac vitia, que sunt insensibiles;
330 anima ergo est incorporea. Et item, omne corpus
subiacet omnibus sensibus aut quibusdam ex eis, sed
B132 anima non subiacet omnibus sensibus neque quibusdam ex
eis; anima igitur non est corpus. Item, omne corpus

inanimatum; sed anima inanimata non est, quod dicere
inconueniens et ridiculum est si dixeris eam 225
[in]animatum; restabit nobis sermo de anima anime
utrum sit corpus aut non, et hoc in infinitum; non
igitur anima est corpus. Item, si anima est corpus
subtile, aut erit aer aut spiritus subtilis per totum
corpus diffusus, aut erit ignis; et si ita fuerit, 230
necesse est ut ille spiritus vel ignis propriam habeat
speciem vel propriam [virtutem]; quia nisi esset ei
anima species vel virtus propria, idest nisi habeat
aliquam proprietatem quam ignis vel aer non habet,
erit omnis anima vel ignis vel aer. Quod si fuerit ei 235
aliqua propria species, erit species illa anima.
Item, si sit anima corpus, necesse est quod sit corpus
compositum aut simplex; quod si fuerit corpus simplex,
[proculdubio] erit ignis vel aer vel aqua vel terra;
et si fuerit anima, unum ex hiis elementis absolute, 240
idest absque aliqua propria specie qua separaretur ab
eo quod participatur ei in suo genere, omne quod
fuerit ex genere suo erit anima. Sicque probatur,
quod si anima fuerit ignis, erit omnis ignis anima, et

aut animatum est aut inanimatum, et si anima est
335 corpus, aut est animata aut inanimata; et impossibile
est ut anima sit inanimata si est corpus, quia
inconueniens est ut anima sit inanimata. Et si
dixerimus quod anima sit animata, reiterabitur nobis
sermo de anima anime utrum sit corpus vel non, et
340 ascendet hoc ad infinitum. Non est ergo anima corpus.
Et item, si anima est corpus subtile, aut erit aer,
spiritus subtilis per totum corpus diffusus, aut erit
ignis. Et si fuerit ita, necesse est ut ille spiritus
vel ignis habeat propriam speciem vel propriam
345 virtutem, quia nisi sit ei aliqua propria species vel
propria virtus, idest nisi habeat aliquam proprietatem
quam non haberet ignis vel aer, erit omnis aer vel
ignis anima; quod si fuerit ei propria species, ipsa
species erit anima. Item, si fuerit /80v/ anima
350 corpus, necesse est ut eius corpus sit simplex vel
compositum, quod si fuerit corpus simplex, erit
proculdubio ignis aut aer vel aqua vel terra. Et si
fuerit anima unum ex his elementis absolute, idest
absque aliqua fortitudine vel aliqua specie propria
355 qua separetur ab eo quod participatur ei in genere
suo, omne quod fuerit ex genere suo erit anima.
Sicque probatur, quod si anima fuerit ignis, erit

similiter de ceteris elementis; et si ita fuerit, omne 245
corpus quod continet ipsum elementatum erit animatum.
Verbi gratia: Si fuerit aer, pulsus et pulmo et uter
inflatus erunt animata; et si anima fuerit aqua, erit
vas plenum aqua animatum; et huiusmodi verba turpia
sunt et inania; quod si fuerit anima [corpus] 250
compositum, erit tunc corpus anima, non corpus. Patet
igitur quod anima sit incorporea substantia. Nunc
quibus modis moveat corpus dicamus.

Omne quod movetur aut movetur per motum se
moventis, sicut plastrum per motum boum, aut movetur 255
per id quod non movetur; quia quod movet aliquid aut
movet et movetur, aut movet et non movetur. Et hoc
fit quidem .iiii. modis: aut enim fit a desiderio eius
a quo movetur, ut adamans ad eum quem amat, aut per
odium et fugam vel terrorem, ut inimicus inimicum vel 260
ab eo; aut per actum naturalem, ut lapis a pondere
suo, vel quia id quod movet est occasio principalis
illius quod movetur, ut magisterium movetur per motum

omnis ignis anima; et si fuerit aer, erit omnis aer
anima, et similiter de ceteris elementis. Et si
360 fuerit ita, omne corpus quod continet ipsum elementum
Bl33 erit animatum. Verbi gratia: Si fuerit aer, pulmo et
pulsus atque uter inflatus erunt animata; et si fuerit
anima aqua, erit plenum vas aqua animatum, et
huiusmodi verba sunt turpia et inania. Et si fuerit
365 anima corpus compositum, erit tunc corpus anima, non
corpus. Et quia iam patet quod anima sit substantia
incorporea, nunc exponamus quibus modis movet corpus.
Dicamusque quod omne quod movetur aut movetur per
motum sui moventis, quemadmodum movetur plastrum per
370 motum bovum, vel movetur cum id quod movet eum non
moveatur; quia quod movet aliquid aut movet et movetur
vel movet et non movetur. Et hoc fit quatuor modis:
quia aut erit per desiderium eius a quo movetur,
quemadmodum movetur amator ad eum quem amat, aut per
375 odium aut fugam sive terrorem, quemadmodum movetur
inimicus ab inimico suo vel contra eum; aut per actum
naturalem, quemadmodum movetur lapis a pondere cum
pondus per semetipsum sit immobile; vel quia id quod
movet est occasio principalis vel causa illius quod
380 movetur, quemadmodum magisterium est causa motionis
motus magistri cum magisterium non moveatur per motum.

magistri. Sic anima movet corpus et ipsa non movetur
per motum eius; anima igitur est causa motionis 265
animalium per voluntatem et opus et mutationem ipsa
tamen nullo motuum corporis movetur, eo quod sit
incorporea. Videamus ergo quo predictorum motuum
moveat anima corpus; anima igitur movet corpus .iiii.
modo ex secunda specie motus. Movet enim corpus ipsa 270
immobilis; movet quicquid eo quod sit principalis
occasio motionis illius operatur enim hoc per ipsam,
idest per animam, ut ma-/244v/ gisterium causa
motionis magistri necnon movetur per motum magistri.
Sic quoque anime corpus nec tamen corporis motu 275
movetur; anima itaque est causa motus animalium per
desiderium et voluntatem ipsa tamen manet inmota eo
quod sit incorporea. Hec de platonis intentione
sufficiant. Transeo ad aristotelem principem
philosophorum. 280

Anima inquit est perfectio corporis agentis et
viventis potentialiter in libro suo de anima; et

magistri. Sic anima movet corpus et ipsa non movetur
per motum eius. Anima igitur est causa motionis
animalium per voluntatem et opus atque mutationem et
385 ipsa non movetur aliquo modo motionis corporis eo quod
ipsa sit incorporea. Videmus ergo ex his modis quos
diximus quo modo motionis movet anima corpus,
dicamusque quod anima movet corpus quarto modo ex
secunda specie motionis, hoc est movet corpus cum sit
390 ipsa immobilis. Movet illud eo quod sit ipsa occasio
principalis sive causa motionis eius quia homo
B134 operatur per eam, idest per animam, et eligit per eam;
et qui eligit movetur, et quia operatur; et
quemadmodum magisterium est causa motionis magistri et
395 illud magisterium non movetur per motum magistri; ita
anima movet corpus sed non movetur per motum eius.
Anima ergo est causa motus animalium per desiderium et
voluntatem /81r/ et per opus atque mutationem, et ipsa
non movetur aliquomodo ex modis motionis corporis eo
400 quod sit incorporea. Et quia iam exposuimus
diffinitionem platonis qua diffinivit animam et
patefecimus interpretationem omnium partium eius, nunc
tractemus de expositione diffinitionis aristotilis
philosophi. Aristotiles philosophus ita diffinivit
405 animam: ut diceret quod esset perfectio corporis
agentis et viventis potentialiter. In libro autem

aliter: anima est perfectio corporis naturalis
instrumenti viventis potentialiter. Potentialiter,
inquit, quia ex rebus quedam dicuntur potentialiter et 285
quedam per effectum. Cum res pervenerit ad effectum
ex perfectione cognoscitur; perfectio enim eius est
receptio suo speciei; ab hinc enim anima dicitur
perfectio, quia "animal" est animatum potentialiter.
Cumque sit animatum per effectum, tunc dicitur fore 290
perfectum et eius perfectio est receptio sue speciei;
idest ut sit animatum sensibile ac voluntarie mobile.
Constat ergo quod anima sit species animalis cum sit
eiusdem perfectio, quia perfectio rei est receptio suo
speciei. Quia ergo anima est species, quam speciem 295
vocamus perfectionem consequens est modos annumerare
perfectionis et eligere quis eorum referatur ad
animam. Perfectum enim duobus modis dicitur, prima et
secunda. Prima est in homine sapientia et doctrina;
secunda est studere in hiis que novit ex scientiis et 300
magisteriis: ut medici, perfectio prima est medendi

aristotelis quem fecit de anima, talis est diffinitio:
Anima est perfectio corporis naturalis instrumentalis
viventis potentialiter. Redeamus ad opus.

410 Potentialiter dixit, quia ex rebus quedam dicuntur
potentialiter et quedam per effectum, cumque
pervenerit res ad effectum per perfectionem
designatur, perfectio enim eius est receptio sue
speciei. Ex hac parte enim dicitur anima perfectio
415 quia "animal" est animatum potentialiter, et cum
animatum fuerit per effectum, tunc dicitur perfectum
fore, et eius perfectio est receptio sue speciei,
idest ut sit animatum sensibile ac mobile voluntarie.
Constat ergo ex hoc quod diximus quod anima sit
420 species animalis absque dubio cum sit perfectio
eiusdem animalis, quia perfectio rei est receptio sue
speciei. Et quia vere probatur quod anima sit species
et hanc speciem vocavimus perfectionem, necesse est
nobis enumerare modos perfectionis et eligere quis ex
425 eis refertur ad animam. Dicamus ergo quod perfectio
B135 duobus modis dicatur: est enim perfectio prima, et est
secunda. Prima namque perfectio in homine est
sapientia atque magisteria. Secunda vero perfectio in
homine est studere in his que novit ex magisteriis et
430 scientiis. Verbi gratia: Medicus dicitur perfectio

scientia; secunda cum ad actum descendit. Anima
igitur est perfectio prima. Cum enim quis dormit hoc
ab opere dormiens cessat, inest ei tamen anima
sensibilis et omnis species et perfectio speciei; 305
anima igitur est species et perfectio corporis.
Corpora duo sunt, quedam a natura quadam ab arte, ut
lignum et sca[m]num. Anima igitur est species
naturalis corporis. Differt autem species naturalis a
specie artis. Hec enim est substantia, et illa est 310
accidens. Corpus autem naturale duplex est, simplex
et compositum; simplex, ut prima .iiii. que a prima
defluerent materia composita vero que ab hiis
commixtis qualia omnia. Anima autem non est species
simplicis corporis sed composui naturalis. Quicquid 315
enim vivit ab anima convertibile est et dissolubile,

prima propter scientiam medicine; cum vero ceperit
operari quod scit, dicitur perfectio secunda. Anima
igitur est perfectio prima, quia qui dormit etsi
careat sensu tempore dormitionis, est ei tamen anima
435 sensibilis, et omnis species atque perfectio est
species atque perfectio alicuius rei. Anima ergo est
species et perfectio corporis. Modi autem corporum
sunt duo, quia sunt quedam corpora in quibus est
species naturalis, ut animalia et arbores, ignis
440 quoque et aqua et quicquid habet motum naturalem in
semetipso. Et sunt quedam quibus acquiritur species
per magisterium ut ostium et sca[m]num. Anima ergo
est species corporis naturalis quia corpus non est ex
actibus magisterii. Differt ergo species naturalis a
445 specie magisterii, quia species naturalis est
substantia et species magisterii est accidens. Anima
igitur est substantia quia est species corporis
naturalis. Modi quoque corporis /8lv/ naturalis sunt
duo, quia sunt quedam simplicia, quedam vero
450 composita. Simplicia vero ut ignis, aer, aqua, terra;
composita ut animalia et arbores. Anima autem non est
species simplicis corporis sed compositi naturalis,
quia quicquid habet animam est animatum, idest vivit,
et quicquid vivit est convertibile vel dissolubile et

egens alimento ut dissoluta restauret et augmento
materiam prebeat; hoc autem diversa expetit
instrumenta, quedam per quem transit ad alia
nutrienda, ut venas in animalibus, ramos in arboribus, 320
quedam per quem superflua effluant, ut in hiis pori,
in illis resine exitus. Hec in animalibus bona et
clemens multiplicavit natura propter in eis
perfectionem et utilitatem varietatem ad vitam enim
sunt eis cor et cerebrum et eis ministra ad sensum 325
nervi et sensuum instrumenta ad motum operativi et
musculi si igitur anima est prima perfectio corporis
naturalis instrumenti et viventis potentialiter.
Videtur autem hec diffinitio corrumpere primam eo quod
subiciat "viventis potentialiter" earum tamen 330

455 necesse est ei cibus quo possit recuperare quod
dissolutum est ab eo et qui auxilietur eius
vegetationi dans ei incrementum. Cibus quoque indiget
diversis instrumentis ex quibus sunt quedam ei
necessaria ut deferant eum ad corpus reficiendum
460 eumque currere ac penetrare faciant, ut guttur et vene
in animalibus, torusque ac rami in arboribus. Et
B136 quedam sunt necessaria refecturo corpori ut eiciant ab
eo queque superflua, ut sunt in animalibus pori sive
exitus resine in arboribus. Multiplicantur quoque
465 instrumenta in animalibus propter magnitudinem
perfectionis eorum et multitudinem operum eorum, quia
si est animal, sunt ei membra vite ut est cor,
cerebrum et quicquid iungitur eis; et si est
sensibile, erunt ei nervi atque sensus; si vero
470 fuerit mobile voluntarie, erunt ei nervi et alia,
idest caro venosa. Et si est ita, bene et decenter
dictum est quod anima sit prima perfectio corporis
naturalis instrumentalis viventis potentialiter. Et
hec definitio est universalis habundans et
475 sufficiens omni anime que fuerit in corpore
corruptibili vel dissolubili universaliter. Quod
autem videtur corrumpere primam particulam et in loco
eius ponere "viventis potentialiter", non multum

interpretatio una est invicem. Igitur "potentialiter"
non vult intelligi quod corpus ita esset in sua
essentia antequam esset anima; post hoc animam
recepisset per hoc quod possibile fuit sibi vivere;
sed voluit intelligi quod esset instrumentum cui esset 335
possibile uti actibus vite; idem ergo significat
"instrumentalis" quam "viventis potentialiter";
Deinceps autem de virtutibus et generibus anime
videtur esse commemorandis; huius igitur tres sunt
species: prima est vegetabilis, secunda sensibilia, 340
tertia rationalis; et hee virtutes vocantur ad
placitum anime. Dicitur autem /245r/ anima sensibilis
et vegetabilis, bestialis et mobilis que movetur idest
voluntarie, et anima rationalis que utitur ratione,
cognitione et cogitatione; anima vero vegetabilisque 345
et anima sementis dicitur nobis communis est, cum

discordat ab alia, quia interpretatio utrarumque
480 diffinitionum est una. Dicens enim viventis
potentialiter noluit per hoc intelligi quod corpus ita
esset in sua essentia antequam esset anima; post hec
recepisset animam per hoc quod possibile fuit sibi
vivere; sed voluit intelligi per hoc quod dixit
485 "potentialiter" quod esset ei instrumentum cui esset
possibile uti actibus vite. Idem ergo significat
"instrumentalis" quod "viventis potentialiter". Hec
est diffinitio aristotilis qua diffinivit animam una
B137 cum expositione sua qua exposuimus eam et patefecimus
490 unamquamque partem eius. Et quia iam exposuimus
utrasque diffinitiones platonis scilicet et
aristotilis et patefecimus interpretationem
uniuscuiusque partis earum, nunc loquamur de
virtutibus anime et dicamus quod prime virtutes anime
495 que sunt ei in fortitudine quasi genera sunt /82r/
tres: prima scilicet vegetativa, secunda sensibilis,
tercia rationalis, et he virtutes vocantur ad placitum
anime. Dicitur enim anima vegetabilis, et anima
sensibilis bestialis et mobilis que movetur scilicet
500 voluntarie, et anima rationalis, que utitur ratione,
cognitione ac cogitatione. Anima autem vegetabilis
que in aliis libris vocatur anima sementis, est nobis

arboribus, herbiis et animalibus. Anima vero
sensibilis, que alias vita nominatur, nobis communis
est cum animalibus. Anima vero rationalis inest
proprie homini. Opus vero anime vegetabilis est 350
nutrire et incrementum dare quod ex quatuor
virtutibus preficit. Dico autem attractiva,
retentiva, digestiva, repulsiva, quare operativa in
omni vegetatio est: arboribus, herbis, animali et
homine. Opus quoque sensibilis est .v. sensuum actus 355
phantasia et motus ad locum voluntarius; hec quoque
hominum sunt et animalium. Opus autem rationalis est
cognitio, providentia, cogitatio, estimatio,
dubitatio, intellectus et memoria, et hec homini sunt
propria. 360

Dicto quid sit spiritus quid in anima que eorum
sit differentia, dicendum horum igitur prima est
differentia, quod spiritus est corpus, anima vero

communis cum arboribus et herbis atque animalibus; et
anima sensibilis, que alibi vocatur vitalis, nobis et
505 animalibus est communis; anima vero rationalis proprie
inest homini. Opus autem vegetabilis anime est
nutrire et reficere, et hoc facit per quatuor virtutes
que vocantur naturales, que sunt attractiva,
retentiva, digestiva, expulsiva. Et hoc opus
510 invenitur in omni vegetabili, idest in arboribus et
herbis et animalibus atque in homine. Et opera anime
sensibilis que dicitur vitalis sunt visus, auditus,
gustus, odoratus et tactus, quinque videlicet sensus
corporis, et phantasia ac motus transmutationis de
515 loco in locum voluntarie; et hec opera inveniuntur in
omni animato, idest in animalibus et in homine. Opera
autem anime rationalis sunt cogitatio et providentia,
estimatio et dubitatio, visus atque memoria. Et hec
opera proprie sunt hominis inter cetera animalia.

520 Et quia auxiliante deo iam exposuimus quid sit
spiritus et anima, nunc loquamur de differentia que
B138 est inter eos. Dicamusque quod prima differentia
inter eos est quod spiritus est corpus; anima vero
incorporea est. Et quod spiritus comprehenditur a
525 corpore; anima vero non potest comprehendi a corpore.

omnino incorporea. Spiritus a corpore separatus perit;
opera quoque anime cum ipsa a corpore separatur 365
pereunt; ipsa tamen in seipsa non perit. Anima cum
est in corpore movet corpus et vitam prestat, ut prima
huius rei causa; spiritus idem operatur et est causa
secunda. Spiritus igitur est causa vite corporis et
eius sensus et motus et aliarum actionum propinquior; 370
eorundem animam est causa, sed longinqua. Cum enim
corpus humanum sit compositum ex durissimis: nervis,
venis et ossibus; et humidis: flegmate, sanguine et
utraque colera; et ex spiritu qui est in ventriculis
cordis et cerebri, in pulsu quoque nervis et venis; 375
spiritus ceteris subtilior partibus et ob hoc anime
vicinior, ad anime operationes complendas est
promptior et ceteris partibus et pro augment[ati]o sue
subtilitatis et claritatis anima operationes fortius
suscipiet; propterea dixerunt philosophi quod virtutes 380
anime secuntur complexiones corporis. Cuius ergo
complexio corporis fuerit perfecta equalis et spiritus

Et spiritus cum separatur a corpore perit. Opera vero anime pereunt a corpore, sed ipsa non perit in semetipsa. Anima quoque movet corpus et prestat ei vitam atque sensum mediatore spiritu, et spiritus
530 operatur hoc absque aliquo mediatore. Anima movet corpus et prestat ei vitam quia prima causa est huius rei et operatur in eo; spiritus vero operatur hoc et est causa secunda. Spiritus est ergo causa vite corporis et eius sensus atque motus ceterarumque eius
535 actionum proprior et anima est causa huius rei longior. Cum enim esset humanum corpus compositum ex partibus durissimis que dura sunt ossa vel tenera nervi quoque ac vene et cetera his similia, et ex partibus humidis que sunt humores, sanguis scilicet et
540 flegma et utreque colere, et ex spiritu qui est in ventriculis cordis et in cerebro, in pulsu quoque et in nervis, omnis spiritus qui fuerit his partibus subtilior et clarior erit ad recipiendum actus anime fortior ceteris partibus corporis et aptior; et
545 secundum quantitatem subtilitatis ac claritatis eius /82v/ recipiet ex actibus anime; et propter hoc dixerunt philosophi quod virtutes anime sequantur complexionem corporis. Cuius ergo complexio corporis fuerit in perfectione equalitatis erit spiritus qui

perfectus, corporis perfectus reperatus, et actus
anime omnino ordinatus. Sic quoque si membrorum
complexio lapsa fuerit et imperfecta et lesa, spiritus 385
erit imperfectus et anime ineptus, et anime actus
imperfecta propterea in pueris et senibus et
mulieribus operationes anime debiliores. Constat
autem hec maxime et gentibus quarum complexio leditur
a calore multo vel frigore propter longe distare a 390
sole vel vicinare, ut sclavi et mauri; et propter hoc
fiunt actus anime in spiritu diversi, per spiritum
enim qui est in corde, vita, hanelitus et pulsus, eo
quod ipse pre ceteris spiritibus sit aeri proprior; et
minus et subtilis per spiritum qui est in anteriori 395
cerebro fiunt sensus et phantasia eo quod spiritus
sensuum et phantasie spiritu qui in corde longe fit
subtilior per spiritum qui est in sequentibus
claustris fit cogitatio et providentia et preteritorum
recordatio, et ipse priore spiritu multo est subtilior 400

550 est in corpore suo in perfectione equalitatis et erit
actus anime in eo in perfectione equalitatis. Cuius
vero complexio membrorum in quibus fuerit spiritus in
propria temperatione fuerit minus perfecta,
imperfectus erit et spiritus in hoc quod debetur ei ex
555 subtilitate, et imperfectiores erunt actus anime hac
B139 de causa; et ideo fuerint virtutes anime in pueris
imperfecte et in mulieribus debiliores, et similiter
fit in gentibus in quarum complexione vi[n]cerit calor
vel frigus propter propinquitatem earum a sole vel
560 earum longitudinem ab eo, ut sunt ethiopes et sclavi
et eorum consimiles; et propter hoc similiter fuerit
actus anime in spiritu diversi quia fuerit per
spiritum qui est in corde vita, anelitus atque pulsus,
tantummodo eo quod ipse spiritus pre ceteris
565 spiritibus proprior fit aeri et minus subtilis.
Postea per spiritum qui est in ventriculis anterioris
cerebri fiunt sensus et phantasia propter quod
adquisivit de augmentatione subtilitatis supra
spiritum qui est in corde, deinde per spiritum qui est
570 in sequentibus ventriculis fit cogitatio et
providentia. Et propter id quod acceperit de
subtilitate supra alium spiritum, et propter quod
necessaria est ei habundancia subtilitatis dum vult

et purior propter sue operationis acumen prior, etenim
cura sensibilia iste cura sensum latentia. Hec de
differentia spiritus et anime dicta sufficiant.

recordari alicuius rei antique que iam precessit et
575 cuius tempus prolongatum est. Et hoc sufficit tibi in
hoc de quo interrogasti. Auferat a te deus omnem
tristitiam et expellat a te quicquid fuerit timendum
et det tibi fortunam in hoc et in futuro seculo.

John

Ms = Brussels, Royal Library 2772-89, ff. 72r-82v

Ed = Edinburgh, National Library of Scotland, Advocates
18.6.11, ff. 104v-108r.

Av = Avranches, Municipal Library 232, ff. 77v-81v

A = I Group (See Appendix B)

Av

Brussels, Royal Library II.2558 (2898),
ff. 112v-116v.

Paris, Bibliotheque Nationale, lat. 16613,
ff. 60v-67v.

D = D Group

Bologna, University Library, lat. 1180 (2344)
ff. 222v-228v

Vatican, Borghesiani 127, ff. 210v-214v

Vatican, latin 2074, ff. 126r-133v

B = E Group

Baltimore, H. Walters Library no. 66, ff. 125v-132r

Paris, Bibliotheque Nationale, lat. 16082,
ff. 305v-311r.

Wolfenbüttel, Herzog August Bibliothek. Cod.
Guelf. 577 Helmst., ff. 112v-115v.

