



Medical Ethics of Medieval Islam with Special Reference to Al-Ruhāwī's "Practical Ethics of the Physician"

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MEDICAL ETHICS OF MEDIEVAL ISLAM
WITH SPECIAL REFERENCE TO AL-RUHĀWĪ'S
"PRACTICAL ETHICS OF THE PHYSICIAN"

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IN MEMORY OF
MY FRIEND AND COLLEAGUE
LUDWIG EDELSTEIN

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PREFACE

The deontological treatise, on which this book is based, is unusual in many ways. First, it is the only medieval Arabic work known to have considered the aspects of medical ethics on a broad scale; in fact, it is the only one known today, aside from some small pieces which touch the subject only tangentially. Further, the Arabic work is of value since it was written in the ninth century, a period in which there was a spreading ferment in the acquisition of the older knowledge from widely scattered sources as well as an era of rapid strides in translation of scientific and philosophical material into Arabic. In addition, the contents of this work are remarkable in their delineation of the manner in which Muslim (and to a lesser extent, Christian) religious ideas were made to harmonize with the older science and ethics of the Greeks in particular.

No commentary can adequately define and describe this exciting transitional phase of cultural transmission without the reading of the text itself. Since the writing is lucid and proceeds very logically, it has not been necessary to burden the translation with unnecessary footnotes. These have been kept to a minimum.

As a work on medical ethics, this is a highly interdisciplinary treatise. Areas of research most involved are the history of medicine, Arabic studies, paths of transmission of Greek culture to the Arabs, and Greek and Islamic philosophy, particularly ethics. There is much of interest still to be worked upon by Arabists, classicists, and philosophers. The major purpose, however, of the present author in publishing this work is to furnish a base for future scholars in the areas of Arabic medical deontology, a field sadly neglected, and

to a lesser extent, the theory and practice of preventive medicine as applied to the individual.

In regard to the latter, the second chapter gives a detailed description of some aspects of Greek medicine as it was taken over by early medicine written in the Arabic. To go further, it is an excellent starting point with which to compare later Islamic medicine in its changes and evolution in the theory and practice of the preservation of health. This was a subject in which the Arabic physician had a great interest.

The present author is indebted to the U. S. Public Health Service (GM 12594-01) for support in this project, to Mary McG. Levey for editing the book, and also to the Turkish Government for its kind permission to make full use of their Arabic manuscript depositories. The Suleymaniye Library of Istanbul, and its librarian, M. Dener, have always responded quickly to any call for assistance. The author appreciates the permission granted by the authorities to work in many manuscript libraries in the different countries of North Africa, Asia, and Europe.

A few rules have been followed in the writing of this book. In the translation, an attempt has been made to retain the ideas and phrasing within the understanding of ninth-century Muslim medicine. Wherever possible, the tenses have been made consistent; this has not always been possible. In further regard to the translation, because the manuscript is unique and diacritical marks and vowels are more lacking than not, it has necessitated paraphrasing a few ambiguous sections. In general, however, redundancy has been omitted and the translation is literal wherever possible.

MARTIN LEVEY

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MARTIN LEVEY

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MEDICAL ETHICS OF MEDIEVAL ISLAM AND ISHĀQ IBN 'ALĪ AL-RUHĀWĪ'S *ADAB AL-ṬABĪB*, "PRACTICAL MEDICAL DEONTOLOGY"

A. NINTH-CENTURY MUSLIM ETHICS

Science in Islamic civilization did not begin to develop until the last years of the eighth century. With the coming of the Muslims to Persia and Egypt, a slow but sure revivification of ancient Greek science began coming to the surface. What had been dormant for many hundreds of years was aroused through the work of translators who brought into Arabic the fine works of many languages including Greek, Syriac, Persian, and Sanskrit.

The earliest scientific book in Arabic was probably a translation by the Persian Jewish physician, Māsar-jawāih (eighth century), of Ahron's *Pandects*. Not a little of the credit for the revival of learning, probably the greatest in man's history, belongs to such Nestorian institutions as the learned academies, of which Jundī-shāpūr was the most famous, and other scientific centers found by the Arabs in their conquests in the Near East. Added to this base of learning was the fortunate fact that most of the Abbasid rulers who came upon the scene about A.D. 750 were intensely interested

in the promotion and support of science and its institutions.

During the ninth century, the flood of translations of the great Greek mathematicians, physicians, astronomers, geographers, and philosophers reached an unparalleled height. These works, due mainly to the activity of Syriac-speaking Christians, were of excellent calibre for the most part and so became the catalyst of the unprecedented acceleration of the development of Arabic science in the ninth to eleventh centuries in the Near East, the Maghrib, and in Spain.¹

It was also in this same ninth century, as a result of these translations, that the Muslims came face to face with new, sophisticated ideas of ethics and morality. While the introduction of new concepts was going on, the Muslims tried to bring about an understanding of

¹ Max Meyerhof, in chapter, "Science and Medicine," in *The Legacy of Islam* (Oxford, 1931), pp. 315 ff. J. Schacht and M. Meyerhof, *The Medico-Philosophical Controversy Between Ibn Būtlān of Baghdad and Ibn Ridwān of Cairo* (Cairo, 1937), pp. 7 ff.

the traditions of the different elements of Islamic ethics.²

The synthesis of not always compatible ethical values was a very difficult one in Islam since it involved a gradual choice and the blending of widely differing religious and philosophical ideas stemming from cultures of widely varying and unusually complex origins. Primarily, these came into the Koran and other religious and ethical works which followed not too long afterward, from pre-Islamic Arabian influences, and from Persian, Greek, Indian, Christian, Jewish, and other sources. This is in contrast to classical Greek ethics where it had been the function of philosophy to refine and express moral values. Further, as in the Greek and other eras, past and present, many standards of ethical values coexisted in medieval Islamic society.

B. THE NATURE OF THE ETHICS WHICH INFLUENCED THE ARABS

It may be of value to note briefly the character of the contents of morality and ethics which came from some of the sources mentioned. Ethics, or "practical philosophy" as the Arabs called it, was a product, in the pre-Islamic period, of a tribal society with no more than a marginal economy. For this reason, in bad times, the Arabs practiced female infanticide. Polygamy was accepted and common as were drinking, gambling, generosity, courage, self control, vengeance, hospitality, and personal and tribal honor.

Muhammad and the Koran, on the other hand, preached general principles which did not conform with the requirements of a nomadic society but may have been intended to lift his people from their static culture-hardened ethical system to a new cosmopolitan form. This involved the introduction of new precepts as belief in and duty to Allah, forgiveness, moderation, restricted retaliation, rewards of Allah, honesty, humility, charity, kindness, and brotherhood among believers.³

Since the contents of the Koran did not take care of all possible religious and ethical circumstances, devout Muslims patterned their lives after the actions of the prophet Muhammad. This took the form of the *Ḥadīth*, from the verb *ḥadatha* "he related." This hadīth literature, in orthodox Islam, includes all the forms of model behavior, the actions and sayings of Muhammad and his Companions. This oral elaboration and expansion of the corpus of Islamic ethics, for its first one hundred and fifty years, was worked on continuously, then finally written down as a roughly categorized compilation. It should be emphasized that

² R. Walzer and H. A. R. Gibb, in *Encyclopedia of Islam*, new ed., 1 (1960): pp. 325 ff.

³ Cf. D. M. Donaldson, *Studies in Muslim Ethics* (London, 1953), chap. 2; al-Shahrastānī's *Nihāyat al-iqdām fi 'ilm al-kalām*, ed. by A. Guillaume (Oxford, 1934), pp. 158 ff. in regard to early religious ethics and law; Abū al-Qāsim Hibatallāh ibn Salāma, *Al-nāsikh wa'l-mansūkh* (Cairo, 1310 H.), introduction.

all that is considered in the hadīth is inseparable from the dominant religious ideas and the primary reference, the Koran.

Along with the Koran and hadīth, some jurists added "judicial opinion"; this was accompanied by the introduction of analogy, the latter resembling the former system except that it was more objective and more free of personal philosophy. A more influential principle, the Consensus of the Congregation, i.e. of the most learned people, became of the greatest importance after the Koran and the Sunna. The latter is the body of Islamic custom and practice based on Muhammad's words and deeds. Analogy thus took fourth place.

Moral acts in Islam may be divided into five categories: (1) acts which are obligatory, (2) acts recommended by law, (3) acts which are permitted, (4) acts disapproved by the law, (5) acts forbidden by law. Thus the entire spectrum is covered in such manner as to make Islamic law an important arbiter.⁴

In the light of the religious basis, it is apparent that the core of Muslim ethics, in contrast to that later known mainly from Greek philosophy, is to be found in the Koran and hadīth.⁵ This ethics of Muhammad and the traditions, in the ninth century, ran head-on into the struggle between the Mu'tazila and the reaction to it in the form of the Kalām. The former reserved some moral decision and responsibility for the individual while the latter remained orthodox, opposing any free will. During this contention, Greek ethics entered the intellectual scene to make itself more and more influential.⁶ Much of this debate was still going on toward the end of this century when al-Ruhāwī's work on medical deontology, the present work under discussion, was written.

The ethics of the hadīth and the Koran are not particularly practical but are essentially anti-utilitarian.⁷ The Sunna includes the traditions relating mainly to religious practices, duties, and beliefs. The traditions of the Sira refer to the biography of Muhammad, and finally, the Adab compilations are concerned with the general culture of people. Since the word *adab* is also

⁴ Cf. T. J. de Boer, *The History of Philosophy in Islam* (London, 1961), pp. 39-40.

⁵ The theocentric system of rules and laws covers every aspect of a Muslim's life today. There is almost no division of such disciplines as ethics, hygiene, cult, manners, social graces, and others. All are considered within one category, according to Mia Brandel-Syrier in *The Religious Duties of Islam* . . . (Leiden, 1960), p. xxxii; A. C. Pearson believes that morality today rests ultimately upon the authority of religious sanctions (*Encyclopedia of Religion and Ethics*, New York, 1951). According to de Boer, Muhammad demanded personal beliefs and personal morality as well as brotherhood of the Arabs, concepts not too different on the surface from those of the Christians (*Encyclopedia of Religion and Ethics* 5: pp. 501 ff.).

⁶ Walzer and Gibb, *op. cit.*, pp. 325 ff.; Donaldson, *op. cit.*, chap. 3; Paul Kraus, *Fi al-akhlāk of Galen*, *Bull. of the Faculty of Arts of the Univ. of Egypt* V/1 (1939).

⁷ G.-H. Bousquet, *La Morale de L'Islam et Son Ethique Sexuelle* (Paris, 1953), p. 24.

found in the title of al-Ruhāwī's treatise, its meaning and philology will be discussed later. All three of these groups of traditions have always been important in discussion of Muslim ethics but it is the *adab* which furnishes the strongest ethical, albeit religious, connotations.

Before Arabic writers became acquainted with Greek philosophical ethics, they learned of Persian and Indian moral literature. These were translated from the Pahlawi and Sanskrit versions under the reigns of al-Manṣūr (754-775) and Hārūn al-Rashīd (786-809), 'Abbasid caliphs. Ibn al-Muqaffa' (d. 757/8), an Iranian convert to Islam, translated *Hudhāi namah* (in Arabic, *Sīyar mulūk al-ajam*) "History of the Kings of Persia," the celebrated Indian *Kaḥīla wa-dimna*.⁸ To Ibn Muqaffa' is also credited *Adab al-kabīr* and *Adab al-ṣaghīr*, works on ethics.⁹ Later, the integration of pre-Islamic, Koranic, Persian, and hadith ethical thought was brought about by Ibn Qutaiba (d. 889/90) in his *Uyūn al-akhbār*. Essentially, the Persian and Indian ethics were of a wisdom literature type but they were, nevertheless, practical contributions in a minor degree to the development of Islamic ethics.

In pre-Islamic times, the warring tribes of Arabia were not completely independent of Greek, Persian, and Roman influences. In northeast Arabia, the Lakhmids of Hira were supported by Persia; on the north-west Syrian border, the Ghassān tribe was under the influence of the Byzantines. There were also powerful tribes of Jews who certainly exerted influence upon the Arabs. The exact extent of these forces is still unknown.

Later on, in the ninth century, it must have been very difficult for the Muslims to receive Greek ethics at the same time that they were developing their ethical literature to its utmost in study and organization. It was in this milieu that such early writers of the *adab* literature as al-Jahīz (d. 868), Ibn Qutaiba, and also the historians abū Ḥanīfa al-Dīnawarī (d. 895), Ibn Waḍīh al-Ya'qūbī (d. 897), and al-Ṭabarī (d. 895), all contemporaries, lived and worked.¹⁰

From the point of view of medical deontology, the importance of the impingement of Greek ethics on this crucial period lies in the fact that the great Muslim physicians, all of whom were deeply interested in philosophy, had to reconsider seriously the basis of their ethics, both personal and professional. It was essential that they bring their ideas into some kind of working agreement with Greek ethics which had a very different metaphysical foundation. At the same time, in various ways, a tremendous pressure was exerted on the older ideas of the Muslims by the rational medicine, science,

and philosophy taught at Jundishapur (especially in the time of Khusrau Anūshirwān, 531-579), in other Nestorian centers,¹¹ and finally among the Arabs. It is of interest to recall the fact that by 900, in the case of the works of Galen for example, 129 of his medical and philosophical works were known in Arabic and used by the Arabs.¹²

A factor which exerted a two-pronged influence upon the early Muslims is the Aristotelian notion that virtue consists in the just mean. Something similar is to be found in the Koran, and since the Islamic tendency is toward conservatism, this determined conciliation of opposites worked for a time in ethics and became popular. However, one of its accompanying results was that it generated a menace to the orderly growth of science.¹³ Other Greek elements influenced the deontological picture of the ninth century. One of the more important was the Stoic philosophy in Galen. Platonic, Peripatetic, and other ethical thought found their paths to the Muslims in different ways.

C. THE AUTHOR, ISHĀQ IBN 'ALĪ AL-RUHĀWĪ, AND THE MANUSCRIPT

This ninth-century scene of conflict in ethical ideas was the background before which Ishāq ibn 'Alī al-Ruhāwī brought out his deontological treatise, *Adab al-ṭabīb*, to be described herein.¹⁴ Unfortunately, not much is known of al-Ruhāwī himself. He is mentioned in an article on Ibrāhīm ibn Ayyūb in an indirect fashion in Ibn Abī Uṣaibi'a (b. 1203/4).¹⁵ From the

¹¹ de Boer, *op. cit.*, pp. 11 ff.

¹² Humāin ibn Ishāq, *Ueber die syrischen und arabischen Galen-Uebersetzungen*, reprint from *Abhandlungen zur Kunde des Morgenlandes* 17 (Leipzig, 1925), by G. Bergsträsser; further information on Hunain's Galen bibliography by the same author in the Leipzig, 1932 issue of the same journal; K. Deichgräber, *Die Griechische Empirikerschule* (Berlin, 1930), pp. 38-39; R. Walzer, "Arabische Uebersetzungen aus dem Griechischen," *Miscellanea Mediaevalia, Antike und Orient im Mittelalter* 1, ed. by P. Wilpert and W. P. Eckert (Berlin, 1962): pp. 179-195; Fr. Rosenthal, "On the Knowledge of Plato's Philosophy in the Islamic World," *Islamic Culture* 14, (1940): pp. 387-422.

¹³ de Boer, *op. cit.*, p. 40.

¹⁴ After al-Ruhāwī, to complete the picture, it is essential to mention that it was not until the following century that two of the greatest physician-philosophers of Islam, al-Fārābī (d. 950) and Ibn Sīnā (b. 980) flourished and contended with Greek ideas with some success. Ibn al-Haitham (d. ca. 1039), who flourished in Cairo, was one of the last great scientists of the Arabic East. Al-Ghazzālī (1059-1111), born in Ṭos in Khorasan and worked mainly in Nisabur and Baghdad, should be mentioned in his relation to Arabic philosophy since it was he who established an overall synthesis of many then prevalent notions in his *Iḥyā' 'ulūm al-dīn* (MS in Leiden 2146 and BM 854/8) and in *Kīmīyā' al-sa'āda*. The latter has been translated by H. A. Homes, *The Alchemy of Happiness* (Albany, 1873).

¹⁵ M. Steinschneider, *Die arabischen Uebersetzungen aus dem Griechischen*, reprint (Graz, 1960), p. 31; B. R. Sanguinetti, *Journal Asiatique* 6 (1855): p. 156; G. Fluegel, *Hājī Khalifa's Lexicon bibliographicum . . .* (Leipzig, 1835-1858, 7 vols.) 1: p. 234; 3: p. 353; M. Steinschneider, *Polemische u. apologetische*

⁸ Published by L. Cheikho as *La version arabe de Kalilah et Dimnah* (Beyrouth, n.d.).

⁹ Cf. O. Rescher, *Mitteilungen d. Seminars f. Orientalische Sprachen* (1917) and *ibid.* (1915).

¹⁰ Donaldson, *op. cit.*, p. 97.

passage of the text, it appears that al-Ruhāwī was acquainted with 'Isā ibn Mūsā, a physician of Marw of the ninth century. Al-Ruhāwī was probably from Ruhā, a city of northwest Mesopotamia. Earlier, it had been called Edessa, a well-known Nestorian center of learning at one time. Today, it is called Urfa. It is also known that al-Ruhāwī was a Christian and compiled two works based on Galen. He is not listed in the *Fihrist* (987) by ibn al-Nadīm¹⁶ nor by ibn al-Qiftī (1172/3–1248)¹⁷ in his *Ta'rīkh al-hukamā'*.

Al-Ruhāwī's *Adab al-ṭabīb* is found as a unique copy in the Sulemaniye Kutubkhane, number 1658. It comprises 112 folios, seventeen lines per page, and is written in a good Nashki hand. The dedication is to the Sultan Bayezid. Folio 1a gives the title as *Kitāb adab al-ṭabīb*. The next to the last page gives the copyist as Abdullāh ibn Makīn. Fragments on the final page are in different hands and are not part of the text.

This treatise is not listed in Brockelmann. In fact, after it was discovered, it was learned that it had been known in brief to Steinschneider and a few others in the nineteenth century but had been completely forgotten after their time.

In regard to the title of the work, the translation of the word *adab* is not a simple one and requires some explanation. In heathen and early Islamic times (and sometimes later), *adab* designated the noble and humane tendency of a person especially as it appeared in the conduct of life and social intercourse.¹⁸ F. Gabrieli¹⁹ defined the meaning of *adab* in its pre-Islamic sense as a hereditary norm of conduct or custom derived from ancestors and others taken as models. This meaning changed in time, paralleling the evolution of Muslim culture. Especially was this developed in the century of al-Ruhāwī when there came to the fore those areas of study centering more on man himself, his psychology and environment, his material and spiritual culture. In this way, *adab* came to indicate a profane rather than a religious idea. It grew to have a humanistic connotation, turning from *urbanitas* to a form of *humanitas* and, at the same time, enlarging its ethical and practical content.

Another meaning of *adab*, a much more restricted one, began to form some time after 750, in the Abbasid period, when it described the knowledge pertaining to certain offices. Later, after the golden age of the

caliphate, a new narrow meaning of *adab* came to be "*belles-lettres*." Thus, it no longer retained the ethical and social sense which was so strong in early Arabic culture. This may have to do with the increasing decadence of Arabic letters, as Gabrieli implies. In the 1930's, one of the large Cairo colleges included grammar, theory of style, and logic under the heading of "sciences of *adab*."²⁰

In the light of this background on the meaning of *adab*, it is useful and pertinent to refer back to al-Ruhāwī's introduction to his treatise.²¹ Some practitioners, he states, have failed to understand the proper path in medicine. Instead, they have resorted to charlatanry and corruption. Therefore, al-Ruhāwī says that it is necessary to discuss the manner in which the physician should improve his moral character. In the first chapter on the loyalty and faith of a physician, al-Ruhāwī declares that the truth is especially important for physicians who should follow a rational ethics and the medical injunctions. He calls physicians, "guardians of souls and bodies." In addition, al-Ruhāwī insists on the proper medical etiquette and *savoir faire* of the physician.

The word *adab* in this treatise may, therefore, be translated as "conduct with a strong ethical connotation," or, perhaps, more precisely as "practical ethics," not ignoring the ever pervasive theoretical overtones.²²

D. PURPOSE AND GENERAL CONTENTS OF *ADAB AL-ṬABĪB*

The "Practical Ethics of the Physician" by al-Ruhāwī, according to his own introductory comment, is a collection of material on medical deontology whose main purpose is to elevate the practice of medicine in order to aid the ill and to enlist the aid of God in His support, vocationally and otherwise.

The table of contents lists twenty chapters whose titles are not always in conformity with those given in the proper places in the text. Internal evidence, however, indicates that there are two extra sections following chapter II. These will be called IIa and IIb, respectively. They may be insertions from another copy of this work. Section IIa is entitled, "Statement on Activating the Functions of the Organs; the Foremost after the Brain is the Heart."²³ This fits in with the subject matter of chapter II. Section IIb,²⁴ however, is concerned with a new topic, and is entitled, "Statement on the Procedures and Policies by Which the Physician Must Conduct Himself in His Daily

Literatur in arabischen Sprache (Leipzig, 1877), pp. 50, 136; ibn abī Uṣaibi'a's (1203/4–1270) *Kitāb 'uṣūn al-anbā' fī ṭabaqāt al-aṭibbā'*, ed. by August Mueller (Koenigsberg, 1884, 2 vols.), chap. 8 on "Syrian Physicians at the Beginning of the Abbasid Dynasty." Cf. also L. Leclerc, *Histoire de la médecine arabe* (Paris, 1876, 2 vols.) 1: p. 497.

¹⁶ G. Fluegel and J. Roediger, editors (Leipzig, 1871).

¹⁷ The full title is *Kitāb ikhbār al-'ulamā' bi-akhbār al-hukamā'*. It was edited by J. Lippert, Leipzig, 1903.

¹⁸ I. Goldziher, *Encyclopedia of Islam* (first ed.) 1: p. 122 under *adab*. Cf. C.-A. Nallino, *La Littérature Arabe* (Paris, 1950).

¹⁹ *Encyclop. of Islam* (second ed.) 1 under *adab*.

²⁰ Anis Khuri al-Muqaddasi, *Ṭasawwur al-asālīb al-nathriyya* (Beirut, 1935) 1: ibn al-Muqaffa's work published by O. Rescher, *op. cit.*, al-Jāhiz's *Kitāb al-bayān wa'l-tabyīn*, MSS in Nuru-Osmaniye 3688, 3696 and Aya Sofya 3814.

²¹ Al-Ruhāwī MS 1b, 2a.

²² Cf. chap. 1 of al-Ruhāwī MS, fol. 4a.

²³ *Adab al-ṭabīb* MS, fol. 52b.

²⁴ *Ibid.*, fol. 57a.

Life." It is almost a certainty that IIb came from another copy of this manuscript treatise. Section IIa²⁵ should be a part of section II. Actually, then, there are twenty-one chapters in this work.

The text is a full and fairly comprehensive one on the relations among physician, patient, visitor, nurse, and servant, together with their directions, injunctions, and moral obligations in the course of medical practice.²⁶

Mentioning some of the sources will indicate to a partial extent the contents of this ethical work, and also, to a large degree, the point of view of the author, al-Ruhāwī. Often, Aristotle's *Metaphysics*²⁷ and Plato's *On the Soul* are quoted. Further quotations are from Hippocrates' *On the Embryo, On Pregnancy, and Injunctions* (Oath), and Galen's *Commentary on Injunctions* and his *Uses of the Organs* in support of al-Ruhāwī's position that God is the source of life. The oath of Hippocrates is mentioned in a quotation from Galen²⁸ and on other occasions. Others briefly mentioned are Pythagoras, Epicurus, Democritus, Zeno, al-Kindī (Book on Philosophy), Ḥunain,²⁹ and Ishāq. Among other mentioned writings of Galen,³⁰ there are *On the Opinions of Hippocrates and Plato, On Ethics, On the Sects of Physicians, Dependence of the Powers of the Soul Upon the Bodily Complexion*. The latter is called an article rather than a book. Hippocrates' *Epidemics* is frequently quoted.

The main ethical principles of the physician are described in the introduction and first chapter, then elaborated upon, both in theory and practice, throughout the treatise.

The physician is exhorted to remove evil people from about him, to know that good character is more valuable than property, and to understand that wisdom is found only in people of virtue and perfection.

One of al-Ruhāwī's major concerns is the care of the physician's body since it is the repository of his soul. As a result, much space is devoted to this subject with the emphasis placed on the following of reason in the belief in God, and moderation as a principle to improve health. Analogy and experience, to a physician, are the lifeblood of reason.³¹ The principles of Galen's *On the Treatment of the Healthy* are recommended as are his ideas in *On Diet*.³² There are extracts from Hippocrates' *On Excesses*, his *Epidemics*, and others. Long quotations are given by al-Ruhāwī

from Galen's *De Moribus*³³ when he describes his understanding of the irrational nature of children and uneducated people.³⁴ In this connection, al-Ruhāwī also refers to Galen's *On [Irrational] Natural Powers*.³⁵

E. SPIRITUAL AND BODILY PHYSICK

From the preceding section in which some of al-Ruhāwī's sources are listed, it is seen that the practical ethics of the *Adab al-ṭabīb* was not only a popular and eminently practical one but it also reflected much theoretical reading and thinking on the part of the author. There can be no doubt that the author was an educated man with an extensive knowledge of the ethical literature of his time in Greek, Arabic, and probably Syriac, and that he was also a practicing physician.

Throughout the work, al-Ruhāwī insists on the necessary interrelation of the spiritual and bodily physick. In fact, one is led to believe that the spiritual health of the soul is of primary importance and, therefore, its care is a function of the physician. This was not a novel idea in the ninth century nor was it Arabic in origin. Galen, in his *On the Opinions of Hippocrates and Plato*, discussed the power of the soul. Al-Ruhāwī writes, "The philosophers can only improve the soul but the virtuous physician can improve both body and soul. The physician deserves the assertion that he is imitating the acts of God, the Exalted, as much as he can."³⁶ Al-Ruhāwī relates that Galen declared that in the book *On Belief* of Hippocrates, the latter mentions "the examination of one who seeks to study the medical art in his body and in his soul."³⁷

From very early Greek physicians to the later Arabic medical writers, maladies of the soul were treated by medical procedures.³⁸ Even in the period of the mystics, it was quite usual for the spiritual director to be considered as a physician. It is no surprise, therefore, that al-Ruhāwī, in accordance with Galenic medicine, constantly laid much stress on the highest type of humanity as being found in the cultivation of Greek rational ethics to attain man's oneness with God. Aristotle, according to al-Ruhāwī, said, "The Creator of this world and its regularity is the first truth. . . ." Following this was the necessity for the development and growth of moral understanding. This aspect, therefore, was an important principle in the scientific treatment of the ill. This may have been the reason

²⁵ *Ibid.*, fols. 52a ff.

²⁶ *Ibid.*, fols. 1b, 2a.

²⁷ *Ibid.*, fol. 6b.

²⁸ *Ibid.*, fol. 8b.

²⁹ This is the famous Ḥunain ibn Ishāq (ca. 809–874), the greatest medical translator from Greek into Syriac and Arabic. Cf. C. Brockelmann, *Gesch. d. arab. Lit.*, G. I: p. 369; G. I, p. 205. His son, Ishāq, was also a fine translator but he worked mainly in philosophy.

³⁰ Cf. R. Walzer, "Arabische Uebersetzungen . . .," *op. cit.*, pp. 179–195.

³¹ *Adab al-ṭabīb*, fol. 15b.

³² *Ibid.*, fol. 30b.

³³ *περί ἠθῶν*. Cf. Paul Kraus, *Bulletin of the Faculty of Arts of the University of Egypt* 1 (1937), *Sectio Arabica*. In his introduction, Kraus discusses the importance of the text in regard to Greek ethics. It is a summary written by Ḥunain ibn Ishāq probably before 842.

³⁴ R. Walzer, *Oriental Studies I*, "Greek into Arabic" (Oxford, 1962), pp. 151 ff.

³⁵ *Adab al-ṭabīb*, fols. 42b–43a.

³⁶ *Ibid.*, fol. 79b.

³⁷ *Ibid.*, fol. 90a.

³⁸ Carra de Vaux, in *Encyclop. of Islam*, first ed. u. *akhlāq*, 1: p. 233.

that al-Rāzī wrote his little treatise called *Kitāb al-ṭibb al-rūḥānī*,³⁹ "Book on the Spiritual Physick," a work on popular ethics, and a companion as al-Rāzī called it to his medical work, *Kitāb al-Manṣūri*.⁴⁰ Because of the accepted importance of psychological treatment in illness, al-Ruhāwī emphasizes the psychological care of the patient as being a proper part of the ethics of the physician.⁴¹ For example, he writes:

The physician must better his relationship to and endure the distress of the patients. He must pay attention to any statement heard from them. The physician must not discourage any complaints of the patient or display of his distress since these symptoms which occur may be important in the diagnosis of the ailment.

Al-Ruhāwī then goes on to the basis of operation of the physician, "The physician must show mercy; this is not possible except by the fear of God. If the physician has these traits, then he speaks only the truth and does good for all the people." Thus, instead of "brotherly love," al-Ruhāwī, although himself a Christian, displays the contemporary Muslim idea of the Godhead as the all-embracing concept in which man finds his model and oneness.

This notion is fully elucidated in al-Fārābī who lived in the early tenth century and devoted himself to the spiritual healing art. He was of the belief that philosophy was the all-embracing science in whose acquisition man comes to resemble the Godhead, the ultimate of desires.⁴² In al-Fārābī's work,⁴³ therefore, the First Being is the end in philosophy so that the practical efforts of men must be directed toward likeness with God. The means or methods among Muslim thinkers, as also in al-Ruhāwī,⁴⁴ did not point to any doctrine of humanism. According to Donaldson, Muslim ethics, on a neo-Platonic model, came partly from the Enneads of Plotinus wherein is described the movement from God to man and vice versa. Al-Fārābī could not transcend this idea; nor could ibn Sīnā successfully.⁴⁵

³⁹ This manuscript is to be found in the British Museum 1530.

⁴⁰ Cf. de Boer, *op. cit.*, pp. 77-79. Al-Rāzī's work on moral health has been translated by A. J. Arberry, *The Spiritual Physick of Rhazes* (London, 1950). Vide Fr. Dieterici, *Alfārābī's Philosophische Abhandlungen* (Leiden, 1892).

⁴¹ Cf. *Adab al-ṭabīb*, fol. 45b et passim.

⁴² de Boer, *op. cit.*, p. 110.

⁴³ *Maqāla fī ma'ānī al-ʿaql*, ed. in Fr. Dieterici, *op. cit.*, p. 39, R. fī al-akhlāq, Suppl. Aligarh 81, 46.

⁴⁴ Donaldson, *op. cit.*, p. 109.

⁴⁵ R. fī al-akhlāq, MS Leiden 1464,6 and 2143. Cf. *Kitāb al-shifāʾ*, Bib. Nat. Paris 6829 fonds arabes. S. Salīm, ed., *Fī ma'ānī kitāb reṭoriqa* (Cairo, 1950). H. Ghoraba, *Ibn Sīnā's Bain al-dīn wa'l-falsafa* (Cairo, 1948).

He had an important influence upon al-Ghazālī (1058-1111), one of the most successful philosophers of Islam in his ethical writings; cf. H. Bauer, *Ueber Intention, Reine Absicht und Wahrhaftigkeit das 37. Buch von Al-Ghazālī's Hauptwerk* (Halle, 1916), as part of *Islamische Ethik*; H. Bauer, *Von der Ehe das 12. Buch von al-Ghazālī's Neubelebung der Religionswissenschaften* (Halle, 1917), in *Islamische Ethik* 2; H. Bauer, *Erlaubtes und Verbotenes Gut das 14. Buch von al-Ghazālī's Hauptwerk der Religionswissenschaften* (Halle, 1922), in

It was abū ʿAlī ibn Miskawaih (d. 1030), physician and one of the greatest Muslim authorities on ethics, who believed that it is only among other human beings that individual man attains perfection. Instead of Aristotle's friendship as the expansion of self-love, ibn Miskawaih stated that it was a kind of love for one's neighbor.⁴⁶ His beliefs, however, were conditioned by many and varied subtleties.

Let us now return to the ethics of al-Rāzī (ca. 865-925), Islam's greatest physician who took for himself the values of the philosophers. From his autobiography,⁴⁷ *Kitāb al-sira al-falsafiyah*, some of al-Rāzī's philosophical principles concerning the ideal may be discerned. These include the concepts that the goal of life is not usefulness but knowledge and justice, that Allah is the judge who punishes and gives, that one's state in after-death depends on that while the soul and body were united, that one's differentiation between good and evil depends on reason, that one must not assume needless pain, and that it is not necessary to be ascetic since Allah has given the means to maintain life not pain. The basis of al-Rāzī's moral idealism is, therefore, on the ground of monotheism. He displays a feeling of religiosity which is primarily of a Hellenistic tradition rather than that to be found in the Sunna. Al-Rāzī accepts the Aristotelian differentiation between theoretical and practical philosophy. In regard to the latter, al-Rāzī states, "I serve the ruler not as a soldier or official but as a physician and dinner companion. I have two duties, one to heal him when he is ill, and the other to give good advice when he is in health."

As to the physician himself, al-Ruhāwī states that the primary requisite is to have faith. First, a physician must believe and have faith in God. He must also be devoted to Him "with all his reason, soul, and free will." A physician must also possess the faith that God sent his Apostles to mankind to teach what the mind alone could not.⁴⁸ The existence of God may be seen in "the demonstrations to be found everywhere in such wonders of the world as metals in the mines of the earth, stones, plants, trees, animals and birds, water creatures, each with its own attributes. Then one should reflect on the subdivisions of these and their characteristics which differentiate their actions."⁴⁹

Islamische Ethik 3; H. Wehr, *Al-Ghazālī's Buch vom Gottvertrauen das 35. Buch des Ihya' ʿulūm ad-dīn* (Halle, 1940), in *Islamische Ethik* 4; W. Montgomery Watt, *Muslim Intellectual A Study of Al-Ghazālī* (Edinburgh, 1963). For the therapeutic value of hope for sinful men, cf. Wm. McKane, *Al-Ghazālī's Book of Fear and Hope* (Leiden, 1962), pp. 45-46, 51-63. For Sufism as a resolution of conflicting ethics, cf. the brief account of A. J. Arberry, *Sufism An Account Of The Mystics of Islam* (London, 1950).

⁴⁶ de Boer, *op. cit.*, p. 130; *Tadhīb al-akhlāq wa'taḥrīr al-aʿrāq* in British Museum Suppl. 72, ii. Vide Leclerc, *op. cit.*, p. 482.

⁴⁷ G. Misch, *Geschichte der Autobiographie*, III/2 (Frankfurt/M., 1962): pp. 976-984.

⁴⁸ *Adab al-ṭabīb*, fol. 5b.

⁴⁹ *Ibid.*, fol. 6a.

Coming to the practical actions in which ethics is concerned, al-Ruhāwī quotes Galen from the latter's *Commentary on the Epidemics of Hippocrates* when there is a question of a choice between the patient's demands and the proper care of the ill one:

It is essential that the physician not follow the will of the patient unless it benefits him in his improvement; he should not fear him in this nor any desire in this of his individual rights. On the contrary, it is only God that he fears and entreats.⁵⁰

There are certain actions which a physician should avoid and he should be fully aware of them. The first thing against which a physician must guard himself is that he not employ anyone else to substitute for himself in the maintenance of health or in treating the ill. In this connection, the physician is warned not to treat any patient whose diagnosis was not ascertained by himself.⁵¹ In choosing an assistant, the physician must pick one who is intelligent. Second,⁵² the physician must try to maintain improvement in what is beneficial in his therapy. Hippocrates' *Aphorisms* is quoted on this point as confirmation, "It is essential for you not to confine the purpose to the necessary action. . . ." ⁵³ As a matter of fact, al-Ruhāwī is very insistent that a physician should employ everything possible to aid the patient. "The physician may also be obliged in his treatment and in the preservation of health to [employ] ethics and psychology, whether praiseworthy or not, so that he may determine the condition of the soul." To al-Ruhāwī, this was necessary for diagnosis of a physical condition.⁵⁴

Following Hippocrates, al-Ruhāwī opposed the use of abortifacients. These were prescribed only in case of the danger of death of the pregnant woman or the foetus. At this point, the physician is advised to read Hippocrates' *On Oaths*. The treatise gives quotations from this work and promises Galen's commentaries on it. Unfortunately, in the text, at times, it is impossible to distinguish Galen's and al-Ruhāwī's comments.⁵⁵

Stress is laid on an admonition of Hippocrates that the physician leave treatment of certain ailments to specialists. Hippocrates wrote,

I do not visit one who has a calculus in his urinary bladder; on the contrary, I leave him to one whose area is in this specialty. It is not necessary for you to do this [i.e. practice in this area] except in a case of calculus distress. In similar ailments as that of the eye [this is true again]. There are people who specialize in these vocations so that you need not practice what is not in your field; this would only harm the ill.⁵⁶

After Hippocrates, Galen wrote a treatise, *On the Sects of Medicine*, so that the physician would know

them.⁵⁷ Al-Ruhāwī gives the opinion that specialization is essential since the medical art is more than one man may master in a lifetime.

F. THE MORE PERSONAL ASPECTS OF THE PHYSICIAN'S LIFE

The daily regimen of the physician himself, in the management of his body and soul, is related in detail in the text so that his works be perfect and his course of action be complete. Al-Ruhāwī describes an ideal day's schedule for the physician. After rising, the physician should cleanse his body and the sense organs. He should wash his mouth, clean and polish his teeth, perfume his breath to do away with bad odor. Then it is necessary to examine the odor of his bodily organs and parts and to counteract them as by using tutty in the armpits. Excessive nails or hair on the head or face should be removed. The clothes should be useful and of beauty. Following all this is prayer. Then the book of his religion should be read, then books of the ancients on medicine. Before visiting the sick, the physician says the morning prayers asking for success with his patients.

Then come the home visits. When necessary, in cases where advice and prescriptions are not understood, the physician must undertake the treatment himself. The office practice is then attended to. When the needs of the people have been taken care of, then he bathes, eats, and drinks. Sleep should be at a minimum.

The physician is obliged to frequent assemblages of the virtuous, learned, and men of letters amenable to him.⁵⁸ When the practitioner is among laymen, he must always be polite to people, not expectorate, yawn, or stretch himself. He should masticate well when he eats, and sip when he drinks. Thus, he teaches the correct way to others. Further, the physician should not drink in public, contend with women, occupy himself with play, or earn property in trade since this holds him back from science. He must remember that the care of his own body is important as is the strengthening of his moral character.

The bona fide physician should be protected. This should be done by the physician himself by keeping a daily chart of all medical matters in regard to the patient. Should the patient recover, then the physician retains the chart in case this patient becomes ill again in the future. Should the patient die, and someone claims that it is due to the physician's error, then this chart is studied by learned physicians. If the symptomatology, diagnosis, and therapy are found correct, then the physician should be thanked. If the facts are contrary to what he thought, then he should not be permitted to practice again. If there is serious error, then capital punishment would be indicated. This was

⁵⁰ *Ibid.*, fol. 60a.

⁵¹ *Ibid.*, fol. 61a.

⁵² *Ibid.*, fol. 69b.

⁵³ *Ibid.*, fol. 59b.

⁵⁴ *Ibid.*, fol. 45b.

⁵⁵ *Ibid.*, fols. 60b ff.

⁵⁶ *Ibid.*, fol. 61a.

⁵⁷ *Ibid.*, fol. 93a.

⁵⁸ *Ibid.*, fols. 57a ff.

the custom with the ancient Greeks, according to the author.

In regard to the physician's fee, al-Ruhāwī states that he should earn an amount sufficient that he need not be occupied with any other occupation than medicine.⁵⁹ The earnings should be large enough so that the physician may afford marriage, the proper food, garments, and housing so that his progeny may be taught the art of medicine. Al-Ruhāwī advocates that the wealthy be just in their fees so that the benefit of the art may be available both for the strong and the weak. Should the wealthy not cooperate, then the physician must turn to other vocations than medicine. Then, it is not only the poor but also the wealthy who must lose. The physician is warned to be moderate with his wealth.⁶⁰

In recommending moderation with wealth, al-Ruhāwī is thinking of preventing a physician from suffering poverty. Further, since the body is subject to change with age and other conditions, the physician must prepare for his eventual illness and old age much ahead of time. Body and soul should be looked after. Galen's *On Ethics*, in four articles, is mentioned to be read for the soul. The physician should also read Galen's *On the Dependence of the Faculties of the Soul on the Body*, *Man's Knowledge of the Defects of His Soul*, and *Useful Stories . . .* in this connection. Then, there is Galen's article, "On the Virtuous Physician as a Philosopher." Also recommended are Galen's *On the Argument* and *On the Opinions of Hippocrates and Plato*. These are ethical works.

In regard to the Hippocratic oath, according to al-Ruhāwī, Galen wrote that it is meant to preserve the sound body and the virtuous soul; second to take account of the possibility of harm and benefit which are in medicine; and last, to prevent the teaching of the art to unworthy children of physicians.⁶¹ It is of importance that, throughout the *Adab al-ṭabīb*, at no point is there any hint which may be considered as opposed to the Hippocratic oath as it is known today. To the contrary, al-Ruhāwī takes great pains to develop what may be construed as an expansion of the oath as a truly workable medical deontology. He leaves no doubt that the oath and God are basic to his deontology.

In the introduction, however, al-Ruhāwī gives a practical reason for writing this work. It is "to strengthen the souls of physicians about the truths. Thereby they can repel evil practices in the treatment of the healthy and the ill, hoping for rewards and trusting in the help of the exalted God and His support for him. Thus, I have undertaken in this book, as much as I can, to collect material about the ethics which a physician must

cultivate, and the manner in which the physician must strengthen his moral character."⁶²

G. THE PHYSICIAN AND THE PATIENT

In discussing the physician-patient relationship, al-Ruhāwī goes into detail. In choosing a physician a person should inquire not only of the knowledge but of the morals attained by the physician. He must question as to whether the physician allows himself

to learn from the virtuous ones about the art, carries out his duties, and keeps away from what is prohibited. If he finds him so, let him obey him, and give up his soul and his body to him. If the orders are not carried out, then advice is not indicated nor is obedience.⁶³

A physician must be careful in questioning the patient. Before he does so, the physician must first become acquainted with the details of the case history. "He does not ask the patient what is obvious since this would indicate inability and ignorance on the part of the physician. He employs special methods of deduction and analogy."⁶⁴ As to the questions, these may be many. "These concern what the senses of the physician do not perceive, what the patient, nursing servant, and trustworthy informers have not divulged."⁶⁵ There should be a definite order in the queries. The types of queries fall into four categories, "Is the thing existent or non-existent?" "What is the existent thing?" "How strong is the case?" and "Why is it?"⁶⁶

It is not fit that a patient consult with an inferior physician also. It is then that he does not trust his own physician. When the opinions of two physicians, one being better than the other, are obtained, then the patient must either abandon the trust of the better one or accept "the inferior opinion and render the imperfect equal to the perfect."⁶⁷

⁵⁹ *Ibid.*, fols. 1b-2a.

⁶⁰ *Ibid.*, fols. 71b-73a.

⁶¹ *Ibid.*, fol. 67b.

⁶² *Ibid.*, fol. 69a.

⁶³ Rufus of Ephesus (first century) devoted a treatise to the questions a physician must ask a patient (from the edition of K. Deichgraber in *Corpus Medicorum Graecorum, Abh. d. Akad. d. Wissensch.* (Berlin, 1957), *Sekt. f. Alt. Wiss.* 8; German transl. by H. Gaertner, in Supplement IV of this work (Berlin, 1962); English by A. J. Brock, *Rufus of Ephesus, On the Interrogation of the Patient* (London, 1929), pp. 112 ff.) Not only are the most minute symptoms of the disease questioned in detail (Gaertner, *op. cit.*, p. 33), but also his moral concepts, methods of work, living, and any other thoughts and facts concerning the patient. In querying the patient so, Rufus wishes to stress that each patient has his own individuality. Rufus also makes clear that the physician should, as far as is possible, not ask questions immediately which are prejudiced toward any particular diagnosis. These come later. Al-Ruhāwī, although he does not mention the need for objectivity, does take care of this by his emphasis on reason throughout his book. However, he does not attempt to determine any demarcation line between reason and religious faith since to him these were not in conflict. Much of this work of Rufus and al-Ruhāwī may be traceable to the work attributed to Hippocrates (W. Mueri, *Arzt und Patient bei Hippocrates* (Bern, 1936)).

⁶⁴ *Adab al-ṭabīb*, fols. 73a-73b.

⁵⁹ *Ibid.*, fol. 111a.

⁶⁰ *Ibid.*, fol. 112a; Cf. L. Edelstein, "The Professional Ethics of the Greek Physician," *Bull. History of Medicine* 30 (1956): pp. 397, 405-406.

⁶¹ *Adab al-ṭabīb*, fol. 90a.

Al-Ruhāwī then goes on to declare that he is not opposed to consultation of two, three, or more physicians, if a patient desires. However, this must be done by getting them together "in order to determine the truth among them, and to point out that which they saw correctly in common as a confirmation."⁶⁸ Each physician must make his own diagnosis. In this way, the truth is obtained more easily and so doubt and forgetfulness are dispelled in mutual consultation among physicians. Good results, therefore, obtain.

The patient and his nurse must not conceal their errors from the physician. When the physician discovers this, he must hasten to correct them to prevent harm.

For the sake of mercy, the physician maintains a silence as to the diagnosis in the case of a patient who would not understand. This is also done in case of error. It is made clear that the physician must always have patience and try to understand the ill one so that not an iota of possible psychological benefit may be lost. In fact, the physician should make an effort to have a good rapport with his patient.⁶⁹ In regard to the data leading to diagnosis, "No matter what the circumstances, he must acquire information from anywhere or anything which may prove beneficial to the recovery of the patient. . . ."⁷⁰

Al-Ruhāwī sums up the actions of the physician with respect to the patient. It reads as if it were taken bodily from an ancient Greek text with minor exceptions:

The method of justice of the physician and its beginning is that it is necessary to be good, training one's self, and taking care of it by employing good morals and actions with sympathy, mercy, gentleness, chastity, courage, generosity, being just, retaining a secret, and anything similar as the virtues of the soul and its proper breeding with work, acquiring the art, studying its books and their meanings so as to practice them and to bestow [their benefits] on all people without distinguishing them as to friend or foe, in agreement or disagreement.⁷¹

H. NURSE, PATIENT, AND PHYSICIAN

In medical practice, there must also be a suitable nurse-patient-physician relationship. It is incumbent upon the healthy person that he look ahead to the period of illness. One of the main tasks is to prepare his nursing aid. He must be trained to be rational, kind, and possess skill and willingness in the tasks required. The patient must respect the nurse and vice versa.⁷² Frequently, the nurse is called upon to de-

scribe the patient's symptoms to the physician in case the ill one is comatose or otherwise incapable. The aide must obey the physician's orders willingly. A reasonable person must show affection and kindness to his servants so that the latter will return these when the master is ill. Further, the physician should know the personality of the servant to be certain that the latter will conduct himself well with the patient and so that the physician may obtain the maximum information from him about the patient's complaints.⁷³

Al-Ruhāwī quotes Hippocrates to the effect that the conduct of the medical art involves three factors, the illness, the patient, and the physician. The patient must rise together with the physician against the illness. When a remedy is prescribed by a physician, only a most trustworthy person is to be held responsible for carrying out the order such as in the weighing out of a predetermined quantity of drug, its pulverization, dissolution, kneading, and in other details. The patient and physician may both be harmed if the nurse is derelict in his duty. In case of doubt, the physician himself must prepare the remedy since it is his responsibility. The physician may also appoint a trustworthy aid as one of his students or an honest drug seller to make up a compound remedy.⁷⁴

I. VISITORS

The conduct of the visitor⁷⁵ with respect to the patient and the physician is discussed by al-Ruhāwī. In the case of some ailments, as melancholia and coma, visiting is prohibited. This holds also in circumstances where the patient may have ugly markings on his face or a bad color caused by his illness. In order to render the patient the best care, only the nurse should be allowed into the sick chamber since visitors often occupy the time needed for therapy.⁷⁶

Should a visitor come, then he must wear clean clothes, have a good odor, and not stay overlong. The conversation should be pleasant and not of disturbing matters.

⁷³ *Ibid.*, fol. 76a; The patient and physician working against the illness became an old Muslim tradition from Greek sources. Cf. al-Suyūṭī, *op. cit.*, p. 55.

⁷⁴ *Adab al-ṭabīb*, fol. 74a.

⁷⁵ The Prophet approved of visitors to the sick.

⁷⁶ Said the Prophet: Visit the sick and set free those held in bondage. This was related by al-Bukhārī.

⁷⁷ Said the Prophet: He who visits the sick or visits his brother in religion, his virtue will be proclaimed, his behavior will be applauded, and a high place in Heaven will be assigned to him. This tradition was related by al-Tirmidhī.

⁷⁸ Said the Prophet: A visit to a sick man is only complete when one of you has put his hand upon his forehead and enquired how he is. This tradition was related by al-Tirmidhī" (from al-Suyūṭī, *op. cit.*, p. 162).

As a result of the traditions and Koranic statements relating to visitors, the physician, as a result, was often hampered in his work. It was thus a problem to the patient and those about him.

⁷⁹ *Adab al-ṭabīb*, fols. 62b-63a.

⁶⁸ *Ibid.*, fol. 73b.

⁶⁹ A Muslim tradition reads, "Hippocrates once said to one of his students: Let your best means of treating people be your love for them, your interest in their affairs, your knowledge of their condition and your recognized attentiveness to them." From al-Suyūṭī, *Ṭibb al-nabī*, transl. by C. Elgood, *Osiris* 14 (1962): p. 55.

⁷⁰ *Adab al-ṭabīb*, fol. 58b.

⁷¹ *Ibid.*, fol. 111b.

⁷² *Ibid.*, fol. 61b.

The visitor must not oppose the physician in the presence of the patient if he is not a physician since doubt is developed as to what the physician has prescribed.⁷⁷

It frequently happens that the visitor will discuss the symptoms, diagnosis, and therapy with the patient. Since the visitor's advice would probably be at variance with that of the physician, the patient is left in a dilemma. For this reason, the patient, nurse, and physician should not answer questions asked by visitors. The patient should always be alone when being treated, when eating and drinking.

To cope with visitors and difficulties which arise during illness, a man should prepare himself during health, "keep himself from rage and anger, have patience, and acquire good morals. Then he will find these easily in time of illness."⁷⁸

J. DIGNITY OF THE MEDICAL PROFESSION

All through al-Ruhāwī's treatise, the author is deeply concerned with the standard of medicine and the dignity of the physician. He states that since the dearest possession of man is considered to be health, then those who have acquired the profession of medicine are on the side of the virtuous and rational ones, "the foremost of the people in station, highest in rank, greatest in worth, and most truthful in speech." This, says the text is because, when this art was bestowed upon mankind, God did not consider all persons fit to learn it and so He gave it to some virtuous ones "whose hearts are pure, with a sharp intellect, and who love the good, have mercy, sympathy, and chastity."⁷⁹

As to the Hippocratic oath, this is not required of a physician by al-Ruhāwī. Since the profession is given only by God to those who are qualified, an oath would hardly be necessary.⁸⁰ Thus, in this deontological text, the practice of the art of medicine as a God-centered one is accented together with the ethics of al-Ruhāwī.

In a chapter called, "On the Dignity of the Art of Medicine," a not too objective discussion claims that medicine is the oldest of the sciences since it concerns the completion of the soul in a healthy body by the use of science. By science, al-Ruhāwī understands "the

means by which the arts and skills are developed . . . one of them is analogy and the other is experiment."⁸¹

In accordance with the ideas of the ninth century, al-Ruhāwī states that

the aim of the physicians [is] to request health for men of distinction. . . . Thus, it is essential that every wise man know his rank and to achieve his bodily health with the aid of this divine art. . . . This makes clear that the medical art has nobility and that it bears benefits for all the people. . . . The first value . . . is the acknowledgment of the oneness of God. . . .

Second, the medical art "is the greatest assistant to fulfill divine law since it makes it possible for men to acquire science and to fulfill religious duty . . . when the body is healthy." The third value . . . "is for one who seeks it for its sake, for the benefit of the people. It is not to seek to earn money but . . . to acquire a continuous pleasure, useful wealth, fame, and numerous divine rewards. It helps to attain dignity which brings you near God. . . ." ⁸²

To counter the assertion that philosophy which strengthens the soul is more worthy of dignity than the art of medicine, al-Ruhāwī writes that the physician helps both body and soul, imitating God as much as possible.⁸³

As to the physician himself, his dignity and honor should be valued by kings and chiefs since he is a man of virtue. The rulers should specify the dignified character of the art of the physician. It is the ruler who sometimes gives the possession of his soul and body to the physician for he knows the importance of the medical man and his art. He honors him, shows him regard, and is his intimate.⁸⁴ Al-Ruhāwī relates tales mainly of his contemporaries to indicate "the ranks of physicians according to their ability in the art of medicine, by the side of kings, and as the virtuous ones of the people."⁸⁵

It is clear from the text that al-Ruhāwī is concerned only with those physicians who treated the rulers and wealthy. The benefit to the people, of which he speaks, is a negative one and is a result of the improved moral and physical well being of the upper class filtering down with benevolence to the poor.

K. CHARLATANS AND QUALIFYING EXAMINATIONS FOR PHYSICIANS

In the ninth century, there were many substandard physicians. Some of these practitioners were fairly skillful and shrewd, as al-Ruhāwī describes them. He writes that they butter up the sultan with electuaries, select pretty women good for one's health, give remedies for digestion, make one's hair beautiful, and incite

⁷⁷ *Ibid.*, fol. 63b.

⁷⁸ *Ibid.*, fol. 77b.

⁷⁹ *Ibid.*, fols. 70b-71a.

⁸⁰ The Prophet said that God did not send down any disease without also sending down the remedy. The Prophet called in a physician when he needed one.

"From abū Harīra comes the following story. One of the Anṣārī fell ill one day. The Prophet called in to him two physicians who were in Medina and said to them: Cure this man. In another version of the same tradition, they put this question to the Prophet: O Prophet, is the science of medicine any good? And he replied: Yes" (*Tibb al-Nabī*, p. 126). These are from a collection of traditions of the Prophet and his Companions gathered by al-Bukhārī (809-869). It is called *Ṣaḥīḥ*. The Koran reads (1.4), "Thee do we serve and Thee do we beseech for help," on the question of curing one.

⁸¹ *Adab al-ṭabīb*, fol. 78a.

⁸² *Ibid.*, fols. 78b, 79a.

⁸³ *Ibid.*, fol. 79b.

⁸⁴ *Ibid.*, fol. 82a.

⁸⁵ *Ibid.*, fol. 85b.

sexual desire. In this way, they attain access to people of wealth and authority.

Others make other claims as prescribing lovers' charms, writing books which incite to passion, and remove treasures from mounds. The author relates that

they travel like flies, roam the roads and streets, prefer that homes be free of the men [when they] show up for their dastardly acts. It is necessary that authorities protect the public and the subjects from these flies and thieves. They hide themselves from the eyes of people with the appearance of their dress and the grossness of their claims.⁸⁶

The non-virtuous and untrustworthy practitioner cannot be relied upon to treat the ill or more important to maintain the health of anyone. For not teaching some people the medical art, al-Ruhāwī gives four reasons. One is that the complexion of the body of the student may be immoderate, i.e., there is a change in the morals and acts of the soul. Two, one must be familiar with good and bad habits and pursue them when they are good. Three, there are times when these two come together in their bad aspects to increase corruption. Last, a reason not to teach a student medicine is when he will pursue it only for worldly wealth and power. The physician's son who wishes to study medicine must meet these conditions.⁸⁷

The text relates that, in ancient times, the profession and study of medicine bore dignity. The author ventures to discuss the reasons for its decline to the state it was in in his time. The first is that those who entered the profession "because of covetousness thought that trust in them could not be lost either in their science or practice. Thus, they turned to what came easily; they abandoned care, reading, and service, and became inclined to flattery . . . so that the truth was lost."⁸⁸ Second is the reason that "the physician, in addition to his medicine, needed to use deceit in other avenues of earning a living as trade or in a shop. . . . As a result of this, there is a scorning of the art. . . . Third, many have entered the art who do not know its principles, its values, and its obligations."⁸⁹

⁸⁶ *Ibid.*, fol. 106a; H. Sigerist, *A History of Medicine* (1961) 2: p. 304.

⁸⁷ *Adab al-ṭabīb*, fols. 89a–89b; Sigerist, *op. cit.*, p. 305.

⁸⁸ *Adab al-ṭabīb*, fol. 90b.

⁸⁹ *Ibid.*, fol. 91a. In a round table talk, "Medical Table Talk," *Da'wat al-aṭibbā'*, ibn Buṭlān (twelfth century) discusses with others in the medical profession the decline of the dignity of their vocation and the lack of knowledge of it. This is in Aya Sofya MS 3626/1, fols. 4a, 4b:

"The seekers [of science] are decreased in number and those who desire it are few. Their books have been sold to druggists to meet the needs of the few. By God, as an art [medicine], it has perished and its fire has died out. Those who aim for it are interested only in the coin and not in the physician's art. It is said that by wisdom is the bodily medicine practised, and by money are medical men diseased. When you see a physician attract disease to himself, how can he nurse another? A poem says, 'Can an ill one recover if it was the physician who made him sick?'"

Many have been led into the profession, according to al-Ruhāwī, through the widely held opinion that it is God who is the cause of all so that, no matter how medicine is practiced or remedies prescribed, the decree of God prevails. This fatalism was, no doubt, common among the poorer classes of society at the time.

In order to control and to eradicate the quacks and similar practitioners, al-Ruhāwī advocated the examination and licensing of physicians.

In his plan to examine physicians, al-Ruhāwī claims to fall back on Galen and Hippocrates. Its purpose, he writes, is to follow the pattern of ancient Greece to raise the level and nobility of medical practice. It is up to the ruler to control the fraudulent physicians "to make the truth clear, to make the benefits common, and the good to be general."⁹⁰

The proposed examination is discussed fully. It is necessary to inquire over the entire spectrum of knowledge of the person under examination. This includes all the necessary facts of medicine as well as one's moral ideas and background. To pass this examination, a man had to spend a long time in the study of books, be in the companionship of practitioners, in the service of the ill, and have experience in the care of the details in regard to the treatment of souls and bodies.⁹¹

As to the contents of the examination itself, the first part is based on Galen's *On the Sects of Physicians*. If the applicant passes these first questions, then the examination may proceed. It is then necessary to inquire into the interests of the applicant, if scientific or practical, or both. Galen's work, *On the Sects in Medicine*, is useful when questioning one about the specialty he has chosen to practice. The applicant is then quizzed on every aspect of his specialty. This includes anatomy, interdependence of anatomical parts, symptomatology, diagnosis, therapeutics, pharmacology, and prognosis. Al-Ruhāwī, in chapter sixteen, relates some of the knowledge on which questions may be based in various areas of practice.