1-5. om DB; 1. before "incipit" In dei nomine et eius
auxilio A; 6. honoret te deus om B; 7. que est inter
spiritum et animam/spiritus et anime B; spiritum et animum
Ed; animam et spiritum Ms; 8. tibi om D; antiqui ad
sapientes D; eo Ms; dixerunt B; 9. tibi om D; collecta DB;
de/ex D; 10. catadon DB; 1st et ad de EdB; 12. ac benededis

John

in animam om Ms; bendedis Ed; anima DB; 14. gloriosissimi
om B; libris B; 15. quem fecit in/quos fecit autem de B; et
om B; 16. ea B; 17. brevitatem ad et EdD; novi ad de D; 19.
huius D; 20. inspicere DB; quia/quod DB; hec/ea B; 21.
sufficiant DB; petitioni ad ideo D, ad cum B; 22. naturali
DBJ; et om DB; 23. dicam ad prius de spiritu et postea de
anima B, (om prius) D; 23-32 quia. . . anima om B; 23
volunt D; differentiam ad que est D; 24. sit ad in D;
earum/harum Ed; 25-26 quia. . . earum om Ms; 25. ut aliquid
sciat/scire D; aliquid om A; 26. duarum/aliquam D; sciatur
D; sit/est D; et ad sic A, sed D; unaquaque/utroque A;
26-27. et habita scientia/postquam habuerit scientiam Ed;
27. sciri AD; 28. earum om AD; earum differentiam/
differentiam que est inter eos Ed; 28-29. anime et spiritus
differentiam A, differentia que est inter animam et
spiritum Ed; 29. primum/primo loco D; 30. spiritu ad et D;
postea/deinde A, ad deinde Ed; 31. incipiamus ad prius Ed,
primitus A; et om D; 31-32. ut sit opus levius/levius sit
opus D; 32. sequatur locutio/loquamur Ed, enim dicemus D;
36. operaturque/et operatur A; 38-39. ex philosophis
laudabilibus medicorum et phisicorum D; 39. phisicorum A;
de hiis om A; corpore D; 39-40. in corporibus viventium om
B; 40. sunt ad de B; opere ad et D; 41. vel/et D;
concavitates/vacuitates A; 42. scilicet om D; eius om B;
lst et om E; alia/alter Ed; 44. ventriculo om D; plus

est/magis habetur Ed; est om D; 45. vero ad ventriculo Ed,
om D; plus ad est AB; 47. quarum vadit om B; 48. enim/autem
B; 50. corporis/cordis D; 51. esse om A; idest om A; eius
om EdA; 53. diverse cause DB; eiusdem/ipsius B; 53-55.
eiusdem...vicinis Ed; 55. per om Ed; 58. vel/ac Ed; 59.
eis/eius A; 60. colligitur ad cor D; 61 venam om D;
pulmonem ad et Ed; 61-62. vaporum fumosorum/ex vaporibus
fumosis Ed, vaporum et fumorum BD; 62. et om Ed; 62-63.
eos...corpore om Ed; 63. corpore/corde DB; hec vena/inde
Ed; 65. ipso om B; ex/a DB; 66. quarum/ex quibus Ed; 67.
corporis/cordis A; 69. altera ad pars D; 70. corporis om
B; descendit ABD; extremitates ad corporis A. extremitatem
D; 71. ea/ipsa B; 72. corporis om Ed; 75. humane D;
corporis propinquior per/corporus que propinquior est et
est per D; propinquior ad et B; 78. humana ad que A; hoc
Ms; est ad illud D; 80. oris ad et DB; labiorum ADB; 80-81.
illud scilicet quod/in illis enim A; 82. altus om A;
arabice om Ms; 83. recessionem A; exitum A; 85. ipsum/eum
EdA, eam B; quia/et Ed; ventriculo BD; 86. superius A; 87.
in/ad BD; extrahit E; 88. et om B; pulmone/calore Ed; 89.
ex/ab B; 90. tempore/ipse D; motus oris/mortis Ed; oris om
A; 91. potest ad amplius A; potest claudi/clauditur Ed;
91-93. sed. . .eo om Ms; 92. anullationem/anelationem B,
hanelationem D; 93. eiusdem Ed only; qua/quare D; hic/his
E, om D; 94. corpore/corde, ad consimilis motus D; idest/et

A, est B; 2nd causa om D; 95. tarditatis ad post D; 96. scilicet/enim D; 1st eius om Ms; 97. eius om A; 98. cause Ed; quoque/autem D; 99. ab iste libro D; 100. sunt om D; propositionibus/propriis pro accionibus D; 101. medicine Ed; artis om Ms; 102. expositio/compositio D; prolixa/prolata D; ideo/propter hoc B; 103. autem/igitur B; 106. adaptationem/aptationem EdDB, optationem A; 107. scilicet om A; eum/cor DB; 108. expulsionem Ed; vaporem ad et A; igitur/ergo B; 109. est om Ed; cause Ed; 110. 1st et om DB; 111. emanatio/natio A; 112. vero/autem D; a/ex B; et om D; 113. membra ad et D; 118. illud ad et B; 119. contextuntur/cum extenduntur Ed, texuntur B; 122. spiritum/ipsum D; 123. spiritum om D; 125. que ad etiam A; 127. introitum ad om Ed; introitum ad et exitum D; 130. utriusque Ed; 130-131. anteriori parte cerebri BD; 131. ergo/vero D; 132. interiora/anteriora B; 132-134. cum. . . anteriori om Ed; 133. sunt/est DB; 134. producant B; eum/ipsum D; 135. alium/illud Ed, alterum D; 138. quemdam om BD; 139. et om DB; 140. meatum ad in D; 141. a om Ms; 142. idest ad in ipso EdDB; introitu/itinere Ed; 143. quem/quod Ed; quoddam om Ed; pitacium/pitacu (?) MsEd, spacium B, [spacium] ad vel punctativum D; 149. claudit D; 150. de anteriori cerebro/ab interioribus cerebri Ed; cerebri B; 151. posteriora Ed; 154. transit A; 155. homo om DB; 156.

aderit/erit D; responsio ad ei D; 157. autem/vero DB; 158. ipsius EdA; 160. tardi ad aspectus MsA; 163. mergat/- inclinet A; vel om D; illud om B, eum E; motis E; illud retrovertat et inmotis/et revertatur et in motu D; 164. sit om D; 165. aperiendum B; 166. vermile om A, sublime D; sursum/cursum D; elevari/removere A; 167. et ad imaginatio sive A; 170. homo om Ed; 172. vel/et D; 173. iungi Ed; 174. interiori Ed; ventriculus Ed; 176. communi ad eius D; possit ad ibi Ed; moras/motus D; 179. 2nd et/in Ed; intellectu ad in Ed, intelligentia DB; 180. mergere/emergere D; 181. 2nd et ad sese A; incurvet/incurvari Ed, incurvat A, curvatur B; 182. vel/et B; 183. hoc om A; 185. super/sub D; 187. eo/hoc Ed; 188. diversis D; 2nd est om EdD; 189. 1st et om MsEd; erit/est Ed; rationabilis D; cogitationis Ed; 190. et om AD; 191. econtrario om D; eritque/erit Ed, om D; talis/itaque D; amens/demens Ed; et om EdD; irrationabilis D; 192. levis/letus Ms; et om AD; ventriculo ad vero EA, ad autem D; 194. duo nervi/divisiones A; interioribus Ed; 196. eos/hos A; 197. quia ad valde DB; est/fuit EdA; 198. esse Ed; multum AB; 199. permixtus DB; 200. iungi Ed; palpebris ad et D; 201. et om Ms; 202. quartus Ed; 1st and 2nd iungitur/iungi Ed; 203. fit om D; sextus Ed; 204. exta/extrema D; 205. colligetur Ed, colligitur D; 206. iungi Ed; 207. hii AE; 208. ex/a A;

hec om BD; 209. accidens ad ut BD; 210. obstruitur
A/destruitur MsEd, destruaturs DB; horum Ed/hominum Ms,
omnium Av; 211. ipse/ille D; 212. membrum/membra B;
eiusdem/illius EdBD; aqua/albedo A; 213 colligi Ed;
separaverit A; 214. operatur ad ad D; 216. ipsum om DB;
217. vel/et DB, vel ad inter Ed; 217-219. aut. . .tactus om
Ed; 217. aut/et D; 219. destructationem MsAv; 220. ipsi/-
illi D; 221-222. reluctante, scilicet natura contra
infirmittatem/in infirmitatem reluctantis A; reluctantis DB;
scilicet natura om DB; 224-225. posterioris anucha que est
pars cerebri om A; 226. diriguntur A; eo/ea Ed; 228.
commixta/coniuncta A; 229. quam/quas D; eritque EdADB; hoc
ad fit D; 231. est om Ms; quia/quod D; his om Ed; 232-233.
aliquod. . .fuerit om A; 232. abscissione Ed, pernitionem D,
per incisionem B; 233. scilicet om DB; vel/atque Ed, ad per
D; decursu/meatus Ed; 234. eo/eis Ed, ad tunc B, ad quia
tunc D; annullatur/mutatur D; illius D; 235. vel/aut DB;
hoc ad etiam D; 237. manus EdDB; contractas DB; sanas DB;
238. non om Ms; 239. ea/eis DB; 1st et om Ed; 2nd et/autem
Ed; 240. huiusmodi/hee D; 241. ut/et D, ad si B; 242.
sunt/fiunt D; 243. membra ad spiritus D, membrum Ms; 244.
iam om Ed; 245. membri Ms; 248. vel om Ms, et D; eis/hiis
D; 249. vel ad ex Ed; 251. actus/tactus D; eiusdem/ipsius
DB; ille/ipse DB; 252. tantum om A; tactum D; interioribus
Ms; 255. moram DB; 256. enim om D; vident Ms; 257.

rufa/rubea B, rubra D; vapores Ed; 258. ascendunt Ed, ascendit DBA; eius om Ed; iunctusque/cumque iunctus A; fuerit ad ille DB; 259. eius om Ed; 260. 2nd et om A; 261. auditui ceterisque sensibus/ alicui penes auditum ceteros sensus D, . . .ceterosque sensus B; 262. affuerit ad aliquod D; 263. cetera Ms; fuerint/sint EdA; 264. destruitur, ad et Ed, distraitur Ms; 266. melancolia D; 267. conturbatio B; 268. in om Ed; superiori Av/superioris EdMs; posterioris DB, ad vel posteriori A; 269. destruetur Ms; actus/tactus Ed; 270. idest/et B; si vero/et si D; 271. ex om BD; 272. occupaverint Ms; 273. atque/et in D; 274. quod om Ms; 277. operetur DB; idest om DB; 277-278. visus auditus gustus odoratus et tactus MsDB; 280. ventriculi Ms; 280-281. et cognitionem om D; 281. et ad quod D; 281-282. spiritus. . .operatur om A; 283. igitur/ergo D; 284. sint A; 285. aer om Ms; eiusdem A; emanatio/animatio A; 286. est om Ed; 288. ab anima om Ms; 2nd qui/quo Ms; 289-291. cuius. . .cerebro om Ms; 297. necnon ad et DB; 298. illos/eos EdAvD; 299. commemoravimus DB; 300-301. et ipsarum diffinitionem expositionem om DB; 301. in expositione om A; 302. eorum Ed; 304. quia/quare DB; hec om D; 306. spiritum ad declarare D; 307. itaque/ergo DB; quod/qualiter A; 308. animam Av/eam MsEd, ad dicens A; inquit om ADB; 309 movens ad quidem D; 313. et ad ita A; 314. quia/et Ed, quod D; apposita Ms; sit ad manens DB; 315. immutabile EdAvD, ad est D; sui D; 316. sed/et Ms;

vitia/scientias D; 317. que/et Ed; est Av, om MsEd, ad et
D; 318. recipit. . .opposita om Ed; que sunt/cum sint DB;
322. et/sed ADB; corpus om Ed; autem/ergo Ed; 322-323.
corpus autem est substantia/et corpus substantia est DB;
323. anima igitur est substantia om Ed; iam om EdDB; 324.
anima om D; 325. nunc om Ed; anima om Ed; incorporea ad
substantia A; 327. perceptibiles ad sensu Ms; a om Ms; 329.
insensibilia AvD, invisibiles Ed; 330. et om D; omne ad
quod est D; 331. eis/ipsis D; 333. sensibus om D; eis/ipsis
D; omne ad quod est D; 334. 1st est om D; 335. et/sed ADB;
336. anima om A; inanimatum DB; si est om DB; 337. sit ad
et A; inanimatum D; 338. recitabitur Ms, iterabitur D;
nobis/vobis Ms; 339. anime om Ed; 341. et om DB; aer om
Ms, ad aut A; 342. erit om Ed; 343. ut/quod D; 345. quia/et
Ed; nisi/non MsAv; aliqua/anime D; 346. nisi/non Ms;
aliquam proprietatem/propriam virtutem aliquam D; 347.
haberetur Ms, habet B; 2nd aer om Ms; vel ad omnis Ed, om
D; 348. species ad et Ed; 350. ut/quod A; eius om ADB;
corpus om DB; 351. corpus om Ed; 352. aut/vel EdDB; 353.
his ad quatuor D; 354. aliqua fortitudine vel aliqua om A;
355. separatur Ed; 356. omne quod fuerit ex genere suo om
Ed; fuerit ex/erit in D; 357. anima om Ms; 358. et om D;
358-359. et. . .anima om EdA; 359. similiter/sic Ed; 360.
ipsum om DB; 361 et om Ed, vel DB; 362. erunt DB, erit
MsEd, ad omnia ista D; animata ad et omne corpus

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elementatum erit animatum D; 364. et/quod A; 365. 2nd anima
/animatum D; 368. dicamusque/et dicamus A, dicamus ergo DB;
omne ad corpus DB; 370. eum/cum D; 372. movet et non
movetur/non A; 373. aut ad hoc Ed; eius om DB; 374.
amat/amans A; 375. aut ad per A; 377. movetur om Ed; a om
D; 378. pondus/motus Ed; per semetipsum/supersemet ipsum
Ms, per se ipsum DB; quia id om Ms; 379. quod/qua Ed;
380-381. est. . .non om A; 380. motionis ad vel Ed; 381.
motus om DB; per motum/motu D; 381-386. sic. . . .
incorporea om in Arabic; 384. mutationem/motionem MsDB;
385. ipsa ad omnino Ed; eo quod/cum D; videamus Ed; his ad
quatuor DB; 387. quo motionis modo moveat A; moveat D; 388.
dicamus Ed, dicamus ergo D; modo ad motionis D; 389.
species Ed; 390. ipsa om A; illud/eum Ed, enim DB; 391.
quia ad ipse B, ad ipsum D; homo/corpus D; 392. anima A;
idest. . .eam om D; 392-393. et eligit. . .operatur et om
A; 396. anima om Ms; sed/et D; 397. causa om Ms; et/vel
Ed; 398. motionem D; ipsa/ita D; 401. animam om Ms; 404.
aristoteles vero philosophorum princeps A; aristoteles
philosophus om D; 404-405. diffinivit enim animam sic D;
405. ut diceret/dixit enim A, dicetur Ed, dicitur DB; 406.
autem om Ed; 407. aristotelis/suo A, om DB; talis est
diffinitio/talem dedit diffinitionem, ad anime dicens A;
408. instrumenti A; 409. opus/hoc quod DB; 410. ex/de DB;
dicuntur/sunt DB; 411. per effectum/perfectione DB; 412.

per om DB; 417. fore/esse Ed; 418. idest om DB; 423.
vocamus EdD; 424. numerare DB; 425. eis/hiis D; referatur
EdDB; ergo/itaque Ed, igitur A; 426. dicitur ADB; 2nd est
om B; 427. in homine om Ms; 428. magisterium D; vero om D;
429. in/ex DB; 429-430. ex scientiis a magisteriis D; 430.
medici DB; 431. scientiae Ed; ceperit/incipit A; 432. quod
scit/tunc sic D; 434. caret MsDB; ei om D; tamen ad illi D;
436. ergo/igitur A; 437. corporum/corporis Ed; 438. quia om
D; 439-440. ignis quoque/ignisque A; 441. semetipso/se ipso
D; 443. corporis A; est om AD; 444. ergo/quoque DB; 446.
substantie A; et/quia D; 447. est om Ed; 448. modi
quoque/modique A; quoque/vero DB; 449. duo/vero Ms;
simplicia ad et D; vero om DB; 450. vero om EdADB;
ut...terra/ut est aer et cetera elementa Ed; 451. composita
ad vero sunt A; et om A; 453. est animatum/habet animatum
corpus Ed; idest vivit om DB; 456. eo/illo D; qui/quod A;
auxiliatur Ed; vegetationi/negotiationem D; 458. ei om Ed;
460. curare EdD; ac/vel D; faciunt D; et om A; 461.
torusque/ torus Ed, truncus quoque A, cortex quoque DB;
462. refectiōni B; corporis DB; eiciant/abiciant DB; 463.
queque/que Ed, quedam DB; sive om D; 464. resine om DB;
466. quia/quod A; 467. sunt/erunt B; ei/ibi D; est/idest
Ed, om A; 468. cerebrum ad et cetera principalia Ed;
iungitur ad in Ms, iungi Ed; 470. mobilis A; 471.
venosa/nervosa ABD; 472. sit/est D; 473. instrumenta A;

instrumentalis viventis potentialiter om D; 476. vel/et D;
 477. videtur om Ms; 479. discordat/descendat D;
 alia/animali A, illa D; 480. viventi D; 481. noluit/voluit
 MsAvB; 482. sui B; 483. animam ad viventis D; quod om D;
 484. dixit ad viventis ABD; 486. actibus/accidentibus D;
 487. potentialiter/primo D; 488. qua/quia D; una/unam Ms,
om D; 489. quam A; eam om A; 491. utrasque om A; 494. prime
 virtutes/proprietates sunt D; 496. tres/tria D; prima om
 Ms; scilicet/videlicet, ad est A; 497. he ad tres Ed; 498.
 enim ad et A; vegetativa D; 2nd anima om EdBD; 500.
 que/quia Ed; ratione ad et D; 501. autem/vero A;
 502. semetis Ms; est ad in D; 503. 1st et om A; 504.
 et/cum A; 505. vero/autem Ed; 506. est hominis Ed; 507.
 reficere/crescere A; 509. pulsativa Ms; 510. in om A; 511.
1st et/in A; animalibus ad quoque A; atque/et EdBD; in om
 MsBD; homine/hominibus BD, ad quandoque D; et opera/opera
 vero A; 2nd et ad hec Ms; 512. sunt ad ut A; 513-514.
 odoratus . . . corporis/etc. Ed; quinque videlicet/-
 quicumque enim D; 515. 1st in/ad EdAv; 516. idest/scilicet
 D; 2nd in om MsD; hominibus A; 517. autem/vero EdAvBD; sunt
om Ed; cognitio A; providentia ad et D; 518. estimatio om
 B; 1st et om Ed; visus om D; 519. inter cetera animalia/
 inter animalia non ceterorum animalium D; 520. et quia/
 quoniam A; 521. et ad quid Ed; anima ad etiam Ed; 522. eos/
 ea A; 523. eos/ea, ad hec A; est ad videlicet A; vero ad

res A; 524. est om BD; quod om BD; 525. potest comprehendi
a corpore om A; 526. et ad quod Ed; 527. anime ad cum
separantur A; 528. quoque ad cum in corpore est A; 529.
mediante BD; 530. aliquo/ullo D; anima ad etiam D; 532.
vero/autem Ed; 533. ergo-igitur EdB, vero D; 534. corporis/
temporis Ms; 535. proprior/prior Ms, proprio D; et/vero D;
est om MsEd; causa om Ms; 535-536. proprior . . . longior/
causa proprior. Anima vero huius causa longior BD [rei om
BD]; 536. longior ad quare est magnis causa BD; esset/sit
A; 537. partibus ad quatuor D; ossa om Ms, vasa BD; vel/et
D; 538. 2nd et om D; 539. et om D; 541. cerebro ad et D;
542. in ad venis vel Ed; fuerit ad in BD; 543. clarior
erit/et purior D; 544. fortior ad ex D; 545. eius/sue Ed;
546. ex/de BD; 547. secuntur A; 548. cuius/eius Ed, cum D;
549. equalitatis D; 549-550. equalitatibus . . .
perfectione om Ed; 550. corpore A/corde Ms; erit om A,
erunt BD; 551. eo in perfectione equalitatis/eadem
similiter A; 552. complexio ad corporis scilicet Ed;
fuerit/sunt BD; 554. et/etiam EdD, om AB; hoc/eo D; ei om
A; ex/in Ed; 556. et ideo om D; fuerint om Ms, sunt B; 558.
vincit BD; 559. earum/eorum EdB; a sole/ad solum ABD; 560.
earum om EdD; et sclavi om BD; 561. hoc om Ms; similiter om
A, simpliciter BD; fuerit/fiunt BD; 562. quia/qui Ed;
fuerit/fiunt BD; 565. propinquior BD; 569. 1st spiritum/
ipsum D; 570. cognitio D; 571. et om EdAvD; id/hoc BD;

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ac[c]eperunt MsBD, accepit A; 572. quod/hoc BD; 573. dum/
cum B; 574. et/aut A; 575. tempus ad iam D; elongatum D
[and usually B]; sufficient BD; 575-576. in hoc de quo
interrogasti/de differentiis spiritus et anime dicta A;
575-578. tibi . . . seculo om BD; 576. auferat/abstrahat
Ms; 576-578. auferat . . . seculo om A;

MS = Geneva Bodmer. s.n. (formerly Leipzig
University Library 1341) ff. 242v-245r.

P = Naples Nat.Lib. VIII.F.31, ff. 3v-4r.

K = Assisi Comm. Lib. 298, ff. 99v-105v.

9. est P, om MS; 13. et om P 18. MS viscinis; enim P;
19. a/ex P; 20. per/ad P; 22. iuvamentum ad eius P;
24. cor pulsat per ipsam/et pulsu ipsam per venam P;
25. vaporem P, MS humorum; 26-27. calore...vocatur om
P; 28. ex corde P, om MS; 29. ascendens P; 31. quos P,
MS quod; 32. corporis P, capitis MS; ad/ab P; 33.
ramis P, om MS; 34-35. Hec...vocatur om P; 39.
liquet/lingue P; 41. 2nd et/sic P; 43. vocat P; 44.
sive P; 45. ipse/ipsam P; ipsum/eam P; 47. quamdam om
P; 49. et om P; 50-51. eius...ore/quoque eius exitus
ex ore fit P; 53. propter/per P; 54. separat P, MS
separatem; 55. egreditur P; corpore/corde P; 1st et ad est P;
56. exitus ad est P; 58. vel om P; 59. cetera talia/omnia
vitalia P; aliena om P; 62. pluribus/ planis P; 63.
expositio/ab ipso P; prolixa P, MS probata; 65. ventriculos
P; 67. eiusdem/eius P; aerem P, MS spiritus; 67-68. afforis
P; 68. expulsionem P; 71. sciri oportet/scribio P; 72. cuius
origo a corde est om P; 75. spiritus P, om MS; est om P; 76.
partis surien/pertyssimen MS, PB per; 77. emittitur P; in om
P; 78. perveniunt P; et om P; 79. ad om P; 80. instar ad
retine P; 81. inferiora?; 83. tradens ei P, MS

trandens eis; spiritus P; 85. etiam om P; 86. in om P;
88-89. habetur uno/habenti unus? P; 89. iter om P;
predictam P; 91. cerebro P, om MS; ergo P, MS igitur;
a/vel P; 92. quod om P; 93. aliam P; 96. et eo aptatur
om P; 99. in P, MS ad; 100-102. et. . .posteriorem P,
om MS; 104. de corpore P, om MS; 106. aperitus P; 107.
spacium ad et P; 108. vero/ergo P; 110-112. ad. . .
[posterius] om P; 112. posterius (John), MS antierius;
est om P; 114. assimilati P, MS assuati; 116. fiunt/
sunt P; 117. recordari om P; vel/et P; 118. inclinatum
om P; 119. et fixis oculis sursum suspiciat P, om MS; 124.
hominibus/omnibus P; 128. delunans/ indeliberans P; 129.
anterioris P, MS interioris; 130. paria P, MS om; 131.
ascendit P; 132. hos mittitur/os immutatus P; 134. purus
om P; secundum P; 136. vero om P; 137. sensus P; 138. vero
om P; in intestina/ad intestinam P; 142. operantur/
moveantur aperiantur P; 145. cuiusque parum prohibetur
spiritus om MS; 146. perit/parit P; 147. ponita P; 148.
et cristalla oidon (?) cecum/[blank] renum P; 149.
cura/archa(?)P; 150. spiritum om P; 151. seu om P; 152.
redit/ reservit P; 153. membri P; 156. diversi P; 157.
manum P; 159. illius/cuius P; 160. et om P; 163. sentit P,
MS siccat; 165. diectus/datus P; via/una P; reddita ad
fuerit P; 166. cause P, MS case; 167. 2nd vel/ut(?) P;

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168. non ferant/omscant(?) P; 175. ingressus P; ab om
P; 177. spiritus P; visus P, MS usus; 181. melancolica/
talía P; 183. et P, MS etiam; 1st fit ad et MS; 2nd fit
om P; 184. sive P, MS tamen; ostensa P, MS offensa
(183-4. Whole reading from P used. MS: Idem etiam
impedimentum fit et in posteriore et fit memorie lesio
tamen priorem offensa.); 185. fuerit. . .impedimentum om
P; 186. cogitationem P; epilepticis P, MS opilepticis;
187. ergo P, MS igitur; 191. spiritus ad vitalis et
animalis P; 192. et regimentum/vegetativum P; 193. a quo
per pulsum om P; 195. ab anima/spiritus P; 198. decurrit
ad aut MS; 214. anima/substantia MS; 232. virtutem
(John), MS has "naturam" deleted but no replacement;
234. proprietatem ad aliam MS; 239. proculdubio (John),
MS perfectio; 272. ipsam/eam K; 274-276. necnon. . .
movetur om K; 277. ipsam K; 281. inquit om K; 283.
aliter ad li[bro]? K; 284. potentia K; 288. animal
dicitur K, MS anim[a] advertitur?; 289. quod K; 292.
voluntarie ad et K; 294. perfectio K, MS receptio; 298.
enim/igitur K; 302. secunda ad est K; 307. quedam/que K;
quadam/et que K; 308. lignum K, MS ligum; MS scannum;
312. 2nd prima ad primo K; 313. destruxerunt K; 315.
composui K, MS componiti; 319. transeatur K; 321. in om
K; 323. space after "propter" in both MSS;

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324. utilitatem ad etiam K; 328. instrumentalis K; et
om K; tamen/autem K; 333. hoc ad autem K; 335. voluit K,
MS volui; 337. instrumentalis/agentis K; quam K, MS quod;
339. commemorandum K; 355. quoque om K; auctus K; 358.
cogitatio om K; 359. hominum K; 361. in/etiam K; 363.
vero ad res K; 365. separantur K; 366–367. cum est in
corpore om K; 371. anima K; 373. 1st et om K; 380.
suscipiet/recipiet K; 382. complexio/perfectio K; 383.
auctus K; 385. lapsa ad si K; 386. auctus K; 387. 2nd et K,
MS in; 389. autem om K; 392. auctus K; 397. phantasie
ad quod K; in K, MS est; 399. 1st et om K; 400. iste K;
multum K; 401. et enim K.

VI. "ON THE DIFFERENCE BETWEEN SPIRIT AND THE SOUL"
AN ENGLISH TRANSLATION OF JOHN OF SEVILLE'S VERSION

Here begins the book on the difference between the soul and spirit, which Costa ben Luca produced for a certain friend of his, the secretary¹ of a king, and which John of Seville translated into Latin out of the Arabic for the Archbishop Raymond of Toledo.²

[Prologue]

You have asked me, may God honor you, about the difference which is between spirit and the soul and that I write down for you what the ancients have said about it; and behold, I am writing certain general themes for you which I have excerpted from the book by Plato called Phaedo³ and his book called Timaeus, and from the books by the philosopher Aristotle and (by) Theophrastus and Empedocles⁴ about the soul; also from the book by Galen which aims to bring into harmony certain sayings of the most glorious Hippocrates and Plato and from the book of that same Galen which treats of the procedures of surgery and of the functions of the parts of the body. And I have exercised the utmost brevity, because I know you have been

greatly occupied with various matters and very concerned with the business of the king, and because due to the shortness of time it is impossible for you to look at these books. And I believe that what I write, with God's help, will suffice (for your request), especially since you already are learned about natural things. But now let me begin by saying that for one to know the difference between two things, it is first necessary to know what each of them is, because it is impossible for anyone to know the difference between two things unless he know the essence of each of them; then having knowledge about each of them, it will be possible to know the difference between them. And because we want to set out the difference between the soul and spirit, it is necessary that I first speak about the soul and spirit, then about the difference between them. And we will begin with spirit, as this is the easier task, and then a discussion of the soul follows.

[Text]

Spiritus is a certain subtle body which in the human body arises from the heart and is borne in assurianet,⁵ that is, in the pulsing veins, for the vivification of the body, and it effects life, the breath and the pulse; and similarly it arises from the brain into the nerves and effects sense and motion. And some praiseworthy physicians and natural philosophers who were

experienced in performing surgery on living bodies⁶ thought regarding this that there are two ventricles or cavities in the heart, one in its right part and the other in the left; and in these two ventricles are contained blood and spiritus, but in the right ventricle there is more blood than spirit, and in the left there is more spirit than blood. And two veins grow out from the right⁷ ventricle, one of which leads to the lung, and the breath of the heart is made by it. For the heart is contracted and extended, and by its extension and contraction the pulse is created throughout the whole body and therefore the pulse shows the state of the heart, that is, its own passions, regular as well as irregular, and foreign, which occur on account of various difficulties of that heart which happens to it in itself or through some member near it. So when the heart extends, it draws in from the lung through the aforementioned vein part of the air which has been taken into the lung by breathing to cool the natural heat which is in it, to be the nutriment or sustenance of that same spiritus which is contained in its ventricles. When the heart is contracted, it drives through that vein to the lung whatever is produced in it of smoky vapors and it expells them from the fiery heat which is in it, and the lung sends them out of the body, and this vein is called the "pulsing" one. The other vein is called

by the Arabs alabhar,⁸ and this vein, at the very place from which it arises from the heart, is divided into two parts, one of which ascends upwards in the body; out of it from the chest to the top of the head proceed branches from which this part of the body is vivified; and the other part, leading downwards in the body, descends to the farthest extremities of the body to the feet, and from it proceed branches by which the lower part of the human body is vivified. And branches from each part of the aforesaid veins which are distributed throughout the rest of the body are called surienet, that is, "pulsing", and this is the immediate cause of life in the human body, because through this it carries to each member some of the spirit which is in the left ventricle of the heart. And an indication by which it is proved that human life comes into being through this spirit is that this same spirit is seen to come out at the time of death by a motion of the stomach, the mouth, lips and chest; in them occurs something like a gasping and a deep, choking breath, and the common people call this in Arabic annaza,⁹ that is, the returning or the going out of the soul. And its exit from the body is made through the very way by which air gains entrance to it because it goes out from the ventricle of the heart to the lung through the vein we spoke about earlier which goes from the heart to the lung in order to draw in air and take away the

smoky vapor; and from the lung through the reed of the lung, that is, through the throat, it goes to the mouth and makes its exit from the mouth at the time of death, namely, when the mouth is open and cannot now close of itself, but must be closed (by some attendant) because of the cessation of life after the going out of spirit from it. Now the cause by which this spirit goes out of the body, that is, the cause of death and the cause of the speed or slowness of its going out, the easiness of death or its difficulty, and its apparentness in certain men or its obscurity in others, and the cause of sudden death¹⁰ and other such matters, are unsuitable for this book because they are matters of great investigations and require first propositions and acceptable proofs from many books on the arts of physicians, the explanation of which is prolix, and we therefore leave off mentioning them. But it is clear by what we have said that life occurs through this spirit which is in the ventricles of the heart and that the pulse and the breath are constituted for the convenience of this spirit: for cooling it (the spirit), by the air which enters it from outside, and through the expulsion of smoky vapors from it. Thus it is now clear that spirit which is in the ventricles of the heart is the cause of life and breath and the pulse, and it is necessary to know this about the vital spirit whose origin is from the heart.

spirit which comes forth from the brain and pervades to the other parts of the body, whose nutriment or sustenance is the spirit which is made in the ventricles of the heart, is called "animal". As the branches of the surien part, that is, the pulsing vein which is called alabahar which is sent from the heart to the upper part of the body, when they (the branches) all reach the bone of the head (the skull) and penetrate it, they all join together and compose and construct something like the fabric of a net; and from this arrangement of veins a certain part is extended under the brain reaching toward the lower parts of the brain, (making it) suitable for receiving animal spirit and bearing to it some of the vital spirit which we have said is in the ventricles of the heart. The brain is divided into two parts, of which one is in the front and larger, and the other in the rear. And in the one in front there are two ventricles having an entrance to a common space which is in the middle of the brain. In the rear there is one ventricle making a passage to the above mentioned space which is common to both of the ventricles which are in the front of the brain. Then the fine veins which are sent out of the net which is under the brain to the interior of the brain, when they reach one of the ventricles which are in front of the brain, they bring to it vital spirit, which in traveling to the other ventri-

cle, is there made finer and is purged and made suitable for the reception of the power of the soul. And this works on it a kind of digestion and conversion to a kind of spirit that is finer and clearer. Then it goes from these ventricles into the (middle) space and from the space into the rear ventricle of the brain by the opening for making the way from the common space in the middle of the brain to the rear; and in this passage, that is, the entrance through which the spirit travels, there is a certain particle, that is, a certain small part cut out from the brain resembling a worm, which is raised and lowered into this passage; and when this part is raised, the opening between the common space which joins the ventricles and the rear ventricle in the brain will be open. When it is lowered, it will be closed; and when the aperture becomes open, the spirit travels from the front of the brain to the rear; and this does not happen unless it is necessary to remember something which has been given up to oblivion, at the time, that is, of thinking about the past. Indeed, if the aperture does not become open and the spirit does not go to the rear of the brain, a man will not remember, nor will he be able to respond to things about which he is asked. Moreover, the opening of that aperture which is made by the elevation of that body which is like a worm is different in men with regard to speed and slowness. For instance, it is

made slow in some and therefore they become slow of memory and slow in responding, absorbed in thoughts. And thus it happens with him who would like to remember something, that his head is somewhat inclined or he bends it backwards and his eyes look up without moving, so that this position or stance is a sort of aid to him in opening the said passage so that the wormlike body can be raised up. The intellect and thinking, forethought and knowledge, occur through spirit which is in the ventricle which is shared by those two ventricles which are in the front of the brain. Therefore, when a man thinks or foresees something, it is necessary that the course, that is, the passage or opening which is between the common space joining those two ventricles which are in the front part of the head and the ventricle which is in its rear, be closed so that the spirit which is in the common space can pause in order to be strengthened and thus provide an increment of power for thinking and understanding; in other words, in order for it to be stronger for knowing and thinking, foreseeing and perceiving. And therefore it happens with him who is thinking that his head bends towards the earth and he looks at it a great deal and he bends over as if he is writing something or working out some figures, as an aid to lowering that body which we have said is similar to a worm over the opening of the passage through which spirit goes to the

rear of the head. Now spirit which is in that space, that is, in the middle ventricle, varies among men. In some it is fine and clear, and such a man will be reasonable, thoughtful, provident and of good mind; in some it is the opposite, and such persons are mad and irrational, unstable and stupid. From the ventricle in the front of the brain proceed seven pairs of nerves, of which one pair, that is, two nerves, coming from the front ventricles is joined to the eyes; vision occurs through these, and they, more than the other nerves, are hollow because it is necessary for vision that spiritus which is sent for it be highly concentrated, abundant and clear and unmixed with any other body. Another pair of nerves is joined to the covering of the eye, that is, the eyelids. The third is joined to the tongue, and through this occurs the sense of taste. The fourth is joined to the palate. The fifth is joined to the eardrum, and through it hearing occurs. The sixth descends to the viscera, providing sense to it, and from it a certain part is returned to the uvula,¹¹ causing it to move upward. The seventh is joined to the tongue and is that by which it is moved. And similarly these nerves operate by means of the spirit which travels in them from the brain to these members; and an indication of this is that when it happens by some accident that the opening for the spirit in any of these nerves is obstructed, the spirit

is prohibited from reaching the member and the work of that member is nullified, as when water¹² which collects in the eye, when it stands between the spirit which is in the nerve and the view, causes blindness, and just as mixtures, that is, bad humors and vapors, which obstruct and separate the spirit itself and the eardrum, or the instrument of smelling, or the instrument of taste or the instrument of touch, it causes deafness or the destruction of taste or smell or touch. And when these apertures are opened either by medicine or by the impulse of nature, that is, by nature struggling against illness, the member returns to its work and becomes healthy and balanced. Also from the posterior part of the brain proceeds anucha,¹³ which is a part of the brain, and it descends through the bone of the neck through all the alfetar,¹⁴ which are the nodes of the spine, and from it many pairs of nerves branch out, between each alfetar, that is, one pair going to the alaadal,¹⁵ which is a certain kind of flesh made up of veins by which motion of the members occurs, and the work of the hands and feet and of all the body occurs through this. And an indication of this is that whenever any one of these nerves suffers some impediment, namely from a cut or a wound, or the passages in it are closed, the motion of the member to which it is sent is nullified or weakened or destroyed, and this happens according to the degree of

impediment which that nerve has suffered. For we see the hand of a cripple looking healthy and whole and no cause of any impediment is evident in it, and yet it feels nothing and does not move.¹⁶ And when illnesses of this kind are cured by some medicine by which the flow to the brain can be opened, such as medicines which cleanse the passages of the members and open those blockages, sense and motion are returned to those members, provided that illness has not passed beyond the point of curing and those members have not become so weak that they cannot withstand the weight of the cure. And sometimes some impediment from a bad complexion or a mixture of bad vapors comes to the spirit which is in all of the ventricles or in some of them, and because of this the acts of that member are destroyed. For example, when only that spirit which is in the front ventricles suffers some impediment or corruption, destruction of sense occurs from this in the way it happens to one who enters the bath and there pauses: his eyes are clouded and he does not see anything; or in the way that it happens with one in whom red choler rises¹⁷ and its vapor ascends to his head, and the vapor is joined to the spirit which is in the front of his brain: his vision is similarly obscured and he does not see anything; and so it happens with hearing and the other senses. For example, if there occurs some impediment in the middle of the brain and

the other parts of that brain are safe, only thinking and understanding is destroyed, and sense and motion remain in balance, as happens in the person afflicted with melancholia,¹⁸ which is a mixture or turmoil of the reason and the destruction of knowledge. And if there is an impediment in the upper part of the brain, memory only is destroyed and the other acts of a man are balanced and normal. Now if there is an impediment in two of these ventricles or in three, and it occupies the whole brain, there is an overall impediment to knowledge and to sense and motion, as happens in the case of epilepsy¹⁹ and similar things. Thus it is proved certainly by the things we have said that this spirit which is in the front ventricles operates the senses, that is, vision, hearing, taste, smell and touch, and with these operates athagil,²⁰ which the Greeks call fantasy; and that the spirit which is in the middle ventricle effects thought and knowledge and foresight, and spirit which is in the posterior ventricle operates motion and memory. It is clear from all these things, therefore, that in the human body there are two kinds of spirit: one which is called vital, whose nutriment or sustenance is air and whose emanation is from the heart, whence it is sent by the pulse to the rest of the body, and operates life, the pulse and breath; and another, which from the soul is called "animal", which works in the brain,

whose nutriment is the vital spirit; and its emanation is from the brain and in that brain it operates thinking, memory and foresight; and from there it is sent through the nerves to the other members in order to operate sense and motion.

To say something about the soul is most certainly a serious matter and very difficult, and this is attested to by the diversity or discord among the greatest philosophers, namely, Plato and Aristotle and Herophilus,²¹ and also Empedocles, and similarly some who came after them. But let us relate the two definitions according to which Plato and Aristotle have defined it and [give] an explanation of these definitions. And in the explanation of each part of them let us use probable arguments, and a discussion of the power of the soul follows; because this will be sufficient for here and it will be possible for us to show from it what we intend, namely, the difference between the spirit and the soul. And so we shall say that the philosopher Plato defines the soul this way: The soul, he says, is an incorporeal substance moving the body. Aristotle, however in his definition of the soul, has it thus: The soul is the perfection of the potentially acting and living body. So now let us explain these two definitions and we begin with the first, which is that of Plato,

and let us show that the soul is a substance and we say so because whatever receives opposite things, when it is a unity and immutable in its essence, is a substance. But the soul receives virtues and vices though it is a unity; so the soul of Plato, which is immutable in its essence, receives virtues and vices, which are opposites. The soul therefore receives opposites and remains a unity and immutable in its essence, and thus it is a substance. And likewise we say that whatever moves a substance is a substance, and the soul moves the body. The body, moreover, is a substance; the soul is therefore a substance. And because it is manifest by clear arguments that the soul is a substance, now let us show that the soul is something incorporeal, and we say: Qualities of each and every body are perceptible, and whatever has qualities that are not perceived by corporeal sense is incorporeal. Moreover, the qualities of the soul are virtues and vices, which are insensible; the soul, therefore, is incorporeal. And likewise every body is subject to all the senses or some of them. But the soul is not subject to all or any of the senses; the soul therefore is not a body. Likewise, every body is either animated or not animated, and if the soul is a body, either it is animated or not animated; and it is impossible that the soul should be inanimate if it is a body because it is not fitting that the soul be inanimate.

And if we should say the soul be animated, the discourse on the soul of the soul will be thrown up to us again: "whether this (soul of the soul) is a body or not" , and this would go on ad infinitum; therefore, the soul is not a body. And likewise, if the soul is a subtle body, it will be air, a subtle spirit diffused through the whole body, or it will be fire; and if it were so, it is necessary that that spirit or fire have its own form or its own power, because unless there be to it some particular form or a particular power, that is, unless it have some property which fire or air does not have, all air or fire will be soul, but if there were to be some species peculiar to it, that species would be soul. Likewise, if the soul were to be a body, it is necessary that its body be simple or composite; if it were to be a simple body, doubtless it would be fire or air or water or earth. And if the soul were to be one of these elements absolutely, that is, without any power or any particular form by which it is separated from that which is a participant with it in the genus, everything which would be of its genus will be soul. And so it is proved that if the soul were to be fire, all fire would be soul, and if it were to be air, all air would be soul, and so on with the other elements. And if it were to be so, every body that contained that element would be animated. For example, if it were to be air, the lung and

the veins and an inflated bag would be animated; and if the soul were to be water, a vessel filled with water would be animated; and such words are base and vain. and if the soul were to be a composite body, then the body would be a soul, not a body. And because it is now clear that the soul is an incorporeal substance, now let us explain in what ways it moves the body. And let us say that everything that is moved is either moved by the motion of its mover, just as a wagon is moved by the motion of oxen, or it is moved when that which moves it is not moved; because what moves something either moves and is moved or moves and is not moved, and this happens in four ways: because either it will be by the natural desire of that by which it is moved, in the way that a lover is moved towards the one whom he loves, or by hate or flight or terror, just as an enemy is moved away from his enemy or against him; or through a natural act, in the way that a stone is moved by weight, when the weight by itself be immobile; or because that which moves is the principal occasion or cause of that which is moved, in the way that craftsmanship²² is the cause of motion in the movement of a craftsman when craftsmanship is not moved by the motion of the craftsman. So the soul moves the body and it itself is not moved by its [the body's] motion. The soul, therefore, is the cause of the motion work and change, in animals through the will,

and it itself is not moved by any kind of motion of the body because it itself is incorporeal. We see, therefore, from these ways about which we have spoken, the kind of motion by which the soul moves the body, and let us say that the soul moves the body in the fourth way from the second kind of motion, that is, it moves the body when it itself is immobile. It moves it because it is that principal occasion or cause of its motion, because a man operates through it, that is, through the soul, and chooses by it; and he who chooses is moved because he operates. And just as craftsmanship is the cause of motion in the craftsman, and that craftsmanship is not moved by the motion of the craftsman, so the soul moves the body but is not moved by its motion. The soul therefore is the cause of the motion of animals through desire and will and through work and change, and it itself is not moved in any way by the kinds of motion of a body, because it is incorporeal. And because we have now discussed the definition of Plato according to which he has defined the soul and we have made clear the interpretation of all its parts, now we will consider the explanation of the definition of the philosopher Aristotle. The philosopher Aristotle thus defines the soul: He says that it is the perfection of a potentially living and acting body. Moreover, in the book of Aristotle which treats of the soul the definition is the following: The

soul is the perfection of a potentially living organic natural body. Let us return to the work.²³ He says "potentially" because certain things are said to exist potentially, and certain ones actually. And when a thing arrives at its act, it is denominated by its perfection; for this perfection is the reception of its form. Indeed, it is from this reason that the soul is said to be the perfection because an animated being is animated potentially, and when it becomes actually animated, then it is said to have become perfected, and its perfection is the reception of its form, which is to say that it is a sensible animated being with voluntary motion. It is established therefore from these things we have said that the soul is without doubt the form of an animal since it is the perfection of that animal; because the perfection of a thing is the reception of its form. And because it is definitely proved that the soul is the form and that we call this form "perfection", it is necessary for us to enumerate the kinds of perfection and to choose which of them is relevant to the soul. Therefore, we say that perfection is said to be of two kinds: there is primary perfection and secondary. For primary perfection in a man is wisdom and skill; secondary perfection in man is applying himself in those things which he acquires of knowledge and skill. For example, a physician is said to

have primary perfection because of his knowledge of medicine; when he begins to employ what he knows, he is said to have secondary perfection. Therefore the soul is primary perfection, because he who is sleeping, though he lack sensation while he sleeps, nevertheless has a sensible soul, and every form and perfection is the form and perfection of some thing. The soul, therefore, is the form and perfection of the body. Moreover, there are two kinds of bodies, because there are certain bodies in which the form is natural, such as animals and trees, fire and water, and whatever has natural motion in itself; and there are certain things in which the form is acquired through craftsmanship, such as a door and a bench. The soul, therefore, is the form of a natural body because the body does not exist from the acts of craftsmanship. Too, a natural form differs from a form [made] through craftsmanship because a natural form is a substance and the form from craftsmanship is an accident. Therefore, the soul is a substance because it is the form of a natural body. Moreover, there are two kinds of natural bodies, because certain ones are simple, while others are composite; simple ones are things like air, fire, water and earth; composite ones are such things as animals and trees. Now the soul is not the form of a simple body, but of a natural composite one, because whatever has a soul is animated, that is, it

lives, and whatever lives is changeable or destructible and needs food by which it can regain what has been destroyed in it and which helps it in the processes of life, giving it growth. For the food it needs different instruments, of which some are necessary to it for carrying it down for the repairing of the body and making it run through and penetrate, like the throat and veins in animals and the trunk and branches in trees. And certain of them are necessary for the body to be restored that throw from it what is superfluous, like the pores in animals or the outlets for resin in trees. Also the instruments are multiplied in animals according to the extent of their perfection and the number of their operations, because if something is an animal there are members vital to it such as the heart, brain, and whatever is connected to them; and if it is a sensible being, it will have nerves and senses, and if it has voluntary motion it will have nerves and alaadal, that is, venous flesh; and if that is so, it has been well and properly said that the soul is the primary perfection of a potentially living organic natural body. And this definition is general, full and sufficient for every soul which exists in a corruptible or dissoluble body generally. Now because we see the first definition change and in its place "potentially living" put,²⁴ it does not differ much from the other [definition], because

the interpretation of both definitions is one. Indeed, by saying a thing is living potentially, he does not want to convey by this that a body would stand thus in its essence before the soul existed, after which it would receive the soul by that through which it was possible for it to live. But he wants us to know, when he says "potentially," that it already had the organs by which it would be possible for it to perform the acts of life. "Organic," therefore, has the same meaning as "potentially living." This is Aristotle's definition by which he has defined the soul, together with its explanation, which we have presented and made clear in each of its parts.

And because we have explained both the definitions of Plato and of Aristotle and have made clear the meaning of each of their parts, now let us speak about the powers of the soul, and we say that the primary powers of the soul, which belong to it in potentia in the manner of genus, are three: the first is the vegetative, the second the sensible, and the third, the rational, and these powers are [also] indifferently called souls. For one [sometimes] speaks of the vegetable soul, and also the sensible [or] brutish soul capable of motion, moved, that is, by the will, and the rational soul which uses reason, knowledge and thought. Now the vegetable soul, which in other books

is called "seminal", is common to ourselves, to trees, plants and animals; and the sensible soul, which is elsewhere called "vital", is common to us and the animals; but the rational soul is peculiar to man. Now the work of the vegetable soul is to nourish and to restore, and it does this through four powers which are called "natural", and these are the "attractive", the "retentive", the "digestive" and the "expulsive" [powers], and this work is found in all things with the functions of life, that is, in trees and plants, in animals and in man. The functions of the sensible soul, which is called "vital," are such things as vision, hearing, taste, smell and touch, namely the five senses of the body and fantasy and the motion of moving from place to place at will. And these functions are found in every animated thing, that is, in men and animals. The tasks of the rational soul are knowing, foresight, judgment, doubt, visions and memory, and these functions belong to man among the other animals.

Since with the help of God we have already explained what spirit is and the soul, now let us speak about the difference which is between them, and let us say that the first difference between them is that spirit is a body, but the soul is incorporeal; and that spirit is contained in the body, but the soul cannot be contained in

the body. And spirit perishes when it is separated from the body; as to the works of the soul, they perish with the body, but it itself does not perish. Also the soul moves the body and is responsible in it for sense and life, through the mediation of spirit, while spirit operates this without any mediator. The soul moves the body and transmits life to it because it is the first cause for this and works in the body. In fact, spirit also operates this and it is the secondary cause. Spirit, therefore, is the more immediate cause of life in the body and of its sense and motion and of its other acts, while the soul is the more remote cause of this. Indeed, since the human body is composed of very hard parts, which hard parts are bones or cartilage, nerves and veins and other things like this, and of humid parts, which are the humors, namely, blood, phlegm and the two kinds of bile; and of spirit which is in the ventricles of the heart and in the brain and arteries and in the nerves; all spirit which is more subtle and clear within these parts will be stronger and better fitted than other parts of the body for receiving the acts of the soul; and it will receive from the acts of the soul according to the degree of its fineness and clearness. Because of this, philosophers have said that the powers of the soul follow the complexions of the body. Therefore, when the complexion of someone's body is in a state of

perfect balance, the spirit in his body will be in a state of perfect balance and the acts of the soul will be in perfect balance as well. But in someone whose complexion of members in which spirit resides is less perfect in its particular mixture, the spirit [also] will be imperfect in that subtlety which it should have, and the acts of the soul will be imperfect on account of this. Thus the powers of the soul are imperfect in boys and weaker in women, and it is similarly so among peoples in whose complexions heat or cold dominates because of their propinquity to the sun or distance from it, like the Ethiopians and Slavs and peoples like these. Because of this similarly the actions of the soul on the spirit will be different: [1] Life, the breath and the pulse are made by spirit which is in the heart; inasmuch as this spirit in comparison with the other spirits is more like air and less subtle; [2] afterwards through the spirit which is in the front ventricles of the brain sense and fantasy occur because of the increase of subtlety it acquires over the spirit which is in the heart; [3] then through the spirit which is in the remaining ventricles thought and foresight occurs, according to the subtlety it receives beyond that of the other spirit, because it needs to have an abundance of fineness when one wants to remember something of old that has preceded and whose time has long passed. And this is sufficient for you

on the matter about which you have asked. May God keep from you all sadness and send away from you whatever is to be feared and give you fortune in this and in the future world.

NOTES TO CHAPTER VI

¹The Jerusalem manuscript names "'Isa b. Farruhansah" as the person to whom Qusta dedicated this work. According to Gabrieli, "Nota Biobibliografica", 364, Abu Musa 'Isa ibn Farruhsah or Farruhansah was a high official, well known for his learning and a generous patron, who lived in Baghdad about the mid-third century A.H. He was the director of the Land Tax in 871 and 873. He apparently was vizir three times, the first in 870 and 871 under al-Musta'in; in 874 with al-Mu'tazz, and under al-Muhtadi in 877-878. These dates, which do not correspond with the reigns of these caliphs are the ones given--in years of the Hegira--by Gabrieli.

²On John of Seville, see Chapter 4. Raymond was bishop of Toledo during the years 1126-1151.

³The Latin reads "cadon", following the Arabic spelling.

⁴In the Latin, "Benededis", rendered from the Arabic "Bendaklis." Nagy discusses the many spellings of the name among the Arabs and their transliteration in Western texts in "Alcuni scritti": 313-317.

⁵According to Gabrieli, "La Risalah", 628, this word is "as-siryanat" الشريانات and he translates "in venis pulsus" as "in the arteries". It appears that "pulsus" conveys both the ideas of the artery and the movement itself. The word is translated here as "pulsing vein" when the carrier of the spirit is meant.

⁶The physicians at Alexandria during the Hellenistic period performed surgery. See Ludwig Edelstein, "The Development of Greek Anatomy," Bulletin of the History of Medicine 3 (1935): 235-248.

⁷This is an error. The Arabic has "left" ventricle, as the context further on clearly verifies.

⁸Alabhar: الأبر, for the vena cava, which branches at the heart and sends one branch to the brain.

⁹Annaza: النزع, the death rattle.

¹⁰Qusta himself was the author of a work "On Sudden Death", as was Galen. A brief quotation from Qusta's book in Rhazes' Continens (Venice: Bonetus Locatellus, 1542), f. 174rb, says that a leap in the heart happens when the blood coming from the liver to the heart is thick and black.

¹¹Only a few MSS have this word; most have "uvam". Although Qusta does not specify the use of this pair of nerves, Galen indicates their use by the instruments of the voice, including the uvula, in Parts, 16.4:689, 691.

¹²Most of the Latin manuscripts have "water", and this is supported by the Arabic. Interestingly, one of the groups of Latin manuscripts (group "I;" see Chapter 4) has the variant "albedo." Theophrastus, citing Empedocles, in his De sensu uses the example of "white matter" clouding the nerves and making it impossible for the spirit to travel to the member in order to do its work. George M. Stratton, Theophrastus and the Greek Physiological Psychology before Aristotle (New York: Macmillan Co., 1917; repr. Dubuque, Iowa: Brown Reprint Library, 1966), 79, and Plato speaks about white phlegm and imbalance (Timaeus, 82b, 83a) as causes of disease. Qusta himself refers to such an idea in a passage quoted in Rhazes' Continens from his work on paralysis (in 1.1:4va) and on laxatives (12:139vb). Health was seen to result from right proportions of the elements and disease from bad mixtures. The humoral basis of physiology is taken for granted. See Galen, Doctrines, 505, 487.

¹³Al-nukha', الخناخ .

¹⁴Al-faqar, الفقر .

¹⁵Al-'adal, العدل .

¹⁶In On Anatomical Procedures and in On the Doctrines of Hippocrates and Plato Galen describes experiments demonstrating the functions of the nerves and the parts of the brain to support his assertion that the brain is the seat of motion and sensation. Costa himself wrote a work on paralysis; a portion describing the blocking up of nerve passages and its effect on the motion of the members is cited at some length in Rhazes' Continens (1:4va). He prescribes a cure for it using laxatives and phlebotomy.

¹⁷Red choler or bile: a harmful humor; this is mentioned in a citation in Rhazes' Continens of one of Qusta's works, probably that on the humors or on the great artery (28:353vb).

¹⁸Melancholia: Thought to be brought on by an abundance of black bile. See Klibansky, et al., Saturn and Melancholy, Studies in the History of Natural Philosophy and Art (London: Nelson, 1964), ch. 1.

¹⁹On epilepsy, see Owsei Temkin, The Falling Sickness, a History of Epilepsy from the Greeks to the beginning of Modern Neurology, Publications of the Institute of the History of Medicine, The Johns Hopkins University, 1st ser., Monographs, 4 (Baltimore: The Johns Hopkins Press, 1945): 60-63.

²⁰Al-tahyil, التخييل imagination.

²¹The Arabic has حرو سلس, which would conform to the name Herophilus, the Alexandrian physician whose work on the nervous system influenced Galen. Since this section of De differentia deals with definitions of the soul among philosophers, it could be that the Stoic philosopher Chrysippus is intended. Galen mentions Chrysippus' ideas as they oppose those of Plato (Doctrines, 171, 175, 235).

²²Craftsmanship. One of the Arabic manuscripts (Istanbul) has مياخة, the craft of the goldsmith, which is the cause of motion of the goldsmith. M.-Th. D'Alverny, "Les Traductions d'Aristote et de ses Commentateurs," Revue Synthese 89 (1968) cites this as an example of John's clumsiness as a translator. However, chances are good that he had a manuscript such as the Gotha and Jerusalem ones, which have the readings "craftsmanship" and "craftsman."

²³This signals the end of a passage evidently added by the translator. It is not in the Arabic. See John's translation, lines 404-409.

²⁴This passage is confusing. The definition given a few lines earlier contains all these terms, yet the text seems to be speaking of it as if the word "organic" were not there. Could either "organic" or "potentially living" be an interpolation here? A few pages before the two different definitions are indeed given, but this is the passage referred to in note 23 as a probable interpolation of the translator. The definition given at the beginning of this chapter also does not contain the word "organic."

VII. THE HEBREW TRANSLATION

History of the Hebrew Version

The fate of the Hebrew version of De differentia spiritus et animae, Teshubah 'al 'Inyan ha-Perek she-hu ben ha-Ruah u-ben ha-Nefesh," in many respects forms a contrast to that of the Latin. To our knowledge, it has survived in a mere two manuscripts, and these have been copied among a collection of kabbalistic works rather than, as was so often the case with the Latin version, among the works of Aristotle or among medical texts. In addition, the Hebrew version is anonymous with respect to both author and translator. This circumstance suggests that perhaps other manuscripts eventually will come to light as they are identified. In the meantime, it appears that either the Hebrew text was not widely known or used or that it became the victim of the censorship that decimated copies of Hebrew works in the Middle Ages, or both. Some evidence is available from the copies that do exist, and we can use it to guess at the history of the translation. All of this limited and circumstantial evidence points to the Hebrew version's provenance and existence exclusively in Italy.