The major part of the examination is based upon Galen's sixteen books, one by one. The titles of these books are listed in order⁹²: *On the Sects in Medicine*, *The Small Art*, *On the Pulse*, *Summing Up of Therapy*, *On the Elements*, *On the Complexion*, *On the Faculties of Nature*, *On Anatomy*, *On the Value of the Organs*, *On the Crisis*, *On the Days of the Crisis*, *Large Book on the Pulse*, *On Simple Remedies*, *On Compound Remedies*, *On the Art of the Cure*, and *On the Argument*.

⁹⁰ *Adab al-ṭabīb*, fol. 99b.

⁹¹ *Ibid.*, fol. 92a.

⁹² Al-Ruhāwī writes that it was the learned physicians of Alexandria who realized that they could not read all of Galen's books. They therefore organized them as sixteen books. These were gathered to be abridged (*Adab al-ṭabīb*, fol. 97a). The order of the books as arranged by al-Ruhāwī is different from that of the Alexandrians, Ḥunain ibn Ishāq (d. 873) and Thābit ibn Qūrra (834–901) (*Adab al-ṭabīb*, fols. 97b, 98a).

Then, it is necessary that the man undergo an investigation as to his soul, his education, culture from childhood on, his associations, his attention to his physical matters, and his ambitions. He must be concerned with people and must employ justice in his associations. "He must treat people as he would like for himself with sympathy."⁹³

Not only did al-Ruhāwī point out the faults of medical practice of the substandard physicians, and his remedies for these, but he also made an effort to correct the pharmaceutical dishonesty and errors of his day.

L. PHARMACEUTICAL QUESTIONS AND ETHICS

Following the dictum of Hippocrates, the treatise designates that the physician look after the preparation of pharmaceutical remedies if the patient or his nurse cannot do so properly.⁹⁴ In order to learn about simple and compound drugs, the physician is advised that this cannot be done from books but by his careful attention to the masters who grow the plants and work with them.⁹⁵

To the physician who had the ultimate responsibility for the proper preparation of the drugs, al-Ruhāwī describes the condition of the botanicals in regard to the time of obtaining its parts. Because it was such a common matter, this description is a rarity in pharmacological texts. The corrupted substance

is found in what is gathered and cut from trees and herbs, extracted from seeds, pulled from roots, gums, etc., before ripening sets in. This also includes that which is procured from fruits not up to par and from seeds which are very moist and weak. For this reason, none of this is collected until nature has ripened it. What we have stated about them is clear to anyone who considers fruits, grains, and herbs; the people wait for their full ripening since there is little to profit from the immature.⁹⁶

The physician must, therefore, be a botanist and know much about the pharmacological characteristics of the various morphological parts. He is cautioned not to neglect remedies after their ripening so that they become spoiled.

This spoilage, as al-Ruhāwī explains, is due to storage of botanicals in moist places in the lower part of the house where there is no breeze and no sun. Sometimes, when pressed, one against another, deterioration occurs. To counteract this, botanicals must first be dried [and lightened in color] in the shade, then stored where there is a moderate breeze. Drugs should also be protected from mud, stones, salts, glass, and extracts. Nor should remedies be stored overlong since this would weaken their properties or render them ineffective or harmful. Those which are oily are spoiled quickly for they attract moisture; examples are seeds of the poppy, flax, and radish. Two or more

remedies must not be stored in the same vessel. All of this is the responsibility of the physician.

Sometimes, intentional spoilage of drugs occurs, or apothecaries substitute⁹⁷ cheap drugs for more expensive ones.⁹⁸ Al-Ruhāwī gives examples of the adulteration of drugs and their substitutes⁹⁹ as well as omission from or unintended addition to some compound remedies. It is the duty of the physician to see that the proper quantities are employed by the apothecaries.

Not only is the physician concerned with the sellers and storekeepers of the remedies but he "must warn the drug merchants not to give women abortifacients without his permission. The seller of drugs must not give poisons to anyone except a trustworthy physician. These would include cantharides, opium, euphorbium, scammony, latex of *sirim*, and similar ones."¹⁰⁰

Thus, al-Ruhāwī not only places a duty upon the physician in regard to some drugs but he also enlarges it to include supervision over the drug merchants and apothecaries. That this became an impossible task for the physician can readily be seen in the later *ḥisba* literature where this supervision is described as taken over by the *muḥtasib*, an official whose duty it was to protect public morality especially in trade, assure the purity of the faith, and protect people against charlatantry and fraud.¹⁰¹

M. EARLIEST WORK ON MEDICAL DEONTOLOGY IN ISLAMIC TIMES

In view of the fact that most of the medical and philosophical works until about 900, whether in Arabic, Greek, or Syriac, have not yet been published, it is difficult to assess the texts and the influence of writers of early Islamic times. A more complete understanding of Arabic medical deontology within a responsible perspective must, therefore, await further detailed study.

It is significant that in the *Adab al-ṭabīb*, in spite of the attempt of Ishāq ibn 'Alī al-Ruhāwī to credit all writers from whom he derived ideas, never is mention made of an earlier Arabic or Syriac work devoted to medical ethics. So far as is known, then, the treatise of al-Ruhāwī is the earliest study extant in Arabic in its field.¹⁰² Because of the as yet insufficient study of

⁹⁷ Cf. al-Rāzī, *Fi abdāl al-adwiya* (Brockelmann, *op. cit.*, G. I: p. 236), and Māsarjawaih's *Fi abdāl al-adwiya wamā yaqām ghairihā minhā* (Brockelmann, *op. cit.*, S I, p. 417.) These texts with translations will be published by the author shortly.

⁹⁸ *Adab al-ṭabīb*, fol. 65a.

⁹⁹ *Ibid.*, fols. 65b ff.

¹⁰⁰ *Ibid.*, fols. 67a, 67b.

¹⁰¹ Cf. M. Levey, "Fourteenth Century Muslim Medicine and the *Ḥisba*," *Medical History* 7, (1963): pp. 176-182; R. Levy, ed., *Ma'ālim al-qurba fī aḥkām al-ḥisba* by ibn al-Ukhuwwa (London, 1938).

¹⁰² Cf. the Hebrew *Manhij ha rōfe'ūn* in very brief sentences which outline a medical *savoir faire* by Isaac Israeli (ca. 832-ca. 932). The work was originally written in Arabic but this is lost (ibn Juljul, "Generations of Physicians," ed. by Fuad Sayyid (Cairo, 1955), p. 87; David Kaufmann in *Magaz. f.d. Wissenschaft d. Judentums* 11, (1884): pp. 97-112. It is com-

⁹³ *Adab al-ṭabīb*, fol. 99a; a castrated Golden Rule.

⁹⁴ *Ibid.*, fol. 73b.

⁹⁵ *Ibid.*, fol. 64a.

⁹⁶ *Ibid.*, fol. 64a.

early medical manuscripts in Arabic, it is not now possible to know the extent of the influence which al-Ruhāwī exerted on his successors.

However, later medical deontology among the Muslims did not stray far from the path trodden by al-Ruhāwī; he had amalgamated his sources so well that it could not help but meet with the approval of later Islamic physicians. Based to a large extent on the revered Hippocrates and Galen, the ideas were assured of a ready acceptance by the author's contemporaries. Three main ideas of Galen were fused with the idea of an Allah who allowed some free will. Other influences upon al-Ruhāwī, aside from the Greek, were comparatively minor. The three tenets of Galen which al-Ruhāwī applied to medical deontology are from the former's *On the Passions of the Soul*: (1) stress on the Aristotelian mean, i.e., moderation and temperance, (2) liberation from passions by training and practice, and (3) nature, or the temperament of the body, as an ethic forming factor.¹⁰³

prised of fifty propaedeutic aphorisms; these are given in the appendix to this volume. Cf. some of these in the aphorisms of Joannes Damascenus (Mesue the Elder, d. 857); Leclerc, *op. cit.* 1: p. 110; al-Rāzī's aphorisms are to be found in M. Steinschneider, *Virchows Archiv* 37 (1867): p. 378. Cf. also reference to al-Zahrāwī's statement on medical ethics in S. K. Hamarneh and G. Sonnedeker, *A Pharmaceutical View of Abulcasis al-Zahrāwī in Moorish Spain* (Leiden, 1963), p. 49.

¹⁰³ Paul W. Harkins and W. Riese, *Galen on the Passions and Errors of the Soul* (Columbus, 1963), pp. 123-124; I. Mueller, *Ueber Galens werk vom wissenschaftlichen Beweis* (Muenchen, 1895).

In regard to training in moderation and control of emotions, so important in treatment, evil passions are controlled only by the help of God (and the physician, of course). In the ethics of the medieval Muslims, and similar religious groups, it is generally the fear of God which serves to restrain man, not his fellow human being. Cf. a good but late description in Bar Hebraeus' *Book of the Dove*, transl. by A. J. Wensinck (Leiden, 1919), pp. 32-43. Further elaboration is in Bar Hebraeus' *Ethicon* where he discusses the love of God (Wensinck, *op. cit.*, pp. 85-117). Bar Hebraeus, a mystic, wrote his *Ethicon* in 1590 in Syriac. It is very similar to al-Ghazālī's *Ihyā' 'ulūm al-dīn*.

Emotions in "The Medicine of the Prophet," *Ṭibb al-nabī*, *op. cit.*, p. 63, were considered to have an effect on the body, today known as psychosomatic. Anger was forbidden by the Prophet.

The ancestry of these is Platonic, Aristotelian, Pythagorean, and mainly Stoic, according to van der Elst.¹⁰⁴ The treatment of the passions as a part of moral philosophy continued over a long period until the French encyclopedia of Diderot and d'Alembert and later. In Descartes, for example, the mastery of passions through reason is fully discussed as part of a moral system.¹⁰⁵

It should be remembered that Galen, unlike Hippocrates,¹⁰⁶ did not propose a definite code of medical ethics of his own. The allusions to this subject, aside from his more general philosophical writings, are in his commentary on Hippocrates' *On Epidemics*, sixth book; it is only a fragment, however.¹⁰⁷

God, in the role of the powerful motivating force in al-Ruhāwī's concepts, has been discussed.¹⁰⁸

In the case of the ancients and Islam, the problem remains of a lack on their part of an element of struggle and conflict to resolve ethical difficulties rather than the constant attempt to rearrange the pieces in a puzzle. This subject is left to students of philosophy and psychiatry.

¹⁰⁴ Robert van der Elst, *Traité des passions de l'âme et de ses erreurs par Galen* (Paris, 1914), p. 43.

¹⁰⁵ Harkins and Riese, *op. cit.*, p. 112; cf. K. Sprengel, *Vortrage zur Gesch. der Medizin* (Halle, 1794-1796).

¹⁰⁶ W. H. S. Jones, *Hippocrates* 2 states that, in order to give a good account of proper behavior and manners for doctors, we must have of Hippocrates, his *Law, Oath, Precepts, Decorum, and Physician*.

¹⁰⁷ Harkins and Riese, *op. cit.*, p. 21; important references are R. Walzer, *Galen on Medical Experience* (London, 1944) and I. Mueller's ed. of *Galen de placitis Hippocratis et Platonis* (Leipzig, Teubner, 1874). Cf. Kuehn's *Galen*, 19: p. 45.

¹⁰⁸ Contrast the ancient Indian medical work, *Charaka Samhitā* (Jamnagar, 1949) 1: pp. 484 ff., where it is stated that ethics does not always require a theistic belief. The six systems of Indian philosophy, as also the Buddhist and Jain systems of thought, are agreed in their upholding of righteous conduct and mental and emotional purity as the means to liberation whatever the nature may be. The origin of Ayurveda is concerned with the preservation of human lives so that they may be dedicated to a high ethical conduct. The ethics, of course, is not the present-day Western one; neither is that of al-Ruhāwī.

In fact it was the feeling of love and compassion for suffering humanity which first gave rise to the sages' efforts to discover the science of medicine (*Charaka, Sūtra* 6: 7).

In the name of Allah, the beneficent and compassionate in whom I have trust and for whose help I ask.

The compiler and author of this book said that when some physicians, O friend, may Allah help you to attain your wishes and to comprehend the truth, were ignorant of the principles of medical practice and failed to grasp its consequences and were unable to determine the correctness in its [proper] direction, they turned to trickery and obscurity so that they corrupted the good qualities of the profession and marred the high standing of its practitioners.

They were as builders who wished to reconstruct a cracked house which had originally been solidly built in the best manner and supplied with all the requisites. However, they were blind to faulty spots. Because of their ignorance, they acted as perplexed people who did not know either the imperfections or their causes. As a result, they resorted to trickery. Instead of rebuilding the edifice, the corruption was hastened and the foundation destroyed. Thus it was not the physicians and other miserable ones who were to be blamed and reproached but those who were practicing what they were in ignorance of.

Indeed, the duty of those upon whom Allah ¹⁰⁹ has bestowed his blessing to know this vocation and be successful in it, is to make public what they know about the art, its expedience and proper appreciation. They should demonstrate what their acquisition has attained; in fact, they must exert themselves to publish it in order to strengthen the souls of people about the truths. Thereby, they can repel (2a) evil practices in the treatment of the healthy and the ill, hoping for rewards and trusting in the help of the exalted Allah and His support for him.

Thus, I have undertaken in this book, as much as I can, to collect material about the ethics which the physician must cultivate, and the manner in which the physician must strengthen his moral character. I have mentioned some things about the ways in which the physician must treat his body, that which he must do first himself so that he may treat ill and healthy persons, and also some instructions, injunctions, and treatments regarding the care of the patient, his servants, and his nurses. All of this makes up the first chapter of this book.

In the second chapter,¹¹⁰ I have gathered together the duties and regulations which the patient must carry

¹⁰⁹ Use of the word Allah is not meant particularly to designate the Muslim idea of God. Further, the words Muslim, Arabic, and Islamic are generally used synonymously to designate the period. When used otherwise, the context will make it obvious.

¹¹⁰ This division of the book by the author has not been adhered to in the actual text.

out, toward himself, toward the physician, and toward his servants, in order to regain his health. I have also mentioned some of the necessities and requirements for the well-being of the healthy and sick such as stories and narrations generally known among people and especially to physicians. These have been set apart in chapters in order to make it easier for the student to find what he desires. There are twenty chapters in my book. I shall enumerate them and mention the contents of each one. Afterward, with the help and support of Allah, I shall commence a more detailed explanation.

Chapter I

On the loyalty and faith in which a physician must believe, and on the ethics which he must follow.

(2b) Chapter II

On the means and measures by which a physician treats his own body and limbs. This part includes many duties which must be discussed in detail.

Chapter III

On things of which a physician must beware.

Chapter IV

On the directions which a physician must give to the patients and servants.

Chapter V

On the behavior of the patient's visitors.

Chapter VI

On simple and compound drugs which a physician must consider and on his remedial directions which may be corrupted by the pharmacist and others.

Chapter VII

On matters of which a physician must question the patient or others.

Chapter VIII

(3a) On the necessity for ill and healthy people to have faith in the physician in times of illness and health.

Chapter IX

On the agreement that the patient must follow the directions of the physicians and the outcome when it is annulled.

Chapter X

On the behavior of the patient with his people and servants.

Chapter XI

On the behavior of the patient in regard to his visitors.

Chapter XII

On the dignity of the medical profession.

Chapter XIII

On that people must respect a physician according to his skill but kings and other honorable men must respect him more. It is necessary to honor him above royalty and virtuous people.

Chapter XIV

Peculiar incidents concerning physicians, that is, those already known, so that the physician may be (3b) forewarned. Some are funny and may help him to discover uncooperative persons before the consultation lest he be held responsible for any harm that may occur.

Chapter XV

On the subject that not everyone may practice the profession of medicine but that it must be practiced by those who have a suitable nature and moral character.

Chapter XVI

On examination of physicians.

Chapter XVII

On ways by which kings may remove corruption of physicians and guide the people in regard to medicine, and how it was in ancient times.

Chapter XVIII

On the necessity of warning against quacks who call themselves physicians and the difference between their deceit and the true medical art.

Chapter XIX

On faulty habits to which people are accustomed (4a) but which may injure both the sick and healthy and cause physicians to be blamed.

Chapter XX

On matters which a physician must observe and be careful about during periods of health in order to prepare for periods of illness and at the time of youth for old age.

CHAPTER I

On the Loyalty and Faith Which a Physician Must Hold, and the Ethics He Must Follow to Improve His Soul and Moral Character.

Praise be to Allah who possesses the endless glory.

When I reflected on carrying out this work, O friend—may Allah help you to comprehend the truth and enlighten your ways to you—I found that the problem requires an answer in many directions and that it contains important matters for all engaged in the practice

of medicine. These are of import for those people who must follow a rational ethics and the medical injunctions; I shall attempt to gather them here from older books and the ethics of honorable men.

These injunctions and ethics are of great importance to all people. Those who are intelligent, and those who try to be so, will find a great profit in them. But those who make pretense to be intelligent will feel shame and weakness; this is especially true for those who pretend to be guardians of souls and bodies in the presence of intelligent people and practice medicine as they do. The good attributes with which a physician must be qualified resemble those which a governor must possess.

(4b) Aristotle¹¹¹ said that a governor must possess four qualities; he must be sensible, learned, pious, and he must act without haste. He added that a governor could embroider his rule or corrupt it. All of these attributes are sound in a physician. Both have similar duties since a physician is the governor of souls and bodies. There can be no doubt that souls and bodies are better than estates. Therefore, a physician must take upon himself a proper ethics and science useful for his profession.

There is no doubt that he who does not know that which is mentioned here will feel too ashamed in himself and before Allah to practice medicine or to compete with honorable men blessed by Allah. A man who wishes to practice this profession must accompany physicians, learn from them, and follow their ethics. When he has the knowledge and experience, then he is enabled to serve his art together with the science and practice to preserve health and to cure the ill.

There are some ill-advised people who think that after they learn a bit about medicine from a physician, have a sharp intelligence, know some simples and compound remedies, bleeding, the formularies, and similar matters or practices of the art, then they think that they need not read professional books on the medical art and know its principles and its rules. In this way, they harm themselves and those whom they treat (5a) since, as it is known from what we have mentioned, they do not know where to place the instrument, for whom it is necessary to use it, when, and in which places, and with which cases and amounts. In this manner, they are in a position to harm the healthy and to kill the sick.

For various reasons and causes, I must hasten in regard to what you asked. Allah in his beneficence aids all pious deeds.

The first thing in which a physician must believe is that all in this world has only one able creator who performs all deeds willfully. He gives life and takes it, causes illness and cures. He is able and wise, the perpetrator of all actions, all intentional.

¹¹¹ W. D. Ross, *The Works of Aristotle, Ethica Nicomachea* (London, 1915), p. 5, 1112^b13 where the means toward an end of the physician, orator, and statesman are compared.

Since the beginning of their creation, Allah has made known what is useful to them since their nature is a needful one. Thus [man has] the ability to recognize useful things which he may utilize, and harmful things which he must avoid. This is the first faith and belief which the physician must possess and in which he must believe in a sound manner.

The second article of faith in which a physician must believe is that he have credence in the great Allah with a firm affection, and is devoted to Him with all his reason, soul, and free will. This is because voluntary love is greater than that which is compulsory.

The third faith which a physician must possess is that Allah sent his messengers to mankind to teach them what is good since the mind alone is not sufficient. Thus, without His apostles, it is not enough for man. In all these matters, the physician must truly believe since all the holy books and ancients affirm them. No believer can deny them. (5b) You must not think that anyone who rejects faith and embraces materialism and polytheism for the sake of vanity is on the right road. It is only his ignorance that impels him to an evil end and death.

If you question him as to his beliefs, why he so thinks, why he turns aside from the beliefs of all and from the religion of his people, then you will understand, at the beginning of his answer, his perplexity and foolishness.

It may be that he wishes to imitate a disbeliever who followed this path. Bereft of all shame, it may be that he seeks cheap and dishonorable ends such as temporary pleasure and delight. The reason of this person disappears and he becomes blinded to reality. The latter improves and leads to the category of truth and true opinion. The end of such a person is destruction in this world and in the next. In addition, he will spoil those perplexed ones who follow him. Such a person is like the root of the thorn whose branches, when they grow, cause damage. Rooting it out is difficult; nothing will extirpate it except an intense fire which can destroy the branches and also the roots. If some of its seeds fall to the earth so as to replace it, the harm is also great. There are many young and ignorant men to follow them since the inclination of young people is toward pleasures and joy by proper means and little trouble. But they also consider the improper as proper and so the followers and followed ones are surrounded by flames without extinction. There is suffering without end for the ill famed in this world, and painful suffering in the world to come.

It is wonder that he ignores the benefit of his Lord. If he awakes (6a) from his sleep and recovers from his intoxication, then when an unbeliever considers his complete creation, his living and his continuance, despite the contradiction of his four elements and the opposition of his mixtures, the solidity of his joints and the firmness of his form, then he will find proof for the unity, the ability, and the wisdom of his creator. If

this proof eludes the unbeliever, then there are several other proofs. These demonstrations are to be found everywhere in such wonders of the world as metals in the mines of the earth, stones, plants and trees, animals and birds, and water creatures, each with its own attributes. Then one should reflect on the subdivisions of these and their attributes which differentiate their actions. Then he should be content with what has been presented if he follows the truth of the deductions.

However, if these proofs are not accepted, then some useful remedies for his blindness consist in reading the books of the divine laws which urge one to good behavior, order pious acts, incite that which strengthens moral character, improve one's deeds, and are the source of good manners and virtues which have disappeared because of ignorance. He who turns aside from this and refuses to follow its suggestions and ways, does himself much harm.

For this reason, Aristotle, in this connection, said to Alexander, "Be on your good behavior always since only this will insure perfect duration for you."¹¹²

Then, if there is anyone who is blind to all these, he may find the remedy for his blindness in reading the books of the ancient wise men (6b). The latter exerted themselves in the rational methods and laws of analogy to discover and comprehend truth. Thus they found eloquent sayings and clear proofs for the necessity of acknowledging the exalted Creator and his unity, his might, his wisdom, and his existence, and acknowledging his prophets, his divine laws, the rewards and punishments (of sin) which are numerous and long lasting, and the weight heavy.

However, there is no harm in ascertaining a little about Him for the one who seeks truth, and for the one who, in blame and shame, has turned aside from Him to evil opinion and corrupt sects. In this sense, it is essential for me to present the sayings of the philosophers. I shall begin with a relevant statement by Aristotle in his book, *Metaphysics*, especially in the section concerned with God.¹¹³

"That which occupies no place is endless, and cannot be included in material like other things; that is God." In another place, he added, "It is proper to believe that that reasonable thing is different from all other things, not only in its nature but also in its behavior; that thing is God Almighty. I mean that greatest thing and the first which is immovable." In another place, he said, "All material things in earth and air may be recognized by the sense of sight, as animals and plants; however, the first honorable thing is immovable and immortal." He also said, "There is nothing common to God and other beings lower than He, in origin, in place, and in beginning, (7a) since God has no

¹¹² B. Kubler, ed., *Julius Valerius* (Leipzig, Teubner, 1888) contains the letter of Aristotle to Alexander.

¹¹³ Hugh Tredennick, transl., *Aristotle's The Metaphysics* (London, 1935), pp. xii, vi-viii.

beginning. However, he is the beginning of all other lower forms."

He also made prophetic statements as, "It is natural to suppose that nature which does not understand its own working is driven to its purposive ends; this proves that it was inspired from above just as those who are inspired make statements which they do not understand." He further said, "The Creator of this world and its regularity is the first truth, and only He has the purest knowledge as to the composition and arrangement of things and those which follow," and he added, "It is obvious now that God knows himself and so he knows everything because he is the beginning of everything, its giver and dispossessor for all."¹¹⁴

He also related in the book, *On the Learning of Existence*, numerous sayings about the branch of knowledge but I shall be content with one saying from the eighth chapter, "Nature is not unprepared but it is well prepared and created, requires His will and has no end." (7b)

As to Plato, in a book concerned with the soul as related to a plummet, he wrote much on reward and punishment, judgment in the world to come, and the classes of rewards and punishments after death. This is overlong but a small part bears repetition.

Socrates¹¹⁵ said, "I think, O Cebes, that you have not yet understood me." "Yes," replied Cebes, "you must understand that the soul is not finished after it leaves the body." Cebes said, "I believe in this." "Our souls," Socrates said, "after death are not to be found in this time but in immortal time. If it were different, it would be appropriate for evil people to obtain comfort." He added, "The guardian angel of everyone drives him after death to some place where he will be judged. Then he will be transported for reward or punishment; then he will be taken to many places at different times." (8a)

This is unlike what Archinos quoted of Thales for he said that the souls go along one single path. "The truth," Socrates said, "is that there are many different paths branching off. We declare that this is according to what is deduced from the sacrifices and

duties incumbent in the divine law to transport the soul which goes obediently and cooperatively, and does not ignore anything."¹¹⁶

As for the soul which was inclined to bodily pleasure,¹¹⁷ it remains for a period of a long time, goes to and fro in perplexity, pulls violently in a contrary direction, meets many kinds of fatigue and difficulty, and goes beyond its path having trouble in finding its driver angel to reach the place where there are many other souls. If the soul was very bad and committed many evils such as murder, no angel will be prepared to lead it anywhere and so it will remain perplexed for a lengthy period until it reaches its proper place.

Plato, in this book, described that land as green and fertile with many species of odoriferous trees with beautiful scenery. Another land with numerous turbid rivers, containing mud of vile odors and ugly colors, which go down to the bottom of the earth and fire is called hell. The former is the home of the virtuous and the latter where the evil are tormented forever. This is from the book of the famous Plato (8b).¹¹⁸

I have quoted these famous men for those unlucky people who do not conduct themselves properly so that they may abandon ignorance and enmity. Here are additional quotations from Hippocrates and Galen to clarify it further.

In his book, *On the Being of the Embryo*, Hippocrates acknowledged the exalted God for his creation of the creatures in that he bestows the breath by its inclusion in the center of the seminal fluid. In another book, *On Pregnancy*, he said, "Many of those born after [only] seven months of pregnancy continue to live since this is the period God chose to create this embryo in the uterus."¹¹⁹

In his book entitled *Aphorisms* he said, "God protects him to whom he gave the knowledge to aid the ill."¹²⁰ In his book, *On Beliefs and Testaments*, he said, "I swear by God, the Lord of life and death and the giver of health."¹²¹ I also swear by Asclepius and the Creator of recovery and by every remedy which originated with Asclepius." He also said, "I swear by the friends of God, men and women."

¹¹⁴ Ross, *op. cit.*, 997b, 1044a, 1072b, 1073a, 1073b, in vol. 8 of *Metaphysics*. The quotes are not exactly as from the Greek. The text, however, seems to give the same ideas in a different fashion.

¹¹⁵ Plato, *Phaedo*, in B. Jowett, *The Dialogues of Plato* (Oxford, 1953) 1: pp. 452 ff. To such men as al-Ruhāwī, al-Rāzī, and al-Kindī, as well as other intellectuals of the period, Socrates was considered as a representative of ancient classic ideals. Al-Rāzī referred to him as the "Imam" who by his death for the truth carried out God's will. This is not necessarily the Socrates of history. Cf. P. Kraus who discussed the *Kitāb al-sira al-falsafiyah* of al-Rāzī in *La conduite du Philosophe, Traité d'Éthique*, in "Raziana" in *Orientalia*, N. S., 4, (1935): 330-334. In this autobiography, in a portrayal of an ideal ethics, al-Rāzī describes Socrates as a social, life-loving man. It is of interest that this work of al-Rāzī is written as an apology for his way of life.

¹¹⁶ Jowett, *op. cit.*, pp. 466-467.

¹¹⁷ *Ibid.*, pp. 467-468. In Arabic ethics, as in the Greek (cf. Aristotle, *Rhetoric*, ed. and transl. by M. Dufour (Paris, 1932), 1370a) the distinction is made between intellectual and physical pleasure. Al-Ruhāwī does this also. Another good example is to be found in the much later ibn Ḥazm's *Kitāb al-akhlāq wa'l-siyar* (Beyrouth 1961) p. 13 Ar.

¹¹⁸ Jowett *op. cit.* 1: p. 470.

¹¹⁹ É. Littré, *Œuvres complètes d'Hippocrate* (Paris, 1851) 7: pp. 436 ff.

¹²⁰ This particular aphorism is not to be found in the *Aphorisms* as published by Jones, *op. cit.* 4: pp. 98-122.

¹²¹ This is part of the oath of Hippocrates. The next sentence conditions it to conform with the belief of the author. For the Asclepius ideal, cf. E. J. Edelstein and L. Edelstein, *Asclepius* . . . (Baltimore, 1945) 2: pp. 115-116.

Galen, in his commentary on this book's first chapter, said, "The right thing is to say that God—to Him belongs the glory and power—created the medical art and inspired men in it. This power is not accessible to the reason of men because God only can recognize what he creates. Medicine is not of a higher level than philosophy which had been organized by God Almighty and by his inspiration."