The earlier of the two manuscripts belongs to the collections of the Palace Library at Parma, Hebrew MS. 2784, formerly DeRossi MS. 1390, item no. 7. Moritz Steinschneider, who identified the text, describes the codex as a small quarto, on parchment, written in a rabbinic hand by a certain Menachem ben Benjamin. Steinschneider notes that this Menachem is mentioned in our text and in four others of the thirty-one, mostly kabbalistic, works. Steinschneider gives a date of 1316 for the codex¹ and this date in fact appears at the end of our text.² The codex became part of the Parma collections in 1846, when it was acquired by Maria Luisa of Austria, widow of Napoleon and Duchess of Parma, by purchase of the collections of Mordechai Bissichis da Brody of Austria and Shelomoh Gottlieb Stern da Rohonez of Hungary. The work probably had previously belonged to the private collection of Mosheh Benjamin Foa of Reggio Emilia (1729-1822), a bibliophile and the librarian and procurator ("Provveditore") of the Este Library of Modena.³

The more recent manuscript is no. 2131 in the Kabbalah and Mysticism Collection at The Jewish Theological Seminary of America in New York, and it was acquired in 1927 or 1928 by gift of Mr. Mortimer L. Schiff among a number of manuscripts of Italian origin.⁴ It was unknown to the catalogers of the Parma manuscript, who

assumed that theirs was the only one existing. The New York codex is comprised of thirteen "Kabbalistic varia", of which Teshubah 'al 'Inyan ha-Perek she-hu ben ha-Ruah u-ben ha-Nefesh is no. 12. On the flyleaf a cataloger has noted the contents and their correspondence to those of the Parma codex. This is very strong: in all, ten out of the thirteen correspond with works among the first eleven items in the Parma codex.⁵ The cataloger has also noted the name and birthdate of the scribe, which appear on fol. 25b, and the dated entry of a censor on the last page. This is "Fra Luigi, 1599". The codex therefore was probably copied not long before that date by a certain Hiyya Finzi, who was born April 8, 1575. It is small and plain in format (21 3/4 x 15 cm.), paper, in a small Italian hand, sometimes difficult to read on account of blotting of the ink, and it is comprised of a single quire numbering forty-five folios. The binding is modern and of cloth. The origin of the manuscript can be placed in or near Carpi or Modena, because we know that the censor, Fra Luigi da Bologna, came from Modena to Carpi in 1599. He was criticized for not being stringent enough in his censorship of Hebrew works⁶ and this may account for the fact that the codex appears to be whole and unexpurgated. It was not further subjected to censorship. Although the Finzi family was well established and prominent in northern Italy by the

sixteenth century, Hiyya Finzi appears not to have been one of its more famous members. A certain Chanaja ben Salomon Finzi, a book dealer, lived in Gazzuolo and Viadana, and died in Mantua at over seventy years of age in 1622. Perhaps he was an elder relative.⁷

Some of the details concerning the two manuscripts, then, suggest a very close relationship between them, to the extent that the sixteenth century copy may have been made directly from the Parma manuscript. By the sixteenth century the Foa family was well represented in Reggio Emilia,⁸ which is quite near Carpi and Modena as well as Parma, and for all we know, some member of it may have already possessed the manuscript. Until we have further information, including some certain indication that the Hebrew version of the text was itself used in any philosophical discussions of the time, we might surmise that the text began as and remained an obscure local product having no impact on the intellectual currents of its time. Even if this, upon further investigation, should be found to be the case, the circumstances surrounding the translation and its fate cannot fail to hold interest for the philologist and historian.

Is the Menachem ben Benjamin named in the Parma manuscript the same person as Menachem ben Benjamin Recanati, the well-known kabbalist philosopher of about the

same date? Recanati was much influenced by the philosopher Nahmanides, whose works figure prominently in the codex. The presence and the personality of the scribe is vividly present, too, which would lend weight to the suggestion that someone like Recanati might have prepared his own copy of these texts.⁹ The idea is appealing in view of the vagueness of the information available on medieval scholars called Menahem,¹⁰ though Shmuel Friedlander, below, offers further suggestions about the identity of this man.

The translation of Teshubah 'al 'Inyan ha-Perek is problematic also. Who was the translator and what were the circumstances of the translation? Why was it made? J.L. Teicher and others have asserted that the Hebrew version was made from the Latin version rather than the Arabic original. This seems to be sustained not only by the internal evidence they cite,¹¹ but by perusal of the Latin manuscripts, where some variants peculiar to a group of them are reflected in the Hebrew. However, this same manuscript evidence, together with other evidence, tends to refute a further thesis of Teicher's that the text received its Hebrew version in twelfth century Spain.¹² It is much more probable that the translation was made in Italy during the later thirteenth century or the early fourteenth century.

Teicher uses two arguments to sustain his idea, one from the manuscripts, and one linguistic. First, he cites a passage of the prologue of the work that is present in the Hebrew version but absent from the Latin manuscripts he has observed, so that where the Latin reads 'et nunc dicam quod qui volunt scire differentiam...', the Hebrew text seems to complete the meaning of 'dicam' by saying '[I shall begin by talking] about the spirit and then about the soul; [for he who wants to know...]'.

That this reading "apparently represents a text earlier than that in the extant Latin manuscripts" is an attractive idea in that it makes perfect sense. The reading is, in fact, present in a number of the Latin manuscripts: "nunc incipiens dicam prius de spiritu et postea de anima"; but these invariably are later manuscripts.¹³ The passage is absent in all the oldest copies, and it is not present in our manuscripts of the original Arabic. Teicher's linguistic argument rests on the use of the word "perek" for "differentia". Since "perek", he says, appears in Isaac Israeli's De difinitionibus, a work we know to have been translated in the twelfth century, and a different word for that meaning, "hefresh", is used in a translation from the thirteenth century, an anonymous "Book on the Spirit and the Soul and the Difference between Them", the use of "perek" in our text points to its translation in the twelfth

century.¹⁴ This argument does not stand either, because the word "perek" appears, with this meaning, in a thirteenth century glossary of Hebrew philosophical terms compiled by Moses ben Salomon of Salerno (d. 1279); clearly the term was still current at that time.¹⁵

That De differentia spiritus et animae was translated into Hebrew in the later thirteenth or early fourteenth, rather than the twelfth, century, is also easier to support on a consideration of the general trends and activities in Jewish philosophy and theology. These also point to Italy or southern France rather than Spain as the place of translation, since most of the translations from Latin to Hebrew were made in these regions. This activity received its impetus from the intellectual ferment among Jewish thinkers which was generated by the appearance of Maimonides' Aristotelianism, and it was fed by contact with similar intellectual currents among the Latin scholastics. Hebrew translations from the Arabic continued to be made of Arab philosophical works or Arabic translations. As with the Latins, the works of Avicenna, Al-Farabi, Aristotle and Galen were sought after; now translations were made from Latin versions of Arabic works and from the Latin originals of medical and philosophical works. Among the latter, those of Albertus Magnus and Thomas Aquinas figured prominently. Jewish philosophers shared the Latins' interest in

an Aristotelianism colored by Neo-platonism and their desire to find a harmony in the two systems. Thus it is easy to understand why the content of De differentia might have been of interest for Jews and Christians alike. De differentia was widely available and much read by the Latins, and cited by such figures as Albert and Thomas.¹⁶ All of these factors might account for the translation into Hebrew probably at this time. It appears, however, that its availability in Hebrew gave it none of the impact in the world of Hebrew learning that the Latin version did in the Latin world.

In the eleventh century Isaac Israeli might have drawn on De differentia in his De definitionibus, and if so, he surely consulted the Arabic text.¹⁷ There is not yet any clear indication that the work had any influence in its Hebrew version on Jewish thinkers. H. Gross has supposed that the encyclopedist Solomon ben Gerson of Arles included passages from it in his Sha'ar ha-Shamayim in the later thirteenth century.¹⁸ Mme Juliane Lay has pointed out, however, that the passages in question may be traced to Domenico Gundisalvi's De anima in its Hebrew translation.¹⁹ A parallel circumstance is evident in a philosophical work from the same period, Hillel ben Samuel of Verona's Tagmule ha-Nefesh, in which extracts from De differentia similarly have been made

through the medium of Gundisalvi's De anima.²⁰ Until it can be demonstrated that De differentia was used in its Hebrew version, we may consider that the translation could have been made any time between the approximate date of the Latin manuscript from which it was made, probably the late thirteenth century, and the date of the Parma manuscript, probably 1316.

For this period the number of candidates for translator from among those well known for translating philosophical works from Latin to Hebrew is still small. A remote possibility is Jacob ben Abba Mari ben Samson Anatoli, but perhaps his career as translator falls too early to fit this situation, as he was already active by 1231.²¹ Solomon ben Moses of Melgueil translated works by Avicenna and Aristotle's De somno et vigilia, which is suggestive on account of De differentia's association in the Latin manuscripts with the works of Aristotle. Solomon was active in the second half of the thirteenth century.²² Hillel ben Samuel of Verona, mentioned above, was acquainted with some of the doctrines of De differentia through Gundisalvi's De anima, and he was also a translator of Latin medical works, a circumstance which is suggestive on account of the association of De differentia with medicine in the Latin West. One might expect, though, that had he translated De differentia or

been well acquainted with it, he would have used it directly in his own work.

Finally, it is interesting to consider the possibility that the philosopher Judah Romano was the translator. According to J.B. Sermoneta, he showed an early interest in scholastic philosophy, which he intended to make available in Hebrew so that Jewish philosophy might thereby be strengthened and revitalized in its purpose to reconcile faith and reason. Judah is particularly noted for his translations of works by Albertus Magnus, Thomas Aquinas and Aegidius Romanus.²³ In some of these he is bound to have encountered mention of De differentia. If Judah was the translator, it would have to have been one of his early attempts, since it appears that he was born in 1292. By 1316, which is both the date of the Parma manuscript and the date one begins tracing his translating career, Judah would have been in his early twenties.²⁴ It is conceivable and even probable that he would have begun translating Latin works before that, perhaps even as early as 1310. Analysis of the text is needed to reveal its qualities as a translation, in order to support or refute this hypothesis.

Whatever the truth may be about the history of the Hebrew translation of De differentia spiritus et animae, perhaps an approximation of it may be achieved based on the

facts available about the two extant manuscripts and of the contact with Latin learning that must be assumed for the translator. During the period here tentatively prescribed for the translation, the late thirteenth or early fourteenth century, the handful of known translators from Latin to Hebrew were active in Italy. Even an altogether unknown author for the text is likely to have shared this circumstance and to have been in contact with this small and exclusive club of philosopher translators. Can we further surmise that a student of kabbalism, possibly Menahem ben Benjamin Recanati, sometime near the end of his life, should have come across the Hebrew translation of De differentia spiritus et animae and made it a part of his own library? The paucity of information about the Hebrew text invites further investigation into its history and possible significance for medieval Jewish learning.

NOTES TO CHAPTER VII (HISTORY)

¹Moritz Steinschneider, "Hebraische Handschriften in Parma. Nach Mittheilungen des Herrn Bibliothekars Abbe Perreau. III. Artikel. Hss. De Rossis," Jeschurun, 6 (1868). No. 1390 is described on 169-184. It is again described in the catalogue that was prepared to include the manuscripts acquired by the Parma library after 1803: Pietro Perreau, Catalogo dei Codici Ebraici della Biblioteca di Parma non descritti da de Rossi, Cataloghi dei Codici orientali di alcune biblioteche d'Italia (Florence, 1878), 124-6, no. 13.7. I have not been able to locate a copy of this catalogue and have the citation from J.L. Teicher, "The Latin Hebrew School of Translators in Spain in the Twelfth Century," Homenaje a Millas-Vallicrosa, 2:423.

²Ibid., 175-176.

³Ermanno Loevinson, "L'acquisto dei manoscritti ebraici per la Biblioteca Palatina di Parma da parte di Maria Luigia d'Austria" (Citta di Castello, Unione Arti Grafiche, 1933), 17 pp. (extract from "La Rassegna Mensile di Israel," 7, no. 10-11, 2nd ser., Feb.-Mar., 1933); and Giuliano Tamani, "I manoscritti ebraici della Biblioteca Palatina di Parma" (Genoa: Studio e Vita, 1967), 201-226 (extract from "Studi sull' Oriente e la Bibbia," Genoa, 1967). Some of the details of the acquisition and cataloging of the collections herein are also given by Steinschneider, ibid., 49-50. Mr. Stern prepared a series of articles describing the new acquisitions for Steinschneider's Hebraische Bibliographie beginning with vol. 7, wherein a short title list was given of the contents of no. 1390 in 8 (1865), 147. According to Leopold Zunz, Zur Geschichte und Literatur (Berlin: Veit & Co., 1844; repr. Hildesheim: G. Olms, 1976), 240, Moses Benjamin Foa was a book dealer in "Reggio." I have assumed that he means Reggio Emilia.

⁴ A catalogue for the Kaballah and Mysticism collection has not been completed, but a short title list is available in "A Reel Guide to the Kaballah and Mysticism Collection/Reels 1-65, from the Library of the Jewish Theological Seminary of America" (Ann Arbor, Michigan: University Microfilms International, 1977); no. 2131 is on reel 51. A notice of Mr. Schiff's donation and the details concerning no. 2131 appear in the Seminary Register for 1927-1928 in its report of extraordinary new acquisitions.

The reports have been collected in Alexander Marx, Bibliographical Studies and Notes on Rare Books and Manuscripts in the Library of the Jewish Theological Seminary of America, ed. Menahem H. Schmelzer, (New York: The Jewish Theological Seminary of America, 1977); see 77-82. A number of the manuscripts described there are documents concerning the Jewish community in Mantua. MS. 2131 is described at 82.

⁵The following list, from the "Reel Guide" (see 4, above), has the matching item from the Parma manuscript (as listed by Steinschneider) in parentheses: 2. Maamar 'al Derek ha-Kabbalah, by Nahmanides(?)(XI.a); 3. 'Inyan ha-Kabbalah Meboarah Yafeh, by Nahmanides (XI.b); 4. Kelal Aher Meboar Yafeh (XI.b and IX); 7. Keter Shem Tob, by Abraham b. Alexander of Cologne (I); 8. Tefillat ha-Yihud, attributed to Nehuniah b. ha-Kanah (II); 9. Sefer ha-Yihud, by Asher b. David (IV); 10. Tefillah le-me she-Yeelam Leshono Pitom, attributed to Rabbenu Tam (VI); 11. Maamar be-Mahut ha-Nefesh, by Alfarabi, translated by Zerachiah b. Isaac of Barcelona (VIII); 12 Teshubah 'al 'Inyan ha-Perek she-hu ben ha-Ruah u-ben ha-Nefesh (VII); 13. Mishle Hamishim Talmidim (X).

⁶William Popper, The Censorship of Hebrew Books, (New York, 1899; repr. New York: B. Franklin, 1968), 93; see Index, "Luigi da Bologna."

⁷Marco Mortara. Indice Alfabetico dei Rabbini e Scrittori Israeliti di cose giudaiche in Italia, con richiami bibliografici e note illustrative, (Padua: F. Sachetto, 1886), 22. See also Shmuel Friedlander's remarks about the Finzis, below.

⁸Ibid., 23.

⁹At the end of our text he is precise about the date and repeats the pious formula "May the Lord give me the privilege to fulfil his good and upright commandments. . .me and my seed," Steinschneider, "Hebraische Handschriften," 175-176. In item VIII (176), his name is followed by the acronym 'מ'ל'ש': "May his name be blessed forever." In item III, an anonymous work on the Sefirot, a passage at the end of the work is ambiguous about whether Menahem is the author or the scribe of the work (170): "I am Menahem ben Rabbi Benjamin that gives commendation and

praises to the king who supports me in writing this 'unity' [of God] (הייחוד) to my teacher Efraim, and the great king will sponsor me and help me and strengthen me and give me power to study it always, etc." Item V has the year 1316 stated ה'מ"ו' by "the writer and completer" (172). Besides the works of Nahmanides (XI.a,b: XI.a is a collection of rules and essays about the Kaballah from Nahmanides) already mentioned, others appear to be present in items XIV, XXII and XXX (178,181,184). Abraham Ibn Ezra, who is also supposed to have influenced Menahem Recanati, is mentioned at the end of item XV, a work by Eleazar Worms on the soul (179); and at the end of item XVI, an anonymous work, Steinschneider suggests that these references are later interpolations (179, 180). Could they have been added by this Menahem? For details on Menahem Recanati, see Efraim Gottlieb's article in Encyclopaedia Judaica (Jerusalem, 1971), 13:1608, with its bibliography. Suggestive also is the fact that among the manuscripts donated to the Jewish Theological Seminary of America along with no. 2131 were two other codices of collected kabbalistic works, and these include works by Recanati. Marx, Bibliographical Studies, 81-82.

¹⁰Leopold Zunz, Literaturgeschichte der Synagogalen Poesie, (Berlin: L. Gerschel, 1865) and Nachtrag (Berlin: A. Cohn, 1867), mentions various Menahems, among them, Recanati. I cannot tell if Zunz had a clear idea of whether any or all of them are identical (369-370): "Menachem b. Benjamin. מלך לך יאחה המלוכה. Für mit dem Akrost. מנחם הקטן ברבני בנימין חזק ואמץ. Menachem b. Benjamin in Rom wurde A. 1289 der jerus. Talmud abgeschrieben. Denselben Namen hat Menachem Recanate. In Cod. Opp. 1370 Q befindet sich ein Commentar des hohen Liedes aus der Handschrift des הרב ר' מנחם בן רבינו בנימין נ"ע. Immanuel erwähnt zweier Menachem als Zeitgenossen; Riete (106b) rühmt Menachem aus Ancona, dessen 'Gebete den Zorn beschwichtigen' und einen heiligen Menachem; einen solchen kennt auch der Zürcher Semak. Im Buch החזק §84 wird Menachem de Finzi als Verfasser von Decisionen genannt." (!) One clue that might be pursued is the naming by our scribe of his teacher, a certain Ephraim. Steinschneider asks whether this might be the same Ephraim mentioned in Zunz, Literaturgeschichte, 619, and whether he might be the author of this anonymous item III. in the Parma codex. ("Hebraischen Handschriften," 170). See also Mortara, Indice, 53.

¹¹Giuseppe Gabrieli, "La Risalah," 625.

¹²Ibid., 423-425.

¹³Ibid., 425. These later manuscripts fall into the classification "D" of this study. See Chapter IV and the classified list in Appendix B.

¹⁴Teicher, "School, "424.

¹⁵Moses ben Salomon, of Salerno, Un glossario filosofico ebraico italiano del XIII secolo, ed. Giuseppe Sermoneta (Rome: Edizioni dell' Ateneo, 1969), s.v. "Perek."

¹⁶See, for example, Isaac Husik, A History of Medieval Jewish Philosophy (New York: Macmillan, 1916; 1941 ed.), Introduction.

¹⁷This has been edited by J.L. Muckle, "Isaac Israeli, Liber de definicionibus." See 318-319.

¹⁸H. Gross, "Zur Geschichte der Juden in Arles," Monatsschrift für Geschichte und Wissenschaft des Judenthums, 28 (1879; repr. Hildesheim: Georg Olms, 1969), 231-232.

¹⁹Correspondence dated September 21, 1982.

²⁰Hillel ben Shemu'el of Verona, Sefer Tagmule ha-Nefesh (Book of the Rewards of the Soul), ed. Joseph Sermoneta (Jerusalem: Publications of the Israel Academy of Sciences and Humanities, 1981), 14-15.

²¹See the article by Umberto Cassuto in Encyclopaedia Judaica, 2:927-929.

²²Encyclopaedia Judaica, article by Shlomo Pines on Avicenna, 15:957, and the article on Translations, 15:1323.

²³Joseph B. Sermoneta, "La Dottrina dell' Inteleto e la 'Fede Filosofica' di Jehudah ed Immanuel Romano," Studi Medievali, 3. Ser, 6.2 (1965):20-26, in particular.

²⁴Ibid., 20-21.

The Hebrew Text

By Shmuel Friedlander

MS Parma 2784 (DeRossi 1390), no. 7 consists of nine pages, each with thirty-five lines. The parchment is ruled and the writing is "hanging" (the tops of the letters are aligned) and neat. The punctuation is in the system of traditional closed and open "parshiot" of the Bible, where the copyist places commas above the line and leaves a long space every few sentences. The manuscript was doubtless written by an experienced, perhaps a professional, writer. Preceding the text on the first page is the prayer of Rabenu Tam and at the end of the text is the signature of the scribe. The manuscript is readable except in a few places where it is blurred by time, and it is almost without erasures and crossing out of errors. There are four corrections by the scribe: at line 51, the addition of 'yod'; at line 93, the addition of 'vav'; at line 154 the addition of 'bet vav' above the line; and at line 224, where the word 'bzman' is in the margin. In addition, there are here and there vowel marks ('suah' and 'cholan') and always in Aristotle's name. The scribe uses the

'aleph-lamed' ligature in writing 'elohim' and in other words too.

The Jewish Theological Seminary manuscript differs from the Parma one in its physical features but also in some items of content. The text occupies seven pages, with thirty-eight to fifty-three lines on a page. The script is an Italian cursive Hebrew, difficult to read on account of blotting of the ink and its permeation to the other side. There are no gaps at all within the lines, but the scribe makes abundant use of commas and colons, sometimes even a colon after a comma. Another striking difference is the tendency of the scribe of the Parma manuscript to join the word 'shel' to the following word, a practice not followed by the scribe of the other.¹ The New York manuscript is headed by a title, "A Reply on the Matter of the Difference that is between the Soul and the Spirit," which is lacking in the Parma Manuscript. I have retained the title in the present edition, since the second manuscript is an exceptionally faithful copy of the first.

Upon comparison it appears that this manuscript may well have been copied directly from the Parma one. In the text of over three thousand words there are only forty differences between the two manuscripts, and only half of these are anything more than unimportant ones such as added or missing letters; if a whole word is missing or added, it

is a pronoun or one of a pair of words. There are two cases of passages missing in the New York manuscript, and these correspond exactly to lines in the Parma text (beginning on lines 162 and 196).

The colophon of the Parma manuscript is expressed partly in abbreviations and it does not explicitly name the scribe, Menahem b. Rabbi Benjamin. We have "completed in the hand of M.I. B.B.L. on Sunday night. . . ." However, since these abbreviations fit the manner in which he is named in the other three works in the codex where the copyist is named, we can assume the same scribe has produced this text. For example, at the end of the work by al-Farabi that directly follows it, we read: "finished and completed, etc., by the youngest of my mother; I am Menahem Yeshalem (an acronym: 'let his name be blessed forever') that interprets" (the Hebrew terminology is ambiguous with regard to copying, translating or writing). Thus the epigraph of our text could be read: "Completed in the hand of Menahem 'Yeshalem' benrabbi Binjamin 'L.O.Y.Ts.' (acronym for 'a righteous [man] lives forever'). . . ."

It does not appear, on the face of it, that this Benjamin is likely to be the Kabbalist Menahem b. Benjamin Recanati. He is supposed to have died around 1290, over twenty years before the codex was apparently produced. Moreover, his dedication of the work on the Sefirot in item

3 of the codex (see note 9 of the first part of this chapter) to his teacher, "Rabbi Efraim," also tends to deny this identification. Recanati's rabbi was Rabbi Eleazar ben Jehudah of Worms,² and the evidence of his last activity was in 1238. Now this Efraim might have been the son of Rabbi Samson, who was the student of Rabbi Eleazar above, and perhaps Menahem's father was Rabbi Benjamin ben Rabbi Shlomo or Rabbi Benjamin bar Jehudah, who are mentioned in the same generation.³ There is no doubt that there was an intellectual relationship and maybe even a family relationship between these two Benjamins. (Thus the generations, intellectual and genealogical, would be: Eleazar b. Jehudah = Samson = Efraim = Menahem).

The colophon of the New York manuscript is also expressed in acronyms meaning "finished and completed, bless God forever, amen and amen." Hiyya Finzi's name has been given elsewhere in the codex, not here.⁴ Perhaps this copyist may be identified with Rabbi Hiyya from Padua who was known as a Kabbalist, and perhaps the son of Jacov Finzi who was active around 1560.⁵ In the beginning of the last page of the codex, where the signature of the censor appears, there is a sort of dedication in the handwriting of the scribe: "Blessed be the memory of your mother; for (text reads "ech" = "how") we found inside "Sefer ha-Rokeach" (Book of the Perfumer)⁶ a writing by

'A.A' (which probably means 'Adoni avi', 'my master, my father'), 'Z.Ts.L' ('the memory of the righteous is a blessing') and this is what it says. . . ." From this we learn that the father of Hiyya Finzi was a habitual reader of the book of Rabbi Eleazar, the author of "Sefer ha-Rokeach," and the rabbi of Menahem b. Benjamin Recanati and Abraham b. Alexander-Axelrod.⁷ Given all these connections, it is possible to assume, then, that our work was introduced into a large collection of works by Rabbi (Rabenu) Tam, his students and the students of his students, which were preserved in the circle of teachers of Kabbala.⁸

The text as here given represents a faithful copy of the Parma manuscript, with the exception of the addition of the title, which appears at the head of the New York manuscript only, and the addition of modern punctuation to facilitate reading. At the same time I have retained the spaces which appear at intervals in the lines of the Parma manuscript and serve as a kind of punctuation. On difficult readings I have ventured opinions with the aid of the other manuscript and the English and Latin versions. Even though this is not an edition, strictly speaking, I trust that the observations recorded in the apparatus will give a good idea of the qualities of the text and will

afford others the means to take the next steps, namely to
make the analysis and to find historical connections for
it. We are only at the level of חציץ ונפגע in this
יכנס בשלום ויצא בשלום that is still waiting to one that
with the treasures. . . . תם ולא נשלם

NOTES TO CHAPTER VII (HEBREW TEXT)

¹Hanoch Yalon, in his introduction "The System of Punctuation in the Mishnah," in Hanoch Elbak's edition of The Mishnah (Jerusalem: Bialik Institute, 1959), 26 (at Seder Zra'im, masechet brachot), writes: "Another type of correction is the joining of 'shel' to the next word, for example, 'shelchamin,' etc. It used to be done in old manuscripts also to connect 'shel' to the following [word]."

²"Eleazar b. Jehudah," in Jehiel b. Solomon Heilprin, Seder ha-dorot (The Order of the Generations) (Warsaw, 1878; repr. Jerusalem: Torah ve-Da'at, 1955-1956)

³According to Rafael Halperin, Atlas Etz Chayim, 10 vols. (Tel Aviv, 1978--), s.v., Rabbi Benjamin ben Shlomo (d. 1270) was one of the learned men of Italy in the generation of Nahmanides, and Rabbi Benjamin bar Jehudah (d. 1310) was a poet and exegete in the spirit of 'Pardes' (a Kabbalistic method).

⁴Fol. 25b.

⁵See Shlomo Simonsohn, History of the Jews in the Duchy of Mantua (Jerusalem: Kiryath Sepher Ltd., 1977) 631, where Rabbi Jacob Israel Finzi is mentioned among other followers of Kabbalah.

⁶Joseph Morris, "The Introduction to the 'Rokeach'," Jews' College Jubilee Volume (London: Luzac & Co.), 171.

⁷Steinschneider, "Hebraische Handschriften," 169, suggests that the patronymic of Abraham b. Achseldar or Achselrad, the author of the first item in the Parma codex, "Crown of the Good Name," is a variation of 'Alexander.' He was, like Menahem b. Benjamin Recanati, a student of Rabbi Eleazar of Worms.

⁸The Seder ha-Dorot relates that Nahmanides, who was a physician, is known as the carrier of the standard of the Kabbalah after his rabbi, Rabbi Ezra, who was also the Rabbi of Eleazar b. Jehudah, who was the rabbi of Recanati.