Galen,¹²² in his commentary on the second chapter of this book, said, "After having given the oath of Hippocrates to the one who has learned the art of medicine by the grace of God—may He be blessed (9a) and exalted and accepted as the creator of the medicinal art—he returned and was given the oath by the friends of God some of whom were Greeks and some not Greek." Thus, each one of them swore by God and by his friends to preserve that for which he vowed.¹²³

Galen stated many things in his book in regard to this topic; only a little is mentioned [here]. In the fifth discourse of his book, *On the Uses of the Organs*, he said, "No matter how great your powers of endeavor and tender care, they cannot approach the wisdom of the Creator." In another statement, he said, "These things are sufficient to prove the wisdom of God in [his] creations."

In the sixth discourse of his book he said, "Our Creator is wise; nothing is hidden from his wisdom. He never created anything but useful things." In the seventh discourse he discussed the heart and its being placed on the left side. "We should thank Him because he took such care and made it as it is now so that the normal warmth would not disappear." He added, "I confess that I do not have the power to thank and praise God for the complete creation of animals and things. It is impossible to thank the Creator completely for the kindness he has imparted to me." In the ninth discourse he said, "God never created anything we have described in vain or without purpose." In the tenth discourse he said, "All that we have described indicates the precedence of the knowledge of our Creator and His wonderful wisdom."

(9b) He said, "When my duty was accomplished to refer to the explanations of learned men, I saw in a dream, as an inspiration of God, that a knocking at the

door was blaming and criticizing me saying, 'You did misuse this instrument which God prepared and betrayed the Creator in explaining this great act which indicates the extreme mercy of the Creator for creatures.' See the last part of this discourse [sic]." He said, "After this, an angel ordered me to explain it and to do as he commanded." He added, "God knows that I am not expanding on what I am saying, I swear that I am telling only the truth. Before God—glory be to Him—ordered me to compose this book, I had resolved to do away with most of it so that many people would not hate me."

In the eleventh (discourse), he added, "I do not understand how it is permissible to accuse anyone who claims that all of these wonderful expedients and superior wisdom occur through research and agreement. If it is from research and agreement, then it is through intention, care, purpose, kindness, and wisdom." Galen said, "This discourse acknowledges the correctness of what Moses—peace be upon Him and other prophets—said." That which is more virtuous and correct for us is to state that in the beginning the Creator made all according to the way Moses relates. Then he said, "You must accept these things as they are; there is no need for inquiry. This involves boldness, attack, and bravery, and once it is commenced, it cannot be dropped since there may not be a proper path to the desired answer."

In the seventeenth discourse of the book, he said, (10a) "We can find the wisdom and powers of God even in a flea. God created this animal and takes care of it. This is important since one cannot suspect that it is without intention and the utmost of wisdom. Thus, one sees the virtue of the wisdom of the Creator and His power in the various species of unique animals. This great power of God is shown in the science of medicine in that God does exist and takes care of animals and other creatures."

Galen also stated in his book, after God remembered him and cured him of a serious illness, "For this reason, I believe in honoring and respecting Him, and I follow the divine law and morals, and accept what Socrates said of the orders of God."

If, after their important statements of ancient virtuous men who acknowledged the exalted God and his prophets, the inspiration, and reward and punishment, then the deluded wretch may still not be convinced, we can only say that what we have written is sufficient for the one who believes in truth and tends to do the right thing. If there is further need of similar quotations, then I would add those from Pythagoras, Epicurus, Democritus, Zeno, others like them, and the sayings of modern learned men as al-Kindi.¹²⁴ The latter has written much on this topic especially in his book, *On*

¹²² Galen wrote such ethical works as *περί ἡθῶν*, *περί ἀλυσίας*, *περί ὁμονοίας*, *περί τῆς διαβολῆς*, *ἐν ᾧ καὶ περὶ τοῦ ἰδίου βίου*, *περὶ δικηχῶν ποιήσεως*, etc. Only the first is now known. Cf. n. 129. Another minor one on medicine is extant (ed. by Kuehn, 1: pp. 1–103, *περὶ διαγνώσεως καὶ θεραπείας τῶν ἐν τῇ ἐσχάστῳ ψυχῇ ἰδίων παθῶν*). The Galen commentary on Hippocrates' *On Beliefs and Testaments* does not seem to be extant. Al-Ruhāwī has quoted from the first, second, fifth, sixth, seventh, ninth, eleventh, and seventeenth articles of this work. Cf. Mewaldt under Galenos in Pauly-Wissowa *Realencyclopaedie d. Classischen Altertum*. (Stuttgart, 1910) 13: col. 588, who states that the titles on ethics seem like works only of a dilettante.

¹²³ It is of interest that al-Ruhāwī falls back on these ancients who "acknowledged the exalted God and His prophets."

¹²⁴ Died ca. 870. A Muslim, he was a scientist but he was better known as the "Philosopher of the Arabs."

Philosophy.¹²⁵ I can mention also Ḥunain,¹²⁶ Ishāq,¹²⁷ and others of the rational sciences. Ḥunain is opposed to the contrary of the sect of the oneness [of God]. (10b) He has composed an article on the Unity and has also composed an article on the rightness of the prophets. However, I shall content myself with what he stated in regard to the blame and fault for those for whom goodness and improvement are desired. One may consider these as inanimate or as beasts upon whom any blame or rebuke may be impressed. It has been said to Buzurjmīhr,¹²⁸ "Why don't you rebuke the ignorant?" He retorted, "Because it is clear that it will not increase their understanding."

Let us return to you, O friend of good taste. When your belief is in accord with the previous statements acknowledging God—blessed and exalted be He and there be love for Him and confession of His truth, acknowledgment of His prophets, and the acceptance of His scriptures—then you must adore Him to make Him content. You cannot do this without improving your moral character and your actions.

This is not possible for you until you know the origins of the powers of the soul. There are three of them as the ancient scientists and physicians have explained. Galen¹²⁹ described them and elaborated upon them in his book, *On the Opinions of Hippocrates and Plato*, in his book, *On Ethics*, and in the article in which he explained the dependence of the powers of the soul upon the complexion of the body.

¹²⁵ Although al-Kindī wrote many books on philosophy, only a small part of it is today extant. Cf. C. Brockelmann, *Gesch. d. arab. Litt.* G. I: pp. 208–209.

¹²⁶ Ḥunain ibn Ishāq (809?–873) practiced in Baghdad. Not only was he a physician and translator of many scientific and philosophical Greek works into Syriac, but he also produced a number of original works.

¹²⁷ Ishāq ibn Ḥunain, son of Ḥunain (in the previous note), died in 910 or 911, was also a famous translator but he concentrated his work primarily in philosophy.

¹²⁸ Buzurjmīhr, according to tradition, was a Persian endowed with every ability and virtue. He was a minister of Khusrāu I Anūsharawān (sixth century A.D.). Cf. H. Massé in *Encyclopedia of Islam* (new ed., Leiden, 1960), pp. 1358–1359.

¹²⁹ Galen's philosophical writings may have been intended for future physicians who were in training. He himself in *De libris propriis* listed twenty-three works on moral philosophy. Al-Ruhāwī's favorite Galenic writings in this area seem to be the three mentioned here. Kraus was the first, however, to publish the text of *περί ἠθῶν* (*De moribus*) in *Bulletin of the Arts of the University of Egypt* V/1 (1937) *Sectio arabica*. This treatise is closely associated with the *De placitis Hippocratis et Platonis*, also mentioned here, and which is a major source of the Stoic Posidonius' ethics (L. Edel, *Amer. Jour. Philol.* 67 (1936): pp. 286 ff, called "The Philosophical System of Posidonius.") Walzer states, in turn, that Galen's whole theory of *ἠθῶς* and its implications relies on Posidonius' restoration of the psychology of Plato who contested Chrysippus' denial of the irrational in man (R. Walzer, "New Light on Galen's Moral Philosophy," in *Oriental Studies I*, ed. by S. M. Stern and R. Walzer, *Greek into Arabic Essays on Islamic Philosophy* (Oxford, 1962), pp. 361, 142 ff.). Cf. also S. M. Stern, *Classical Quarterly*, N. S., 6 (1956): pp. 91–104.

He [Galen] said that the first power of the soul is the sensory one which is accomplished through the brain. The second power is the selfish one accomplished through the heart. The third is sexual whose acts are accomplished through the liver.

Know that with the moderation of these powers in man that his moral character may be virtuous and praiseworthy and his soul pure and clean. When these powers come out without having had a moderating influence, then his moral character is ruined and wicked. Moderation of the sensory power leads a man to acquire intelligence, reason, good learning, discrimination, and healthy thought. Moderation of the selfish power helps one to acquire a sensibility, respect, lessening of wrath and anger. (11a) Moderation of the sexual power helps one to achieve chastity and to desist from following desire and pleasure.¹³⁰

After you know what we have mentioned, it is necessary for you to train your soul and accustom it to these three good qualities, i.e. reason, respect, and self restraint, to be virtuous, ethical, and to cleanse and improve your soul in order to acquire the sciences.

Strive to avoid the lessening of these powers; this leads to illness as when the sensory power becomes immoderate and causes evil acquisitions and ignorance. The illness which occurs when the selfish power loses its moderation causes quickness of anger and violent outbursts of impatience. When the sexual power becomes inordinate, this illness causes a man to lose control of his soul, to be weakened against desire. Avoid these six cases for they are illnesses of the soul, and cause impurity, wickedness, baseness, and corruption of the just *modus vivendi*. In virtue, the soul places everything in its place.

Take the recommendation of Aristotle to Alexander. "Don't be hot-tempered because this is for lions and boys. Don't repent excessively for what has been lost for this is the attribute of a weak woman. Don't marry because this is for pigs and because it shortens life. Improve your soul and people will follow you. Love freedom for it is a virtue of the soul which enables compliance with devotedness to good deeds. Be of noble aim to attain goodness and generosity. Otherwise, a base goal attains evil and lowliness. Do not hold an opinion violently. Distinguish good from bad with intelligence to keep your logic strong and your action praiseworthy. Retain caution in time of anger and restrain excessiveness in requital with politeness, and avoid obstinacy (11b) together with an unsociable disposition. Both of these indicate folly. Be brave in time of fearful circumstances and do not be afraid even of death. Be bold and brave in time of necessity toward danger preferring a noble death to a blameworthy continuance. Use patience, choose toil, and do not wish for rest and pastime. Be chaste, meek, and grave

¹³⁰ Cf. *Adab al-ṭābīb* MS, fol. 70b.

in order not to be silly, ridiculous, and foolish. Burn down desire with the flame of patience before pleasures bring you to an early grave. Together with embracing justice, control your instincts. Understand the creed and laws of your people and country and do not disagree with them or your demise will be near and quick."¹³¹

Aristotle said, "The first proper thing which we must do is to fulfil the exalted God's will. The second thing is our obedience to Kings. Afterward, our duties are to the people of our civilization, our countries, and our ancestors. After this come our predecessors; in this there is mercy which is a part of justice. It involves justice, safety, health, faith, and some joy. Be of kindness, compassion, and of manly nobility since these stem from the quality of freedom."¹³²

Homer, the poet, said "An avaricious person does not attain a high rank but the generous does achieve a high position. Have affection toward relatives and good men. Be kind toward strangers for these are the acts of polite freemen. Happiness is not the affection of generosity, being diffuse in speaking, profiting by pleasures, possessing pleasure with sovereignty, and winning a fight. This is because their repetition and perseverance loosen the soul. But, bearing distress and [using] the power of the soul in time of misfortune, and being satisfied with the quality, all of these, are made up of happiness and bravery."¹³³

Socrates said, "May God requite your lifetime. Strive after these in conformity (12a) with your group for there is virtue in this. Be with your parents just as it is necessary for your sons to be with you. Behave toward them as you would like them to act toward you. There is no value in quick fraternization and in hastening the decision, for both are shallow and frivolous. Know that the affection of good men increases continually and that of evil men ceases abruptly.

"Ancestral inheritance is not so valuable as the gain of brethren and friends. True friendship appears in bad times just as fire uncovers the purity of gold. Hasten with help toward your friends before they make the request of you, especially when they are hit by a calamity. Be of help to people of goodness and purity; do not rely upon corrupt and evil people. Hate the deceiver and cringing flatterer as you despise the liar and thief. Be easy and sociable with friends, bestowing respect and favor upon your neighbors. You should be nearer to those who want you and forgive those who have treated you harshly. Know that the straightforward-

¹³¹ Cf. the pseudo-Aristotelian letter to Alexander in Kuebler, *op. cit.*

¹³² This quotation seems to be from a pseudo-Aristotelian work unknown to the present author; it does, however, paraphrase some of the material in the *Liber de causis*. Cf. O. Bardenhewer, *Ueber das reine Gute . . . Liber de causis* (Freiburg, 1882). This contains the Arabic and Latin texts. Cf. also 'Abd al-Rahmān Badawī, *Neoplatonici apud Arabes* (in *Islamica* 19) (Cairo, 1955).

¹³³ As a Homeric quotation, this is highly doubtful.

ness of politeness together with wisdom is better than money and rule."¹³⁴

Aristotle said, "Wisdom is the basis of expedience, the weapon of the soul, and the mirror of reason. Try not to be a preacher with beautiful sayings but act also. Knowledge must be absorbed step by step. You must impregnate your mind with culture just as the tree is founded on roots. Train the soul with wisdom to comprehend the truth just as one trains the body to be patient with suffering. Know that through wisdom people attain the ranks of great virtue. This is similar to the case of the ruler who must remove the evil since their faults are attributed to him."¹³⁵ (12b)

Similarly, O physician, you must remove the evil people from among your friends and students so that what they do and say may not be attributed to you. Know that lawful poverty is more proper than illegal riches. Continued good character is better than precious property which is perishable. Further, money may be found with the foolish and ignorant but wisdom is found only with people of virtue and perfection. Your joy and sadness must be moderate,¹³⁶ not in excess.

You should consider what I related of the words of Galen in the beginning of the second discourse of his book about the complexion. After he described the state of the moderate complexion, he said, "This is the state of the man who is most moderate in his body's complexion. He is also moderate in his soul between courage and cowardice, between slowness of the late comers and the haste of impetuous ones, between kindness and envy. Whoever is like this is of good soul, a friend, a lover, and one who acts brotherly and meekly toward people. If you try to conceal property in your house, you must avoid concealing this condition in your soul. Strive, O seeker of wisdom and knowledge, to obtain them from books and origins. Acquire their utterances and meanings as the bees pick up the best of all plants to build a home and to store the honey."

¹³⁴ The source of this Socratic statement is not known to this author.

¹³⁵ Possibly pseudo-Aristotelian; source is unknown.

¹³⁶ W. F. Thompson, *Practical Philosophy of the Muhammadan People . . . being a translation of the Akhlāk-i-Jalāly* (London, 1839), writes of the mean, "According to this exposition, therefore, the difference in the steps of perfection will be measured by the difference in their proximity to the true equipoise. (Found in Cicero after Plato, *Tusc. Disp.* 13, "*Unde igitur rectius possumus quam a communi parente Natura? Quae quidquid genuit, non modo animal sed etiam quod ita artum esset a terra ut stirpibus suis niteretur, in suo quidque genere perfectum esse voluit.*") The principles of mental therapeutics should follow analogy, and the standard of therapeutics for the body.

Al-Rāzī, in his autobiography, declares that he practiced all physical satisfactions only to the point of moderation. This is seen throughout his *Kitāb al-ṭibb al-rūḥānī*. In his *Kitāb al-sīra al-falsafiyah*, al-Rāzī gives his six maxims of philosophy. One of them states that nature and passion are to be resisted (cf. M. Meyerhof, "The Philosophy of the Physician Ar-Rāzī," *Islamic Culture* 15 (1941): pp. 45-58.

Follow the above advice and injunctions in which blessed souls find satisfaction. Be attentive to the care of your body with whatever is fitting for it to preserve its health. I shall mention all of them in the second chapter of this (13a) book which I now begin. Reflect well on it.

CHAPTER II

On the Means and Measures by Which the Physician Treats and Improves His Body and Limbs.

I say, and God is the aid, that the Creator—may he be exalted—when he wished to display his wisdom and his might, he rendered each creature in a perfect form, so that the evidence (of His greatness) would be manifested in His creation—blessed be He. Some were made like others putting them, however, in different ranks in order that they partake of His wisdom in accordance with the nobility of their rank. The Exalted One gave those which grow [some] of the four faculties [powers] by which they are fed and grow in order that they be viable in their species. These he did not give to inanimate matter.

To man, He, the exalted, granted from His light, a learned, reasonable, discriminating soul which He did not give to other animals. For this reason, man is the most perfect of all animal species. He possesses a living body and a reasonable soul which complement each other. Thus, his body was constructed as suitable to his faculties just as other animals were fashioned in regard to the powers of their souls.

Those who are brave, love victory and killing, had their bodies built, suitable for their souls, such that they, like the lion, tiger, and wolf, could perform these acts. Those who are cowardly had their bodies created in a suitable fashion for running, as the hare, fox, and similar animals. Thus, the body of man was also constructed to be suitable for his soul. Since the soul of man is the purest of souls and the most moderate, it was given a body which is the most perfect in its origins, form, and is the most (13b) moderate in complexion. This is so that its acts be perfect, complete, solid, and as sure as the perfection of his soul, its completeness and nobility.

Since the body is an instrument for the soul, and the organs of the body were created for the soul of the animal to accord with its powers, then each animal of a certain species can perform something unique which other animals cannot. Their organs are an aid in this respect in that the acts of the wasp, bee, and ants are fixed by them; each one by divine ordinance. Each has its unique form in accord with what is suitable for their actions, and as the spider's web has its function as well as silkworms, etc.

Man, as a complete creature, with the nobility of soul and the power of reason can reach knowledge of all crafts and arts. The omniscient God wished to demon-

strate what is in the power of the man's soul in the form of the act, and so created the organs of the body perfectly and completely. Thus, with his reason, he can do what all animals do naturally. He—blessed be He—created two hands for him so that he could perform fine and noble works of the crafts. In this way, he obtains various weapons as the sword, spear, arrow, and shield, and trains the horse to ride accordingly.

These functions are divided among animals as that the tusk of the pig is for tearing and cutting like a sword, and the spear of the porcupine with its thorns, and the horns and claws of other animals. The totality of these is found only in man for he invents them with his reason, seeks the activities, and carries them out. There is only one act which is natural for an animal.

In order to live, the animal is compelled (14a) to obtain food, drink, shelter and clothing against hot and cold, and progeny; they instinctively build nests and homes, and, by instinct, know many kinds of foods suitable to sustain their lives. They do not approach what is not good to drink or eat. The males and females of each species mate for reproduction. They do not do this excessively. Some do it in certain periods and not in any other. That which they cannot do instinctively for themselves God—may He be exalted—kindly created for them so that they would not perish, as wools, furs, feathers and hair to protect them from heat and cold.

As to the rational man, may God be blessed and exalted, He granted him what is noblest in nature crowned with wisdom, science, and knowledge of the past. Thus man understands by his reason what is useful as when he chooses a dwelling, clothing, and many kinds of food and drink. He also knows how to avoid detrimental and afflictive matters whether natural or arbitrary. The Creator—may He be exalted—joined pleasure with the instincts in His wisdom of the obvious sensory matters so that the animal desires and thus uses these. If this were not so, the animal would not reproduce and would not remain [in existence].

Since instinct makes for pleasures and longs for them, and since the animal species have no reason to determine properly what is good for them, the Creator—blessed be He—kindly determines it for them by [their] instinct. For this reason, in most animals, there do not exist the ailments which affect man.

Man has a mind by which he can determine and distinguish between detrimental and useful things for his nature as (14b) in food, drink and other matters which demand his attention. If he does not follow his reason, as in concerning himself with pleasures and similar matters, detrimental and evil,¹³⁷ then sickness

¹³⁷ In this connection, it is interesting that ibn Sīnā (980–1037) who derived his ethics from Aristotle (cf. G. Gabrieli, "Avicenna," *Archeion* 4, (1923): pp. 258 ff.; *Risāla fī al-akhlāq* in Brit. Mus. 978–924) was himself not a moralist. To him, evil was the non-existence or absence of an element needed to perfect matters (S. M. Afnan, *Avicenna* (London, 1958)).

and bad symptoms will affect him with death expected. In doing so, he becomes lower than beasts since they were created without reason but with instinct thus making them superior in [certain] situations, and safer and better than one who does not use his reason.

As to the person who follows his reason, the order of divine law, and travels in the roads and paths of both, then he is virtuous, has knowledge, and is really human.

Since the natures of men are different because of the difference in their complexions, the duty of the mind is to reduce anything immoderate to moderation. This is done in two ways. One of them is to teach that which moderates the morals of the soul, and the other is that which moderates the complexion of the body.

As to the teaching of that which moderates the morals of the soul so that it may acquire virtue and lead [the soul] to the path of truth so that it may be free from the afflictive pleasures, evil and vileness, of nature, this is rational teaching and cultivation which leads man from brutal to human behavior. Good breeding helps when it is rooted and fixed in the soul of man together with habits found in man in infancy.

That which gives one good breeding was known by the ancients as "acquired reason." Its relationship to universal reason is as that of the rays of the sun to the sun. Just as the light of the sun brightens the air, and by its falling on things perceptible for the senses, so is the soul the light of universal reason. It is shaped as that which shapes it (15a). It manifests its light [from universal reason] and its daylight. When its light increases, it comes from reason, and [lays open] inquiries on the virtues and sciences. In this way is developed the learned, cultured man whose science is followed and who is imitated.

He who knows that God—may He be exalted—has appropriated much to him, enabled him to profit by it, to be useful to others, and granted him an incorruptible favor which is never lost, then he must not hesitate in the twinkling of an eye to thank Him who favored him. He is obligated to give the same favor to one who seeks it and to help him from the fathomless sea of deadly darkness to the height of the light of science which allows life. He who has cultivated his soul makes it acquire eternal life. We supplicate God to allow our souls to live with His benefit; we thank Him eternally and permanently.

The preceding is the first kind of teaching of reason and its good breeding for the nature. This was done briefly to urge the young toward an advantageous direction not only for this life but also for that in the other-world after death. Now it is proper to discuss the second kind of rational teaching which moderates the complexion of the body and preserves its health to

complete all this instruction. This is the aim toward which we strive in every way in this book. I shall mention what it is possible to discuss in a brief fashion with easily [attainable] purposes and with familiar and suitable language. This will be more effective for the friend of culture and for his purpose, and to facilitate explanation for him. In God I trust and of him I ask help.

The second teaching set up by reason to put nature in the proper order and to improve man concerns moderation of the body, help it acquire health, and to preserve the well-being of the body. This teaching and its practice is called the art of medicine. It is that which the Creator—may He be blessed—bestowed upon reason, and then reason set down its principles for reasonable men, teaching them the extraction (15b) of its consequences.

This is done in two ways, analogy and experience. These are the ways, in sum total, by which medicine may be learned. These were taught and then practiced.

If such things are clear to you, O friend of the learning of medicine, such as the principles of the ways of teaching determined by reason by rational men, and the whole of it has been disclosed to you, then let us return to elaborate on the second teaching which improves the body. I shall speak to you clearly and simply. We are enamored of the explanations given by scholars to prepare the way for the subject and elaborating on its ways.

The first principle of this way for one who seeks to improve his body is to examine its activities. If he finds that they are on a normal course and that they function properly, then he knows that his body is hearty without any ailment. He must examine all organs of his body. Thus, the eye was created to see colors and forms. If you find that it perceives visible objects without impairment and without shortcoming, then it is said to be in health. If it fails [in its function] and does not see, then it is said to be sick or to have lost its vision. One may say the same about other organs of the body and about the whole systemic system.

Then, after knowing the state of health of the body, you must learn how to preserve bodily fitness so that the body will not fall into disease. Following the second teaching is a third which is concerned with what we must know to eradicate illness, the nature of the illness, where it comes from, how it is removed, and by which manner and therapy it passes away. He must know all these if he eagerly desires knowledge of treatment of diseases. It is not our purpose to elaborate on this subject nor to discuss the science of the third teaching here except by way of digression. (16a)

In the second chapter of this book I shall discuss the preservation of health, directing the body in the right course as to food and drink, and in [its] treatment. By a general law, I shall sum up my opinions in determination [of the right course]. Thus, it would awake

This missing factor is an accident (i.e. in the chemical terminology of the day) which is a concomitant of matter, whether it be internal or external.

one who has a mind and intelligence to understand the principles of the therapy of the ill; the summing up will be of profit to him. It also urges students to seek for knowledge about diseases, and how to tend and treat the sick.

Let us return to our purpose and speak to the one whose body is healthy. The first thing it is necessary for one to know is how to preserve health and to know, in turn, how to restore it when it is lost.

Now, know that health is retained with that which is similar to it for likeness perpetuates the like. Attraction is with what is in opposition for the contrary, for the contrary drives away a contrary. Because of this, let it not cause you to err as when you are well and bring cold things to hot. This is done only in disease for cold complexions are repaired with hot. But, this is not true in the preservation of health. Health is a natural phenomenon of the body. We have mentioned the knowledge of what health is a little earlier. Now, we shall relate statements about it by ancient physicians as they defined it.

They say that health is a natural state of the body by which it completes its functions. Since the activities of the body are numerous, their number equals that of the organs of the organized body. Each action of the activities of the parts of the body must be effected in a way that depends on the health of an instrument as taste; this is not completed except when the mouth and its parts are in good health, and also the sight, and other activities.

The organs of the organized body by which the functions are carried on are sound in three (16b) ways. One is by the harmony of the complexion of the organ. The second is by the harmony of its shape, and the third is by the harmony of its connection. The word "harmony" has three meanings: The first is the harmony of the four elements in the body.¹³⁸ These are equal to each other. There is as much heat as cold, and as much moisture as dryness. This is a harmony whose existence is not necessarily obvious to the senses but is true in theory. This is because the body at any instant cannot remain in one state but it changes from one state to another continuously.

The second class of harmony is akin to the first and near to it in importance. It is scarcely found.

The third class is very common and inclines toward one of the four complexions, i.e. heat with dryness,

¹³⁸ The subject of harmony and symmetry in relation to concepts of atomic theory were discussed by Democritus who was a physician as well as a philosopher. Similar discussions were held by Pythagoras. The goal of their medicine was the same as that of their philosophy. The success of the Democritean empirical investigations is difficult to assess today since it may have been that Plato's enmity toward Democritus contributed toward the loss of the latter's works, especially the probably important *περί ἀνθρώπου φύσις ἢ περί σαρκός*. (J. Schumacher, *Antike Medizin* (Berlin, 1963), pp. 150-155; Pauly-Wissowa *Realencyclopädie* (Stuttgart, 1903) 5/1: p. 136, article by E. Wellmann u. Demokritos.

heat with moisture, cold with moisture, or cold with dryness. They are to be found in the healthy and not, in themselves, at fault. For this reason, they are called harmonious. It is necessary to preserve health in the case of each of these complexions. This is impossible until one has acquired knowledge of their qualities and quantities, and the symptoms of them. In this way one may retain the qualities, quantities, locations, times, and other elements of preservation as the ancient physicians explained in their books.

You must know when you treat a patient that the complexions of bodies are different and every one has its symptoms and marks. For this reason, you must have the skill and professional sense to determine the different possibilities. This will come about only when you learn the specific laws of the science. If (17a) you have acquired the science with its principles and rules and have been trained in diagnosis, then it is necessary to consider the special methods in which one proceeds to preserve his bodily health.

The first to know these methods, to acquire them, and to practice them is the physician. One must follow them because it is bad to do the contrary of what he thinks to be good in order to gain delight in pleasure or entertainment. After the mentioned rules of the physician, he must know that the complexions of bodies are not fixed in one state for there is a great speed in their changes and alterations. There is a necessity for them to dissolve and always decrease. For this reason, it needs that which will oppose this to prevent it; this opposing force is food. Since there is no way to return the dissolved part of the body except that which is similar to it and in like amount for this is natural, therefore we must not feed our body anything which is not like it. We must try to use the food and drink most similar and most akin to our species. It must also be quickest in being transformed into it. He who does not know the needs of the body, the necessary food and drink, and the amounts of their complexions is not able to regulate the food and drink for the preservation of health, and is unable to determine which of them are suitable.

Even if the food and drink are similar to the bodily material and complexion to the utmost, they are not nutritive unless they are cooked and become adjusted to the organs, and ripen. Nature discriminates among the foods so as to distribute them among the proper organs (17b) which resemble them. There may be excesses which cannot be utilized. The Creator—may He be exalted—created special places in man's body to gather these. Thus, from these, they are expelled so as not to corrupt by their abundance and protracted detainment. For this reason, it is of importance to the physician to seek out these passages and ways whether their functioning is as natural as necessary or whether they require aid from outside. It is the duty of the physician to search for these and to assist nature in any

manner in order to expel the excess and to improve the function as much as he can.

It is clear from what we have declared that the physician must have knowledge of what is brought into the body, its types, the ways in which it comes, how to improve digestion, and its excretion.

Ancient physicians explained that when food reaches the stomach, it is digested there for the first time. Then the liver absorbs its purity through the veins called the mesenteric veins. [The matter is] clear for the sediment which remains is abandoned in the intestines and is accumulated in the colon then issues through the anus. The clear part which is transferred to the liver is digested in it a second time. After it is carried to the organs, as much as is necessary for each one, the excess which remains is taken to the kidneys, then to the urinary bladder, then out with the urine. What arrives in the organs is digested a third time before it becomes like them. So, what is similar to the organ becomes part of it; what does not become so, passes out with perspiration and with the dissolution which is not perceived by the senses.