It is possible to assume that Nahmanides knew about our text, since portions of it are included in the Encyclopedia Sha'ar ha-Shamayim (The Gate of Heaven) (see notes 18 and 19 and accompanying text in first section of

this chapter) by Gerson b. Solomon of Arles, who was his son-in-law.

As for the possible reasons why Kabbalists might have been interested in this text, see Gershom Scholem's Kabbalah (Jerusalem: Keter Publishing House Jerusalem Ltd. 1974), especially pp. 48-57 dealing with the "Gerona Circle" in Catalonia and pp. 152-165, which discuss the complex of Kabbalistic ideas about psychology and the soul.

תשובה על ענין הפרק שהוא בין הרוח ובין הנפש:

שאלת מאותי בני, יכבדך האל, מהפרק שהוא בין הרוח ובין הנפש לא ברי
שכתוב מה שאמרו בו החכמ' הקדמונים. והנה אני כותב קבוצים
מקובצים מספר אפלטון הנקרא נאטרון, ומספרו האחר הנקרא תנבוס,
ומספרי ארסטו הפילוסוף ותיאופרסכל ובני דידוס ומספר גלינוס
בנפש, כי הוא עשה מהחכמה הדינים הנכון, המעולה, איפוקרט ואפלטון.
ומספר גלינוס אשר עשאו בחכמת התחכוש ובתועלת האיברים. ולמאד
אני מקצר בו. ועל כי ידעתי אותך נאחז בענינים נחלפים ובמפעלי המלך
למאד אני משתדל, ומצוקת הזמן אין לך יכולת להשגיח באלו הספרים, ומה
שאני כותב יהיה מספיק לשאלתך בע"ה לפי שאתה בחכמת הטבע נכון וערום.
אתחיל לדבר מהרוח ואחר כך מהנפש, כי מי שירצה לדעת הפרק שהוא בין
שני דברים, צורך יש לו לדעת הראשון מה הוא, וכל אחד מהם. כי אני
יכלתי לדעת פרק שום דבר אם לא יהיה נודע כל אחד מהם מה הוא. ולאחר
שיהיה נודע כל אחד מהם מה הוא, ביכלת יהיה שידוע הפרק. אם כן צורך
לדבר בראשית המקום מהנפש והרוח, ולאחר כן הפרק שהוא ביניהם. ולהתחיל
מהרוח כדי שתקל העבודה ולאחר כן לדבר מהנפש.

הרוח גשם דק הצומח בגוף האדם מהלב ונשא באסומיניך, והוא
הדופק בורידים להחיות הגופות ופועל חיים ונשימה ודפק, וכמו כן
צומח בגידים מהמוח ופועל ההרגשה והתנועה. וקצת מהפילוסופים
המפוארים בחכמה ברפואה ובחכמת התחכוש זממו כי יש בלב שני בטנים
זעירים חלולים, האחד בימינו והאחר בשמאלו. ובשני אילו הבטנים יהיה
מוקף הדם והרוח, אבל בימינו הדם יותר מהרוח ובשמאלו הרוח הוא יותר
מהדם. ומהבטן הימין שני וורידים שהאחד מהם הולך אל הריאה ובו נעשה
הנשימה שללב. והלב מתקבץ ומתפשט ובעבור הקבוץ והפשטנות שלו נעשה הדפק
שללב, ועל כן הדפק מורה על היות הלב והוא פגעיו המחוקקים לו השוים
ושאינם שוים והנחלפים שנעשו מתחלפים מסבת הערעור שללב. ההוא
הנקראה לו מבעבורו או מבעבור קצת איבריו השכנים לו. והלב כשהוא
מתפשט מושך בוריד ההוא מהריאה חלק מהאוויר הנכנס אל הריאה בנשימה
לקרר את החום הטבעי שהוא בו, כדי שיהיה זה מזון וקיום שלרוח ההוא הנחזק
בבטנים ההם. וכשהלב מתקבץ הוא דופק בו ודוחה אל הריאה כל מה שיוולד
עמו מההכלים והעשנים מהחום הטבעי שהוא בו. והריאה היא דוחה אותם מעל
הלב. וזה הוריד הוא הנקרא דפק והוריד האחר הערבים קוראים אותו
אל אתר. והוריד ההוא בצמיחה ההיא מתחלק מהלב ללשון חלקים, שמהם
האחד עולה ומבקש החלקים העליונים שלגוף ונאצלים ממנו מהחזה נצרים
שבעבורם יהיה זה החלק שלגוף, והחלק האחרת הוא יורד אל החלקים

- 35 התחתונים שלגוף ומבקש עד אחרית הרגלים, ונאצלים ממנו נצרים שבעבורם יהיה החלק התחתון שלגוף האדם. ונצרי שני חלקי הוריד ההוא שהם מתפרדים בשאר הגוף נקראים אפומובין, והוא הדפק. וזהו עלת חיי גוף האדם שהיא ביותר קרובה והוא הנותן לכל אבר מהרוח שההוא בבטן השמאלי שללב. והדין שיוודן בו, כי חיי האדם הם בעבור זה הרוח זה הוא, שהוא נראה מצאת הרוח ההוא בשעת המות שהוא מתנועת הבטן והפה, והשפתיים
- 40 והחזה, טפת שעור כמו פיהוק ודילוג ונשימה. והעם קוראים בערבי אלו הבל, אמרו, והוא הפרידה ויציאת הנפש. ויציאתן מהלב תהיה בשביל שנכנס אליו האויר, כי הוא יוצא מבטן הלב אל הריאה בוריד שאמרנו העובר מהלב אל הריאה למשוך את האויר ולהוציא הבל העשן מהריאה בקנה הריאה וזה הוא, כי בגרגרת הוא עובר אל הפה. ויציאתו מהפה תהיה בעת תנועת הפה, כשיפתח הפה, ובעבורו לא יוכל להסגר. אבל בצורך יסגר בעבור נשימת החום לאחר יציאת הרוח ממנו. והעלה למה הוא יוצא זה הרוח מהלב והיא העלה שלתנועה הקלה, או המתעוררת. והקלות של יציאתו והוא שלמות או כובד שלה, והשגחתה בקצת בני אדם, והסתרתה בקצת. ועלת מות פתאום והאחרים הדומים לזה, גרים הם מהמספר הזה כי הם ביותר חקר גדול, וצריכים לבירורים ראשונים מחזקים לשאלות מבוראות מספרים רבים שלמלאכת הרופאים שפירושם הוא ביותר ארוך, ועל כן הנחנו אותם ולא הזכרנו אותם. והחלק שאמרנו כי החיים בזה המין שהוא בבטני הלב נעשים, וכי הדפק והנשימה הם מוכנים להצלחת הרוח ההוא לקרר את הלב באויר הנכנס אליו מחוץ, ובדחיית ההבלים שלעשינות ממנו. להשגיח יש כי הרוח כשהוא בבטני הלב הוא עלת החיים וגם הנשימה והדפק, וזה הוא שצריך הוא להעשות מהרוח שלחיים שהשפעתו היא מהלב. והרוח הנובע מהמוח הוא עובר לכל אברי הגוף, ויקרא חיוני, ומזונו וקיומו הוא הרוח שהוא בבטני הלב, כי חלקי החלק אסינירוד והוא שלדפק הנקרא אל אתר, הנובע מהלב אל החלקים התחתונים שלגוף. כשישיגו הכל אל עצם הראש ועוברים אותו, הכל מתקבצים ביחד ויתרככו ויסתככו בדמות הרשת. ומאלו הדפקים המסתבכים הוא נפשט, חלק אחד תחת המוח מבקש תחתוני המוח, מוכן לקבל הרוח החיוני ומוסר לו מרוח החיים שאמרנו שהוא בבטני הלב. והמוח מתחלק לשני חלקים. האחד מהם הוא מוקדם, שהוא יותר גדול, והאחר הוא מאוחר. ולחלק המוקדם יש שני בטנים שיש להם מבוא אל המרחב השותפי שהוא באמצע המוח, ולמאוחר יש בטן אחד עושה שביל אל המרחב ההוא, שהוא שותפי לשני הבטנים שהם בחלק המוקדם שלמוח. והדפקים הדקים הנדחים מהרשת היא תחת המוח אל החלקים המוקדמים, כשישיגו לשום בטן שהוא במוח המוקדם
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מביאים אליו הרוח שלחיים. וכשהוא עובר משם אל הבטן האחר יעשה לשם יותר דק, ויתנקה ויעשה מוכן לקבל הכח שלנפש וזה יעשה לו בעכול, ובהפיכה לרוח יותר דק ויותר צלול. ולאחר זה הוא עובר מאלו הבטנים, ממרחב אל מרחב, בבטן המאוחר שלמוח בשביל שהוא הולך מהמרחב השותפי שהוא באמצע המוח אל הראשון, והוא כל המבוא שהוא שבו הוא הולך הרוח. ויש מרחב אחר או חלק שהוא מגוף המוח שהוא דומה לתולעת שהוא מתנשא ונוטה בשביל שהוא. וכשתנשא החלק ההוא, יפתח חור שהוא בתוך המרחב השותפי הדבק בבטנים. ובטן הבטן המאוחר כשהיה נוטה יסגר. וכשיפתח החור, הוא עובר הרוח מהמוח המוקדם אל המוח המאוחר, וזה לא יהיה כי אם בעת שיהיה צורך לזכרון שום דבר שכבר נשכח. ובזמן שבו תעשה המחשבה בדבר שעבר במ, החור לא יהיה פתוח ולא יעבור הרוח אל המוח המאוחר לא יזכור, ולא תתכן לו תשובה מהדברים הנשאלים ממנו. והפעולה ההיא שלחור ההוא בהתנשא בגוף ההוא הדומה לתולעת, מתחלפת היא בבני אדם בקלות ובכבדות, ובעבור שיהיה זה מתאחר בקצת בני אדם נעשה מתאחר הזכרון להשיב לרוב מחשבות, ולזה יקרה למי שירצה לזכור שום דבר שיפנה ראשו, והפניה ההיא תחזיר הדבר ההוא. ולמדת ההרגשה יראה בעיניים, כדי שתהא זה ההשמה בצלם, כאילו עוזרת היא לפתוח לה החור ההוא כדי הגוף התועלתי ההוא למעלה והיה יכול להנשא. והדעת והמחשבה והידיעה וההשגחה נעשות הם ברוח שהוא בבטן הרוח השותפי לבטנים השנים ההם שהם במוח המוקדם, וכשיחשב האדם או ישגיח שום דבר בצורך יהיה שביל שהוא דרך וחור בין המרחב השותפי הנדבק בשני הבטנים שהם בחלק המוקדם שלראש, והבטן שהוא בחלק המאוחר שלו יהיה נסגר כדי שיהיה הרוח שהוא במרחב השותפי יכול להתעכב כדי להתחזק. וזה יהיה כתוספת חוזק לחשוב ולהשכיל. ולא יהיה יותר חזק במחשבה ובדיעה, ובהשגחה ובידיעה. ועל כן יקרה למי שיחשב לפנות ראשו לארץ ולהשגיח בה לרוב ויניע כאלו הוא כותב שום בתוכה, או חוקק הוא בה שום צלם או צורה, כדי שיהא זה כאלו עוזר לעורר הגוף ההוא הדומה לתולעת תחת המרוץ שלחור שבו יהיה עובר הרוח לחלק המאוחר שלראש. והרוח שהוא במרחב ההוא בבטן אמצעי בבני האדם, הוא מתחלף. בקצתם הוא דק וצלול וזהו המשכיל המחשב על התבוננות במחשבה טובה, ובקצתם להפך שיהיה קל בלי משכיל וסכל. ומבטן המוח המוקדם נובעים שבעה זוגות של גידים, שמהם זוג אחד שני גידים הבא מהבטנים המוקדמים נדבק לעינים ובו תהיה הראיה ואלו הגידים בתוך. וכל הגידים הם חלולים כי מאד צריך יש לראיה שהרוח הבא אליה יהיה רב ומקובץ, ומספיק וצלול, ולא יהיה מעורב מגוף אחר. וזוג האחר מהגידים	70
	75
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	85
	90
	95
	100

נדבק ומספיק וצלול ולא יהיה מעורב מגוף אחר. וזוג האחר מהגידים
נדבק הוא למכסה העינים והוא העפעפים. והזוג השלישי הוא נדבק ללשון
שבו תהיה הרגשת הטעם. והזוג הרביעי הוא נדבק לחיך. והזוג החמישי הוא
105 נדבק לצדע האזן שבו יהיה הרגשת השמע. והזוג השישי הוא יורד מבחוץ
ליפתן להם הרגשה ותחזור ממנו חלק אחד אל הרחם להניע אותו לקבץ
הרגשי. והזוג השביעי הוא נדבק ללשון כדי להתנועע. וכמו כן הם פועלים
אלה הגידים בעבור הרוח העובר מהם מהמוח אל האיברים, ודין זה הדבר
110 הוא, כי כשיהיה שום מקרה שיפסיד השביל שלרוח שהוא בשום גיד מהגידים
האלו וימנע זה הרוח שלא להשיג אל האיברים, ותבטל פעולת האיבר כמים
הנקבצים בעינים שהם כשיפרידו בין הרוח שהוא בגיד ובראיה והיא פעולת
העורון. ובעירובים הרעים וההבלים הנסגרים מפרידים בין הצדע שלאוזן
והרוח, וכלי הריח, וכלי הטעם, או כלי המישוש, פועלים חרישות או
115 הפסד הטעם, או המישוש, או הריח. וכשיהיו הגידים פתוחים בשבילים שלהם
או בעבור רפואה, או בעבור יושר הטבע העומד עד החולי, יחזרו האיברים
כמנהגם, ויעשה בריא. ושונה ונובע מצד המוח המאוחר שהוא חלה מהמוח
ויורד הוא בעצם הצואר ובחורים שהם קשרי הגב. ומפרדים משם זוגים
לרוב מגידים בכל חור וחור. וזוג אחר הוא עובר לחאדי, שהיא בשר מעורב
120 בורידים, שבהם היא תנועת האיברים והידיים והרגלים וכל הגוף. ודינו זה,
כי אם יחלה שום אדם בגידים ההם ויארע לו שום פגע בם או בחתוך, או
בחבורה, או שיסגרו השבילים שבהם, בהם תבטל כל התנועה שלאבר ההוא
שהיתה נעה אותו, או תהיה חלושה, או תכלה, וזה עוד יהיה לפי כמות הפגע
שיסבול הגיד ההוא. ויראו ידיים בריאות ושלימות, ועלת שום פגע לא
125 תהיה נראה בהן, אבל לא ירגיש ולא יניע בהן. וכשיהיו נרפאים החולאים
ההם בשום רפואה שבו יפתחו שבילי המוח שתנקה הרפואה שבילי האיברים,
ויפתחו המסגרות ההן, תחזור אל האבר ההוא ההרגשה והתנועה. אם החולי
לא מדת הרפואה והאיבר לא יהיו עדין חלשים כדי שלא יוכל לסבול
סבל הרפואה. ושמא יקרה לזה הרוח שהוא בכל הבטנים, או בקצתם, שום
130 פגע ממזג רע, או מעירוב הכלים רעים, ותבטל פעולת האיבר ההוא. וזה
הוא, כי הרוח ההוא בלבד שהוא בבטנים המוקדמים כשיסבול פגע או
הפסד מזה תכנה כלית ההרגשות, כמו שיקרה לאיש הנכנס למרחץ ויתאחר
לשם יחשכו עיניו ולא יראה מאומה. כמו שיקרה למי שהתעורר עליו המרה
האדומה והבלה יעלה לראשו, וידבק ההבל ההוא ברוח שהוא במוח המוקדם,
135 עוד תחשך ראיתו ולא יראה מאומה. ועוד כמו כן יקרה לאחר בשמע ולכל
ההרגשות, וזה הוא אם יקרה שום פגע בחלק האמצעי שלמוח וכל חלקי המוח
יהיו בריאים, תכלה המחשבה והידיעה בלבד ותשאר ההרגשה ותנועה שוה

בחולי הנקרה במלנקוניאה, שהוא עוכר המחשה וכלות הדין. ואם יקרה הפגע
 בחלק המוח המאוחר יכלה הזכרון בלבד, וכל המפעלים יהיו שוים וישרים.
 ואם יקרה הפגע לאילו שני הבטנים או לשלשה ויתאחז כל המוח, יהיה
 הפגע במחשבה ובהרגשה ובתנועה הטבעי לא כמו שיקרה לנכפים ולרואים?
 ובזהיתבאר, כמו שאמרנו, כי הרוח שהוא בבטנים מוקדמים פועל הוא ההרגשות
 והם הראות והטעם והריח והמשוש והשמע, ובאלו פועלים אלתחוויל ושהיונים
 קוראים פנזיאזיאה. והרוח שהוא בבטן האמצעי הוא פועל הזכרון והתנועה.
 ובזה נתבאר כי בגוף האדם הם שני רוחות, האחת חיוני שמזונו וקיומו הוא
 האויר ונביעותו מהלב, ומשם נזן בדפק לשאר כל הגוף והוא פועל החיים
 והדפק והנשימה. והאחר שיאמר מהנפש הפועל במוח ההוא שמזונו הוא הרוח
 החיוני, ושפיעותו מהמוח הוא פועל בו, הידיעה והזכרון וההשגחה. וממנו
 נזן בגידים לשאר כל האיברים כדי שיהא פועל ההרגשה והתנועה.
 לספר שום דבר מהנפש כבד הוא ומאד עצל, וזה יורה מהחילוק
 שבין הפילוסופים הגדולים כארסטו וגירוזיוס ובנדודים והדומים להם
 שבאו אחריהם. אך אנו בזכיר שתי התכליות שגדרו אותה בהם ארסטו ואפלטון
 ובפירוש שתייהן. יש לדבר בשאלות מבוארות ונכרוך לזה ספור שלכוחות
 הנפש, בדבר שיספיק בזה המקום, ונוכל לגלות בו כונתנו והוא לגלות הפרק
 שהוא בין הנפש ובין הרוח, ונאמ' כי אפלטון הפילוסוף ככה גדר הנפש:
 הנפש היא עצם בלתי גופני המניע הגוף. וארסטו גדר בלשון אחרת ונאמ'
 כי הנפש היא תמימות הגוף והפועל והחל בגופניות. אם כן יש לנו לפרש
 אילו שני תכליות הנפש ונאמ' כי מהראשון שלאפלטון ונבאר כי הנפש
 היא עצם. ונאמ' כי כל המקבל את הדברים הנגדיים, כשהוא נשאר אחד
 במספר ואינו מתשנה בהיותו, הוא עצם. והנפש מקבלת היא הכוחות והאשמים
 כשהיא אחת במספר, כנפש ראובן שהיא בלתי מתשנה בהיותה, היא מקבלת
 הכוחות והאשמים כשהם נגדיים. והנפש מקבלת הנגדיים כשהיא אחת, והיא
 במספר בלתי משתנה היא בהיותה, ולכן היא עצם. ועוד נאמ' כי כל מניע
 עצם, עצם הוא. והנפש היא מניעה לגוף והגוף הוא עצם. אם כן הנפש הוא
 עצם. ואם מבואר הוא בשאלות מבוארות כי הנפש היא עצם, נבאר אז כי
 הנפש היא בלתי גופנית, ונאמ' כי האיכיות שלכל גוף הם מקבלים,
 והדבר שהאיכיות שלו אינן נקבלים מההרגשה הגופנית, בלתי גופני הוא.
 ואיכיות הנפש הם כוחות ואשמים שהם בלתי נרגשים. הנפש אם כן היא
 בלתי גופנית. ועוד כל דבר שהוא גוף נושא לכל ההרגשות או למקצתן,
 אבל הנפש אינה נושאת לכל, ולא לקצת מהן. אם כן הנפש איננה גוף.
 ועוד כל דבר שהוא גוף או יהיה מנפש או מבלתי נפש, אבל אינו יכלתי
 שהנפש תהיה כגוף עם נפש כי אינו הגון כי הנפש תהיה. כנפש ואם נאמ' שהוא

175	כנפש, נחזור בדבור מהנפש שלנפש, אם היא גוף אם לא. ויעלה זה עד לבלי קצבה. אם כן הנפש איננה גוף. ועוד, אם הנפש הוא גוף דק, או תהיה אויר בכל הגוף נפשט, או תהיה אש. ואם תהיה ככה, צורך יש כי הרוח ההוא, או האויר, יהיה כח מוחזק או מין מוחזק. כי אם לא, יהיה לו כח מוחזק או מין מוחזק. וזהו אם יהיה לו שום כח מוחזק, מה שאינו באש, או ברוח. כל אש ורוח היה לו להיות נפש. ואם יהיה לו שום מין, תהיה בעינה מין הנפש ההיא. ועוד אם הנפש גוף, בהכרח תהיה פשוטה או נרכבת. אם תהיה פשוטה, גוף תהיה או אש או אויר או מים או עבר. ואם תהיה הנפש דבר אחד מאלו היסודות לגמרי בלי שום כח או מין מוחזק לה שבו תפרק ממנו ותתחבר עמו בסוגו על מה שהיה בסוגו תהיה הנפש. ובזה יתבאר כי אם הנפש תהיה אש, כל אש יהיה נפש. ואם אויר, כל אויר יהיה נפש. וכמו כן מכל היסודות. ואם הוא כן, כל גוף מוקף מיסוד הוא מנפש. וזהו אם יהיה האויר ריאה, או דפק, או בטן נפוח, יהיה הכל מנפש וכל גוף מיסוד יהיה מנפש. ואם תהיה הנפש מים, הכלי שיהיה מלא מים יהיה מנפש. ודבר שאינו הגון היה להיותו הכל. ואם תהיה הנפש גוף מורכב או יהיה גוף עם נפש בגוף, ועל שמכאור הוא כי הנפש הוא עצם בלי גופני יש לפרש באי זו מדה תנוע הגוף. ונאמ' כי כל גוף המתנועע.
185	בעבור תנועת מטען, מתנועע הוא כתנועת העגלה מהבקר, או מתנועע הוא, והמניע אותו אינו מתנועע. כי המניע שום דבר, או הוא מניע ומתנועע או מניע ואינו מתנועע. וזה יהיה מארבע מדות, שיהיה או בעבור חשק שממנו יהיה מתנועע, כחושק המתנועע מהחשוק, או בעבור השנאה או הבריחה או היראה, כאיש האויב המתנועע מאויבו, או יברח ממנו או ילך לנגדו. או בעבור הפעולה הטבעית כמו שהאבן יהיה מתנועע מהכובד,
190	והכבד בעבורו הוא בלתי מתמוטט, או כי הדבר המניע הוא סבת ראשיתו, או עלת המתנועע כמלכות שהוא עלת מניע המלך, כי המלכות איננה מתנועעת לפי תנועת המלך ככה הנפש מניעה אף היא את הגוף והיא מתנועעת בשום תנועת הגוף על כי היא בלתי גופנית. אם כן נשגית באי זו תנועה מאילו ארבע מידות שאמרנו הנפש היא מניעה את הגוף, ונאמר כי הנפש מניעה את הגוף במדה הרביעית מהמין השיני שלהתנועה. וזהו שתניע את הגוף על כי היא בלי מתמוטט. אם כן היא מניעה בעבור כי ממנה תעשה הסבה הראשונה, או עלת התנועה, כי הגוף ההוא בעבורה נעשה וזה הוא בעבור הנפש. ומה שהוא בוחר בעבודה הוא, ובו מתנועע כי הוא נעשה. וכמו שהמלכות היא עלת תנועת המלך, והמלכות ההיא איננה מתנועעת בעבור תנועת המלך, ככה הנפש היא מניעה את הגוף ואינה מתנועעת בעבור תנועתו. אם כן הנפש היא עלת תנועת החיות, בעבור
195	
200	
205	

- התאווה, והרצון, והצרר, והתנועה, והיא אינה מתנועעת בשום תנועת הגוף בעבור שהיא בלי גופנית. ועל כי בארנו תכלית אפלטון
- 210 בנפש בפירוש כל חלקיו, יש לבאר עתה תכלית ארסטו בו גדר ואמ' כי הנפש היא תמימות הגוף הפועל והחי בגופניות. ובספר הנפש ככה גדר הנפש: הנפש היא תמימות טבעית של כל החי בגופניות. נחזור עתה ונאמ' על זה שאמר בגופניות, כי מהדברים קצת הם בכח וקצת בתמימות, וכשישיג הדבר על המועיל יורה על התמימות. והתמימות היא קבלת המין שלו כדי שיהיה הדבר מנפש הרגשי ונע ברצון. אם כי נתבאר מזה הדבור כי הנפש היא
- 215 תמימות נפשית בלי ספק כי היא תמימות שלחי שלה, כי תמימות הדבר היא קבלת מינו. ועל כי באמת נתבאר כי הנפש הוא מין, וזה המין אנו קוראים אותו תמימות. צריכין אנו למנות מדות התמימות ולבחור מי מהם יסמך אל הנפש. אם כן נאמ' כי התמימות מתחלקת לשני חלקים, כי יש תמימות ראשונית ושנייה, והראשונית באדם היא החכמה והמלאכה. והשנייה היא הלמוד באדם מהדברים הנלמדים מהחכמה והמלאכה, ונאמ' כי הרפואה תהיה תמימות ראשונית בעבור חכמת הרפואה, וכשיתחיל לרפאות אותם בפועל אז תקרא תמימות שנייה. אם כן הנפש היא תמימות ראשונית כי אם ישן לא תהיה לו הרגשה בזמן השינה, אבל יש לו נפש הרגשית. וכל מין ותמימות הם מין ותמימות שלשום דבר, אם כן הנפש היא מין ותמימות שלגוף. ומדות
- 225 הגופות הם שתיים, כי מהם קצת הם פשוטים וקצת נרכבים. ובפשוטים כאש וכאור וכמים וכעפר, והנרכבים כחיות והאילנות. והנפש איננה מין שלגוף פשוט טבעי כי אם שלגוף נרכב, כי כל מה שיש לנפש הוא חי, וכל מה שהוא חי הוא חוזר וצריך מאכל שבו יכול למלאות החסרון שנתר ממנו, ולהעזר בעניני הפועל לתת לו תוספת. והמאכל צריך לכלים רבים שמהם
- 230 קצת הצרכן להביאו אל הגוף ולהשביעו, לרוץ ולעבור בושט והוורידים בחיות, והקליפה והענפים באילנות. וקצת להשביע את הגוף כדי שידחה ממנו כל מותר בשבילים בגוף ובאילן. רבים הם הכלים בחיות בעבור גודל התמימות שלהם ורוב מפעליהם, כי אם הוא חי יש לו אברי החיים כלב והמוח ומכל מתקבץ בם. ואם הרגשי יש לו גידים והרגשות, ואם נע
- 235 ברצון יש לו גידים ותנועות אחרות, כבשר עם גידים מסתבכים כהוגן וכראוי ובטוב נאמ' כי הנפש היא תמימות הגוף הטבעי. וזה התכלית הוא כללי, שופע ומספיק לכל נפש שהוא בכל גוף, הפסדי ונתר בכלל. ואם יושם מקום החלק הקטן החי בגופניות, לא יהיה למאד החילוק מהתכלית האחר. כי פירוש שני התכליות היה לו להיות אחד. כשאמ' החי בגופניות,
- 240 רצה להודיע כי הגוף ככה הוא, בהיותו קודם שהיה עם נפש ולאחר כך קבל הנפש, ובעבור כי ביכולת היה לו לחיות רצה להודיע בזה ואמ'