If all is as we have described, then the physician must examine the excretions, their types, quantity, quality, and time. He must assist nature in excretion by means of bodily exercise, rubbing (18a), and oiling. All of these mentioned are of different gradations, act in different ways, are more appropriate for certain bodies, times, and places, according to specific conditions at hand.

Strive, O physician, after the knowledge of these and acquire the science of their principles from Galen's book, *On the Treatment of Healthy People*, which comprises six articles.

Before we mention the treatment of the organs and the duty of the physician in regard to his knowledge, we should be aware that there are two kinds of organs. One of them is obvious to the senses as the eyes, hands, and feet; one of them is hidden as the stomach, lungs, and liver. Further, some of the organs are major ones. There are four of these, the brain, heart, liver, and the testicles. He must not omit [study of] any one of them but exert greater care in the examination of those which are hidden to the sensory perception.

Now let us commence to discuss them, their treatment, and matters concerning them which the physician must not ignore in regard to himself and others. Let us begin with the noblest of them, followed by statements on the other organs in order, with the help of God and with his succor.

Statement on the Brain and Its Relevancies

I shall begin with the treatment and care in matters which preserve the brain which is primary in animal and human functions. Its function which it has in common with animals is that it has feeling and the notion of movement. Without the nerves and parts of

the brain where there are sensitive faculties and the base for the senses and moving limbs, the animal could not feel or move from place to place. In addition to these activities, the function of the human brain especially is important in discrimination, (18b) memorization, and imagination. Only man can have such completeness and perfection since his species is complete and perfect—may God be blessed and exalted—. He gave man the most moderate complexions in contrast to those of the animals. For this reason it is said that the complexion of [man's] brain is more moderate than the brain of other animals. Also, for this reason, it is said that it is an object which is burdened with the faculties of the rational soul, the divine, and the noble, all given to the human species exclusively. Since he is a noble species, he, therefore, knows the sciences, the fine crafts, and the beauty of the arts.

Since this organ is the very basis of his advantages and his good actions, then it is essential that every reasonable man take care of it. To the body and its organs, it has the rank of a king for the latter takes care of his subjects and country. Like the king, if he neglects his distinction and does not take the proper care of his friends and people so that their conditions are corrupted, the brain is so. For if its complexion changes to make its condition poor, and its distinction is corrupted by disease, then the rest of the body is troubled and corrupted. No one can preserve the brain except one who knows its complexion and its nature. The same situation holds in the care of other organs.

Then, O physician, you must be careful to understand the complexion of man and its distinction from the complexions of other mixed ones. Then take pains to know the specific complexions, person by person, their quantitative values, their properties, and their symptoms. Then know what is peculiar to each organ of the body. Through these differentiations, it is possible to achieve their health and, in time of disease, to cure them.

You must know that the animal brain is inclined to be cold and moist as is the complexion of its other organs, whatever (19a) the animal may be. For this reason, it is said that the complexion of the human brain is cold and moist. It is added that God created the animal brain as cold and moist so that it would not be corrupted because of its continuous movement and because of the hot vapor which rises to it.

If the nature of every man's brain needs different quantities of heat and moisture, then it is the duty of a physician to know the complexion of every man's brain and the quantity of heat and moisture which will enable it to continue its functions.

Ancients have said that there are three functions which the brain accomplishes by itself. The first is imagination which is carried out by the frontal part of it. The second is discrimination done by the mid-

part. The third is learning brought about by the hind-part. These are functions which are carried out with the help of permanent nerves.

These functions are of two types. The first concerns the operation of the five senses, sight, smell, hearing, taste, and feeling. The second is the movement of the limbs which move.

They explained also that their activities and functions may be performed by the brain only on two conditions. This is the soundness of the brain both in complexion and shape. So, physician, by these means, you may examine the functions of the brain, whether it is sound in complexion and shape. Thus, you can help yourself and others.

You must know that the performance of the brain may be altered according to its shape which always follows, in general, the shape of the head. You can make use of this statement. You can also know the state of the complexion of the brain from the hair which grows on the head and face, and from the statement on the senses and the activities of the organs.

(19b) Set up for yourself, O physician, a temperament which is just about moderate, and a measure by means of which you may determine the moderation of the temperament and what is not close to it. Do likewise in what you know of the organismic parts.

Example—the head: To be moderate, its form is round but lacking some on the lateral portions with a prominence in front and on its back; this is average in its largeness and smallness. The hair which grows on it and on the face is moderate in roughness, in softness, in stickiness, in separatedness, in abundance, and in length; it is shining black in childhood, then black, and then its whitening process is slow.

The features of the face should be proportional in their dimensions and [properly] positioned. The eyes, when moderate, are neither large nor small, neither of quick nor slow movement. The nose should be moderate in length, in height, and in thickness. The cheeks should be moderate. The rest of the senses and the other parts of the face are to be so understood.

Then one should look at the activities of the function of these bodily parts—at the sight of the eye; if you see that it is sound and strong, then [examine] the faculties of smell, hearing, and taste. You investigate tastes with their actual presence, and the perception of the reality of touch, whether hot, cold, moist and dry. Then there is the determination of what depends on these as the qualities like hardness, softness, roughness, smoothness, etc. [All this is done] because you have to judge the health of bodily parts by the very functioning of these. Then their healthy state is affected by the bodily parts which aid them in their functions. [Also affecting them are] health of the imagination, excellence of discrimination, and strength of the memory which help to determine the health of the complexion

of the brain together with the other characteristics which preceded.

Give consideration to the preservation of the brain. This is accomplished by the harmonization of what reaches it. That which affects the brain [is of two types], partly (20a) natural and some not so. There is no reason to mention here that which is unnatural since this is because of disease. Therefore, it is convenient to remark only on what is natural. I shall inform you of its details thoroughly in order that you accept its principles for yourself to live thereby, and to deduce that which I do not mention. Thus, it will be possible for you to preserve the brain and the other organs of the body from what may be suspected and from what may arise in health. Understand this and consider this as a binding regulation.

The natural factors are these: the state of the air, movement and rest, food and beverages, vomiting and clystering, sleeping and wakefulness, sensual occurrences, occupation, the country, habits, strength of the body, age, suppleness of the temperament, and the nature of the body.

Know that when you are aware of the complexion of any part of the organs of the body of which you wish to preserve its health, i.e. the moderate complexion that is called health, you improve, as required, each one of these natural factors which bring about health. Also, these cause recovery from illness when they are in disease. Be awake to these and consider these mentioned uses for the brain as an example in order for you to apply it to the rest of the parts of the body when you intend to preserve their health or to cure illness.

*Statement on the Properties of Air Healthful for the
Ill, and on That Which is Healthful of the Air
Especially for the Brain, as an Example.*

Air is a light substance and a subtle essence. It therefore enters the body through the pores and other passages, with or without the choice of man. Therefore, it is said, when it is not favorable to the body, it is quickly damaging to the body since it is impossible to avoid it. For example, it appears healthful (20b) for the brain and other sensitive parts when it is pure, clean, and moderate; then there is what occurs when it is dusty and corrupt. The rest of the body is affected. The most praiseworthy and favorable air for the body is pure, clean, and without odors of corruption but with those which cause improvement and betterment. It is good and favorable if there is no smell in the essence of the air. Also the air, being a movement of nature, has a [property] in that it ascends upward due to the lightness of its matter, and because it moves sidewise so that its complexion alters, it changes the body as when it is affected by draughts. The north winds change the complexion of the air to cold and dry, the south wind to hot and moist.

As to the east and west winds, they counteract its [the air's] complexion. They change it more strongly if the dwellings are opposite to them, when the location of the country faces them, and especially (if) they are on the lee side of their opposite and directly in front of their opposite.

As to the winds that blow, and the country and dwelling are between them, then their complexions differ most and least. Understand this if you are of those who are concerned about the preservation of health and the cure of disease.

Know that wind which is moderating of these. Moving one of them by a counteracting movement clarifies the air and cleanses it from the vapors which arise from the moist and dry substances of the earth. For this reason, whichever of the winds becomes of moderate movement, and is intermediate between cold and hot, between dry and moist, and retains its essence, then this is the best air for the healthy body. An example of this is the excellent work of the brain, the strength of its activity, and the clarity of its senses at the time when the air is just right.

For this reason, the air of the two temperate seasons is the most favorable in regard to its effect upon the brain and other organs (21a) of the body. These are the air of spring and autumn. Such being the case, it is necessary to strive to improve the air of the other two seasons, summer and winter. In fact, it is essential that when air is not exactly fitting, then it should be made so by a temperate type. As the saying goes, the similar one retains its similarity, and the opposite attracts its opposite, in accord with the word of the great Hippocrates.

*Statement on What is Favorable in Regard to
Movement and Rest of the Human Body; for
Example, the Brain and Other Organs.*

Transferring movement of a volitional nature is of two types in man. One of them is a moderate type which produces normal heat or normal warmth. The latter assists digestion in the stomach, extension of the limbs of the body, helps the organs to dispose of waste after nutriment have been digested, assists parts of the body to attract to themselves these nutriment and to retain them and become assimilated.

As to the second type of movement, it is above or below what may be considered normal. If [bodily] movement is less than moderate, then the activities previously mentioned are not performed as they should be; if they are increased and are excessive, coldness is produced since the organs become exhausted. It is essential for you, O physician, to know this and to accept it as a principle for the various kinds of exercise whose need is indispensable for the preservation of the health of organs and for their cure.

For this reason, it is necessary for you to know the time [of exercise], the arrangement of their periods,

what is proper to precede it, and what is (21b) convenient to follow it. This is because the symptoms of the body and organs reflect their good health. Galen stated this; it is convenient for you to go to his writings.

I relate a quotation from his text to you for correlation with the above. He said, "The best hours for exercise are after digestion and the completion of the continued feeding of yesterday, in two locations—in the intestines and in the veins, and before ingesting further nutriment."

If you exercise just before this time or just after it, then either you fill the body with raw mixtures or cause yellow bile to be formed and increased. It is necessary to wait for an hour, as we pointed out; this is determined by the production of urine. I shall relate his statement on this deduction from the urine [formation] in a separate section to emphasize then the preservation of health and the predetermination of the [amounts of] exercise and nutriment.

*Statement on the Diagnosis of the Urine to
Determine the Hours of Exercise.*

Galen stated that the primary matter here is that of rest, then comes that of movement. As to rest, its effect is always the same. It is superfluous in that it produces coldness and moisture. Heat is necessary to combat the moisture. If the physician is acquainted with the kinds of movements and their peculiarities from the point of view of their amount, their measure, and their ineffectiveness on the rest [of the body], then he attains his desire to preserve health and to cure the ill.

The exercise whose quality is such that it is violent, strong, and severe, heats the organs, dries them up, and hardens them; weaker exercise is less so.

The differences in exercise in regard to their measure (22a) is of two kinds; it is either prolonged in time so that it is extensive and its activity is strong, or that of short duration which brings about weak activity. As to the differences of exercise in regard to the ineffectiveness of it on rest, there are two types. One is quick and consecutive so that its result is as that of strong exercise. The second type is slow with intervals giving the effect of weak exercise.

After the physician understands the activity of exercise generally and the function of rest, he then makes a functional summing up of the various kinds of exercise on the human body so that he knows this for each part of the body. But this is not sufficient for him without being aware of the organs' activities by which their functions are completely effected and those which are related to them. [He must] then strengthen [them] so that their healthy status may be continued.

I will give you as an example the matter of the brain and an idea of its fine senses so that you will see how it is necessary for you to do this, to take it as a principle, and to use it for the rest of the parts of

the body if you are of an incredulous disposition and suspicious.

I say that the ancient people found that man's reason, to which understanding belongs, carries out its activities in the brain. They found that some of the activities of this reason are carried out by portions of the brain. These [activities] are three: imagination is effected by the forepart, discrimination by the middle part, and memory by the hindpart. These three activities are effected by the movements of these parts of the brain so that they may manifest the faculties of the functions. In the activities of reason, some are not effected as a force by the essence of the brain but by the powers which are inherent in other organs of the body, in the secondary nerves. These activities are the senses and the translational motions. There is no doubt that these activities are also effected by the exercise of sense force which is motive to the nerves. (22b) These activities are not effected except by the exercise of the sense force which travels in the sinews to the bodily parts.

When the knowledge of these movements, their quantity and quality, is clear to the physician, then it is essential that he keep them firmly in mind. Then, O physician, make it your purpose to equilibrate the movements of the brain toward the normal so that its complexion be moderated by them and its activities be commendable. When the movements and various bodily exercises to improve the complexions of the organs are preplanned, then it is a worth-while thing to manage the healthy and to treat the ill.

If you are interested in treating the brain of a friend, then know that his healthy activities are accomplished only by the improvement of his complexion. The latter is inseparable from that of all the organs. This is accomplished only by using proper food and drink, air, exercise, rest, and other factors previously mentioned. Then, if you have improved the complexion of the brain, for example, and normalized its activities to a healthy state, be careful that excessive activity is avoided for its complexion will be changed by this.

An example of this is if you devote yourself to the imagination of distant and difficult professions and sciences which are of obscure existence and of attainment remotely possible. In short, you would imagine all that is difficult to attain like those who exert their minds and their thoughts in seeking the power of alchemy and incantations. Beyond those is the imagining of people and their dreaming up of spirits like the genie, etc., and their conversing with them. Some people do this at times to practice deceit to gain money; they try to demonstrate its reality. Some believe in this and desire eagerly to imagine it. This brings about the corruptive reason of the frontal section of the brain; it is due to excessive imaginative activity which is corrupt.

One may state the same in regard to an excess in discrimination and in memory. Some people give them-

selves to the sciences, the composition of books, the affection for sects and opinions, and versification. Others learn verses by heart, many religious quotations, and seek for the masters and authorities. Their excess (23a) in these pursuits causes insomnia and weariness of the brain. For this reason, it is necessary for one to avoid excessive pursuits and activities, and to refrain from searching for whatever is bad for one's reason. [Otherwise], his group is wicked and his activities are corrupted by them.

As to discussion with learned and well-trained men, imagination of the truth and distinguishing this from false statements and corrupt opinions, and keeping and appropriating them with moderation and temperance, this fortifies the brain, sharpens the mind and the imagination, betters thinking and discrimination, and improves the faculty of the memory. By being this way, the soul which speaks out rejoices and lights up as we have stated about the activities of the brain and its essential movements.

Understand also that the [brain's] actions which it carries out by means of other parts are of two kinds. One of them is its activity which allows our hands to grasp and our feet to walk, and in short, all the other voluntary movements of the body. There are also those activities which may be carried out without moderation and normality so that it affects the brain as [for example] excessive constipation, excessive crying, revolute motion of a person to excess, wrestling, jumping, and whatever resembles these.

As to bodily exercise which must be appropriate for each person else they cause weariness and fatigue, they strengthen the brain. At the same time, the person must eat and digest his food, separating those excessive parts which are not needed by the body. They also strengthen the senses and improve the motions and activities of the limbs.

You should know that exercise is a general term which includes many kinds of movements. Rubbing is one type and so is riding of various types. It also includes walking, kneading, wrestling, and such as greasing, anointing, bathing, massaging, and others like them in the form of violent movements.

Exercise is simply not merely movement but it is carried out as a training in a certain (23b) direction which may strengthen one man and weaken another. For this reason, not every movement is bodily exercise. The essential of exercise is to change the basis of movement, from its beginning, in size, speed, and repetition at short intervals. In this case, it is called heavy work and exercise.

Galen said that the word for exercise in Greek is derived from nakedness, for those who exercise do so when naked. He stated that there are two purposes of exercise. One is to exhaust the excesses, and the other is to improve the build of the main limbs. Exercise causes three results; one is the toughness of the organs

to imitate one another, [second] developing innate heat, and [third] increasing the urging of the soul to activity.

As to its special uses, there is strength of sucking, the goodness of being nourished, the benefit of being changed, the loosening of the stubborn excesses, the draining of [excess] moisture, the opening of channels and pores, the eradicating of excesses and the value of repelling [undesirables]. Since it diffuses nourishment in the body, it is necessary to avoid it before digestion of food takes place by the stomach, liver, and [other] organs. Its occurrence must be before the meal since Hippocrates said that fatigue should precede eating. If you wish to know the types of these and their uses, learn them from the book of our teacher Galen who called it *The Treatment of the Healthy*. It contains six articles which you must read.

As to the second category of activity of the brain which it does not carry out by itself but by the mediation of other anatomic parts, this is its sensory action; the latter is effected by intervention of the senses. It is necessary for us to mention here [i.e. in the later chapters] the senses and their actions, one by one, in order to understand their workings and to preserve them [in health]. This will be made clear to you by what is fitting for them of activities, exercises, and perceptions.

*Statement on the Sense of Sight and
What is Propitious for It.*

(24a)

The healthy state of the sight is determined by the health of the eyes. The eye is an organ composed of strata and moistures, muscles that take hold of them to move them, and nerves of differing forms. Because one of them is empty inside,^{138a} this is where the light arrives; that is where the bodily faculty, the perception of visible forms, occurs. Each part of the eye has a special function and purpose; it was so created. The physician must know this so as to understand in advance how to preserve it; he is invested with authority to preserve the well being of the eye and to cure its diseases. It is incumbent upon him that he study this because it is an organ of great importance and of much use for the operations of the body.

As to you O physician of natural^{138b} means, it is necessary that you take care of the functions of the eye and of its self evident uses. Keep it carefully from damage. Keep it from anything extraneous which may torture it whether from the inside or outside. You may protect it by enriching food and drink, exercise, sleeping and waking—in short by employing whatever is beneficial of natural things.

As to that which affects it from the outside, you may improve its condition by using what is beneficial for it

^{138a} Space between two layers.

^{138b} I.e. the use of natural means.

providing you understand its uses, its function, and how it carries out its function. In a few sentences, I shall show you how to determine many of the details. As to the full requirements of it, this cannot be done, except by one who reads the books of the physicians. I mean the book of the excellent Galen on the uses of the organs and his book on anatomy (24b). In this manner, your purpose will be completely achieved.

Do not ask this [knowledge] of me since it is [simply] my purpose to arouse the minds of the people of the medical art to the height of its glory and benefit, to encourage them to understand it, and, especially, it is for those who derive their earnings and sustenance therefrom. Some of these people do not care about what I discuss [here], and are not stimulated to study their textbooks or be well ordered by their discipline. They are those who lose themselves and their religion. Turn to us, O friend of the good, to what we are about and (try to) understand what is said.

I declare that the ancient people conceived of the construction that the perception of the sense of sight—that is, of that which is visible, is accomplished by penetration and entering of the brightly appearing light in the luminous air into and adjoining those [parts] which see. The sense of sight perceives it and the sense of one's imagination receives the percept. There are statements and tales about how this image occurs in observations of the ancients but their discussion is not suitable here because of their length and difficulty of explanation.

Matter is observed through air and light and so these are mediate agents between the viewer and the visible object; it is not possible for the arrival of images of visible objects without them. It is thus essential that you strive to improve them to provide a state of health for the sense of sight to perceive.

Sometimes the air receives the light and sometimes does not have it; the light sometimes penetrates straight into the air and sometimes its penetration is held back. This is because the air is sometimes thick and dirty, and often moist and dry vapors are mixed with it. These hinder penetration of light into it. The light affects the sight so that when the air is turbid it does not penetrate straight into it. Those who see do not achieve real perception. Then, if it is necessary, you must attempt to improve the air surrounding you. See to it (25a) that the vapor, smoke, and dust do not corrupt [the air] for you. Try to have your dwelling placed in front of the east winds. [The air of] cities placed in this direction is closer to normalcy. For this reason, the air of those cities is healthier, has less dust, and is greater in purity.

For this reason, we see that Hippocrates prefers these cities to others. About the eastern sections of cities, Hippocrates, in his book *On Countries and Waters*, states, "This concerns the cities which are situated facing the winds which [blow from] between the points

of the rising of the summer sun and the points of the rising of the winter sun. This is also about those [cities] located oppositely. The results are these. Those cities which face the direction of the rising of the sun are healthier than those situated facing north winds and those facing hot winds.¹³⁹

When the distance between two cities is only one *stadion*,¹⁴⁰ which is the equivalent of seven miles to the Greeks, then the amount of heat in them is closer to moderation than what is between them, rather than being cold.

Then he said that it is essential that the air in a city not be thick since when the sun rises and its light falls upon it, it [i.e. the haze] blocks it [i.e. the light]. Thick air in the morning often tends to reflect strong and bright illumination like that of the sun or a large fire. This weakens the light for seeing and blurs the sight. A shining white does the same since it blurs the sight in the case of a black object.

It is also necessary to be cautious in doing fine work and thin writing since these also weaken the eyes.

To cleanse the eyes (25b) wash them especially after sleep. This protects them from that which enters them and from perspiration which flows into them. There is no harm in their having strengtheners like collyrium, stibnite, and the like. Sometimes it is good to behold beautiful and useful objects like the green and other kinds of plants. O you, whoever tries too hard to be practical, consider what I have mentioned and be sure to read the textbooks. Be pleased with profiting from them since it is the greatest of benefits that God, the exalted, bestowed upon you and arranged it that you reach them with the light of your eye. It is, therefore, proper for you and us to praise him much, to glorify [him] always, and to disregard that which holds us back and evil so that we may retain this benefit for ourselves.

*Statement on the Sense of Hearing and
That Which is Good for It.*

The instrument of hearing should be regarded like the eye because it is also a fine sense and requires the air to work perfectly. By intervention [of the air] audible things reach it. Audible things include that which hears voices like declarations, melodies, music, conversation, and, in short, all noise. For this reason, we must take care of the air which is the intermediary like that care which is recommended for the sense of sight.

Special care must be taken of the air within the ear since hearing is there completely. Also, take care of

the air without the ear adjoining it. Make certain that neither becomes dusty so that the other not be contaminated. Be cautious in regard to the air inside the ear; essential to this is the vapor of the stomach which ascends and connects with it finally to affect the brain. Caution will prevent excesses caused by filling the stomach with food and drink which exceed the necessary amount in quantity and quality.

Exercise (26a), taking a hot bath, and other indispensables should be carried on. These may be altered for your body so that they may benefit and reach the air of the ear.

As to the outside air, you have heard the statement on its improvement and on the choice of that which is favorable. This statement was concerned with the eye. It is necessary to add further what was stated earlier. It is not good to live close to an industry where there is corrupted air such as from blacksmiths, from sawers, from limekilns and other large furnaces as those of glass and copper melting plants. Further, beware of hearing great and terrible noises like the sounds of beasts, of bears, of continuous drumming, and of horns without interruption. This is because all of these spoil the hearing in the ear. Inflammation weakens the hearing and hinders the ear from hearing. However weak the instrument may be, its receptive power will be less when old age comes and when there is systemic disease of the body and especially that of the ear.

Manage as we have described. Take care of aural matters. Cleanse the ear of that which comes to it as the excesses of the brain because this and other passages, having attributes of gaining and rejection, were made as bodily parts to which excesses and vapors come. Cleanse its passage after leaving your bath since then what is present in it is soft. It is not treated roughly since the nerve in it is sensitive and near the brain. Beware of scratching it and inserting foreign bodies. Beside these [precautions], strive that your ears not be beaten by noises but [be caressed] by sounds which are beautiful, pleasant to your hearing, and whatever statements and melodies benefit your soul. In these, there is advantage for your nature. Beware of what is lacking of moderation and is unfavorable, as much as possible.

The art of music improves the character; the skilled musician's character also inclines, (26b) with the art of music, to dimensions which are not exactly natural. It makes the timid one bold and the melancholy one cheerful. It is also true vice versa, and also with other opposite states of personality. It is because of this that physicians have concurred to preserve favorable characters so that one should listen to what makes the soul happy. Thus, one should listen to stories of excellent men and deified ones, to the sciences of the scholars of theology, i.e. of canonical law and rational ones, to tales of the pious and ascetic ones. When one listens to these, there are joys and pleasures for the

¹³⁹ Jones, *op. cit.* 1: pp. 75, 77.

¹⁴⁰ A greek measure of length. It was equal to about 600 Greek feet. The *stadion* varied; the Attic one was 607 English feet and the Olympic 630.8 feet. The equivalent in the text is probably erroneous. The *mil* or "mile" is also uncertain. Often, it was as far as the eye could see.

virtuous soul since they are actions that emerge from noble substance. They like to be with these qualities and to have them.

They dislike listening to absurdities, falsehoods, faulty statements, and ugly deeds. It is pleasant to recall people of quality who happen to be beyond their observations and talk. Strive, O young, to rise against your faulty nature which calls you to faulty things, and protect your character. This is because with all pleasure known by the body there is an imperceptible abominable uncleanness that the mind can understand. Act, then, according to your reason not by where your nature leads. If you succumb to nature, then you will be deprived of the essence of the reason of lasting joy, the surety of happiness.

Accustom yourself to few words and to much useful listening because the pleasure of one is in his ear and the pleasure of another is in his tongue. Beware of listening to foul opinions like [those of] the sects of the materialists and atheists. Keep away from the counsel of ignorant and jealous people because they lead to destruction of the soul and to jealousy. Reflect on what I have told you, and compare it with what I have left unsaid. You are on the proper path, Allah willing.

*Statement on the Sense of Smell and
What is Good for It.*

(27a) As to the sense of smell, it is not what it appears to be outwardly in the nostrils. It is what is in the cranium in the two frontal lobes of the centers of the brain; it is by means of the spirit of the flesh which is in those lobes of the brain. The sense of smell is accomplished only by the intermediate action of the air which bears the vapors and smells into these two lobes. Together with these, the air sometimes bears fine matter also. The need to breathe the air for the continuation of the life of an animal is imperative. It is also what cleanses the brain of its excesses. Sometimes it [i.e. the air] warns it through the nostrils by the direction of these two lobes since they overlook the nostrils. The exalted Creator granted the animal a cellular kind of wall for these two lobes which are the instrument of smell. He created it bored like the cellular arrangement of the sponge. The excesses of the brain are filtered through it and the odors of the air arrive through these cells. The air goes in and comes out with the vapors it cleanses from the brain; it is so by its permanent breath and [its] stirring together with what the spirit of the flesh sends to the senses and to other bodily parts. The air may arrive alone sometimes without an odor, and sometimes with an odor. This amazing attribute holds not only for the organ of smell but it is also true for that of hearing. When the sound is inside the head near the brain, the ear acts as a veil to hide it. The air attempts to penetrate it but is not allowed in except for the noise of small bodies and

others. The interior of the ear was created bent and circular like a screw in order that the air and sound may enter without any bodies penetrating. Consider the favor of the (27b) exalted Creator in regard to the animals and His wisdom and the perfection of His art. This is not only in the animal but also in all created things.

It is a benefaction of the exalted God that the organs of sense of the animal were made in pairs like the eyes, the ears, the nostrils, and the tongue which has two parts so that if one part is injured, the second carries on the task.

When I describe the entire creation of the nostrils, the instrument of smell, and other senses, and when I give you a hint of the value derived from the science of human anatomy and the value of the organs, it is not confined to what I have related here but it is also in the books by Galen, the excellent teacher. [These books are] on anatomy and on the importance of the organs. It will benefit you to know all of these.

Then turn with us to the statement on the instrument of smell. Know that the intermediary between smelling and an odor is the air. For this reason, it is necessary that it [i.e. the air] be improved for the sake of the highest cause which is life and its preservation. This is because it reaches the brain and lining through the nostrils so that what is pure and clean reaches them. The second reason is that through it [i.e. the air] the odors reach the two frontal lobes of the brain which are the source of smell. The last consideration is the pollution of air and was mentioned previously in a statement on the senses of sight and hearing.

You must keep away from places which have bad odors else they will affect you. The air which surrounds you should be such that its odors are agreeable; they should be beneficial for a long time when one smells them. They go to the brain so that they better and improve the bodily spirits within it.

Incense and other kinds of odors purify [the air]. Various odors and incense find excellent uses in clothes and in the body. Their continuous inhalation is of value. For this reason, do not fail to do so. You may also profit (28a) by this in another direction. This is that when sick people come near you with injurious odors and you cannot remove yourself from them, then those odors which you allowed to penetrate your clothes will keep the [evil] odors from you and counteract them.

In addition, a neutralization occurs, i.e. a ready strength for the spirit of the sick one when he smells your odors. You must improve your air, then, and the physician must take an active part in this.

Also, see to it that whatever vapors ascend from the stomach to the apparatus of smell should be favorable. This is accomplished only by being aware of an excess of food and drink, when its quality is spoiled, and when it is badly prepared. I have already mentioned pre-

viously some of this. Of all this, use only what is helpful for yourself so that your brain and your other senses are purified by it.

One should also cleanse the nostrils which were created so that the superfluities may come out through them. Take care of them by washing and anointing them in time. Choose for yourself a beneficial form of exercise, rubbing, and bathing since all of these contribute to purify the brain and the senses of their excesses.

During your treatment, keep away from offensively smelling remedies if they do not help your complexion or the complexion of your brain. Be careful in your treatment of others for the internal harm of this is not only to the apparatus of smell and to the brain but also to the heart and lungs. Know this. Check yourself on the soundness of what I have stated by what Hippocrates wrote in his book on foods. There, he ordered one to smell pleasant and helpful odors that strengthen the soul which we want to keep well fed. Unfortunately, he does not give the odors or the fine foods. The order is to smell the odor in them (28b). Hippocrates said, "For him, whose body requires something further to regain his strength, the most sufficient of all is that which is moist, and the most rapid method to achieve this is by smelling."

*Statement on the Sense of Taste and
Those Things Which Aid It.*

The sense of taste is accomplished by the tongue, uvula, and palate. A nerve extends to these agents of the mouth. Man has a mouth which is related in various ways to everything created by him. It serves different purposes as accepting information on sorts of tastes, the nature of foods, the breaking down of those [foods] which require it, grinding by the molars of what is necessary, moistening the food with saliva by turning it over with the tongue so as to complete the pulverization. It is also to render the pieces alike so that their form will be the same, equally soft in order that they descend easily into the esophagus.

The animal benefits by it for it is a prerequisite for life; through the mouth, air comes to the lungs and heart to stir their normal heat, and to bring them whatever is pure and clean of it. By virtue of the mouth and its parts, sound issues from animals. It is especially so from man to whom the exalted God gave exclusively the power of reason, ably to divide his sound into varieties by the apparatus of the sound and parts of the mouth. [In this way], he realized melodies and phonemes, and he was able to discriminate among these phonemes so as to make statements a reality and to explain ideas in the soul. In this manner, he was able to speak on different matters and use special phrases in many sciences.

The mouth, then, is a door through which go in and out matters of the soul and body which are necessary

for men. By the sense of taste, and by means of the real scrutinizing power created by the exalted God, it is possible for rational man (29a) to know food from a drug, to use each one of them in [proper] time, and also to know those things which appear in the mouth under certain circumstances. These are often related to systemic matters; they include spittle, vomiting, and similar things.

In each of these [symptoms], there are several signs to determine the state of health of the stomach if it is diseased. The same is true of the intestines. In the case of irrational people, one may deduce the factors by their words and statements which come from the soul according to one's virtue, sensitivity, and lowness of position. If the matter is so, then it is necessary for every rational man to take care of his soul and body so that nothing penetrates them except what is good and favorable. As a result nothing will issue from them except what is praiseworthy.

The most magnificent factor, which helped to improve the senses and especially the mouth which is the instrument of taste and speech, is that God—may his name be exalted—granted reasonable logic and thus ennobled all people and made them superior with it. Whoever is deprived of speech is also deprived of the virtue of hearers, and whoever's speech is bad is mean and despicable among those who are fluent. This is true also for those whose taste is spoiled by disease, or for any other reason [they] cannot taste food or drink, then the stomach does not feel good.

When the body remains without food, the animal perishes. Praise be to the One who always favors His creatures.

Because the mouth, as we said, is composed of different parts, it is for this reason that it is necessary to treat each part with that therapy specially adapted to it. This is except for some matters which are common to all. The first one of the common matters which can improve the soundness of the functions of the mouth and also may spoil them is the air. This is because it is always entering it and keeps changing. Sometimes, in (29b) a single day, it is hot and cold, moist and dry much more so than those changes caused by the seasons or by the blowing of the winds. Therefore, you must take care of your mouth so that air which is deleterious to your health does not enter it. You know that, according to the statement we presented on the senses, it is only the foul air which demands caution. In addition, beware of the arrival of air which bears the vapors of corpses and stinking manure. Avoid what issues from those who have fatal diseases like tuberculosis and a spoiling pneumonia. The stink of them corrupts and spreads. Also avoid air mixed with vapors of excrement, vomiting, and what comes out from the body as an evil emission. Beware also of what enters your mouth as that taste with a bad quality which ruins your taste faculty or hurts any part of your mouth like the

teeth, tongue, uvula, and others. [Also avoid] sharp acids, strong astringents, and strong bitters since these harm the taste apparatus and the parts of the mouth especially the teeth.

Strive to cleanse these parts by rubbing with a toothpick and polishing. Rub them and wash them to cleanse them of dirt and particles gathered on them, especially on the teeth. Try to keep anything from ascending from your stomach to your mouth except favorable vapor since foul vapors corrupt the mouth. To do this fully, you must improve your food, the quality and quantity of it, and its composition. Try also to prevent your molars and teeth from being broken by hard matter. Avoid their being pushed or crushed since they cannot be restored to their original state. Keep from them viscous things (30a) and excessive cold like snow. Do not allow cold things to follow hot. In addition to all I have recommended, try to keep speech brief and useful. When you speak on the sciences, do so to people of the profession only and to those who merit it. Speak as Plato once did when he sat down among his students and Aristotle was missing. One said to him, "Speak, O teacher!" And he said, "If I found an audience, I would speak." Then, one said to him, "There are, O philosopher, a thousand students around you." And he said, "I want a single one [who is] equivalent to a thousand."¹⁴¹

Since I have mentioned these recollections on the senses, the time is come to complete the discussion of these natural matters.

Statement on Edible Matter

Since what we have mentioned in regard to the five senses is useful for systemic improvement, a word is in order on the natural matters as an example and for guidance. We mentioned the natural matters of air, exercise, and rest. It is necessary to follow up with a statement on edible matter, by the way, with brevity and with mention of useful factors which will encourage and urge one to study science in its occurrences and its books.

I say that edible matter may be called food as a synonym since food is sometimes made of it. Real foods are substances which are distinguished from edible matter by the first, second, and third cooking, and their superfluities, which are not eaten, are thrown away. Those substances remain which are suited to become a part of the one who eats [them], and takes the place of what was lost by him since they make a quantitative excess. In this way, he is not dissolved away and does not perish.

¹⁴¹ In the Syriac version, a paraphrase reads, "During this time, it sometimes happened that he was not present in the audience, and then Plato would say, 'The Mind is away' or 'The philosopher is far from the truth' or 'The audience is a deaf one.'" Ingemar Duering, *Aristotle in the Ancient Biographical Tradition* (Goeteborg, 1957), p. 185.

(30b) The situation is such that you will find that edible things have different tastes and qualities, and accordingly affect the body in various ways. Thus, it is necessary to know their composition and functions. I mean also that one should also understand the body and its natural complexion; together with this it is indispensable for you to know the natural or acquired complexion of its stomach.

Our excellent teacher Galen encourages and leads us to this in his book *On Nutrition*. He said, "It is necessary that one be careful to know these matters. You find that foods sometimes are slow to swell up and sometimes quick. This depends on the reaction of the stomach at the beginning or by the substances in that which was eaten and drunk. Because some of them are moist, some dry, some viscous, some quickly separating and falling apart, some pungent and acrid, some sour or bitter or sweet or salty, and sometimes these properties are found in drugs, therefore properties of foods are considered as easy remedies."¹⁴² It is essential that the physician take Galen completely at his word to the full extent of this science for the preservation of life is of great importance.

Galen said that the science of the properties of foods is close to being one of the most useful of medical sciences. While there is not always need to employ the other [sciences] for bodily health, the need for food is always present, both in times of health and illness, for life does not go on without it.

It is not necessary, O physician, that you imitate any writer in regard to the properties of foods, their states, and their functions in the body. Some have written volumes on the basis of experience but this experience is insufficient when applied to an actual case. You may (31a), however, find some similar factors which are common but it is not sound to judge by these merely. An example of this is that you find several things which cause diuresis or facilitate an abundant flow, and so on. You find that some are cold and some hot. In teaching this, Galen quoted the scholar and physician before him called Theophilus. It is this. Galen said that Theophilus stated that men are not wise who believe that a single property like taste or heat or smell when found in two things will make them all alike. Aside from this common factor, there may be many different properties. One must not, therefore, treat all substances which empty the belly, or cause diuresis, or have any other common property, as being alike in all their properties. This is so because that [substance] may be hot or cold or salty and not every sweet or salty thing has the same strength in taste. But one may consider that the resultant action of a substance comes from its total makeup. Whoever grasps this principle will make no mistake and will not lose the truth.

¹⁴² In this connection, cf. Jones, *op. cit.* 2, *Regimen in Acute Diseases*, pp. 84-85.

It is not convenient for you to hold back anything of a food or drug because of its effect on one sense, and so believing that it possesses only this effect. Sometimes you find that what seems very apparent is one thing but its actual effect is another. Examples are the lentil and cabbage which act oppositely [to their effect on the sense of smell]. They empty some bellies and fill others; they do this since in their creation they are made up of two different substances having two different properties in composition and complexion.

Galen said, "As to the reason why the lentil¹⁴³ empties and softens the belly of some people, and does (31b) not restrict and block it, I add that I explained this in the book *On Simple Drugs*. It is that many kinds [of drugs] which are considered to be simple and single are compounded, at the beginning of their creation, of different substances with opposite properties instead of what we compound with our skill. In them, there are different activities. You find these in many foods like the lentil, cabbage, and all sea animals which have a skin with a sharp taste; each one of them is composed [of substances] with opposite properties. Thus, their body is hard and slow to swell, the belly is under control and may be emptied. The explanation for this is that when they are cooked, their soup empties the belly but its hard body keeps the belly under control. People, however, disagree about this.

When considering foods, the conditions in the stomach [should be recognized]. You may find that a flame heat dominates it. This may be so because of the complexion brought about in creation or yellow bile which pours into it because it has been deviated from its source on its way to the intestines. In this case, the stomach digests some foods which are thick like beef, etc., and the thin ones like the meat of chicken and partridge spoil in it. It is not necessary to examine and experiment with the foods to prohibit some since some are quickly and some are slowly digested, according to the conditions in the stomach. Since this stomach condition is far from normal, it is not correct to make a judgment on the foods in it.

It is necessary to examine once more the question of foods. Some edibles which are in abundance resemble body matter. These are wheat, barley, rice, and similar grains; also there are palatable foods as animal meats which may be quickly cooked and digested. All of these and what is similar to them (32a) feed man when they are well prepared; they are good nutritionally.

As to the edibles which do not resemble the body of the eater, when they are together with non-nutritional matter [they] may make one ill if he does not know how to use them. These edibles have excessive sourness, are excessively salty, excessively sweet, and an excessively stypitic acidity may predominate. These are more like drugs. Between the extremes of these

edibles and their opposites, there are many which, when well prepared, will nourish the eater and not injure him.

There are also those which, because of moderation in taste, are often employed to improve bodies. It improves the health of old people, especially those whose complexion is cold, in whom phlegm predominates, in periods of cold and in cold countries. Understand this and compare with it the rest of the edibles which have obvious and different tastes. When you recognize good food, then beware of an excess or deficiency but favor moderation. This is better.

Hippocrates had a saying that every excess is an enemy of nature, and a deficiency is lacking in trustworthiness. When one exceeds the natural amount, Hippocrates stated that there is no hearing or appetite or any other favorable thing. Hippocrates also said that when excessive food is ingested, it is superfluous and causes illness with its coldness.¹⁴⁴ He stated that it is important that one predetermine the amount of food for the body with regard to the state of the season in which one is. There are two seasons, summer and autumn, when the body cannot endure excessive food. In regard to the seasons of winter and spring, it may take much food. Hippocrates pointed this out (32b) in a statement when he declared that the most difficult period for the body to take care of food is in summer and autumn; the easiest time is in winter and spring.¹⁴⁵ Galen explained and commented upon this by saying that bodies begin to be cold in the autumn, to come together to be thick, and then in winter to loosen and to be light. Galen said also that in winter and spring, the belly is hottest and sleep is longer. Because of these two reasons, more food is necessary since more natural bodily heat is required then. Thus, more food is essential. Evidence of this comes from the aged.¹⁴⁶

It is also indispensable to know the time of the meal and the small snacks. I mean that it is necessary to eat during the day and night, and [it is necessary] to know the time between meals. The eater must know this and also the speed of his digestion, and also how long it takes his stomach to be emptied of the last meal and of spoiled mixtures and excesses. Hippocrates summed this up when he stated in *On Epidemics*, in the sixth discourse,¹⁴⁷ when he arranged for the food after exercise and before sleep. He said, "Weariness, food, sleep, and coition must all be organized by a natural arrangement." He meant that one must predetermine intentionally the quantity of exertion of each one by the eater. Hippocrates said that the body which is not clean, whenever it ingests food, makes its advances in evil.¹⁴⁸

¹⁴⁴ Cf. Jones, *op. cit.*, *Aphorisms*, pp. 102-105.

¹⁴⁵ *Ibid.* 1, *Ancient Medicine*, sect. X, pp. 29 ff. *Ibid.* 4: p. 106.

¹⁴⁶ A. J. Brock, *Galen's On the Natural Faculties* (London, Loeb, 1947) 2, 7: pp. 183 ff.

¹⁴⁷ Cf. Littré, *op. cit.* 5: pp. 292 ff in *On Epidemics*, sect. 3.

¹⁴⁸ Cf. Jones, *op. cit.* 4, *Aphorisms*, pp. 110-111.

¹⁴³ Kuehn, *op. cit.* 11, *Galen de simplicium medicamentorum temperamentis ac facultatibus liber III*, p. 576, also pp. 740-742.

In some edibles like vegetables, there is very little nutriment; in some there is much as in animal meats and hard grains. Some are in between these like the meat of lamb, chicken (33a), partridge, the yolk of eggs, etc. For this reason, it is necessary to know the science of this to use what is valuable according to the need. [Another reason] is that the spoliation of some edibles is rapid since they change so quickly; some are slow to spoil since they are resistant.

Thus, it is incumbent upon the physician to know the arrangements of food according to this and according to the condition of the stomach. It is often convenient to present the quickly changing foods first before those which ripen slowly in order to facilitate the penetration of a hard one so that it not be spoiled were it to precede the quick one. To eat melon, apricot, and others first before bread and other edibles is better. For this reason, one must be careful what he eats after the meal so as not to spoil the food, mixtures, and the stomach. Do not neglect, in view of what I have presented, to take account of age, heat, the countries, habits, occupations, and conditions since the science of all these is necessarily indispensable for everyone who wishes to nourish his body properly. Carry on by these and compare them.

Statement on Beverages.

As to drinks, know them in regard to their properties and actions to employ the useful and to beware of what is harmful. One cannot know their temperaments and qualities. Since water is the earliest known (of drinks) and the most honorable in temperament, qualities, and usefulness one should know its properties in regard to bodily change. Under normal circumstances, there are none. It is a substance without color, without taste, and without smell but it is cold and moist. Its body was created without form, and without connection among its parts except that which is united when it is in a container. It is not nutritious (33b) unless one considers its use in the cooking of food and its penetration into parts of the body.

As to the water which is contrary to that here mentioned, its matter has mixed with other matter possessing other attributes like sulfur and borax waters, etc. Waters like these have different tastes and properties. Owing to the fact that they vary in taste, smell and weight, for this reason, they affect the body in different ways. The physician must know the properties of waters and their differences. Otherwise, if the question of water is neglected, great harm will come to the body; this is because it is essential for life and its need is continuous.

So far as internal harm to the body is concerned, then, there are the matter [of water], the matter of the air, the factor of the seasons when they change, and the effect of the winds generally in [some] countries.

Therefore, Hippocrates¹⁴⁹ said that he, who wants to study medicine the straightforward way, must do this that I describe. It is, first, that you must consider the times of the year and what can be done since they are not alike. They are very different not only in themselves but compared also to others. Then, attention must be paid to the hot and cold winds, especially those common to all people and those peculiar to each country. It is also necessary to consider the properties of waters since they may not only differ in taste and weight but also be different in [other] properties.

When we reflect on the results of Hippocrates' advice, we understand that water is important, when suitable, for the preservation of health; it is harmful if not suitable. No one can be more discriminating in acquiring this [knowledge] than were (34a) the ancients. The most efficient in this was Hippocrates so listen to his teaching and hold on to it in order to attain your wish in the art of medicine.

Hippocrates said, "I want to inform you of the other waters and which of them are more effective in bringing good health. I shall describe what it is necessary to derive from evil and salty waters since the kind of water is very important in aiding health."¹⁵⁰

There are waters which are stagnant, tainted, and are at the bottom. These are warm, odorous, and thick in summer for they do not flow. They are used since rainwater does reach them. They tend toward a dirty color and are bitter. In winter, they are covered with ice, and are turbid with the water coming from snow and hail. These waters are the most apt to cause phlegm, hoarseness, and a large, hard spleen in the one who always drinks them.

He said that these waters are bad for all things. Further, those waters which issue forth from rocky places are harsh like those which come from earth where there are hot waters, or where copper, silver, gold, sulfur, alum, or borax are produced. It is because these are produced from a hot shaft and it is impossible that good waters come from this earth. They are harsh, cause difficulty in urination, and prevent excretion.

He said that the best waters flow from lofty and high places, from mountains which have soil. These waters, whose sources are deeper, are (34b) palatable, pure, have little redness, are hot in winter and cold in summer. Superior waters, he said, are those whose sources are opposite to the rising locations of the sun; those after them [in superiority] have their sources between where the summer sun rises and sets. The third best are the waters [whose source is] between where the winter sun sets and where the summer sun sets. The worst waters arise opposite to the north. The waters are very bad in the times of the southern winds but better in the times of the northern winds. He said that it is necessary to use these waters knowing this. As

¹⁴⁹ *Ibid.* 1, *Airs, Waters, Places*, *passim*.

¹⁵⁰ *Ibid.* 1: pp. 83 ff.

to the healthy and strong person, it is not essential that he discriminate among the waters; he drinks what is available. He praised rainwater as the lightest, purest, most palatable, and finest of waters. This is because when the sun raises the water, it carries off the thinnest and lightest. Consider the use of the saltpan where the salty part of the water remains because of its thickness and heaviness, becoming saltier. The sun carries off the finer water; since it is light it raises it. It is raised from palatable waters, from sea water, from all bodies, and from the bodies of men continuously [especially] that which is the thinnest and lightest of the moisture.

Thus, when a man walks or sits in the sun and puts on his clothes, then that part of his body exposed to the sun does not seem to perspire since the sun always carries away the perspiration by evaporating it. That part of his body which is covered with clothes (35a) or anything else perspires because the sun causes the sweat to come out. The covering keeps and preserves it. When this man moves into the shade, all his body is so since the rays of the sun do not fall upon him. For this reason, rainwater may be putrid and have a bad odor since it comes from many different kinds of moisture and is mixed with them. As a result, it is the first of waters to stink.

Then, after Hippocrates demonstrated how rainwater comes about, he said, "This water may be the best of waters but it needs to be cleansed by boiling." Then he said, "If this is not done, then it develops a bad odor and it causes the drinker to be hoarse, to cough, and to have trouble with the voice." Then said Hippocrates, "As to the water from snow and ice, it is all bad since when water is once frozen, it will not get back to its original properties but that which is pure, light, and palatable is expressed. The sediment and what is close to being a solid remains."¹⁵¹

I have mentioned these quotations from Hippocrates to show the pressing need of water and to encourage you to study this science in the books of Hippocrates and Galen.

I shall now return to the value of taking hot water baths. The value of this bathing is different for the sick and for those who are well. For healthy people, it is good to bathe in potable, cold water, or for some in water with salt or borax, and for some with other tastes, hot and non-hot (35b) water. These waters may be good for some sick people but not for all, for people of certain ages but not for all, in some but not all countries, and depending on certain habits.

In this, there may be much error; it is necessary to be aware of it and to study it. Strive to know the good from the bad waters by the method described by Hippocrates. These methods are these. Make your decision according to the lightness of the water, its ability to become quickly cold or hot. Hippocrates said about

this, "The water which warms quickly and becomes cold quickly is the lightest of waters." In the fifth section of his book, he said, "The lightness of its weight is so in comparison with any other, and is seen in the rapidity of its drying with what was kneaded with it, and in the quickness of cooking what is cooked [in it]."¹⁵²

After making these statements, it is necessary to follow them with the mention of wine and raisin wine for these offer some advantages. Wine is good both for the healthy and ill. For healthy people, it is quicker nourishment than other foods because of its quick ripening, its penetration into the liver, and its changing into . . .¹⁵³ for the property of its complexion of heat. For this reason, it increases and cleanses the blood, and drives away through the urine many moistures mixed with it. Whatever it finds in the stomach and liver, by means of the heat of its phlegm it ripens [especially] that which has not yet ripened of the mixtures. Thus, those who possess a cold complexion and manufacture phlegm abundantly will profit by it, especially when they take a little [wine] between their food [courses]. By its virtues, it strengthens the body so that it acquires a plenitude, a bright color, and is capable of exercise and work. For this reason, also, the soul may acquire evil. In some complexions, it improves the memory and sharpens the mind. All of (36a) these uses are for healthy people.

Further, it is useful for the ailing if they use it appropriately, in moderation both in quality and quantity. To use it in the best manner, it must be done according to the condition of one's nature, age, occupation, habits, time of the year, the country where one lives, etc. If one neglects these or any one or more of these, then internal harm results accordingly to the man in soul and body. This is especially so if the purpose of the imbibitor of wine or intoxicating drink is to find delight and inebriation in its continuance. Then the damages are so great that the listing and description of them would be quite lengthy. When you investigate the harm and vice brought on the victim, they are so abundant and apparent that even one who is not a physician is fully aware of them. How many healthy people it makes ill! How many kinds of death it causes! From the brain, it takes away its memory, corrupts its understanding and renders its imagination turbid! How much it dries up the nerves! [How much] it makes the limbs tremble and the senses weakened! How many kinds of evil changes it causes the soul in his sleep! It becomes a lasting habit when one drinks much for it takes one back, in delight, to the joy, games, and play of the child. It makes a brave man bold under danger. It makes him imagine bad as good. At the end, it abandons him in the impotence of uncontrolled actions so

¹⁵² This should read "seventh" book instead of "fifth." Cf. Jones, *op. cit.* 1: p. 91.

¹⁵³ One word is effaced.

¹⁵¹ *Ibid.* 1: pp. 91 ff.

that he may take out his penis and urinate in the presence of people. He does not know what he is doing. His position at that time is like that of boys who do these things (36b) and like beasts without reason and discrimination. These are the end results of the vices of wine drinking and the end results of its addiction. This is so that you will understand the details which I do not see fit to discuss.

After this, it remains to discuss the kinds of wine and their advantages for whoever wants to use them. The black, thick, astringent wine is opposite to the white, thin, aqueous wine. As to the red wine tinted toward yellow, it is in between them. In its properties, the black is opposite to the white. This is because the black [wine], on account of its viscosity, does not travel quickly through the stomach but, on the contrary, is slow in it. It renders the blood thick and nourishes it. The white [wine] has the opposite of these properties. It is stronger in causing diuresis because of the rapidity of its penetration. It is not so strong for the body in regard to heat. If the properties in these extremes are so, then those of the middle are in between. These are wines which occupy certain places in the range from one extreme to the other.

For this reason, it is necessary to distinguish among the various kinds and to compare them with those in the middle, the most moderate, so as to know its nature and its effect on the body of the healthy person or an ill one. Check the wine, the one made from raisins which resembles the former with that made from dates, and others which intoxicate, in regard to their different tastes. Compare all of these in respect to what I mentioned about wines and you will recognize their effects on the body by their different tastes. Do the same with the non-intoxicating beverages which are useful to maintain health and to cure the sick. These are juices extracted from fruits like pomegranate juice, apple juice, quince juice, etc., and what is composed (37a) of these, and also what is made of sugar, honey, and other drinks like them of different kinds and diverse properties. Thus, you should know them, study their compositions and their effects on various kinds of complexions so that they may be used reliably. Take care to know the honey drink and the types of its compositions since they are numerous, according to their needs. Their necessity in the maintenance of health and in the cure of the sick is very great. Know that the differences in its properties in dissolving the nature and its costiveness, in its producing and lessening of urine, in its stopping and increasing thirst, in ripening and reducing the mixtures, its increasing and lessening the nutriment, all of these, depend upon the abundance or paucity or average amount of its proportions in mixing with water. They also depend on the manner of its use in cold and hot, and upon the time when used. Taking account of all these helps you to predetermine how much is to be used, and the need; it helps to guide

you as to which of the drinks is helpful for the particular person and the particular case. Manage this. Make the comparison and seek what you wish from books in which these drinks are described. Search out all kinds of simples. In this manner, you will attain to reality of your wish.

Statement on Vomiting and Clystering

A physician looks at vomiting and clystering in two ways; one is the need for them in the maintenance of health and the other is concerned with curing the ill. Vomiting and clystering are natural matters in the case of health and are indicated in the case of illness. The exalted God created bodies which eat and sleep, a power which attracts beneficial foods, and another power (37b) retains that which was attracted until it is digested. Then it nourishes them with what is beneficial for them. That which is not beneficial is repelled by another power originating in the organs. When the body is in health, these four powers carry out their activities in their own particular periods. When the activities of these powers are weakened or they are not active at all, or they are spoiled, or the function of some one of them is delayed from its time period, this indicates that there is illness in the body. For this reason, it is necessary that the physician take care to understand vomiting and clystering in managing the body of man.

The nourishment of the body is not [exactly] what a man eats and drinks; our bodies are nourished only with what becomes like them. As to those [foods] which contain no similar [substances], they remain as excess and are expelled from the organs of nutrition. For this reason, the exalted Creator, in every feeding body, fashioned body passages and ways through which these wastes leave. They are expelled by a power in the body through the intestines, the urethra, ducts for perspiration, and the apertures through which wastes of organs come out as the mouth, the nostrils, the ears, and, in brief, the other openings constructed for this [purpose].

If everything is as we have stated, then it is necessary for the physician in charge to know what kind of vomit is expelled from the body in health. If he finds that it comes out in the proper quantity and in the proper time which nature predetermines, then he does nothing. If what is voided is excessive, i.e. not natural, then he must reduce the excess to a natural order, if the physician is a servant of nature.

When the body strays from the natural order, it may be in two ways. Either that which the body voids is excessive or is too little. (38a) If it is more, then he must decrease and prevent this; if it is less, then he must relax to bring normalcy. The physician cannot do this until he learns the habit and temper of the one who finds it difficult to void and why [the wastes are] given off in a manner to which his temper is not accustomed. An example of this is the excrement and urine

since these and other body excesses are from the works of the temper which repels them from the body and causes them to go out at certain times and in proper quantities. This operation is not carried out in the body merely by food and that similar to it but by a body which is healthy and is correctly managed.

The temper does not cause exhaustion of that which is natural like blood issuing from males. If one may say the same for females also, then it is correct that the catamenial discharge of females is an excess of the blood and body superfluities. The physician does not begin to treat for discharge and retention without knowing their causes. If he knows that the forces are retained because of one of its properties, for example its drying or other qualities preventing its excretion, or the repellent powers are too weak, or there is an impediment like a swelling in the intestines—if he understands these and others like these, then nothing stands in his way in discharging that which is retained. The same applies to over-discharge.

We have mentioned these points in this book to awake and encourage you, O physician, so that you may know its principles and details from the books which the ancients authored. Hippocrates summarized the process of discharge and its cases. He who pays attention to the preservation of his health and the curing of (38b) illness must know them. Hippocrates said also that the bodily discharges of diarrhoea and vomiting, when spontaneous, and it is essential they take place, are beneficial and the process is easy. If it is not like this, then the situation is just the opposite.

The same applies to the exuding of perspiration. If it is given up when necessary, then it is beneficial and it comes easily; if it is not so, then the situation is opposite to this.

Hippocrates said also, in the fifth article of his book *On Excesses* [of the body], that discharge of excesses is good but when this is not done, then something must be done to reduce them. You, O physician, are obliged, while you are discharging excesses of bodily mixtures and [bodily] superfluities, to treat the complexion of the body, to consider the temperature of the man, his age, habits, and profession, the time, condition of the air, peculiarities of the country, and also day to day changes in these when you decide to discharge the blocked excesses from the organs of the body, and to exercise what you wish to repel.¹⁵⁴

Hippocrates ordered the patient who drank a remedy or used a purgative to exercise since this heats the mixtures and activates them. In this way, the remedy is attracted to them, and repelling them is easier and quicker. Hippocrates said that when you make a man drink hellabore, you must intensify movement of his body, and his sleeping and resting must be lessened. (39a)

¹⁵⁴ This idea runs through Hippocrates; the location of this statement, however, is not known.

Being on a ship shows that movement invigorates the body. Together with suitable movement and moderate exercise to repel and attract excesses, one must also take a water bath, moderately warm. One should also rub, anoint, and use for food and drink whatever is suitable for constipation and discharging. You may learn these matters from books by Galen and other ancient [physicians]. Galen composed a book for what we mentioned on evacuation, constipation, classification of exercises, and in general, what is done to maintain health. This book is divided into six discourses; he called the book *On the Treatment of the Healthy*. It contains all that you would want.

Statement on Sleeping and Being Awake

The physician takes care of the matter of sleeping and waking and knows the function of each in healthy and sick bodies. Thus, he should be able, according to bodies of animals, to predetermine the state of a sufficient and suitable amount [of sleep] for the preservation of health and treatment of the ill. This is because sleep is a natural thing without which man cannot retain his health; there must be a definite time for it in the natural order.

The excellent Hippocrates explains it in the sixth discourse of the book *On Epidemics*. He said, "Weariness, eating, sleeping, and coition all must be done planfully."¹⁵⁵ Galen interpreted "planfully" as meaning the limitation of their quantities for every man, as [the amount of] sleep is found naturally for different ages of man. We say that it is the kindness of the exalted God who created sleep and rest for the animal's body in order to return to it a replacement for that which was lost from it during waking. This is because during waking, the natural heat expands to the outside of the body and to other regions, and spreads with it the blood which helped it form. It is spread in the body so that the animal moves by the power of [this] heat to its activities and to obtain food for survival (39b).