בגופניות חי להיות כלי לה שביכולת לו היה לנהוג בדברים המקריים
ובפעולות החיים. אם כן דבר אחר מורה חי בגופניות, כשבבלי חי בגופניות.
245 וזהו תכלית ארסטו בנפש, כמו שפירשנו ובארנו בכל חלקיו. ומדות
הגופות שתיים, וקצת מהן הם גופות שבהם הוא מין טבעי כנפש וכאילנות
והאש והמים וכל מה שיש לו התנועה הטבעית. וקצת הן שבהן יתאחז
המין בעבור המלאכה כשער וכסולם. והנפש היא כמין הגרמי שלגוף כי מה
שאין לו גוף אינו ממלאכה. ויפרק המין הטבעי ממין המלאכה, כי מין
250 הטבע הוא עצם, ומין המלאכה הוא מקרה. אם כן הנפש היא עצם, כי היא
מין טבעי שלגוף. ומדות הגופות וגו' ואם ביארנו שתי
התכליות שלאפלטון, וארסטו ופי' כל חלקיהם נאמ' עתה מכחות הנפש
ונתחיל. כי הכחות המחזקות שהם לה בכח, בסוגים
שלש הם. והם האחד הנפש הצומחת, והנפש ההרגשית, והנפש השכלית, ואלו
255 הכחות נקראים לפי רצון הנפש. והיא הנפש הצומחת, וההרגשית המתנועעת,
הבהמית המתנועעת לפי תנועה רצונית, והנפש השכלית הנוהגת בדין
ובמחשבה ובדעת. והנפש הצומחת אשר בספרים האחרים נקראת הנודעת היא
שותפית לנו ולאילנות, ולצמחים, ולבהמות. והנפש ההרגשית שבמקום
נקראת חיונית, היא שותפית לנו ולבהמות. והנפש השכלית מחזקת היא
260 לאדם. ופועל הצומחת היא לזון ולהשביע. וזה פועל בעבור ארבעה כחות
הנקראים טבעיים, והם העוצר, והמושך, והמעכל, והדוחה. וזה ימצא בכל
דבר צומח באילנות ובצמחים ובבהמות ובאדם. ופועל הנפש ההרגשית,
הנקראת חיונית, בששה הוא: בראיה, בשמע, בטעם, בריח, במישוש
והפנטסיה, והתנועה שלהעתקה ממקום למקום ברצון. ואלו ימצאו בכל חי,
265 בבהמות ובאדם. ולנפש השכלית המחשבה, ההשגחה, והספקות, והזכרון
ואלו מוחזקים הם באדם בין כל החיים והדומים להם.
ועל שביארנו בעזרת האל מה הרוח והנפש נאמ' עתה מהפרק שהוא בינותם
ונא' כי הפרק הראשון שביניהן הוא, כי הרוח הוא גופני, והנפש היא בלי
גופנית, והרוח נפגע מהגוף, והנפש לא תוכל להפגע מהגוף. והרוח כשיפרד
270 מהגוף יכלה, ופעולות הנפש בגוף יכלו והיא אינה כלה בעודה. והנפש
מניעה היא את הגוף ונותנת לו הרגשה וחיים בהתמצעות הרוח, והרוח
פועל כל אלו בלי שום אמצעי. ועוד, הנפש מניעה היא את הגוף ונותנת לו
הרגשה וחיים, כי היא עלה ראשנה לו, על כן פועלת היא בו. והרוח
פועל הוא כל אלו, כי הוא עלה שניה לו. אם כן הרוח הוא עלת החיים שלגוף
275 והרגשתו, ותנועתו, וכל פעולותיו, כי היא עלה קרובה לו. והנפש היא יותר
רחוקה, על כי היא עלה ראשנית. ועל כי גוף האדם הוא נרכב מחלקים
ביותר מחלקים, שהם הכלים הקשים והרכים, והורידים וכל הדומים לאלו,

- ומחלקי העירובים והם: הלחה, והדס, ושתי המרות. ומהרוח שהוא בבטני הלב
והמוח והדפק. ובגידים כל רוח שיהיה בו, יותר דק ויותר צלול ויותר חזק
מכל חלקי הגוף, ונכון לקבל פעולת הנפש. לפי כמות הדקות וצחות שלו יקבל
מפעולות הנפש. ובגלל זה אמרו הפילוסופים, כי כחות הנפש רודפים
הם אחר מזגי הגוף. אם כן, אם יהיה מזג הגוף בתמימות השוות, יהיה הרוח
שבגוף שלו בתמימות השוות, והפעולות בו יהיה בתמימות השוות. והמזג
שלאיברים שבם יהיה הרוח בהתחלת מחזקת יהיה בפחות תמימות. עוד יהיה
הרוח בו בעבור מיעוט הדקות, ובפחות תמימות יהיו פעולות הנפש מזו
העלה. ובגלל זה יהיו פעולות הנפש בפחות תמימות בנערים, ובנשים
חלשים, וכמוכן באנשים שמתחזק וגובר עליהם או החוס, או הקור, בעבור
קריבותם אל השמש וריחוקם ממנו, ככוכבים והדומים להם. ובעבור
זה בפשיטות פעולות הנפש ברוח הם מתחלפים, כי נעשות ברוח אשר בלב
החיים והנשימה והדפק בלבד, על כי הרוח ההוא יותר קרוב אל האויר מכל
האחרים, ובפחות דק. ולאחר כן, בעבור הרוח שהוא בבטני המוח המוקדם יהיו
ההרגשה והפנטסיה. ועל כן אוחדים הם מתוספת הדקות על הרוח שהוא בלב,
ולאחר כן ברוח שהוא בבטנים הרודפים, יהיו הדעת וההשגחה על כי קיבל
מהדקות מעל לרוח האחר. ועל כן צורך יש לו שפע הדקות בעת שירצה
לזכור שום דבר קדמוני שעבר וזמנו מאד רחוק. ודי לך אילו המופתים במה
ששאלתני. יסיר האל מעליך כל צרה, ויבריא ממך כל מה שיש בו ספק, ויתן
לך מזל טוב בזה ובבא.
- נשלם ביד מ'י בב'ל ובליל א' בי"ד ימים לחודש שנים עשר של שנת
ה'מול הש'י יזכני לקיים מצותיו הטובים והישרים אני וזרעי וזרע
זרעי. אמן.

ABBREVIATIONS

- AES Abraham Eben-Shoshan Dictionary: Ha-milon ha-chadash (Jerusalem: Kiryath Sepher, 1966-1970),
- BY Ben-Yehuda Dictionary: Milon ha-lashon ha-'ivrit ha-yshana ha-chadasha (Tel Aviv: La'am, n.d.)
- E English translation.
- K Jakob Klatzkin, Thesaurus philosophicus linguae Hebraicae et veteris et recentioris (Leipzig: Verlag "Eschkol" A-G, 1928-1933), 4 vols.
- L Latin text, John of Seville's translation.
- MSA Parma, Ducal Library, Hebrew MS 2784, no. 7.
- MSB New York, Jewish Theological Seminary of America, MS 2131 (Mysticism and Kabbalah Collection) ff. 40a-43a.
- S Moritz Steinschneider, "Hebraische Handschriften in Parma."

NOTES TO THE TEXT BY LINE NUMBER

The title appears only in MSB.

1. בני is absent in L;
 cf. קרנו תרים בכבוד (Psalms 112:9) and
 תן כבוד לעמך (New Year's prayer);
 L = differentia, AES and BY = fork in the road;
 always in masculine, perhaps to emphasize the
 difference between it and the נפש (feminine);
 לא ברי = doubtful; cf. ברי ושמא ברי עדיף (Bava Kama
 118);
3. L = cadon (Phaedo); S. in his notes, p. 175, no.
 2, suggests "Eutyphron";
 L = Timaeus;
4. L = Theophrastus;
 L = Empedocles;

5. MSA עשה בדינים ; MsB עשה מהחכמת הדינים
 = logical theories (AES);
 MSA איפוקרט ; MsB אפוקרט; L = Hippocrates;
6. scientific knowledge, work of art.
 בחכמת התחבושת, L = chirurgie;
7. = business? (חלפן = moneychanger);
 L = negociationes;
11. here in plene or full (i.e., with vowel
 characters) spelling; it later appears sometimes in
 the grammatical (minimal) spelling;
- 11-12. איני יכולת perhaps איני in Aramaic, meaning:
 impossible, improbable (AES and BY);
16. גשם = body; L = corpus;
17. sometimes in full, sometimes in minimal
 spelling (see 11);
19. MSA: וחכמת התחבושת והמפוארים בחכמה ברפואה
 MsB: המפוארים בחכמה;
 זממו = imagined, hypothesized (K);
20. חדרי בטן, נפשי ובטני cf. בטנים
 (Proverbs 18:8); L = ventriculi;
 sometimes full, sometimes minimal spelling;
21. ימין (right) agrees with L. Arabic = left;
22. הריאה in MsB it is punctuated:
23. MSA: נעשה ; MsB: נעשית;
 throughout MSA the preposition של is always
 adjoined to the following word; in MsB it is always
 separate;
 meaning (expansion) והפשטות
24. הוית = condition (rather than 'existence');
 מווקים (K has טבוע = registered impression?)
 L = proprias;
- 24-25. שוים = regular (?);
26. מבעבורו = because of itself;

30. "עלה עשן באפו" vapors of breath מההבליים והעשנים;
L = vaporum fumosorum;
31. MsA: קוראים; MsB: קוראין;
32. אל אתר; L = alabhar;
MsA חלקים ללשון; MsB assumed a slip of the pen and wrote לשלוש חלקים (to three parts), but the context calls for two parts only (L = duas divisiones), and perhaps MsA used it figuratively for 'branching' as in "לשון-אש" or "לשון-ים";
33. נאצלים = separate. (Ezekiel 42:10);
35. ומבקש = travelling;
36. MsA: שני חלקי הוריד; MsB: שני החלקים הוריד;
37. אפומוניך, L = surienet;
וזה, in some places הוא;
38. שהיא ביותר קרובה, the most immediate;
שהוא: the use of ש as a prefix is frequent throughout the text;
39. והדין שיוון; K: והגזרה הנגזרת; L = probatur;
41. MsA: שיעור כמו; MsB: טפות שיעור;
L has annaza, Arabic for "going out of the soul".
- 44-45. MsA: כגרגרת; MsB: (erroneously) כגרגרת;
47. MsA: והעלה למה הוא יוצא זה הרוח מהלב;
MsB: והעלה למה יוצא מהלב זה הרוח;
49. והשגחתה = apparentness;
50. גרים הם מהמספר הזה. (ספר should be מספר) = are outsiders to this book (L = aliena sunt a libro isto);
cf. Chronicles II 2:16;
51. מקובלים = מחזקים = accepted, conventional;
54. להצלחת; L = adaptationem;

55. full spelling; ובדחיית
56. MsA: שצריך להעשות; MsB: שצריך הוא להעשות;
58. חיוני; L = animalis;
וקיומו, full spelling;
MsA: הרוח שהוא; MsB: הרוח;
59. אסינירור; L = surien (many Latin MSS have something like 'asurieneth');
MsA: אֶל אֶתֶר; MsB: אֶל אֶתֶר;
60. התחתונים (the lower), L = superiore (the upper);
61. רשת , L = retis;
62. נפשט (= מתפשט = expands);
full spelling; המוח
64. מוקדם = frontal . . . rear; מאוחר
66. שניל, L = iter;
73. MsA: שבו הוא הולך; MsB: שבו הולך;
75. מתנשא ונוטה, rising and then falling (L = elevatur et deponitur). "ויט שמים וירד" (Samuel II 22:10);
81. מתחלפת = of a different nature;
85. קביעה, שבוץ (K = fixing, setting); L = ההשמה בצלם; figura;
92. MsA: במחשבה ובדיעה ובהשגחה ובדיעה;
MsB: במחשבה ובדיעה ובהשגחה;
93. MsA: כאלו; MsB: כאילו;
95. תחת = because;
המרוץ = running; K: מהירות; L = decursus;
96. MsA: בבני האדם; MsB: בבני אדם;
98. MsA: וסכל; MsB: וסכל;
99. MsA: זוגות; MsB: זוגים;

100. נדבק = connected;
 MsA: ובו תהיה הראיה;
 MsB: ובו תהיה הנדבק הראיה (the underlined is a slip of the pen; the word appears earlier in the same sentence);
106. צוע . L = tympano;
 minimal spelling, sometimes full;
 יורד מבחוץ (= descending on the outside); L = dextram;
107. הרחם (= womb) L = uvulam = uvula (see note 11 of the English translation);
- 107-108. לקבץ הרגשי = to combine sensations;
110. שיפסיד = that becomes lost (L = obstruitur = obstructed, but many MSS have destruitur = destroyed);
112. MsA: הנקבצים בעינים; MsB: הנקבצים אל העין;
113. מזיגה והרכבה = mixing and combining; K = , ובעירובים;
116. אופן נאות וראוי = a proper way (perhaps "the laws of nature"; cf. יושר הכתיבה, where BY reads "the laws of language");
 MsA: עד החולי; MsB: על החולי (which seems more proper);
117. חלה = loaf (of the brain), but perhaps a spelling error (in both MSS) and should be חלק = part (of the brain), as in the Latin;
119. לחאדי , L = alaadal (MS Milan, Ambrosiana S.70.Sup., ff. 314r-319v has "cadal", which resembles קדל , in Aramaic = fat meat);
121. MsA: או בחתוך; MsB: בחתוך;
123. תכלה = will cease (AES), L = decursus;
 MsA: לפני כמות; MsB: כפי כמות;
127. MsA: המסגרות; MsB: מסגרות;
129. minimal spelling, sometimes full;
- 130-131. וזה הוא, sometimes וזה הוא;
132. תכנה = call by name, cf. "אכנך ולא ידעתני" (Isaiah 45:4);
133. MsA: לשם; MsB: שמה;
 MsA: למי שהתעורר; MsB: לאיש שהתעורר;

- 133-134. המרה האדומה, L = colera rufa;
138. MsA: המחשה; MsB: המחשבה, which seems closer to L (= cognitionis);
 וכלות הדין = loss of logical thought;
139. המפעלים, in the sense of הפעולות (L = actus);
141. לא כמו as a question: "isn't it like . . .?" (L = ut accidit . . .);
 לרואים (not in L), cf. "לנביא היום יקרא הרואה"
 (Samuel I, 9:9);
142. על ההרגשות, should be ההרגשות;
143. אלתחוויל, L = athagil (Arabic al-tahyil = fantasy or imagination);
144. פנטזיאה in both MSS; should be פנטזיאה;
146. נזן, minimal spelling;
150. עצל = difficult; cf. K: עצלוח = inability);
151. שבין, MsB has it twice;
 כארסטו, Aristotle mentioned without Plato. L = platonis scilicet atque aristotelis;
 גירוזיוס, L = gerosii (see E, note 21);
 בנני דיודוס, spelled in line 4 as בנודוס;
153. שאין בהן ספק (K: מבוארות = proven; L = probabilibus);
154. MsA: כונתנו; MsB: כונתינו;
157. תמימות הגוף, L = perfectio corporis;
 MsA: בגופנות; MsB: בגופניות;
158. ונתחיל בראשון, means ונאמר כי מהראשון;
160. הכוחות והאשמים, L = virtutes ac vitia, E = virtues and vices; K = כח = סגולה = virtue;
161. כנפש ראובן; of course this idiom is a "Hebrew original"; L = anima platonis;
- 161-165. from after משתנה in line 161 to after משתנה in line 165 the text is missing in MsB;
163. הוא עצם (הנפש); later we find עצם עצם;

- 163-164. MsA: עצם מניע עצם, עצם הוא; in MsB one עצם is omitted in error;
166. מקבלים ; L = qualitates sunt perceptibiles;
171. או יהיה מנפש או בלתי נפש = animate or inanimate;
172. כי הנפש תהיה כנפש ; L = ut anima sit inanimata;
- 173-174. לבלי קצבה = beyond measure, infinite; cf. "אין קצבה לשנותיה" in Yom Kippur prayers;
- 174-175. אויר בכל הגוף נפשט = air diffusing through the whole body (L = aer spiritus subtilis per totum corpus diffusus);
177. MsA: שאינו באש ; MsB: שאין כן באש;
180. MsA: עבר is wrong; should be עפר, L = terra; (MsB not clear);
184. MsA: וכמו כן ; MsB: וכן;
מיסוד = of the four elements;
189. באיזו sometimes as one word: באי זו;
190. בעבור תנועת מטען L = aut movetur per motum;
- 195-196. MsA: מהכוֹבֵד והכוֹבֵד (both words punctuated--rare!);
MsB: מהכוֹבֵד והכוֹבֵד;
196. בלתי מתמוטט = motionless;
197. מלכות. . . מלך L = magisterium . . . magistri;
- 198-199. מתנועעת in line 198 to after מתנועעת in line 199, the text is missing in MsB;
201. Both MSS: השני, instead of השני;
202. MsA: מתמוטטת; MsB: (wrong) מתוטטת;
203. minimal spelling, usually full;
209. MsA: ועל כי ; MsB: ועל;
210. MsA: בו גדר ; MsB: כי גדר (=defined);
211. MsA: הנפש: הנפש היא ; in MsB one הנפש is missing;

213. MsA: וכשישיג; MsB: וכשישיג(wrong);
 וכשישיג הדבר על המועיל יורה על התמימות
 pervenerit res ad effectum, E = when a thing attains
 its completion;
214. מין, K = סוג, L = species;
219. יסמך, K = מיוחס = related;
220. ושנייה, full spelling;
 והמלאכה, K = חכמה ואמנות = wisdom and artisanship,
 L = sapientia atque magisteria;
224. הרגשה, K = כח ההכרה = power of consciousness, L =
 sensu;
225. The portion from ומדות הגופות in line 225 (L line
 448) to ויבארנו בכל חלקיו in line 245 (L line 490) and
 the portion from ומדות הגופות in line 245 (L line 437)
 to מין טבעי שלגוף in line 251 (L line 448) are in
 reverse sequence to the Latin. The scribe was aware
 of this displacement. See note to line 252;
227. MsA: והאילנות; MsB: ואילנות;
229. הוא חוזר = repeats (is subject to a cycle), L =
 convertibile;
 שנותר too minimal spelling; should be שנותר;
233. מותר = means מותר;
235. הרגשי = capable of feeling;
236. כבשר עם גידים מסתבכים, see note for line 119:
 "לחאדי";
238. הפסדי ונתר = בן תמותה?, L = corruptibili vel
 dissolubili;
239. ואם יושם מקום החלק הקטן החי. A mistranslation for L
 = Quod autem videtur corrumpere primam particulam et
 in loco eius ponere "viventis" "Primam" has
 been rendered as "small", and "quod" as "if"; in
 addition, it seems that the translator or copyist
 thought that the text is discussing a living thing
 rather than the word "viventis" as a part of the
 definition of the soul according to Aristotle;
 לא יהיה למאד החילוק; cf. "חילוקי-דיעות"; L = non
 multum discordat;

240. פרוש , minimum spelling, sometimes full;
245. See note at line 225 regarding passage sequence;
- 247-248. שבהן יתאחז המין = that the species will be acquired in them; L = quibus adquiritur species;
248. סולם = ladder; L = sca[m]num = bench, not so different from L "scala" for "ladder";
הטבעי , L = naturalis;
249. וינדל means ויפרק , as in line 1;
250. מקרה , L = accidens;
251. "There are two kinds of natural bodies, etc." This does not belong here and the "etc." shows that the scribe knew about the displacement (see note to line 225). To show where to place it, he gave the first two words of the passage that should have followed here, followed by "etc.";
252. ופירוש , abbreviation for ופירוש;
254. הצומחת , L = vegetativa;
ההרגשית , L = sensibilis;
השכלית , L = rationalis;
- 258-259. במקום נקראת = in another place, L = alibi;
259. מחזקת = is a property of, L = proprie;
268. כלי , should be בלי , without (a body); L = incorporea;
269. נפגע , is obstructed, held inside, cf. פגע = obstacle;
L = comprehenditur;
271. בהתמצעות = כאמצעות , L = mediatore;
276. מורכב = נרכב;
281. שואפים = רודפים;
282. מזגי = mixture (of the four elements), L = complexiones;
בתמימות השוות = in perfect balance;

284. נהתחלת מחזקת , the Hebrew meaning is unclear, L = in propria temperatione = in its particular mixture;
עוד = moreover, in addition;
285. מיעוט , full spelling;
288. ככושים , L = ethiopes;
289. בפשיטות , L = similiter;
מתחלפים , L = diversi;
293. הרודפים = the following;
298. מנחם יושל'ם' = מ'י' ,
; יהי שמו לעולם מבורך = יושל'ם'

ברבי בנימין ליעיל'ץ' = בי'ל'י
לחיי עלמא יחי צדיק = ליעיל'ץ'
299. שנת ה'מ'ו'ל'י = 5076 = 1316 A.D.;
השם יתברך = הש'י

APPENDIX A
PRELIMINARY CLASSIFICATION AND
THE COSTA PROGRAM

The classification of the manuscripts of De differentia spiritus et animae in Appendix B and the method I am describing here reflects an interim stage in my work. I still have not seen a number of the manuscripts, and I have insufficient data on others that I examined in the early stages of the research. At the beginning I was guided by the characteristics outlined in the classification given by Aristotles Latinus. To these I have since added other criteria for sorting the manuscripts as I have continued to observe them. These are items (6), (7), (8) and (9) in the list that follows. The groups listed in Appendix B are characterized by combinations of the following features:

(1) Rubric ascribing the translation, usually at the head, but in a few cases at the end, of the work, to John of Seville;

(2) Presence of the longer prologue;

(3) Presence of the shorter prologue;

(4) Ending with the word "futuro" considered typical of the "anonymous" version;

(5) Ending "et hec sufficient", considered typical of "hispalensis" version;

(6) Ending "et hec igitur de differentia spiritus et animae sufficient";

(7) Ending "prolongatus est", that is, stopping a few words short of "sufficient" (only 3 mss);

(8) Presence of the word "sapientes" modifying "antiqui" at beginning of prologue;

(9) Passage in middle of the longer prologue with characteristic wording at the end of the shorter prologue (suggesting possible contamination or conflation between manuscripts featuring the longer and shorter prologues).

Of the several groups (each of which has been assigned a letter) which I sorted according to these characteristics, some turned out, upon further study, to be somewhat large and consistent and therefore to form real families. Groups E, J and M are closely related to one another, proving that the presence of the shorter prologue is a good indication of family relationship. Group D is even more consistent, while the I group is less so and smaller. The classifications C and B still need considerable work. These are separated from one another by the presence in C of the rubric and its lack in B. Within each

group there are still differences which I have not yet analyzed, but I consider B and C manuscripts to fall within the main tradition of the text like the base text, Brussels Royal Library 2772-89, ff. 77r-82v. Probably the presence of the rubric is not so telling a feature in tracing the lines of descent of the manuscripts in these two groups, but the C list at least gives an idea of how many manuscripts named the author and translator of De differentia. The presence of the rubric has not been a defining feature of group I, half of which have it. Nearly all the other manuscripts lack it. The Edinburgh manuscript, which appears to me to represent the oldest version, has the attribution of the translation to John in a colophon which is worded differently than the rubric (1) and for that reason has been classified by itself. For the time being I have absorbed into the "unclassified" list a number of manuscripts which have unusual combinations of the nine criteria and which do not form groups of any size.

In order to get a sense of the manuscript tradition as a whole and to see what significant families it seemed to form, I eventually took variants from fifty, about one third, of the approximately 150 manuscripts I know of, using several examples from each of the families in the preliminary classification. The variants are taken from two sections of the text, at the beginning and at the end,

each four typewritten pages in length. While the beginning and end of a text might be more liable to change and less characteristic than other parts, I believe that the size of the portions sampled will offset this hazard. These samples comprise a little under one-fourth of its length. I made the letters designating the groups the headings on a chart devised to set off the more particular characteristics of each group, as a means of visualizing significant alignments of variants and thus of the manuscripts. Eliminated from these have been such relatively insignificant variants as differences in orthography, rare readings or those that appear to be mere grammatical errors. Other variants that occurred with significant frequency, more than twice, were recorded in the space allotted for the group into which that manuscript had been classified. Each manuscript in this arrangement has been given a two letter code, the first letter that of its group, and the second, a letter to distinguish it from the others in that group. Since the preliminary classification proved to be less adequate for some manuscripts than others, further analysis was needed. Many manuscripts in the inadequately defined groups nevertheless share a number of variants and thus are clearly connected in some way, but the task of tracing the connections in such a large number of manuscripts seemed nearly impossible. This project seemed to be a good candidate for computer assistance.

The COSTA Program to
Construct a Stemma Codicum

It was an easy step from the more graphic representation of the problem presented in the chart to consider the manuscripts as subsets of variants, represented by numbers, headed by the two-letter codes that had already been given each manuscript. The entire group of carefully selected variants goes to make up a universal set from which the subset for each manuscript is constructed. There are forty-nine variants, each with its own number. Each manuscript has anywhere from three to twenty-two of the forty-nine variants in the universal set, and each combination of variants is, of course, different. The aim of the program, written by Mordechai Friedlander, is to cause the manuscripts, defined by the particular set of variants which occur in them, to fall into a genealogical pattern indicating the probable "parents" and "children" of each.

Before the program could be written and run, we needed to create the strings of variants belonging to each manuscript, since the data had been recorded by variant in the chart. That is, the manuscripts having a given variant were listed together on the chart. Friedlander wrote a program which lined up the individual variants next to the letter code of the manuscript in which it appears. These

strings became the database on which the program is run. See Figs. 1 and 2 at the end of this Appendix. When the main program is run, the strings are further put in order of their number of variants, since it is assumed that those with fewer variants will always fall nearer the root text in a genealogical representation. The root text upon which the variants have been taken, Brussels Royal Library 2772-89, ff. 77r-82v, will always be a null set (no variants) in the program, unless the person running the program decides that some other manuscript should be considered the archetype in the stemma codicum being created and selects an option (described below) to obtain that result.

In order to demonstrate very specifically the method of selection of variants used in the project, the portions of the text chosen for variant-taking are given below. Their line numbers in the John of Seville version are given, as are the numbers they have been assigned (the numbers appearing next to the manuscript letter code).

Out of the forty-nine variants, fifteen (marked off in parentheses) have been eliminated for the time being from consideration. Following is the list of variants and the grounds for elimination, if applicable:

Line Var. No.

1-5	(1)	Ascriptive passage lacking. Might have been omitted for reasons of format, etc. Also reads

differently in Edinburgh manuscript and is at the end there; it cannot be considered the same characteristic exactly.

- 6 2. Om honoret te deus
- 7 (3) Que est om. With no. 4, confusing and perhaps the result of error. Impossible to follow.
- 7 (4) Que est inter om. Same as no. 3.
- 7 5. Spiritus et animae (for spiritum et animam).
- 8 6. Tibi om. Missing in Arabic also; its presence indicates a good reading.
- 8 7. Antiqui (or ea) ad sapientes. Supported by one Arabic manuscript, where "the words of the wise" could have been read for "what the ancients said" (Gotha ms).
- 9 8. Tibi om. A poor reading, since "tibi" is in the Arabic, but a reading which occurs in many Latin manuscripts, indicating that it is a characteristic reading in them, even if an error.
- 14 9. Gloriosissimi om. Supported by the Arabic, where this meaning is not present.
- 17 (10) occupatum ad esse. Could have been inserted or om at will of scribe as a matter of grammar.

- 18 (11) Omnibus (instead of or in addition to
operibus). Simple error and could have been
made at any time.
- 20 12. Inspecere (for aspicere). Aspicere is
probably John's clumsier rendering. Both
words fit the meaning.
- 23 13. Dicam ad prius de spiritu et postea de anima
(this wording ends the prologue in its shorter
version and appears in some manuscripts which
contain the additional lines also).
- 23-32 14. Om end of prologue.
- 23 15. Differentiam ad que est. Stylistic
improvement.
- 25-26 16. Earum (missing in Brussels MS; it is restored
in the established text) ad quia impossibile
est. . . earum. The passage is also missing in
one of the Arabic (Gotha) manuscripts; hence
it could indicate some revision made according
to a second Arabic manuscript, one like the
Gotha MS.
- 32 (17) Combined into definition of 18.
- 32 18. Dicemus or dicens for sequatur locutio.
- 39-40 19. Om in corporibus viventium (the idea of
"corporibus" is merely implied in the Arabic.
- 40 20. Om chirurgie (also not in the Arabic).

- 44 21. Magis habetur (for plus est). "Plus est"
would fit John's style better, but this is one
of those rare characteristic variants from the
Edinburgh manuscript).
- 44 (22) Has been absorbed into 21.
- 47 23. Om quarum vadit (an error? The Arabic has this
idea; the omission in some Latin manuscripts
may be an attempt to lighten the style).
- 58 24. Om in eo (the Arabic has the language for "in
eo").
- 58 (25) Sit ad in eo propter (a gloss).
- 60 26. Pulsat ad idest pellit (a gloss).
- 525 27. Om potest comprehendi a corpore.
- 536 28. Longior ad quare est magna causa (a gloss).
- 537 29. Partibus ad quatuor.
- 537 (30) Sunt ad ossa. "Ossa" (restored to correct om
in Brussels text) supported by the Arabic.
- 537 31. Sunt ad vasa (word replaces "ossa" in
established text).
- 537 32. Sunt ad vasa or ossa. Inverted and combined
with 31 but not 30, this can indicate which
texts have the reading "ossa."
- 548 33. Perfectio for complexio. An error, but fairly
frequent and characteristic.
- 549-550 34. Om passage erit. . .equalitatis.

- 550-551 35. Om passage et. . .equalitatis.
- 556 36. Om et ideo.
- 559 (37) Ad solem (for a sole); "a sole" can be supported by the Arabic where this configuration fits. "Ad solem" is better Latin and might have been given by scribes at any point.
- 560 38. Om et sclavi. An error; meaning of "et sclavi" is in the Arabic.
- 561 (39) Solarii, subsolares or subsolanes (for sclavi). There is no way of telling whether these errors show a relation between manuscripts.
- 561 (40) Simpliciter (for similiter). An error, and could have been corrected spontaneously by scribes.
- 574 41. Iam om (altogether) (see 42). Indicates better style. Rendering "iam" indicates slavish translation characteristic of John.
- 575 42. Tempus ad iam.
- 575 (43) Tempore (for tempus). Could have been changed spontaneously to read better.
- 575 44. Elongatum (for prolongatum. A stylistic change; both are correct.
- 576 (45) Interrogasti ad me. Not in the Arabic.

- 575 (46) Has ending typical of most "short prologue" manuscripts, that is, "sufficient" or "elongatum (or prolongatum) est." Variant rejected as being contrived.
- 575-578 47. Om tibi. . .seculo.
- 575 48. Ends (after "sufficit") "igitur de differentia spiritus et animae."
- 576-578 49. Om auferat. . .seculo.

Of the forty-nine selected variants, eight correspond with the features marked in italics in the samples given by Aristoteles Latinus to support of their thesis regarding the two versions. Some of the words and phrases italicized in the Aristoteles Latinus samples have not been included among the forty-nine variants we are considering in this experiment:

<u>Line</u>	<u>"Hispalensis"</u>	<u>"Anonymous"</u>	<u>Reason</u>
9	extraxi	excerpsi	rare - not characteristic
12	audidis	ambemdeclis	error
11	ex libris	de libro	not significant
13	quos	quem	not characteristic.
35	assuriened	assitien	error
569	propter	per	rare

Variants or other differences not noted in the Aristoteles Latinus samples which do appear among the forty-nine listed

above are 6, 7, 8, 10, 11, 12, 16, (17 and) 18, 41, 42, 43, 44, and 45-49.

Some explanations of the variants has already been given in the list of forty-nine, above. We have also been able to add to this a comparison of the Latin with the Arabic texts available to us.

Among the Readings Kept for Now:

Errors - 8, 19, 24, 31, 32 34, 35, 36, 38.

Agree with all Arabic MSS - 9, 6, 20, 32, 42.

Agrees with Gotha MS (Arabic) - 7.

Agrees with Jerusalem (Arabic) MS - 16.

Agrees with Aya Sofya (Arabic) MS - (16), 48.

Possible attempts to improve Latin (i.e., revise) - 12, 15, 18, 21, 23, (27?, 2?), 41 (see also "Hard to characterize").

Hard to characterize - 2, 5, 13, 14, 27, 44, 47, 49.

Glosses - 26, 28, 29.

Among the Readings Dropped

Errors - 11, 33, 39, 40, 43, 45.

Agree with all Arabic MSS - (none)

Agree with Gotha (Arabic) MS - (none)

Agree with Jerusalem (Arabic) MS - (none)

Agree with Aya Sofya (Arabic) MS - (none)

Possible attempts to improve text - 37.

Hard to characterize - 1, 3, 4, 10.

Glosses - 25.

Absorbed with another variant - 17, 22, 30.

Subject to spontaneous adjustment by scribes - 37, 39, 40,
43.

Invalid (probably erroneous - 46.

Although some of the variants are more striking than others, they all have appeared to be explainable as scribal variants consisting of errors, omissions, interpolations and grammatical changes. In the mass of data available, it is extremely difficult to see any groups of changes that might point to a major revision of the kind suggested by Aristoteles Latinus. Thus in the development of the program, a single version by John of Seville has been assumed. The manuscripts carrying the version attributed to Hermann of Carinthia are not included in this project.

The program has assumed a genealogical relationship, that is, that the manuscripts have acquired their particular set of readings through copying from others, and that their relationships may be found by comparing their variant sets. We have assumed that once missing links were accounted for (see no. 1 in the list of "Data Manipulation Options," below), the manuscripts would be shown in a clear relationship to one another. Proceeding on this assumption alone has given us ambiguous results. For some manuscripts it has appeared to be adequate and we have

gotten plausible relationships based on these readings and this logic. For several others, it has clearly been insufficient. In these there has been an indication of considerable "contamination," where many manuscripts have seemed to have several parents, more than ten in some cases, which is historically implausible. We feel that the anomalies present may become explainable if we assume minor revisions and develop ways to detect them and place such detected texts in their proper relationships to the other manuscripts. Up until now, the program has been based on the assumption that variants only accumulate over the generations. If we consider the idea of a revision in which someone has eliminated some of the variants belonging to the manuscript or manuscripts at hand, then the head of this group could be positioned lower in the stemma than the number of its variants would otherwise warrant, and at least some of the apparent contamination would disappear. The problem is, of course, that we have no way of telling how such a revision can be identified just by comparing variants, and we can have little help from manuscripts which can be dated only approximately.

The hypothesis regarding these revisions set out in Chapter 4 is based upon personal observation of the manuscripts reinforced by the ability of the COSTA program to compare them exactly. The antiquity of the Edinburgh

and Brussels texts and of the version represented in the "Avranches" group (group I in the classified list) suggest the sudden appearance of minor revisions. The groups of manuscripts associated with "Revision B" do not give such a clear picture. It is still not clear which of these types introduced the short prologue. The idea of the "D" revision is based on the large size and closeness of manuscripts in group D.

A more complete analysis of the manuscript tradition will be possible with further development of the COSTA program. While it cannot solve the problem at hand in its present form, it already offers the ability to perform a number of functions which can enable us to manipulate the data in various ways and to produce information conveniently in the output. An example of this is the program's ability to indicate the point in the stemma where a particular variant has been introduced first. This has been suggestive and instructive, and from it we hope to continue developing our ability to picture any process of revision as well as of scribal changes that were at work as the manuscript tradition unfolded. To date, such indications have not been conclusive. By recognizing what the computer can do for us, we have come to rely on its potential eventually to tell us whether the clusters of readings appearing to be characteristic for certain groups appeared in

that group at once or piecemeal through other groups. The great boon for the text editor is the ability to compare the manuscripts in a number of ways, rapidly and accurately, in operations as radical as making any given text in the database the base text. Following are some output and data manipulation options.*

Output Options

1. An "informative list" of the manuscripts consisting of a manuscript code and the number and codes of its variants, variants first introduced by the manuscript and the codes and count of descendant manuscripts (children) and immediate predecessor manuscripts (parents). See Fig. 6, second sheet.

2. A matrix of manuscripts and variants. See Fig. 3.

3. A graphic representation, on a CRT display or a printer, of the "tree" or stemma codicum indicating "contamination" (descent from more than one manuscript), if it exists. (Note: We use the term "tree" advisedly, since the relations indicated among these sets do not form a true tree in the Boolean sense, but rather an "ordered graph," on account of this contamination.) Figs. 4 and 5.

*The following lists of options appeared in an article by Judith Wilcox and Mordechai Friedlander, "A Program to Construct a Stemma codicum," in Rom Ramblings, published by the Fordham University Computer Services, Fall/Winter 1983, 5:13-17.

Data Manipulation Options

1. Creating "missing links" or hypothetical parents (presumed lost manuscript copies) with hypothetical variant sets, when it is necessary to account for the introduction of the same variant in two or more manuscripts where one cannot be the parent of the other(s).

2. Removing or adding certain variants, conditionally (depending on certain occurrences) or unconditionally.

3. Removing certain manuscripts.

4. Interchanging roots, that is, arranging the data as if the sets of variants have been taken against another chosen manuscript.

5. Creating a "perfect root" by assigning a subset of variants to a hypothetical manuscript which is to represent the original or "archetype" of the text, presumed lost. Once created, the perfect root is interchanged, as in 4, with the base text.

6. Allowing inversion of variants or groups of variants which are mutually exclusive without distorting the relationships, for use in the perfect root.

7. Pointing out the "most significant parent(s)", that is, where contamination is indicated, ignoring the parents that contribute fewer variants, and using only the most significant parent(s) to create the informative list

and stemma. This procedure has the virtue of simplifying the relationships shown and the disadvantage of introducing a level of uncertainty into the relationships. The amount of uncertainty, however, is indicated in the informative list, where "ignored parents" and "ignored variants" appear.

Logic Assumptions and Decisions in
Creating the Stemma*

by Mordechai Friedlander**

1. No two MSS can have an identical set of variants (if they do, they can be treated as one).
2. The "root" of the stemma has no variants. All sets of variants are taken against the root. There can be only one root at a time (see 1 above).
3. A variant cannot be introduced independently in two different MSS. (We had to make that assumption because we have no way of detecting such an occurrence). Therefore, all MSS that have any variants in common should have connecting path to a MS where that variant was first introduced. (This assumption is the dominant cause of contamination and the necessity of introducing missing links, but we believe that we cannot assume the reverse.) Variants of a

*For logic definitions, lattice and set theory, refer to Zvi Kohavi, Switching and Finite Automata Theory, 2nd ed. (New York: McGraw Hill Book Co., 1978).

**The Figures following this section have also been prepared by Mordechai Friedlander.

nature that can be introduced independently should be removed from the database of the program.

4. A variant once introduced cannot have been removed later. This assumption was made simply because we have no way of distinguishing between identical sets of variants. If a variant is not in the set, we assume that it never was there, and that the set is earlier than a set that has this variant. In reality, a variant can be removed (e.g., a spelling error being corrected) and we still have to find a way to detect such occurrences.

5. A descendant MS ("child") must have all its ancestors' (parents') variants (see 4 above). A logic AND operation between the sets of variants of a child and a parent should result in a set identical to the parent's set.

6. A child always will have more variants than any of its parents (see 1 and 4 above). The definition of "generations" refers to the number of variants in a set and is valid according to assumption 4).

7. A direct parent is the greater-lower-bound of the set of all parents identified as described in (5). The other parents in the set are regarded as "grandparents" and can be ignored. (They will be identified again and put in their proper relative location in the stemma while the

program looks for direct parents for the direct parents found before). See exception below (8).

8. Contamination occurs if a child has more than one direct parent (if one of the parents found cannot be identified as the parent of the other parent of the child in question by the logic described in 5).

9. Missing links: When the AND operation on variant sets of two MSS results in a non-zero set which does not belong to any existing MS (including the above two), a missing link which has that resulting non-zero variant set has to be introduced (see 3 above).

10. A non-redundant missing link is a missing link which introduces one or more variants for the first time into the stemma. "First time" relates to the link which contains the smallest set of variants (reasoning 6 above). The redundant missing links are removed from the stemma, since they do not provide an essential variant path (the path needed to show 3 and 4 above).

11. When removing variants from the universal set of variants (for the purpose of testing the validity of certain variants), if some MSS become identical due to the removal of the variant(s) that distinguished between them, all but one (necessary to represent the new, contracted, set of variants) are removed from the set of MSS (see 1

above). A multiple occurrence of this phenomenon is possible.

12. When interchanging roots, the new root has no variants (see 1 above) and is treated as if all the sets of variants were taken against it. All variants formerly belonging to the MS which has become the new root have now an inverted meaning. All MSS having them before, do not have them after the interchange has been made; all MSS that did not have those variants before, have them now.

A sample of the input data as originally typed in by hand. Each 2-digit number represents a variant, which is followed by the list of MSs that contain it. This raw input is rearranged by the computer (see fig. 2) before feeding it to the COSTIA program.

In addition, the program was also fed with variant definitions and MS information such as dates, locations, physical features, etc. which can be sorted by class and printed out.

TABLE 1: VARIANTS AND MSS THAT CONTAIN THEM

01,	BA,BB,BC,BF,BM,BP,BQ,BV,BY,DA,DB,DD,DE,DG,DT,EA,EC,EL,EO,EP,FD,FE,FJ,FO,HA,JA,JK,JN,JP,KV,LA,LB,LC,MA,MF,MN,
02,	BP,BQ,CM,CN,CS,CV,EA,EC,EP,MF,
03,	BA,BB,BP,BQ,BV,CF,CK,CM,CN,CS,CV,CW,DE,EA,EC,EL,EP,FJ,HA,JA,JP,MA,MF,MN,
04,	BA,BB,BP,BQ,CF,CM,CN,CS,CV,DE,EA,EC,EL,EP,FJ,HA,JA,JN,JP,MA,MF,MN,
05,	BA,BB,BP,BQ,CM,CN,CS,CV,DE,EA,EC,EL,EP,FJ,HA,JA,JN,JP,MA,MF,MN,
06,	BM,BY,DA,DB,DD,DG,DT,MN,
07,	DA,DB,DD,DG,DT,FB,FC,FD,FE,FJ,FO,LA,LB,LC,
08,	DA,DB,DD,DG,DT,FD,FE,FO,LA,LB,
09,	BY,EA,EC,EL,EO,EP,HA,JA,JN,JP,MF,MN,
10,	BY,CE,CR,FB,FC,KV,
11,	BC,CF,CK,LC,
12,	BA,BB,BC,BV,BY,CK,CW,DA,DB,DD,DE,DG,DT,EA,EC,EL,EO,EP,FB,FD,FO,HA,JA,JK,JN,LA,LB,LC,MA,MF,MN,
13,	DA,DB,DD,DE,DG,DT,EA,EC,EL,EO,EP,HA,JA,JK,JN,JP,LA,LB,LC,MA,MF,MN,
14,	EA,EC,EL,EO,EP,JA,JK,JN,JP,MA,MF,MN,
15,	BB,BF,BM,BY,CF,CR,DA,DB,DD,DE,DG,DT,FB,FC,FD,FE,FJ,HA,IB,IO,LC,
16,	BA,BM,BY,CE,CR,DA,DB,DD,DG,DT,FB,FC,FD,FE,FJ,HA,IB,IO,KV,LA,
17,	BA,BQ,CE,DA,DB,DD,DG,DT,FJ,HA,LA,LB,
18,	BA,DA,DB,DD,DG,DT,FB,FC,FJ,LA,LB,
19,	BA,BC,BP,BQ,CM,CN,CS,CV,EA,EC,EL,EO,EP,HA,JA,JN,LB,MF,MN,
20,	BP,BQ,CM,CN,CS,CV,FC,MF,
21,	CE,CR,KV,
22,	BA,CE,CR,JP,KV,
23,	BB,EA,EC,EL,EP,FJ,HA,JA,JN,MF,MN,
24,	BP,BQ,CN,CV,FB,FC,

--- FIG. 2 ---

A portion of the input data to the COSTA program. Each MS occupies one line, starting with its 2-letter siglum followed by its 2-digit variants. This input list was reassembled by another portion of the program from a typed-in list of variants and MS that contain them (as shown in fig. 1 above). These two data forms can be simultaneously displayed using the MATRIX option (see fig. 3). Reading the matrix vertically is analogous to the original input while reading it horizontally is analogous to the re-assembled input.

```

10220 DATA "LBS: "
10230 DATA "BAI: 01,03,04,05,12,16,17,18,19,22,36,37,39,41,"
10240 DATA "DBI: 01,03,04,05,12,15,23,39,37,39,"
10250 DATA "BCI: 01,11,12,19,28,36,"
10260 DATA "BFI: 01,15,34,"
10270 DATA "BHI: 01,06,15,16,27,28,31,32,35,36,37,39,42,43,"
10280 DATA "BPI: 01,02,03,04,05,19,20,24,26,31,32,33,37,39,"
10290 DATA "BGI: 01,02,03,04,05,17,19,20,24,26,31,32,33,37,39,44,"
10300 DATA "BVI: 01,03,12,27,28,31,32,33,36,39,42,"
10310 DATA "BYI: 01,06,09,10,12,15,16,27,31,32,37,39,40,42,43,"
10320 DATA "CEI: 10,16,17,21,22,30,32,34,"
10330 DATA "CFI: 03,04,11,15,35,36,"
10340 DATA "CKI: 03,11,12,33,36,40,"
10350 DATA "CMI: 02,03,04,05,19,20,26,33,37,39,44,"
10360 DATA "CNI: 02,03,04,05,19,20,24,26,37,39,44,45,"
10370 DATA "CRI: 10,15,16,21,22,30,32,43,"
10380 DATA "CSI: 02,03,04,05,19,20,26,31,32,33,37,44,"
10390 DATA "CVI: 02,03,04,05,19,20,24,31,32,33,37,"
10400 DATA "CWI: 03,12,35,"
10410 DATA "DAI: 01,06,07,08,12,13,15,16,17,18,29,31,32,36,37,38,42,44,46,47,"
10420 DATA "DBI: 01,06,07,08,12,13,15,16,17,18,29,31,32,36,37,38,42,44,46,47,"
10430 DATA "DDI: 01,06,07,08,12,13,15,16,17,18,26,29,31,32,36,37,38,40,42,44,46,47,"
10440 DATA "DEI: 01,03,04,05,12,13,15,27,30,32,33,37,41,46,"
10450 DATA "DGI: 01,06,07,08,12,13,15,16,17,18,28,29,31,32,34,37,38,40,42,44,46,47,"
10460 DATA "DTI: 01,06,07,08,12,13,15,16,17,18,28,31,32,37,38,40,42,44,46,47,"
10470 DATA "EAI: 01,02,03,04,05,09,12,13,14,19,23,28,31,32,37,38,40,42,44,46,47,"
10480 DATA "ECI: 01,02,03,04,05,09,12,13,14,19,23,25,28,37,38,42,46,47,"
10490 DATA "ELI: 01,03,04,05,09,12,13,14,19,23,28,30,32,37,38,42,44,46,48,"
10500 DATA "EOI: 01,04,12,13,14,19,28,31,32,33,37,38,40,42,44,46,47,"
10510 DATA "EPI: 01,02,03,04,05,09,12,13,14,19,23,28,37,38,40,44,46,47,"
10520 DATA "FBI: 01,07,10,12,15,16,18,24,31,32,33,37,39,42,43,44,"
10530 DATA "FCI: 01,07,10,15,16,18,20,24,28,31,32,37,39,44,45,"
10540 DATA "FDI: 01,07,08,12,15,16,28,31,32,36,37,39,42,44,45,"
10550 DATA "FEI: 01,07,08,12,15,16,31,32,36,37,39,42,"
10560 DATA "FJI: 01,03,04,05,07,12,15,16,17,18,23,25,28,31,32,37,39,42,44,"
10570 DATA "FOI: 01,07,08,12,31,32,37,42,"
10580 DATA "GAI: 01,03,04,05,09,12,13,15,16,17,19,23,27,28,37,38,40,"
10590 DATA "IBI: 15,16,27,37,39,41,46,48,"
10600 DATA "IOI: 15,16,27,37,41,46,48,"
10610 DATA "JAI: 01,03,04,05,09,12,13,14,19,23,28,37,38,40,44,45,"
10620 DATA "JKI: 01,03,12,13,14,28,31,32,37,40,44,"
10630 DATA "JMI: 01,03,04,05,09,12,13,14,19,23,28,36,37,39,"
10640 DATA "JPI: 01,03,04,05,09,13,14,22,31,32,37,41,"
10650 DATA "KVI: 01,10,15,16,21,22,30,32,46,"
10660 DATA "LAI: 01,07,08,12,13,15,16,17,18,36,37,"
10670 DATA "LBI: 01,07,08,12,13,15,16,17,18,19,28,35,36,37,38,40,43,32,45,"
10680 DATA "LCI: 01,07,11,12,13,15,16,28,29,36,37,39,40,42,43,"

```


(ASTERISK ABOVE VARIANT NO. INDICATES INVERSION)
(ZERO (0) ABOVE VARIANT NO. INDICATES OMISSION)

[illegible]

THE CODE		N		N	
WAR FREQ 24 4 12 11	23	18 24 17 1 1 1	17	1 9 1	1 10 1 5 7 1
					1 24 14 1 7 1 5 7 9 6 1

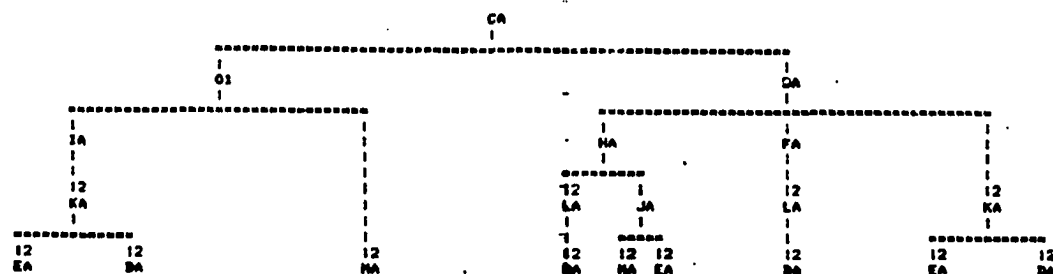
FIG. 3

A matrix of selected MSs and their variants. In addition to a fast graphic reference to variant distribution, the matrix points out the inverted variants (when the base text was exchanged), the omitted variants, variant occurrence and the common core (variants common to all MSs currently used), which is an important aid when checking the validity of MSs grouping. (A new portion of the program, which is not completed yet, actually tries to sort the MSs into groups, based on common-cores comparisons.)

--- FIG. 4 ---

The classic 'horizontal' stemma which was our initial choice, naturally. With our input being so large and the numerous missing links and contamination links added to it, this stemma proved inadequate. To solve the problem, we invented the 'vertical' stemma (see fig 5). A MS that has several parents appears in the stemma once below each of its parents and the number of such occurrences appears above the siglum. The vertical distance between MSs is proportional to the difference in their variant count.

STEMMA FOR COSTA, WITH 'CA' AS A SOURCE

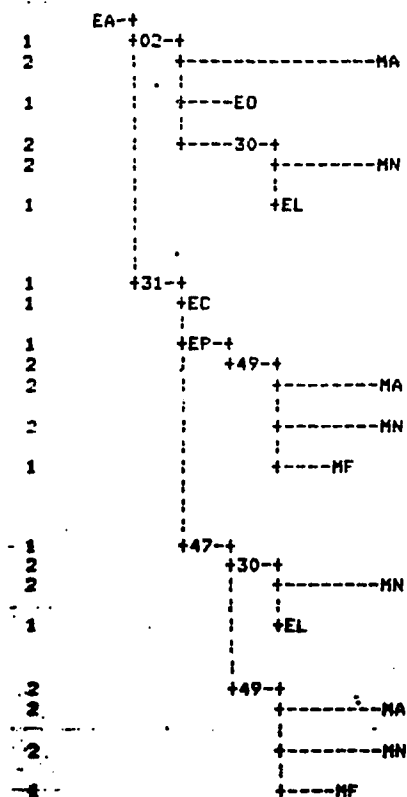


THE NUMBER OF PARENTS OF A MS IS INDICATED ABOVE MS NAME
THE NUMERICAL MSS ARE MISSING LINKS

--- FIG. 5 ---

The 'vertical' stemma. Although not as attractive as the 'horizontal' one, it is not limited by width since computer paper is fed vertically into the machine and the sheets are continuous. In our worst contamination cases (usually when choosing an unlikely root or using ambiguous variants) we 'managed' to print a continuous stemma over more than ten sheets. To be able to visually examine such a stemma, we added an option to print out the most significant links only. A MS that has several parents appears in the stemma once below each of its parents and the number of such occurrences is printed in the left margin. The distance of MSs from the left margin is proportional to their variant count.

STEMMA FOR COSTA, WITH 'EA' AS A SOURCE



THE NUMBER OF PARENTS OF A MS IS NEAR LEFT MARGIN

--- FIG. 6 ---

A sample run of the COSTA program with partial input data (for clarity). The uppercase print is the actual dialogue with the computer, where the lines beginning with a '?' are the keyboard inputs by the researcher. A blank following the '?' stands for CR (a carriage return, which usually commands the most frequently chosen option). Notes and remarks are given in lowercase print.

```

IF YOU WANT TO OMIT CERTAIN MSS.
TYPE TOTAL NUMBER OF MSS THAT YOU WANT TO OMIT
IF NONE, TYPE 0(ZERO)

IF, INSTEAD OF OMITTING MSS, YOU WANT TO USE ONLY A FEW, TYPE FEW
?FEW                                     (We have selected a FEW mss from the input data)

TYPE TOTAL NUMBER OF MSS THAT YOU WANT TO USE
?8                                       (Total of 8 mss)

DO YOU WANT TO IGNORE CB? Y/N
?Y
TYPE LIST OF MSS. MAKE CR AFTER EACH
IN CASE OF AN ERROR, MAKE ANOTHER CR.
?EC
?EA
?EL
?ED
?EM
?MF
?MN
IS THE LIST CORRECT? Y/N
?Y
DO YOU WANT TO CREATE A PERFECT ROOT? Y/N    (A PERFECT ROOT (one that has variants supposed
?N                                           to be the correct readings) is not created)
TOTAL 8 MANUSCRIPTS

AT THIS STEP, IF THERE ARE ML'S THEY ARE CODED SEQUENTIALLY

IF YOU WANT THE INPUT DATA PRINTED, MAKE CR
OTHERWISE TYPE NO
?
TABLE OF INPUT DATA
-----
1) MA: 01,03,04,05,12,13,14,28,37,38,40,44,46,49,
2) ED: 01,09,12,13,14,19,28,31,32,33,37,38,40,42,44,46,47,
3) EC: 01,02,03,04,05,09,12,13,14,19,23,25,28,37,38,42,46,47,
4) EP: 01,02,03,04,05,09,12,13,14,19,23,28,37,38,40,44,46,47,
5) MN: 01,03,04,05,06,09,12,13,14,19,23,30,32,37,38,44,46,49,
6) EL: 01,03,04,05,09,12,13,14,19,23,28,30,32,37,38,42,44,46,48,
7) MF: 01,02,03,04,05,09,12,13,14,19,20,23,28,37,39,32,44,46,49,
8) EA: 01,02,03,04,05,09,12,13,14,19,23,28,31,32,37,38,40,42,44,46,47,

TOTAL OF 8 MANUSCRIPTS

IF YOU WANT TO OMIT CERTAIN VARIANTS, TYPE OMIT
OTHERWISE, MAKE CR
?OMIT                                     (We have chosen to omit certain variants. No 32
VARIANT NO. 32 WILL BE REMOVED AUTOMATICALLY    is not mutually-exclusive and 30 + 31 cover its
HOW MANY VARIANTS ARE TO BE REMOVED?           occurrence)
(EXCLUDING VARIANT NO. 32)

FOR AUTOMATIC REMOVAL OF LESS IMPORTANT VARIANTS, TYPE A
?A
DO YOU WANT TO OMIT MORE VARS? Y/N
?N                                           (Automatic removal of less significant or ambi-
THE VARIANTS TO BE REMOVED ARE:                guous variants)
1 3 4 10 11 17 21 24 25 32 36 37 39 40 46
IF CORRECT, MAKE CR
OTHERWISE, TYPE NO
?