Whenever it moves, moisture is lost little by little to cause dryness. If it keeps on moving and the waking is not interrupted, then the dryness becomes excessive to its body so that it will die. For this reason, the exalted God made the times of sleeping between the times of waking. This is so that the heat is gathered during sleep inside the body and cold is outside; the organs of the animal relax, its senses abate, its actions stop, and heat begins in the digestion of food, in improvement of fluids to aid the organs. The latter exert an attractive power and are moistened in this way. This is the opposite of losing [moisture]. With sleep, also strengthening are the retentive faculty, the altering power, and the evacuating strength. Due to the sound-

¹⁵⁵ This was quoted earlier by al-Ruhāwī; the words in quotes are a condensed paraphrase of material running through *On Epidemics*, Book VI, a spurious work.

ness of these four powers and the efficiency of their activities, the body is healthy and its functions are proper. In addition to strengthening nature, sleep weakens the physical powers; the senses and faculty of reason are weak during it due to their abdication of these functions.

If this is so, then the physician must know the amount of sleep and work for each man for everyone has a natural quantity which he requires according to his complexion, his habits, his activities, his food, his age, season, and the state of the air. If one of them [i.e. sleeping and wakefulness] is not in its properly natural quantitative state and time, then it indicates divergence from bodily health. For this reason, Hippocrates said, "If sleep and sleeplessness are excessive, then the necessary amount is a bad sign." When the physician sees this, then he knows that this immoderate condition indicates disease in the brain. This is because sleep is a special state (40a) of the brain and occurs when it is cold and moderately moist. If these are excessive, then they cause cold brain disease. For this reason, Galen said that sleeplessness comes from coldness of the most important sentient, the brain. When this coldness is strong and mixed with moisture, then the disease called *lasir'as*^{155a} occurs which is cold vertigo. When dryness is also with it, the disease is called catalepsy which is called *jumūd*. Sleeplessness is also because of the heat of the most important sentient but this heat may be either from a particular, bad complexion or from black bile.

Hippocrates said that when sleep causes pain in any disease, it is a sign of death. When sleep is useful, it is not a sign of death. Hippocrates said also that when sleep quiets the confusion of the mind, it is a good sign.¹⁵⁶ Make your decision on sleep and wakefulness according to what we have considered of their conditions and according to what the ancients said about them.

Know that when sleep follows constipation of what should be evacuated or when waking follows evacuation of what was confined, then both are dependent on the difference in the states of the mixtures in the body. When one sleeps and he has unripe food and nutriment which is unabsorbed, it ripens it, improves absorption, heats, and moistens. If it finds the body clean and nutriment is needed, it strengthens the heat and drives moisture off. For this reason, it substitutes for the small amount of substance, the coldness of the body. When [one sleeps] and [has eaten] moderate food, the normal heat is strengthened and is very useful. When during sleep there is much material, it is difficult to ripen it; then sleep is harmful. This is also so in the beginning of abscesses (40b) in intermittent fevers. For this reason, physicians order no sleep at the beginning of an abscess.

^{155a} Diacritical marks missing. Pronunciation uncertain.

¹⁵⁶ Jones, *op. cit.* 4, *Aphorisms*, pp. 108-109.

Make use of sleep and waking according to these laws. Some ancients said that in sleep there is a similarity to death. This is because perception by the senses and discrimination by them stop; it is not possible to notice anything perceptible with them. For this reason, it is necessary for students of science and for those who seek the virtues that they not show zeal for sleep but zeal for seeking the realities of science and the virtues during their lives. Otherwise, their waking is sleeping and their life is death.

Statement on Psychic Events

It is necessary for the physician also to know what psychic events are, how many there are, and from where each kind stems. If he does not know these, then he cannot preserve them in their natural condition and drive away the non-natural. It is said that you should know that man has a power by which he distinguishes and thinks, a power by which he is angry and enraged, and thirdly, a power by which he desires and lusts for pleasures. Man completes his actions and work by these three powers. The ancients called them the deteriorating powers; they recognized that characters and physical events are different for each of these three kinds of power of the soul.

Also he must know what the ancients mean with their word "event." Galen explained it; I shall relate what he said. Galen wrote that as long as the soul of man remains in its state, this is its state—as rest and quiet. If its state changes, then we can imagine that change as a movement which belongs to it. Some movement is very translational and some (41a) is otherwise. We call the movement which is very translational an action, and the movement which is [done] by something other than itself an event. An example of this is that if a man takes a thing and conveys it from its place to another place, then the movement of the hand is an action of that man and his hand, but the movement of the thing is an event of the thing. This is the relation of the action and event for movement in space.

As to the movement in change, as when the body of a man is heated by a fire or the warmth of the sun, this heat is an event to the body, and the heat [of the fire or sun] is the action of the things which heat. When the exalted God created the matter of man's body from these powers and their actions in whatever amount, it was then necessary that these quantities be natural for that particular man. If any of it is lacking or is excessive, then it is not natural. The natural one indicates possession of a healthy power for a certain body; the unnatural indicates disease [of the power and body].

Because both of the animal souls [the second and third of the three powers] which are in man, especially the carnal one of the two, often harms the rational soul to attain pleasure in a persistent fashion, it is essential that the pleasure be of limited duration and of a moderate amount. When it exceeds this amount, it is harm-

ful and causes illness. For this reason, the intelligent soul will stop this corruption by determining and limiting their periods to act and their amounts. The situation being so, he must know the action of each one of these souls, first separately without being affected by the other two, and then how it acts with their help.

The action of the rational soul is [to determine] the existence of the correlation of things and their difference. An example of this is that when you hear two statements you notice their difference from another; you know the real one and the untrue one. As to its action with the help of another, it is that when the physical (41b) desires, it may amplify some movements which are strengthened by the soul of anger. This is the [soul of the] animal since this soul has strength and courage. If these were not, it would be impossible to make a stand and attain any aim. Galen said that the essence of this soul, by which is meant the soul of anger, is the natural heat. Galen said, "The essence of this power by which man is strengthened in endurance and patience in work, in my opinion, is the natural heat since whenever the movement of the natural heat is stronger, the man is more hot; also coldness causes laziness and quietness, and thus heat causes willingness, movement, and power for action. Thus, youth and wine arouse movement and courage in man, and age and cold remedies cause laziness and weakness. The latter corrupt action and movement."

Moderation of the rational soul indicates that it is sagacious, has much understanding and a good memory, and has a longing for beautiful deeds. When it is not in moderation, the opposite is true.¹⁵⁷

Galen said,¹⁵⁸ "It is true that if the rational soul is silly, of little understanding and memory, and not desirous of meritorious actions, and both the animal souls are strong but not very obedient, then it [i.e. the rational soul] is not moderate. The rational soul needs to be prepared for perspicacity and for what is correct,

¹⁵⁷ W. D. Ross, *op. cit.*, 1138b.1, "... one ought to choose that which is intermediate not the excess nor the defect (see also 1104a, 1106a-1107b) and that the intermediate is determined by the dictates of the right rule. . . ." A man must be moderate but the correct rule is not easily dictated "e.g. we should not know what sort of medicines to apply to our body if someone were to say all those which the medical art prescribes, and which agree with the practice of one who possesses the art."

In 1180b.7, "Further [personal adjustment to the moderate] is worked out with more precision if the control is individual, for each person is more likely to get what suits his case."

D. M. Dunlop, ed., *The Fuṣūl al-Madānī of al-Fārābī* (Cambridge, 1961), has a statement of al-Fārābī that man has power to produce the mean and moderate by his nourishment which may be considered as a medical practice. As a result, man has power over a phase of the medical art.

¹⁵⁸ Cf. P. W. Harkins and W. Reese, *Galen on the Passions and Errors of the Soul* (Columbus, 1963), pp. 29 ff. In part VI of the text is mentioned Galen's *On Moral Character* which the translators declare is not extant. Cf. Galen, *Kuehn* 19: p. 45. This quotation is probably from this mentioned work.

and to be expert in attuning to things and their differences. If the power of the soul of anger, an animal one, is of easy obedience, the carnal soul, a vegetable one, is weak. It is because the latter is not dependent on the rational soul." Plato described it and likened it to the predatory beast, saying, "Whoever needs to be straightened up has a weak vegetable soul for this should not hinder the rational soul from its actions (42a). Since the powers of these souls are dependent on the complexity of the body, whatever happens to their actions and characters in the events which change them and remove them from moderation and a satisfactory state, occurs only because of bodily change. This may be seen in what happens to one who is anxious, excited, or steals, and who drinks wine and other drinks." He, whose complexion is changed by any of these causes, the examples alone, changes in his character as a result and in the states of his souls which were previously healthy—when his soul was quiet without movement and without that event. Therefore, the physician must be trained to recognize the types of these complexions so as to know in certain people's complexions, if they wish preservation, what is good in one's character and the powers of his souls, and also the rectification of that which is out of line. It is also necessary to investigate further what has happened to the souls if it may be determined for the bodies. In some people who are sensitive to shame there may be a natural inclination which is not the state of the soul nor the complexion. One exception to the word "naturally" is that nature may be somewhat changed by education.

If you wish to examine what is in the [irrational] nature of man and the events of the souls and their characters, examine those who are the uneducated—the unimproved with virtues and sciences—as, for example, children. You will find these events and characters separately especially in those who do not have good habits and have no one to educate them. These do only what is in their nature.¹⁵⁹

Galen has described some of these characters in children. We must relate it in his words. The observation was made by one of intelligence and a good mind (42b). Galen said, "There are children who do not lie at all and children who do not speak the truth at all. Some feel ashamed and others do not. Some are timid and some bold; some are voracious and some are not. Some are generous and help one another and some are avaricious and do not help one another. Some of them like cruelty and anger; some like justice. Some have mercy on any sympathy for children who are beaten and some advise to beat them and laugh about it. They differ from one another; the differences are in their characters.

¹⁵⁹ Cf. the article of R. Walzer, "Arabische Uebersetzungen aus dem Griechischem," in *Miscellanea Mediaevalia*, Berlin, 1 (1962): pp. 179-195.

"If this is so, then the physician must know the [irrational] natural character and the difference between it and the educated character so as to examine the condition of the souls and the events [associated with them]; the character is improved with good education and good habits do not cause him to err.

"Just as association with good and virtuous ones causes the soul to acquire the virtues and goodness of the [good] souls, so associating with evil ones and those with bad habits spoils the character of many people. They lose their good temperament for the other [evil one]. For this reason, the physician must first take care of the soul by improving the soul of the patient and the events [associated with it]. He must care for the soul more than anything else since the completion of man is in his soul; completion is dearer than that which is completed."

From these conclusions mentioned, one must know the purpose of the book, to encourage it, and to read what Galen and others have stated. Galen explained it in his book *On Natural Powers* and in his book *On the Opinions of Hippocrates*. Plato described [it] in his book *On the Characteristics of the Soul* and in his writing where he explained that the powers of the soul are dependent on the complexion of the body, the actions of the soul and its characteristics, and other events relating to it. He also explained that each of the three powers (43a) which many ancients called the souls, i.e. that rational, animal, and vegetable souls, has a dwelling and a place special to its actions. The place of the rational soul is the brain; the place of the animal soul is the heart, and the place of the vegetable soul, which is carnal, is the liver. Undoubtedly, upon the health of these organs will depend the health of the souls in action. If they are sick, then [the souls will be] ill. Thus, it is necessary as previously mentioned, that the physician understand the states of these organs if he wants to recognize "physical events." The latter are mentioned as part of the natural matter previously numbered; they are the attributes of the air, motion, quietness, food, drink, discharge [of excesses] and congestion, sleeping, waking, physical events, the countries, occupations, and other matters mentioned earlier.

We mentioned the importance of these natural matters to maintain completely the health of the body and to maintain the health of organs and their parts. We began, by example, teaching the friends of the medical arts to show how the physician uses them for the maintenance of health. Our example for this was the brain since it is the most important of bodily organs. We set down in each chapter, what we mentioned of the statements on these natural matters, the summations and principles which encourage students. We recall for the learned ones what was said regarding every meaning. We did not finish them all but discussed some of them. For this reason, we returned to the rest, as we did previously, for a statement on treatment of the

brain which is the example here for all organs. Then we went on to mention treatment of one organ as distinguished from another by brief descriptions (43b). God is the helper with His generosity.

*Statement on Changes of Country and Their
Effects on the Body According to
Weather Conditions*

Dwellings are necessary for the continuance [of life]; their situations and sites differ in [various] lands.¹⁶⁰ Bodies are changed by the circumstances [of housing] and the complexions [of a locality]. Complexions of countries may change from their usual conditions; as a result their inhabitants will become ill. The physician should know the conditions in his city where he lives; he should know the complexions toward which it inclines. This means [he must know] whether heat and dryness are predominant, or cold and moisture, or cold and dryness, or heat and moisture, or what affects the complexion of that city.

Hippocrates explained the causes which change the conditions of the body in four examples. He attributed them to the positions of the cities in four directions. He explained the complexions of these cities in relation to the circumstances of their inhabitants. For the one who understands Hippocrates in these examples, it is possible to recognize a principle and law in regard to the conditions in any city he enters. For this reason, Hippocrates ordered that anyone, who did not know a city which he entered, must learn its location and how the winds blow on it. He should compare, describe, and recognize these conditions of the city. (44a)

I shall tell you what Hippocrates ordered. He said, "When one arrives in a city which he does not know, then he must contemplate and consider the situation, how it is located in regard to the opposite winds and locations of the rising of the sun. This is because conditions differ for the city placed opposite the north and the one opposite the south, for the city placed opposite

¹⁶⁰ As al-Ruhāwī points out, medical attention was focused early in classical Greek times to a large extent on the influence of climatic factors on the body. Ibn Sīnā, as almost all other medieval writers on medicine, discussed this factor in his work. In the *Canon* particularly, there is a large section devoted to the effects of various kinds of atmospheres on the body. In the *Canon*, however, there is not only a strong categorization but, in turn, a much more detailed discussion of the many different possibilities involved. Because ibn Sīnā was removed from al-Ruhāwī by over a century, a period in which Greek medicine came to be fully accepted as the basis of the new medicine in Arabic, it was no longer necessary to mention continually the actual Greek sources as al-Ruhāwī did so often. Concomitant with this development was the lesser need in ibn Sīnā's period, or even in the earlier al-Rāzī's lifetime, to conform with the letter of the Greek treatises. For comparison purposes, cf. O. C. Gruner, *The Canon of Medicine of Avicenna* (London, 1930), pp. 175 ff. Only Book I was rendered into English. Cf. Jones, *op. cit.* 1, *Airs, Waters, Places*, pp. 70 ff.

the sunset and the one in front of the sunset." He also said, "Consider also if it is without trees and water or vice versa, and whether it is a low place and hot or on a slope and cold."

Hippocrates stated these ideas well in two chapters. One must understand that the causes of change in territories derive from the influence of the sun in that city, and second, from the blowing of winds on it. It is quite suitable that one mention the north and south winds because of their influence on areas placed opposite to them; this is since their effect is stronger than that of east winds and the winds opposite certain places. In these latter two directions, the influence of the sun is more important and obvious. Also, the nature of the east wind may influence eastern countries just as much as the sun does. The same may be said for the west wind accordingly. Hippocrates favors the earlier cause given as decisive in changing the complexion of eastern and western countries.

Then, for lack of trees, a country may be exposed, or there may be obstacles to the passing of the wind. They may not receive sufficient heat of the sun considering their winds. If trees do cover [the country], then there is a third cause [of climatic change]. Abundance of water also acts [to affect climate]. Areas may differ in receiving the heat of the sun, and its dryness, and the effect of winds due to their height or lowness. For this reason, the [bodily] figures of the inhabitants of [different] countries, their characters, and their actions, etc., are different, as Hippocrates has explained these.

He said, "According to the locations, nations differ from one another in measurements of the inhabitants' bodily parts, in [their] figures, and (44b) in boldness. I shall explain these matters."¹⁶¹

He said, "Those who are in mountainous country looking down, where there is abundant water, experience changes in their bodies so that they are big, ready to toil, and possess an animal-like boldness more than others. Those who inhabit low and spacious places where hot winds blow more than the cold, and use warm water, have bodies which are not large or muscular. However, they are broad in width, have much flesh, possess black hair, have a color more brown than white, and the bile is more predominant in them than phlegm."

He explained these in the discussion on the need of the physician to know the city conditions where he treats its inhabitants. There are further statements by Hippocrates but I do not wish to make this chapter overlong by mentioning them since that which I have presented is sufficient for the intelligent one. It will encourage him to study the locations we have not mentioned in order to complete this chapter. Great praise be to God!

¹⁶¹ Cf. Jones, op. cit. 1, *Airs, Waters, Places*, pp. 110 ff.

Statement on the Change in the Body Due to Vocations and Occupations.

Since the occupations and crafts of men have the power to affect the body and to change its qualities into opposite ones, as a hot complexion to cold, cold to hot, moist to dry, dry to moist (45a), soft to hard, hard to soft, etc., the physician must know how each craft affects the human complexion—how it affects the sick and healthy, the maintenance of health by suitable means, and cure of the ill from what is harmful.

The crafts¹⁶² which contend with fire and sun, for example, cause hot complexions. These would include the crafts of melters and blacksmiths, glass, lime-burning and similar occupations. It is because these, and those similar to these, act upon the body with the heat of the fire since it is near it. The opposites of these which cool the body are crafts which concern water like that performed by divers, seamen, fishermen, and others similar. As to the crafts which cause the body to dry, they are performed by those who suffer and become weary especially in the sun as builders, tree cutters, carpenters, wrestlers, carriers, and others similar. As to those that moisten the body, they are the easy occupations which do not fatigue one much. Those [crafts] which give pleasure to the body are concerned with perfumery, music, pigeon fancying, and others similar.

The physician must learn the harmful and injurious qualities imparted to the body, and the kind of thing affecting the body systemically and also the various organs. These effects are caused by certain types of work which diffuse harmful odors as tanning, cleansing of waterways, and [also the carrying of] weights. It is because all these and those similar injure the senses and brain especially when they go on continuously, for example, sieving of grain, pounding and combing of flax, soap-making, and in the occupations which cause their workers to contend with fumes. It is because all of these and those similar to them injure the chest and lungs, cause difficulty in breathing, damage to the blood vessels as bleeding of the veins (45b), and similar matters as pain of intermittent fevers and other serious chronic ailments.

The physician may also be obliged in his treatment and in the preservation of health to [employ] ethics and psychology,¹⁶³ whether praiseworthy or not, so that

¹⁶² Jones, op. cit. 1, *Regimen* xii; also *ibid.* 4: pp. 251 ff.

¹⁶³ It was Posidonius, in early Greek times, who believed that the understanding of the nature of emotions is the basis of all ethical philosophy. These emotions originate with the appetitive and passionate faculty of the soul (Galen, *De placitis Hypocritarum et Plotinus*). When there is a proper appreciation of the emotions, then there is an ethical discrimination of good and evil things, and the aim of life becomes more exact. L. Edelstein, "The Philosophical System of Posidonius," *Amer. Jour. Philol.* 57 (1936): pp. 305-316. Cf. Ibn Sīnā's concepts of psychology in his work, *Kitāb al-shifā'*; a good copy of this work in Arabic and French has been published by J. Bakos, *Psychologie d'Ibn Sīnā* . . . (Prague, 1956, 2 vols.).

he may determine the condition of the soul. [In this way he determines] whether the soul is amenable to the sciences and literature or not. The body may be thick and heavy, suitable to the heavy occupations and good professions. [All this must be known] in order to understand what is suitable for each soul and each body, and what disagrees with them in order to preserve them under opposite conditions.

By means of these matters, the physican may choose the casual and dialectal matters in obtaining the benefit from his science and in being aware of the opposite and the harm.

Statement on Habits

Habit is very important in the preservation of health and in the treatment of the ill. This is because in mankind people are accustomed to things in [certain] measures and times. [Accordingly], their complexions develop to endure them and their bodies are healthy with them. When they [i.e. the habits] stop, then their health is affected, they become ill and their bodies are troubled. Also inhabitants of countries located in different situations are accustomed and grow used to different activities, different foods and drinks, different dwellings, and so on. For them, these are natural and necessary for maintenance of the body rather than being unnatural. Through these habits, the body retains its health. Though some may become accustomed to the morals of others and some consent to the actions of others, there are some people for whom these actions and morals are not praiseworthy and satisfactory. An example of this is that some people are accustomed to the eating of barley bread (46a) and to eating curd and cheese. Also you find that some people are accustomed to drinking much pure wine for their complexion is hot, their bodies accept it, and it suits their health. We also observe that some whose complexions are hot cannot drink that amount of wine and drugs. This is so because of habit. Also we find that some people since childhood have been in heavy occupations of a difficult type so that their bodies are weak and thin from going through that toil and weariness continually. You will also find that some who are stouter and stronger than these cannot endure these occupations since they are not accustomed to them. When one who is accustomed to food in a certain amount increases this quantity, then it is harmful. Thus, he who is accustomed to eating once [at a certain time], eats twice, then he is harmed to the point of illness.

Hippocrates said much concerning this. I shall give two of them [i.e. his statements]. One concerns the change of habits of people. The second is general, an example of which is the case of different people who are accustomed to certain things which are very natural for them. It is not good to give these up.

As to the statement of Hippocrates in regard to the habits of people, he said, "It is obvious that unwise management in eating and drinking is harmful for the preservation of health. This is easily seen in the change from one kind of regimen to another. The change in one who was accustomed to eating once [a day] to a contrary [system] causes harm and weakness. If one eats at an unaccustomed time, it weakens him immediately, overburdens his body, and makes it lazy and atonic. (46b)

"Some may be exposed to the softness of nature. The cause of this is that one's stomach is exposed to the contrary of what is the natural state. This may be because his habit was to have an empty stomach and not be filled twice, and not to digest food twice. It may become accustomed to being filled twice, i.e. in the transition period from one habit of eating to another, if the bowels had been exhausted in the [double] eating period. For this, it is required that one sleep the entire night after the evening meal, if it is winter avoiding the cold, and if it is summer avoiding the heat. If it is not possible for one to sleep then he walks gently a great deal without stopping. After that he does not eat or eats only a little. A little does not harm one; having the same effect is also a drink not mixed with water."¹⁶⁴

This statement of Hippocrates is sufficient to explain and serve as an example for what we mentioned of the change in the body with the change in habits for anyone. If you wish to listen to all that Hippocrates has related on the subject of habits and also what Galen has said in his commentary on it, then delve into Hippocrates' book and Galen's commentary on it.

As to a general example, Hippocrates said, "I shall give you a demonstration from the best of proofs as to the softness of one's body. This is that you find many Scythians, all of whom are in agriculture, who are heavy in their shoulder blades, in their upper arms, wrists, haunches, and in their chests. This is due only to the softness of their nature. They cannot string a bow or shoot javelins with their shoulders because of their softness and weakness. If they are steamed, the moistness in their joints dries and they become stronger than previously. . . .¹⁶⁵ (47a)

"They are not bound in clothes in childhood as is practiced in Egypt. This is not their usual custom since they ride the horse constantly. Those males who cannot ride the horse but sit on the cart rarely hasten in walking because of their heaviness; their females are stronger than they in breadth and thickness."

He also said, "I declare that because they ride the horse, they are affected by an illness called *qadmata* in

¹⁶⁴ Cf. Jones, *op. cit.* 4, *Regimen* II, pp. 307 ff. Although many passages in the text of al-Ruhāwī are given as quotations, they are often brief paraphrases of the original text.

¹⁶⁵ Cf. Hippocrates' *Airs, Waters, Places* in Jones, *op. cit.* 1: pp. 122-125. In this text, it is the Scythians who are mentioned as the Northerners.

Greek.¹⁶⁶ This is because their feet are always suspended on the horse. When the illness is strongly evident, they become lame. They treat themselves in this manner. When their illness begins, they cut open two veins behind the ears bilaterally. When the blood is shed, sleep overpowers them because of weakness. So they complete the treatment; some of them recover and some do not."

I believe that the seminal fluid is corrupted by this treatment since whoever is bled in these two veins behind the ears becomes sterile. Most are bled only in those two veins.

Thus, I have related to you these statements once again and improved the way for you to recognize the changes due to habit in healthy and ill people. If you wish to listen to the words of Hippocrates on habits, and how the inhabitants of [various] countries acquire them depending on the change of air, water, and countries, read what he wrote in his book on countries, water, and air. By means of it, you will be in a position to judge many factors related to habits. I finish [here] what I mentioned to you [hoping to] awaken and encourage [you].

*Statement on the Powers of the Body
and Their Functions*

Sometimes it may be necessary for the physician to try to obtain knowledge of the faculties of the body since activities of the animal are completed by the body only with those (47b) faculties when they are healthy. When they are corrupted, then the functions are also spoiled. Due to them the eye has sight, the nostril is small, the mouth has taste, the ear has hearing, and other organs of the body have the sense of touch. It is not possible for any organ of them to perform its work except by a faculty which the exalted God bestowed specially on it and prepared the morphology of that organ for it.

Of these functions, whether natural, animal-like, or physical, there isn't any which does not have structures which follow it closely in channels and ways so as to improve the faculty. This structure which extends back does not mix with them [i.e. the three functions]; it reaches back to the organ which is the origin and source of them.

The ancients have explained that these sources are three—the brain, heart, and liver. The brain is the source of the physical faculty, the heart is the source of the animal faculty, and the liver is the source of the sense faculty. They have also explained that in the body the faculties are dispersed potentially. When their effects arrive in the organs from their origins, they are moderate in quality and quantity; there is no doubt that this is possible only because of the moderateness of

their origins and sources. They have also stated that when any particular organ has a particular strength, then this special attribute is also moderate. However, if it is immoderate in quality and quantity, and has no strengths, then it is not normal.

The question of understanding normality of a faculty and its health is related entirely to the faculty of the body, with the faculty of each particular organ, and with their functions. If the functions are not beset by any failing or corruption, then one may conclude that [that] faculty of the body is in health. If deficient and corrupted, then one judges on the basis of the corruption and deficiency of the faculty.

It is not of use to you to know that there are three faculties, as we have mentioned, unless you are aware of what each subsumes. You must know that there are four types of the natural faculty, the attractive faculty (48a), the repellent faculty, the digestive faculty, and the holding faculty. The animal faculty includes the attributes of pulsation, breath, disdain, anger, and love of dictation. The physical faculty includes the five sense faculties, and those of a kind of imagination, a kind of discrimination, a kind of memory, and types of the voluntary faculties.

The matter of faculties of the body is arranged properly after you study the types of faculties and their details and their specialties for each particular part of the body. By this means, you may preserve them completely in the body in every organ. You may [also] better that which is corrupted of them, what is in excess, and what is deficient. This is primary in medicine.

The physician must also know when those faculties perform their functions and when they refrain from them. This is in order to take care of each faculty at the time of its functioning when it is suitable for treatment.

An originating power always acts as a generator until the completion of that which was started. Then another power forbids this function if a need for this is indicated. An example of this is the function of the generator to form a foetus. If it is a male, it takes thirty to thirty-five days; if it is a female, then forty days. Then the generator refrains from its function. That which makes one grow carries on its function until the completion of bone formation as the growth of human organs to the end of the period of youth which is thirty-five years. As to the function of food, it is the same as long as the generating process continues and the animal lives.

It is essential that the physician know the [patient's] age since treatment must be adjusted to every age both in health and illness. If he does not know the natural complexion peculiar to each age, then he cannot know, for example, what food is suitable, what drink is proper, nor anything else necessary to maintain the patient's health. He must also know things similar to what is required. If he does not know this, then he is un-

¹⁶⁶ Jones, *ibid.*, pp. 124–125 has, "Moreover, the constant jolting on their horses unfits them for intercourse."

acquainted with (48b) that which repels illness by means of opposites.

Of all the ages, that of children is the most delicate because of the origination of the foetus from blood and seminal fluid since both of these are soft and the foetus is merely their coagulation from food similar to their complexion—as milk of the wet nurse and that which resembles it.

Its extreme opposite is the age of old people since [the body] is very dry for the organs attain in old age the utmost degree of dryness. In the middle between these two extremes is the age of young ones who are in the bloom of youth. Therefore, this age is average in complexion, drier than in the age of children and more delicate than in old age. This is the difference [in the body] in softness and dryness.

As to their differing in heat and cold, the explanation of these is also necessary for the physician. We shall discuss them here as we have mentioned the matter of softness and dryness since what we shall elaborate upon will encourage the friend of the medical arts, if he is intelligent with a good mind, to know fully the science of all that we mention from their books which were composed for their science.

We say that in the age of children, there is great heat due to the proximity of its period to the beginning of existence—to the seminal fluid, blood, and soul—all of which are hot. This is obvious in a sensory fashion. In old age, there is coldness because of its remoteness from the origins previously mentioned. The extinction of heat in the bodies of the aged and the domination of coldness in them cause them to be susceptible and receptive to the pain not found in other ages. For this reason, their bodies are disposed to be affected by cold ailments. When one touches their bodies, they are found to be cold.

As to heat in young people, many do not agree on its hotness. They disagree; discussion of this is not in order here. However, in order to understand it, you may study the subject in the book of Galen on the complexion, and in other places in the book of Hippocrates (49a). To Galen, it appears that the faculty of hotness in the child and young person are equal but the amounts of heat are different. The hotness of the child is more than that of the young in quantity and is softer; the hotness of the young is less in quantity but equal in quality.

Some people have divided age into four divisions and have said that the complexion of each one is similar to the complexion of the mixtures of the body and its parts, and related to the seasons of the year. They have declared that in childhood there is heat and moisture similar to the complexion of blood, air, and the season of spring; in the young there is heat and dryness like the complexion of yellow bile, fire and the season of summer; in the mature man's age, there is coldness and moisture like the nature of phlegm, water, and the

season of winter; in the aged, there is coldness and dryness like the nature of black bile, soil and autumn.