```

— Fig. 6 (cont') —

IF YOU WANT TO INTERCHANGE ROOTS, TYPE YES

OTHERWISE, TYPE NO

YES

WHICH MS IS TO BE THE ROOT?

EA

(We have chosen EA to be the root)

THE NEW ROOT IS EA. IF CORRECT, MAKE CR.

IF INCORRECT, TYPE NO

?

THE INVERTED VARIANTS ARE: 01,02,03,04,05,09,12,13,14,19,23,28,31,32,37,38,40,42,44,46,47,

DO YOU WANT TO ADD MISSING LINKS? TYPE YES/NO

YES

(The inverted variants are those that used to belong to the root and now they become the proper readings. Mss that did not have them before have them now and vice versa. The definition is also inverted (e.g. instead of 'extra-word' the variant is 'missing-word'))

(We have chosen to create missing links)

ADDING DONE

TOTAL 13 MANUSCRIPTS

AT THIS STEP, IF THERE ARE ML'S THEY ARE CODED SEQUENTIALLY

IF YOU WANT THE INPUT DATA PRINTED, MAKE CR

OTHERWISE TYPE NO

?

TABLE OF INPUT DATA

1) EA:
2) 02: 02,
3) 03: 31,
4) EC: 31,44,
5) EF: 31,42,
6) 06: 31,47,
7) ED: 02,05,23,33,
8) 08: 02,30,31,47,
9) 09: 31,42,47,49,
10) EL: 02,30,31,47,48,
11) HF: 20,31,38,42,47,49,
12) HA: 02,09,19,23,31,42,47,49,
13) MN: 02,06,28,30,31,42,47,49,

(the new input list, after inversion of variants and addition of missing links. Note how the list of variants shrank, compared to the original, due to removal of the common-core, showing close relationship within this group (i.e. the common-core was large))

TOTAL OF 13 MANUSCRIPTS

IF YOU WANT COMPLETE FAMILY RELATIONS, MAKE CR

?

ARRANGING AN INFORMATIVE LIST COMPLETED

TOTAL OF 16 PARENTS FOR 12 MSS.

NUMBER OF EXTRA PARENTS= 4

CONTAMINATION FACTOR= $\frac{4}{12} = 0.33333$

(We believe, though have not proven yet, that the smaller the CONTAMINATION-FACTOR is, the more probable root has been chosen. Also, that the smaller the ratio of MISSING-LINKS (ML) to real Mss is, the group is more complete)

AVERAGE NUMBER OF PARENTS/MS= 1.33333

LARGEST NUMBER OF PARENTS = 2 FOR MS: 08 09 MA MN

THE ROOT IS EA

RATIO OF 7 ML TO 12 MSS= 0.583333

— Fig. 6 (cont') —

(In the informative list, if an asterisk follows the variant definition it has been inverted, and the definition is the one following the '//'. (normally it is the preceding one))

MISSING LINKS ARE NAMED AFTER THEIR FIRST INTRODUCED VARIANT
(IF ML NAME >50, SUBTRACT 50 FROM ML NAME TO GET FIRST VAR NO.
AND REFER TO INFO LIST OR MATRIX FOR THE COMPLETE LIST.)

NORMALLY, THE FIRST TERM IS THE VARIANT.
IF THE SECOND TERM IS FOLLOWED BY ASTERISK, IT IS THE VARIANT.

EA 1) MANUSCRIPT: EA VATICAN URBINATES LAT. 206, 335R-343R.8ITALY0E013/1
NUMBER OF VARIANTS: 0
LIST OF VARIANTS:
VARIANTS FIRST INTRODUCED: NONE
NUMBER OF CHILDREN: 2
SIGLA OF CHILDREN: 31 02
NUMBER OF PARENTS: 0

2) MANUSCRIPT: 02 [MISSING LINK]
NUMBER OF VARIANTS: 1
LIST OF VARIANTS: 02- - - - -
VARIANTS FIRST INTRODUCED: 2 (1/4 HONORET TE DEUS (OM))/(PRESENT) #3
NUMBER OF CHILDREN: 3
SIGLA OF CHILDREN: 30 EO MA
NUMBER OF PARENTS: 1
SIGLA OF PARENTS: EA

3) MANUSCRIPT: 31 [MISSING LINK]
NUMBER OF VARIANTS: 1
LIST OF VARIANTS: 31,
VARIANTS FIRST INTRODUCED: 31 [33/15 VASA (AD)/(OM) #]
NUMBER OF CHILDREN: 3
SIGLA OF CHILDREN: 47 EP EC
NUMBER OF PARENTS: 1
SIGLA OF PARENTS: EA

EC 4) MANUSCRIPT: EC BALTIMORE WALTERS 66 (ENG?), 125V-132R.*ITALY@I#13/1
NUMBER OF VARIANTS: 2
LIST OF VARIANTS: 31,44,
VARIANTS FIRST INTRODUCED: 44 [36/4 ELONGATUM/PROLONGATUM *]
NUMBER OF CHILDREN: 0
NUMBER OF PARENTS: 1
SIGLA OF PARENTS: 31

MF 11) MANUSCRIPT: MF FLORENCE BIBL. LAUR. S. CRU. PL. 14, S. 1, 108R-112V. ITALY#013
NUMBER OF VARIANTS: 6
LIST OF VARIANTS: 20,31,38,42,47,49.
VARIANTS FIRST INTRODUCED: 20 [3/4 CIRURGIE (DM)/(PRESENT)]
38 [35/5 ET SCLAVI (DM)/(PRESENT) #]
NUMBER OF CHILDREN: 0
NUMBER OF PARENTS: 1
SIGLA OF PARENTS: 49

MA 12) MANUSCRIPT: MA CAMBRIDGE CONV. AND CAIUS COLL. 452/379, 298V-304V. ENGLAND 0013
NUMBER OF VARIANTS: 8
LIST OF VARIANTS: 02,09,19,23,31,42,47,49,
VARIANTS FIRST INTRODUCED: 9 [1/13 GLORIOSISSIMI (OM)/(PRESENT) *]
19 [3/3-4 IN CORPORIBUS VIVENTUM (OM)/(PRESENT) *]
NUMBER OF CHILDREN: 0
NUMBER OF PARENTS: 2
SIGLA OF PARENTS: 49 02

MM 13) MANUSCRIPT: MM CHICAGO NEWBERRY LIB. 23 (MELK 529⁵), 177R-180R.#AUSTRIABIB137
NUMBER OF VARIANTS: 8
LIST OF VARIANTS: 02,06,28,30,31,42,47,49,
VARIANTS FIRST INTRODUCED: 6 [1/7 TIBI (OH)/(PRESENT)]
28 [33/14 LONGIOR (AD) QUARE EST MAGIS/MAGNA CAUSA/(OH) 8]
NUMBER OF CHILDREN: 0
NUMBER OF PARENTS: 2
SIGLA OF PARENTS: 49 30

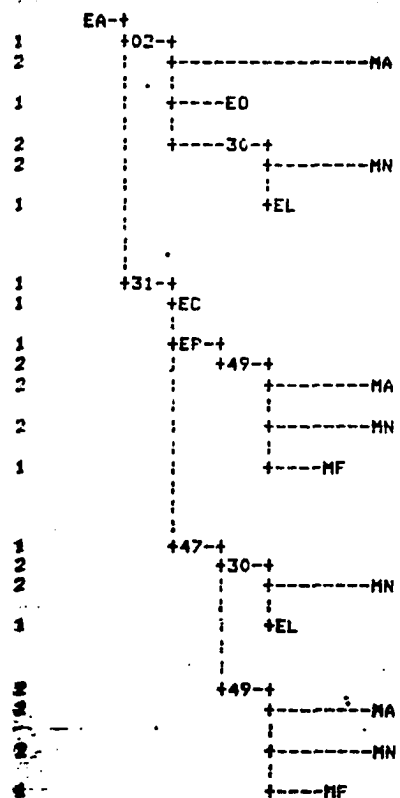
— Fig. 6 (cont') —

DO YOU WANT A MSS&VARIANTS MATRIX? Y/N
?N

(See Fig. 3)

IF YOU WANT THE STEMMA PRINTED, MAKE CR
OTHERWISE TYPE NO
?

STEMMA FOR COSTA, WITH 'EA' AS A SOURCE



(This type of 'VERTICAL' stemma can stretch over many sheets of computer paper without interruption, if necessary)

THE NUMBER OF PARENTS OF A MS IS NEAR LEFT MARGIN

(This list of major OPTIONS appears at the end of each execution and enables the researcher to repeat execution of certain portions (with the same, or different features chosen) without starting from scratch. Option 5, which have not been demonstrated above, can sort the Mss by various criteria. e.g. date, place, number of pages, etc.)

CHOOSE ONE OF THE FOLLOWING OPTIONS:

(TYPE OPTION NUMBER + CR)

- 1) END THE PROGRAM
- 2) CURRENTLY INVALID
- 3) PRINT INFORMATIVE LIST WHEN DATA ALREADY PROCESSED
- 4) PRINT STEMMA WHEN DATA ALREADY PROCESSED
- 5) SORT THE LIST OF MSS BY CRITERIA
- 6) PRINT MSS&VARIANTS MATRIX
- 7) CHANGE PREVIOUS SELECTION OF FAMILY RELATIONS
- 8) PRINT AN UPDATED INPUT LIST
- 9) RERUN THE PROGRAM

APPENDIX B

CLASSIFIED LIST OF THE LATIN MANUSCRIPTS

Abbreviations

- AL Aristoteles Latinus and Supplement.
- Del Leopold Delisle, Inventaire des manuscrits latins conserves a la Bibliotheque Nationale sous les numeros 8823 - 18613
(Paris: A. Durand et Pedone-Lauriel, 1863-1871), 5 parts.
- GB Guy Beaujouan, Manuscrits scientifiques medievaux de l'Universite de Salamanca
(Bordeaux, 1973).
- HMES Lynn Thorndike, History of Magic and Experimental Science, I:657.
- MA Manuel Alonso, "Traducciones del Arabe al Latin por Juan Hispano (Ibn Dawud)," Al-Andalus 17 (1952), 137-138.
- Sch Wilhelm Schum, Beschreibendes Verzeichniss der amponianischen Handschriftensammlung zu Erfurt (Berlin: Weidmann, 1887).
- TK Lynn Thorndike and Pearl Kibre, A Catalogue of Incipits of Mediaeval Scientific Writings in Latin, Rev. ed. (Cambridge, Mass.: The Mediaeval Academy of America, 1963), 771.

Order of groups listed: Edinburgh MS (unique); C; B; I; E, M & J; F; D: Unclassified; Incomplete copies; Lost copies.

Edinburgh, National Library of Scotland Advocates MS 18.6.11, ff. 104v-108r (XII) (AL 1913).

Group C (1, 2, 4; see Appendix A, page 279.)

Brussels, Library of the Dukes of Burgundy 2772-89,
ff. 77r-82v (XII) (HMES)

Erfurt, Amplonian O.28, ff. 3r-4v (XIII-XIV) (Sch
692).

Erfurt, Amplonian F.335, ff. 69v-73v (XIII) (Schum
232, pp. ref. in error).

Graz, University Library 1385, ff. 26v-32r (XIV) (TK)
prologue condensed.

Kremsmünster, Stiftsbibliothek 123, ff. 92r-96r
(XIII) (AL 52).

London, British Museum, Sloane 2454, ff. 82r-84v
(XIII) (HMES)

Munich, CLm. 18.917, pp. 116-120 (XII) (AL 1071)
Rubric at end of text.

Naples, National Library VIII.E.24, ff. 182v-185r
(XIII) (AL 1478).

Paris, Bibliotheque Nationale 6325, ff. 167v-171r
(XIII) (AL 572).

Paris, Bibliotheque Nationale latin 16,490,
ff. 228v-235r (XIV) (AL 690). Rubric at end.

Prague, University Library IV.D.6, ff. 114r-120v
(XIV) (AL 201).

Vatican, Latin 2072, ff. 277v-283r (XIII) (AL 1832).

Venice, Library of St. Mark latin Vi.33,
ff. 278v-283r (XIV) (AL 1595).

Wolfenbüttel. Herzog August Bibliothek Helmst. 1105,
ff. 359v-365r (XIII) (AL 944); part of text missing.

Worcester. Chapter Library Z.81, ff. 108r-110v
(XIII) (AL 394).

Group B (2, 4)

Cambridge, University Library I.II.10, ff. 229r-233v
(XIV) (AL 261).

Chantilly, Condee Museum 280 (1051), ff. 225v-231r
(XIII/XIV) (AL 462).

Clermont-Ferrand, Municipal Library 168, ff.
210r-215v (XIII) (AL 476).

Escorial, latin f.II.4, ff. 222r-232r (XIII)
(AL 1218)

Florence, Laurentian Library, Plut. 84.3,
ff. 257r-260v (XIII) (AL 1321).

Florence, Laurentian Library, S. Crucis Plut. 13 Sin.
4, ff. 167v-174v (XIII) (AL 1365).

Gotha, Forschungsbibliothek (Ducal Library) I. membr.
124, ff. 322r-326r (XIV) (AL 930).

Madrid, National Library 1427, ff. 196rb-199va
(XIII/XIV) (AL 1192. Sup. has corrections).

Milan, National Braidense Library, cod. A.D. IX 25,
ff. 9r-14v (XIV) (AL 1461).

Padua, Antonia Library SVI.370, ff. 151ra-154rb
(XIV) (AL 1503).

Pamplona, Chapter Library 8, ff. 245v-250v (XIV)
(AL 1214).

Paris, Bibliotheque Nationale latin 119, ff.
267v-271v (XIII) (AL 725).

Paris, Bibliotheque Nationale latin 12.953, ff.
276r-282v (XIII) (AL 625).

Paris, Mazarine Library 3460, ff. 210r-213r (XIV)
(AL 523).

Paris, Mazarine 3461, ff. 150v-154r (XIV) (AL 524).

Paris, Bibliotheque Nationale latin 6319, ff.
218v-224v (XIII) (AL 566).

Paris, Bibliotheque Nationale latin 14.717, ff.
196v-200v (XIII-XIV) (AL 642).

Paris, Bibliotheque Nationale latin 16.083, ff.
80v-83v (XIV) (AL 659).

Paris, Bibliotheque Nationale latin 16.088, ff. 163r-
167v (XIII) (AL 663).

Rheims, Municipal Library 864, ff. 130r-136r (XIII)
(AL 735).

Rheims, Municipal Library 868, ff. 306v-311v (XIV)
(AL 738).

Rome, Convento S. Maria Sopra Minerva, #?, ff. 268r-
277r (XIII) (AL 1553).

Rouen, Municipal Library I.15 (formerly 920),
ff. 280v-285r (XIV) (AL 743).

Schlägl, Stiftsbibliothek 10. Cpl., ff. 227v-232v
(XIII/XIV) (AL AL 70).

Uppsala, Royal University Library C.647, ff. 26r-31v
(XIII/XIV) (AL 1710) Prologue abridged towards end.

Vatican, latin 2071, ff. 300r-307r (XIII) (AL 1831).

Group I (2, 6)

(A) MSS with rubric (1)

*Avranches, Municipal Library 232, ff. 77v-81v
(XII/XIII) (AL 408).

Paris, Bibliotheque Nationale, latin 16.613,
ff. 60v-67v (XIII) (Del. Sorbonne, 70).

Paris, Bibliotheque Nationale, latin 6296,
ff. 308v-315v (XIII) (AL 552).

Paris, Bibliotheque Nationale, latin 6567A, ff. 1r-3r
(XIII) (AL 590).

(B) MSS without rubric

Brussels, Royal Library II.2558 (2898), ff. 112v-116v
(XIII.1?) (AL 175).

Paris, Bibliotheque Nationale, latin 14.393,
ff. 162v-169r (XIII) (Delisle, St Victor, 12).

Schlögl, Foundation Library 173 Cpl (457) 15,
ff. 233rb-236v (XV) (AL 73).

Toledo, Cathedral Library 94-18, ff. 225r-231v (XIV?)
(AL 1239).

Basel edition of 1536 (probably lacks attributions).

Group E (3, 5)

(A) Classic Short Prologue (ends "et hec sufficient")

Assisi, Communal Library 283, ff. 207v-213v (XIV)
(AL 1259).

Baltimore, H. Walters Library #66, ff. 125v-132r
(XIII) (AL 3).

Bologna, Communal Library of the Archigymnasium,
A.127, ff. 248v-254v (XIII) (AL 1276).

Leipzig, University Library 1397, ff. 39v-45r (XIV)
(AL 985).

London, British Museum, Arunt. 325, ff. 83r-89r
(XIII) (AL 292).

Madrid, National Library 1428, ff. 205v-212r (XIII)
(AL 1193).

Munich, CLM 9676, pp. 56-65 (XIV) (AL 1043); used in
Barach edition.

Paris, Bibliotheque Nationale, latin 6323, ff.
131v-137r (XIII/XIV) (AL 570).

Vatican, latin 725, ff. 32v-36r (XIII/XIV) (AL 1825).

(B) With variations

Leipzig, University Library, 1392, ff. 107r-113r
(XIII) (AL 983).

London, British Museum, Royal Library 12.G.III, ff.
259v-267r (XIII) (AL 318).

Paris, Bibliotheque Nationale, latin 16.082, ff.
305v-311r (XIII) (AL 658).

Toledo, Cathedral Library 47-15, ff. 99vb-100vc
(XIII) (AL 1234).

Uppsala, Royal University Library C.625, ff.
152r-159r (XIII) (AL 1708).

Vatican, Urbinate latin 206, ff. 335r-343r (XIV?)
(AL 1810).

Wolfenbüttel, Herzog August Library, Cod. Guelf.
577 Helmst. (formerly Gotha, Helmst. 577), ff.
112v-115v (XIII) (AL 942).

Group M (3, 7)

Basle, University Library F.IV.23, ff. 42v-46v (XIII)
(AL 1148). Has rubric.

Berlin, Prussian State Library latin F.662,
ff. 45v-49r (XIV) (AL 812).

Cambridge, Gonville and Caius College 452/379,
ff. 298v-304v (XIII) (AL 228).

Chicago, Newberry Library, Melk Klosterbibl. 529,
ff. 177r-180r (XIII/XIV) (AL 60).

Florence, Laurentian Library, S. Crucis Plut. XIV
Sin. 1, ff. 108r-12v (XIII) (AL 1374).

Rheims. Municipal Library 865, ff. 10v-14r (XIII)
(AL 736).

Group J (3, 4)

Cambridge, Gonville and Caius College 506/384,
ff. 261v-269r (XIII) (AL 237).

Florence. Laurentian Library, S. Crucis, Plut. XV
Sin. 1, ff. 202v-208r (XIII) (AL 1376).

London, British Museum, Royal Library 12.G.II,
ff. 358v-368v (XIII) (AL 317).

London, British Museum, Harleian 3487,
ff. 202r-208r (XIII) (AL 302).

Montpellier, Library of the Faculty of Medicine 177,
ff. 110r-114v (XIV) (AL 496).

Nürnberg, Cent. V.59, ff. 214v-220v (XIII)
(AL 109).

Paris, Bibliotheque Nationale, latin 16.142,
ff. 154v-159r (XIII) (AL 674).

Paris, Bibliotheque Nationale, latin 15.452,
ff. 280v-288r (XIII) (AL 653).

Paris, Mazarine 3457, ff. 152r-158r (XIV) (AL 520).

Tours, Municipal Library 681, ff. 326r-332v (XIV)
(AL 770).

Vatican, latin 2984, ff. 161v-167r (XIII) (AL 1877);
text finished in margin.

Vienna, National Library 87, ff. 297v-301v (XIV)
(AL 87); used in Barach edition).

Group F (2, 4, 8)

Bruges, Municipal Library 478, ff. 284v-289v (XIV)
(AL 156).

Budapest, National Museum, latin 64, ff. 13v-19v
(XIV) (AL 1252).

Durham, Chapter Library C.III.17, ff. 381r-387r
(XIII) (AL 275).

Durham, Chapter Library C.IV.18, ff. 211r-216r
(XIII) (AL 278).

Madrid, National Library 9726, ff. 121v-128r (XIII)
(1204).

Oxford, Balliol College 232A, ff. 169r-174r (XIV)
(AL 349).

Oxford, Corpus Christi College 111, ff. 314r-320r
(XIII) (AL 358).

Paris, Bibliotheque Nationale, latin 8247,
ff. 99r-104r (XV?) (HMES); very crude, copybook
format, paper.

Paris, Bibliotheque Nationale, latin 6322,
ff. 178v-183r (XIII) (AL 569).

Vatican, Borghesiani 37, ff. 207r-210r (XIV)
(AL 1721).

Vatican, Borghesiani 308, ff. 284r-288v (XIII/XIV)
(AL 1742).

Vercelli, Archivio Capitolare Eusebiano CXIII (160,
ff. 211v-215v (XIV?) (AL 1652).

Vienna, National Library 113, ff. 79r-85r (XIII)
(AL 89); used in Barach edition.

Yale, Admont 126, ff. 200r-206r (XIII) (AL 28).

Group D (2, 5, 8, 9)

Assisi, Communal Library 663, ff. 103r-105v (XIII)
(AL 1267).

Bologna, University Library latin 1180 (2344),
ff. 222v-228v (XIII).

Bordeaux. Municipal Library 421, ff. 291v-297v
(XIII) (AL 453).

Cambridge, Gonville and Caius College 109/78,
ff. 1r-6v (XIII) (AL 223).

Florence, Laurentian Library, Ashburnham 1674,
ff. 247r-251v (XIII) (AL 1333).

Florence, Laurentian Library, S. Crucis, Plut. XIII,
Sin. 5, ff. 151r-155v (XIII) (AL 1366).

Geneva, City Library 76, ff. 314r-319r (XIII)
(AL Supp. 1159).

Milan, Ambrosiana Library, F.146.Sup., ff. 75r-82r
(XIV) (AL 1445).

Monte Cassino, Monastery Library, cod. 8 VV (ext. 8
and 292), pp. 368-384 (XIV) (AL 1308).

Paris, Bibliotheque Nationale latin 6569,
ff. 111r-116r (XIII) (AL 591).

Paris, Mazarine 3456, ff. 216r-222r (XIII) (AL 519).
f. ref. varies.

Saint Omer, Municipal Library 625, ff. 79v-83v
(XIII) (AL 432).

Vatican latin 2074, ff. 126r-133v (XIII) (AL 1834).

Vatican, Chisiani H.VII.238, ff. 137r-141v (XIII)
(AL 1755).

Vatican, Borghesiani 127, ff. 210v-214r (XIII) (AL
1730).

Not Classified

*Not seen

*Barcelona, University Library 597 (formerly 7.2.6), ff. 193r-197v (XIV) (AL Sup. 1175).

Bruges. Great Seminary 102/125, ff. 368r-373r (XIII) (AL 163) Resembles "D" group.

*Cava dei Tirreni (Salerno) 31, ff. 235r-241v (XIII) (AL 1313)

*Cava dei Tirreni (Salerno) 31, ff. 244r-245r (XIII) (AL 1313).

Erfurt. Amplonian F. 32, ff. 32r-37v (XIII) (AL 868). Resembles "D" group.

Evreux, Municipal Library 79, ff. 294v-303r (XIII.2) (AL 480; error in cit.).

Florence, National Central Library, Conventi Soppressi I.IV.22, ff. 335v-344v (XIV) (AL 1405).

*Milan, Ambrosiana Library C.148.Inf., ff. 220r?-223v (XIII) (AL 1436).

Naples, National Library VIII.F.12, ff. 377r-385v (XIII/XIV?) (AL 1484).

Oxford, Balliol College 232B, ff. 159v-164r (XIV) (AL 350).

*Oxford, Corpus Christi College 114, ff. 229r-234v (XIII) (AL 359).

*Prague, Metropolitan Chapter Library L.XXXV, ff. 160r-163v (XIII) (AL 185).

*Salamanca, University Library 2241 (formerly Madrid, Palace Library 1122), ff. 177v-180r (XIV?) (AL Sup. 1961); received incomplete copy.

*Salamanca, University Library 2256 (formerly Madrid, Palace Library 255), ff. 165v-170 (XIV) (AL Sup. 1210; GB 125).

*Salamanca, University Library 2706 (formerly Madrid, Palace Library 152), ff. 241v-246r (XIII) (AL Sup. 1208; GB 194, 197).

*Seville, Chapter Library 82-6, ff. 126v-132r (XIV)
(AL 1187).

*Seville, Colombina Library 7.6.2, ff. 209r-v (XIII)
(AL 1185).

Vatican, latin 4426, ff. 37v-41r (XIV) (M. Alonso,
Al-Andalus, 1952, 138).

Like "D", but have ending "futuro"

Berlin, Prussian State Library, latin Qu. 341,
ff. 94r-100v (XIII) (AL 822).

Milan, Ambrosiana Library, S.70.Sup., ff. 314r-319v
(XIII) (AL 1456).

Naples, National Library, VIII.E.21, ff. 109r-112v
(XIII/XIV) (AL 1477).

Paris, Bibliotheque Nationale, latin 6323A, ff.
232v-238r (XIII) (AL 571).

Incomplete Copies

Assisi. Communal Library 298, ff. 99v-103v.
Has John's translation to fol. 105v. The remainder
has Hermann's version.

Cesena, Malatesta Library, Plut. I. Sin. 4, ff.
148v-149v (XIV?) (AL 1290 says 13c); end of text
lacking.

London, Royal Library 12.G.V, ff. 221v-223v (XIII)
(AL 319); first part only; more than half missing.

Paris, Bibliotheque Nationale, latin 14.718, f. 186v
(XIII) (AL 643); prologue only.

Paris, University Library 567, ff. 226r-228r (XV)
(AL 727); beginning only (ends after chapter I).

Rome, Biblioteca Casanatense 87, 192r-193r (XIII) (AL
1546); text is in poor condition; first part lacking.

Vatican, Barberini, latin 165, f. 392r (XIII)
(AL 1717); has end only.

Vatican, latin 6747, ff. 219v-220v (XIV) (AL 1892);
has beginning only.

Vatican, latin 10.803, f. 206rv (XIV) (AL Sup.
2191); beginning only.

Vatican, latin 7096, f. 96rv (XIII/XIV) (AL 1895);
first part only.

Nonexistent Copies

Admont, Monastery Library 254, ff. 43r-47v (XIII) (AL 29; description comments that it is missing).

Douai, Municipal Library 698, ff. 48r-57v (XIII)
(Listed in AL, #479; according to the Librarian, the text does not appear in #479).

Todi, Communal Library 55, (AL 158 gives items, including De differentia, from an index for a non-existing section B).

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