From the point of view of reliability, the first division is better but understanding the kinds of division is very useful for this [subject].

*Statement on the Appearance of the
Complexion of the Body*¹⁶⁷

As to the appearance of the complexion of the body, it depends on its complexion. For this reason, the physician must judge by the appearance of the complexion. The first thing he has to know is that the complexion of the entire body is made up of five factors and that all of them come under the name "the appearance" of the complexion. The meaning of each one differs from the others. One of these five is the quality of the substance; the second, the amount of flesh of the body and its fat, the third, [its firmness]; the fourth is the state of the hair and its amount; and the fifth is its color.

As to the quality of the substance, when the body feels hot to the touch, then it is of a hot complexion; if it is cold, the complexion is cold. Similarly so on the moderate one.

As to its firmness, if it is hard, then it is dry; if it is soft, it is moist (49b); between these, it is moderate.

As to its quantities of flesh and fat, if it is fleshy, then it is moist; if it has little flesh, it is dry; if it is between these, it is moderate. If the body is fat, then it is cold; if it has not fat, it is hot. If it is between these, it is moderate.

As to what is known of the condition of the body from the point of view of its hair, it is indicated by three aspects, i.e. its quantity, form, and color. The quantity may be much or little, either thick or thin. When there is much and it is thick, coldness is indicated; when moderate, then there is moderation of the complexion. As to its form, when it is curled, dryness is indicated; when straight, moisture is shown; between these is moderation. As to hair color, henna and red indicate moderation; black indicates hotness; white indicates coldness; if faded, it indicates that its coldness is stronger and more violent. When black, it indicates [not only] hotness but also dryness.

Together with the knowledge of the physician on deduction using these principles, their details, and their intermixtures, and the understanding of the complexion of the entire body by these, he must also possess knowledge of the complexion of the organs and their various parts in the body, all made possible by these very principles. It is not enough for him to know [generally] that which we mentioned, he must divide and further subdivide these finely to determine exactly the indications. For example, the fertility of the body and its

¹⁶⁷ Compare Jones, *op. cit.* 4, *Humours*, pp. 62 ff. The next few folios in this text are an abstract of Hippocrates' work.

flesh are two [different] kinds; one of them depends on the natural complexion of the body, i.e. the moist complexion with moderation; the second is the complexion acquired with care in moistening the body. The same is done for the fat, etc. (50a)

It is also necessary for him to know that these statements apply only in moderate countries and are incorrect in non-moderate climes. For this reason, in his statements, he must make exceptions and judge accordingly so that his conclusion may be correct. Further, many err when they arrive at the complexion of a body from part of an organ as those who judge by the broad-nosed who is supposed to be of moist complexion, and the hook-nosed as of dry complexion, and the wide-eyed as of moist complexion, and on the small-eyed as of dry complexion and cold. Those who judge by these alone do not know that the original power which fashioned them, the exalted God, formed the parts of the animal according to what was present of material in abundance or in paucity, according to the good and bad qualities.

The conditions of the organs are according to the character of the soul and its faculties when judgment is called for.

Statement on the Nature of the Body

As to the question of knowing the nature of bodies, it is exceedingly important that the physician know them. This is in order to preserve health and treat illness. The health of the body is preserved only by what resembles its complexion, i.e. when one does not first know this body complexion. Thus, there is the necessity to discuss "the nature of the body" here. The meaning of "the nature" to Hippocrates and other physicians is the same. Sometimes "the nature" stands for the complexion of the body, sometimes for its appearances, and sometimes for the faculty which manages its action. In short, the meaning of "the nature" here is that complexion which refers only to the body. It is this which the physician must know in order to preserve the body's (50b) health and to treat its illness.

The ancients explained that it is impossible to give those attributes by which one may define the complexion of any one person as distinct from that of anyone else. This is because people are without number and so their complexions are without number. This being so, they sought knowledge as to the types of complexions and their kinds. They accomplished this by distinguishing the types and kinds with what they did and did not have in common. In this way, some order was introduced so that others may understand any complexion of persons whose health or illness may be cared for. That physician who does not utilize this law and its understanding will make healthy ones ill and the ill will die. That physician who has received a good bringing up and is consciously aware of the obligations of reason and divine law is a help both for himself and for the people. This is because his conscience leads him to seek that

which he does not know of these principles and laws. As a physician, it is impossible for him to be ignorant of these matters.

The latter, discussed in this chapter, is the science of the kinds of complexion. These are nine. One is moderate and the other eight are non-moderate. Four of the latter are simple ones, i.e. the hot [complexion], the cold, the moist, and the dry. Four others are the compound [complexion], i.e. hot and moist, hot and dry, cold and moist, and cold and dry.

It is not sufficient for the physician that he know these without being aware that the natures of the body are divided into classes. The middlemost of them is the moderate one; then there are two extremes from the middle one. There are many healthy classes of healthy complexions and ill ones. The extreme of the latter is corruption as far as possible. He must know the attributes which denote these various classes. An example of this is the group of attributes attributed to the hot complexion (51a) and to the cold complexion.

Although one thing may be indicated, in fact, many [complexions] may be indicated. This is because, although the hot complexion, for one, may be indicated, there are such [qualifying] matters as its intensity or lack of it, its violence, and its weakness. Changes of timing affect the complexions of people on an overall basis. For example, people with the hot dry complexion have a broad chest, have large blood vessels easily showing pulsation, have brave souls; their bodies have thick muscles and delicate joints near them. The skin is black or deep brown, the hair is abundant and black, and they have thin bodies with little fat.

The opposites of these attributes are the characteristics of the cold moist body. And like the hot dry complexions, the cold moist ones too are numerous and unlimited in strength and in weakness. These and similar characteristics of the remaining kinds of the eight complexions have classes and degrees which are numberless. Some are more strong than others. It is up to the physician to determine the complexion of the person whose health he intends to maintain or whose illness he will treat.

Our saying this does not mean that we must here present the characteristics of the natures since our intention is not so in this book. We mentioned only what we have merely by way of example as comparison for intelligent people in the medical art and for the sake of students. Those who are superior in this art do not need this since they have already read about it in books. It is now enough what we have mentioned in this chapter. Let us return to our [original] intention.

We say that we have completed the mention of [these] summations; the properties of the natural things were discussed as a pressing need in knowing the factors in regard to the body, its improvement, and the particular necessities. These are especially for the physician and any others who desire bodily good. (51b)

Our intention in "improving the physician" is first to raise his soul and to strengthen his ethics. We have presented it before the goodness of his body because the soul is before the body in honor.¹⁶⁸ Further a separate chapter has been written about it previous to this one. We intended in this second chapter, to record the factors in regard to the body since it is secondary in any individual. In the preceding chapter, we said that ignorance of the organs of the body and their parts is improper for the physician. [In regard to the organs], some are excellent and are served; some were created as tools and serve the rational soul; and some were created together with these tools and serve natural purposes. We also said that they are of different complexions and properties, and that he who takes care of people in health and illness must know all case [gradations].

The physician [himself] is the most in need of this [knowledge] in order to improve his own body first and then others. He must first take care of himself. Thus, it is imperative that one who has a fine, intelligent, and pure mind, in managing the organs by [this] law, can use it for the whole body and for any part of its organs.

There is no escape for us from this; let us take an example of the manner in which operation of the law is required. The brain, of all the organs, may be chosen as an example. We have discussed the necessary factors and the natural matters which are indispensable for the continued living of a person, and how we have to choose the best of these. Further, we plan to make the physician aware of the necessary scientific facts.

When these have been understood, then it is necessary for you, O friend of this art, to carry over what we have mentioned on the brain to the rest of the noble organs, i.e. the heart and liver, and other organs necessary for life which are the tools of the soul, and the apparatus for food like the stomach and liver, and in general, to the part of any organ of the body, whether large or small (52a) or any other type. The purpose of this is so that a more suitable choice of these natural matters may be made for each organ. By this, I mean the conditions of the air, movement, rest, food, drink, defecation, clustering, sleeping, waking, physical properties, countries, habits, faculty of the body, age, softness of the complexion, and the nature of the body. He must choose from each, for the entire body and its organs and parts, whatever is suitable for it in quality and quantity, in time and place according to what we have mentioned in these chapters.

¹⁶⁸ From Ross, *op. cit.*, 1102a.18: Aristotle's *Ethica Nicomachea* states, "... clearly the student of politics must somehow know the facts about soul, as the man who is to heal the eyes or the body as a whole must know about the eyes or body; and all the more since politics is more prized and better than medicine; but even among doctors the best educated spend much labor on acquiring knowledge of the body."

If anyone is in need of this [knowledge] and uses it in health or illness continuously, as long as he is alive, then the beneficial virtue is only for people practicing this art and for those virtuous ones who carry out the advice of the physicians skillfully. That is, they choose from each of those the most suitable and most useful, and they use only what is indispensable for the person and that particular kind [of aid] for the continuance of life. An example of this is that which is used for the prolongation of life of a person as food, drink, and other natural things, the explanation of which has gone earlier.

The virtuous one eats only when it is a pressing need, at a suitable time, the proper amount, and drinks only [what is necessary]. His other activities are carried out like this in his movements, rest, sleep, waking and, in short, what nature leads him to do. His virtue in this is that he does not partake of them according to pleasure but according to need. One of the worst things is to act as an animal which does not partake of these things according to need, and also to consider oneself as intelligent but, at the same time, going beyond his need. Worse than this is when one tries to overreach himself beyond his ability as when some take electuaries to strengthen themselves for excessive sexual intercourse (52b). That man, and others like him, are dangerous and evil for the rational ones. He is the worst and most evil in regard to the physician who defends the proper regimen for people whether learned or unlearned. Then, O friend, disperse your nature with your reason, and your misunderstanding about your benefits in reading the books of the ancients, understanding their statements, coming close to the erudite of them to increase knowledge from them and to be able to do good work. This is because in science there is attainment of the good things.

It is convenient, I see, after the presentation of these summations, to mention some (conclusions on the) advice [and] to encourage the physician to carry out improvement of the other large organs of the body and by which he decides on their betterment. Following this is the kind of life a physician must lead, how he must be, how he arranges everyday care of his body for all his days. (With this, this chapter is concluded.)

*Statement on Activating the Functions of the Organs;
The Foremost After The Brain is The Heart*

The physician must take good care of the activity of the heart in health since it is the source of life, the location of the animal soul, and the origin of natural heat. From it the animal soul circulates in the veins the effective agent which extends to the rest of the body; through the thinness of its blood it ascends to the network of the brain. Also with it is the thinness of the animal faculty which is there changed and improved. Then the blood becomes food for the brain or for the animal soul.

The physical soul has substance and materiality. The heart was created in the shape of a pine tree [cone] like the shape of the fiery substance which is in it. There are two procedures to use in improving the heart. One of them is concerned with the improvement of what arrives in it from the outside as the air, which may be windy and fiery, and what the animal soul which is already in it supplies. The second is by improving the incoming blood which feeds it, causes growth, and preserves animal power and natural heat as the fire of oil is increased and preserved. For this reason, the (53a) physician must always take care of the improvement of the food from which blood originates.

It has been explained that rectification of these natural things, previously mentioned, in the management of the brain, and their care for heart therapy, stems from what concerns the two original procedures which complete therapeutic improvement. The ancients explained that the heart is an affected instrument of the strength of anger. With its improvement, the actions of this power come to a suitable state, the morals are moderate, and the strength of the anger is weak when the blood is pure and the physical is strong.

When the heart is damaged, then it indicates anger is venal, and morals are corrupted. The condition of the heart is extended to other organs of the body. One may check the pulsation of the arteries; the science of pulsation for the physician in the preservation of health and therapy is a very worth-while one since, as Galen stated, it does not lie. For this and similar reasons, he must show enthusiasm in maintaining cardiac health.¹⁶⁹

Statement on the Liver

The liver also is a primary organ created to manufacture blood. By its attractive faculty, which God, may He be exalted, created in every eater, it attracts to itself that of the food which is pure and which the stomach digested and ripened.^{169a} When it is metabolized in the liver, then ripened secondly, the changing properties in this period of time when held by this faculty produce blood. Then, it is transmitted and sent off to the organs through the arteries which branch out to every similar part. After they [i.e. the organs] take their food from it according to their need, then what remains is not suitable as food of any kind. This includes the dregs, sediment, froth, and water. It is a predetermination of the powerful and wise God.

The liver was created as crescent-shaped in the midriff, convex outside and concave inside so as to make possible that it be a container by its (53b) deepening and by its lobes over the stomach to warm it and to assign it to the metabolizing of food. A similar example is that of the earthenware pot put on the hearth.

¹⁶⁹ Cf. Galen's works on the pulse in C. G. Kuehn, *Claud. Galeni Opera Omnia* (Lipsiae).

^{169a} "Ripened," as elsewhere in this translation, indicates the proper preparation for the further passage of food in digestion.

The properties of the liver make possible the full operation of existence; this is because the primary properties are responsible for forming and growing up, and the secondary [faculties] attract, retain, digest, and send out. When the liver is in a state of health, then the condition of the living one is sound. For this reason, it is necessary that the physician take care of all that comes to it [i.e. the liver] of food and drink, and also what issues from it. As was stated previously, in short, the determination of natural matters must be according to their effectiveness.

Statement on the Stomach

After physicians take care of the chief organs, meaning the brain, heart, and liver, he must care for the other organs which serve these, and [whose activities] are beneficial to the entire body. The foremost of them is the stomach since it carries out the first digestion of food in it. When the teeth, canines, mouth, and tongue break up the food into [small] pieces by grinding, it is not properly digestion or [any form of] metabolism since, on their level, it is only to make it [i.e. the food] ready before metabolism and to pulverize it before that.

The stomach, in fact, is the first instrument of digestion. For this reason, its receiving fibre in width becomes a fixed fibre to contain and retain the food to complete its pounding and digestion in a certain period of time. Two faculties aid one another to do this; one of them retains and the second changes and digests. These two faculties are operative if the attractive faculty is working; otherwise they do not as when the third faculty [obstructs] in its repellent action to the two normal faculties. For this reason, the stomach was created with two openings; one of them is where what arrives in it (54a) is attracted through its connected esophagus; the second is the pylorus which is the opening to the beginning of the intestines called "twelve."

The lower part of the stomach is its widest part and is of flesh since it brings about most of the ripening; the upper part is of much nerve since its feeling is there. If the stomach is as beneficial, as we have described, then the physician must take care of its well-being. The first of its improvements is its cleaning and emptying of what has remained in it or what had arisen in it from putrid excesses of cold food. The first therapy involves the preparation of food, cleansing the earthen pot and the cooking utensils.

The best thing for the stomach and other organs is not to expose them to anything but food and drink which are proper, etc. They must be suitable in quality, quantity, in order, and in time. If food and drink are not in excess, their quality is satisfactory in hotness and coldness, for example, they are served in the proper order, i.e. and easily digestible, fine food precedes slowly digestible food, food precedes drink, digestion of food is unhurried before the succeeding food arrives in the

stomach, all other natural necessities for the stomach are recognized as exercise, rest, sleep, waking, excretion and withholding, and other matters which improve the stomach and other bodily organs, then [this is the best].

For this reason, the physician must take care of these. He must also remember, as previously mentioned, the cleansing [of the stomach] from what had entered it. That which comes into being from the mixtures in it is of two kinds: one of them makes benefit possible in the digestion of food so that it makes its way to the liver and blood arises from it; the second kind of mixture does not make possible the creation of blood from it. (54b) For this reason, it is necessary to remove it by non-activity or vomiting.

The first kind from which creation of blood is possible is the phlegm. Therefore, it is essential to take care of its digestion and improvement for the aged, and for those who have cold moist complexions.

Those in whose stomachs phlegm arises should rearrange the digestive components of their stomachs by eating honey, suitable electuaries, and by drinking some pure wine with their food, etc.

As to the second kind of mixture which arises in the stomach which is not susceptible to a change into blood and its improvement, it is either from what had arisen there or from what had been poured into it of yellow and black bile, of the yellow bile mixtures, and of the black bile mixtures. The removal of these [harmful] mixtures from the lower part [of the stomach] is possible by means of purgative drugs, and by vomiting for that in the upper part [of the stomach]. Compare [this] with what we have mentioned to you and make the measure good. You will succeed, if God wills.

*Statement on the Intestines, Spleen,
Gall, Kidneys and Bladder*¹⁷⁰

For the physician, it is also necessary to pay attention to the science of the substances of the remainder of the auxiliary organs and what is of value for each of them. It is not enough merely to take care of the major organs only but also those serving them must be attended to for the maintenance of life and the preservation of health.

These organs serve, as God the Creator created them in the third rank, in order to assist the stomach and the three small intestines, i.e. those connected with the pylorus, those called "twelve," and "the thirsty part." These are the paths through which the stomach discharges proceeds since in them are the beneficial, thin blood vessels which came from the liver. These are called *al-māsārīqī*^{170a} meaning the capillaries through which the pure part of the nutriment is attracted to the liver to there become blood. For this reason, the intestines are very much curved (55a).

¹⁷⁰ Much of this section is a restatement of Hippocrates in his relevant works.

^{170a} From *saraqā* "to steal," i.e. the nutriment.

As to the large intestines, the value of them is that they serve as a lumen to cleanse the waste. For this reason, it is necessary to force it out if nature is unable to carry out this function. Thus, nature requires an assistant, the physician, who knows how to cause evacuation. Evacuation is necessary every day just as food is essential daily. The waste must be evacuated. To do this easily, the aid is for the food to be quickly digested and that its preparation not be too difficult for the stomach. To accomplish this, it must be ripened and pounded somewhat by outside preparation and cooking before ingestion. Then the food must be of a complexion which is similar to that of the diner when he is healthy.

For those who have a cold complexion and whose stomach is overcome by coldness and phlegm, to assist excretion one must mix the attenuating matter with the food to help development of yellow bile, to arouse it so that it pours into the intestines. This helps one to move his bowels. These attenuating matters are antagonistic as cumin, cinnamon, ginger, pepper, and honey. In those mentioned, there is a very strong effect since they reduce consistency, ripen the phlegm, and help it to become blood. It is these which aid and greatly benefit those who drink pure or nearly pure wine. In winter, its [i.e. the wine's] complexion with hot water and the treacle of date juice tending toward sweetness, is beneficial in this.

If the intestines lag in expelling the wastes because of the coldness of the complexion, because the phlegm in it has increased, because the waste in it has dried, or because of the abundance of wind arising from the the kind of food ingested, then the physician must extract it by a clyster. This warms the intestines, melts the phlegm, and repels the wind. In the clyster, these are used: marshmallow pounded in honeywater and oil, juice of cooked cumin and marshmallow, or fenugreek and cumin mixed with honey and oil (55b). These and similar ones are useful for the preservation of health and cleansing of the intestines. Also very valuable are exercise and improvement of natural matters. It would be wrong to neglect any of these.

As to the spleen, it is an organ having many important uses. The most obvious and most important of them is its cleansing and attracting of the impurities of the blood from the liver. When it arrives, [the impurity] is treated in it so that black bile arises from it. It allows some of this black bile to proceed to the opening of the phlegm. There it is dammed by its contents and by that which is in this bile of sourness. This causes an appetite for food.

To help the spleen, he examines the stomach for [its] digestion, including its form just as the liver is protective from the right side as if it clothes it by a covering on its front. All of these are to warm it.

To obtain the benefits and activities of the spleen, care is necessary to cleanse it and make it better. When

there is a difference in the [spleen's] condition as that which covers it, the physician must cleanse it out, strengthen its sharpness, and remove what may be in it with oxymel of honey, squill, caper made with vinegar, and the like.

The physician must check the condition of the bile because it is something which was created to attract the froth of the blood from what the liver metabolizes just as the cook removes the froth of the concoction with a ladle to cleanse it. This fine froth becomes yellow bile from reaction in the gall bladder. Nevertheless, after its being fed, the bile passes through the two ducts, to the lower part of the stomach and to the intestines. It helps the stomach to digest because of its hotness, and also assists the pylorus to expel the ripened part and to help the large intestines to expel the excrement and keep them free from phlegm which tends to increase in them since their complexion is cold.

For this reason, it is necessary to take care of the gall bladder, to examine that which enters it, and its attraction and repulsion so as to improve the food, drink, exercise, bathing, and in short, the remaining natural factors.

A statement as to the kidneys and urinary bladder is similar to that on the gall bladder (56a). They are organs created to attract to themselves the water of the blood after they extract their nutriment from it. Then they allow the rest to pass into the urine. For this reason, the physician must check that which is excreted in the urine, to examine its abundance or lack of it, and its properties as to color, consistency, the ease of urination, and any other quality when it is excreted. The science of the study of the urine in relation especially to food intake and for the condition of parts of the body generally, in health or in illness, is of great value to the physician. For this reason it is necessary to know the science of the various conditions and to read the treatises composed by physicians. For this reason also, it is essential to check the kidney and urinary bladder for their functioning and uses so as to improve food and drink especially, and other natural matters generally.

Statement on the Lungs and Chest

Subservient to the noble, and useful organs for the continuance of life is the organ [called] the lung. It is an organ whose purpose is to protect the heart, to fan it to extinguish the fiery hotness in it, to bring pure and cold air into it, and to purify the hotness as the fan does when it brings air to the fire to banish the accumulation of smoke and ash and so purify it. This is what the lung does also. For this reason, it was created as a sponge, light. For the sake of its operation, it is protected by a wall surrounding it composed of bone, muscle, and membranes, etc. which is the chest. It is used mainly for keeping alive, for the voice and its expres-

sion. For this reason, the physician must take care of all matters relating to it. This may be by improving food, drink, especially the air which surrounds a person and its movement since these are the quickest to affect the (56b) lung and chest. In short, it is necessary that all natural things be continued for them as well as for the health of the remainder of the organs of the body we have mentioned and those not mentioned. That which we have discussed about certain organs serves as an example for the physician to do what he must do for the rest of the organs of the body.

For this reason, it is necessary that he know all the instrumental organs of the body and to know the organs which precede the instrumental organs in rank. These are parts of which each one is similar since they are the roots of the instrumental organs. Then it is necessary to know that which composes the organs of which each part is similar in order to know how to preserve them. He must take steps to learn the matter of mixtures and before that learn about the complexion because the mixtures are from the four elements. Thus, for this reason, they said that these factors are the natural things of the body with their origins and properties.

For these reasons and because of their extensive research and being wise in the procedures of their science, the ancients composed books for each branch. If you wish to know them thoroughly then you must seek in an orderly fashion to read the books on any of its branches according to the arrangement of the natural things in the human body. The best of what I have read on this [subject] are the books of Galen, especially sixteen of his books which the Alexandrians have arranged for students of this art. We shall mention them later in due order with the help of the exalted God.

He who understands must take care in their lessons. The book on the four elements [of them] precedes [that of] the complexion, and the latter precedes [that of] the science of anatomy, and [that of] the uses of the organs precedes the natural faculties, and so on.

We have completed the statement here so let us return to what the physician himself has to learn of the management and administration for his body and for his soul in daily existence so that his works may be perfect and his course [of action] be complete. By these, this chapter is concluded. (57a)

Statement on the Procedures and Policies by Which the Physician Must Conduct Himself in His Daily Life.

We say that it is necessary for the physician, after he expends [his efforts] in what has been mentioned in the pursuit of science, that he do his best every day to cleanse whatever issues forth from the orifices of his body as his nostrils, eyes, nose, etc., and to wash them with water. Excesses should not be in evidence in these openings; this occurs only with excessive eating,

drinking, and harmful use of these. Therefore, for this reason, the most beneficial method to purify the senses and to cleanse them is the improvement of food and drink.

Further, the physician is obliged to frequent assemblages of the virtuous, learned, and men of letters amenable to him. It is not polite for him to expectorate, spit, yawn, stretch himself, and to do similar things. All these and those like them are caused by being satiated with food and drink. The physician must avoid them and whatever fills the head. After that, he must take care of his mouth by means of a toothpick and tooth medicine to polish the teeth and to perfume the breath and strengthen the gums of the teeth. This is done by means of *schoenanth*,^{170b} *cyperus*, and others similar. He chews aloewood a little at a time to perfume the gums of his teeth, and to strengthen his stomach and brain. *Mastix* and similar [gums] are also like it. For this reason, Galen said, "There was a man who had a bad odor in his mouth; he took care of it to the extent that it decreased by vomiting, purging, and drinking the remedies which improve it. Then, everyday, he put in his mouth cardamom, sometimes cinnamon, and sometimes other odoriferous substances. After he did this, he could not leave his house.

Then it is necessary that he follow this by examining the odors of his other bodily organs (57b). That which is bad is removed by an opposite odor as *tutty* for the odor of the armpit, and aromatics which subdue unpleasant smells.

He must also investigate any excess in his organs not needed for the body as excessive nails, too much hair on his head and face, etc. He removes them.

After these, the physician must take care of his clothes, keeping two factors in mind. One is that they must be useful and soft and warming in winter, and thin and soft in summer. The second is that they must be [garments] of beauty when he is near people of his status. The physician to the king has need of more clothes than does one who serves the public.

The physician must guard all his five senses and not use them except for a beneficial purpose and to repel harm. If he speaks, he must talk of science and knowledge, and no foul word must be heard from him. He must be cautious in his use of words especially in the assemblage of kings and chiefs. He does not ask [anything] except what helps his problem, and he does not answer except when he is queried.

In the same way, he must guard his sight, not beholding anything vile which may be injurious, if it is not necessary. This is true even as a boy. He must try always to look at the books of his art and at the code of his divine law since the books on divine law determine morals and encourage good works, and the books of his art help him to acquire knowledge.

^{170b} For botanical information, cf. M. Levey, *The Medical Formulary of al-Kindī* (Madison, 1966).

It is essential that the physician take care of his hearing, trying not to talk with illiterates nor to listen to statements of the wicked and those of the sects with evil opinions. This is possible when he does not sit in company with those who do these things, and if he does not mingle with or speak to them, as far as possible. If possible, discussion with a virtuous one [is desirable]; otherwise to sit down (alone) in study is the greatest of friendship.

He must be careful in guarding the rest of his senses by keeping away evil smells and (58a) corrupted odors from the brain, or the factors which corrupt his body. He should try to improve the air of his dwelling and his office. This is possible by not being close to that which corrupts the air such as a copper smeltery, the furnace of a bathhouse, a place where corrupted water accumulates, a tanning yard, and the like.

Then, the physician must divide his day and night times according to his needs and practice. He should try to choose the time of sleeping so as to be at a minimum and only in that amount of need. This is because sleep is like death, and deeds are accomplished only in wakefulness. For this reason, the period of wakefulness must be longer than that of sleep. An example of this, that his actions must be according to schedule, is that the first of the acts of a rational one after rising from his sleep and cleansing of his body and the organs of the senses, in accordance with the preceding statement, is prayer. This is because thanksgiving to the Benefactor, acknowledgment of His unity, and humility before Him [is due] since He is the origin of all good, the Almighty, the doer of what is necessary in reason and divine law. He justifies withdrawal from vice and pure sin by cleansing the heart. And he answers prayers and gives to all the beloved. For this reason, the first act is prayer, also [it is] the last act of the evening.

Then the physician turns from prayer to the reading of the book of his religion since it orders him to do good. Then he turns to the reading of the books of medicine according to the order of the ancients. Then when it comes to visiting the sick, he prays again saying the morning prayers asking the exalted and hallowed God to help him prosper in his success with his patients. He then goes out with good intentions to his patients who have been exposed to many sorts of disagreeable matters and their eyes are sleepless from the depth of [their] calamity. He praises God for bestowing so much on him and asks his help for their recovery so that when he comes to the patient, asks (58b) about the symptoms, and diagnoses his case, he soothes his mind and promises him recovery and health.

If the patient and the one who serves him understand, then the physician describes the remedies to them and allows them to go on with the therapy. If it is not understood, then he must, with his own hands, undertake the treatment that is necessary; he [i.e. the physi-

cian] does not explain anything to [the patient]. In maintaining silence as to the diagnosis for one who would not understand, in case of error, it is better for the patient and for the physician. After he has completed the visit to his patient he must return to the above mentioned office to treat any of the patients and to understand the problems.

Here, I have not described how it is necessary to query the patients, nor how the patients must behave, nor how to serve them since I have set apart separate chapters for each of these. They will come later by the help of God.

The physician must better his relationship to and endure the distress of the patients. He must pay attention to any statement heard from them. No matter what the circumstances, he must acquire information from anywhere or anything which may prove beneficial to the recovery of the patient. The physician must not discourage any complaints of the patient or display of his distress since these symptoms which occur may be important in the diagnosis of the illness. The physician must show mercy; this is not possible except by the fear of God. If the physician has these traits, then he speaks only the truth and does good for all the people.

When he has attended to the needs of the people, then he pays attention to bodily matters by bathing, eating, and drinking. These are done in proportion according to what is best for him in quantity and quality, and according to the time and place. If he must eat with others, he does not ape them in eating and drinking but he organizes all the natural things according to what is essential and in the amount of what is needed, not according to taste. He teaches (59a) the correct way to others in this. He masticates well what he eats and sips what he drinks. It is best for the physician that he not sit down to drink wine in company since by this he loses time and his status is lowered. He must also beware of frequent association and mingling with young men since this would not free him from the illiterate and insensitive. It is not proper for the physician to contend with women in pulling so as not to be held in contempt by the people and chiefs. It is not correct for the physician to earn property by trade since that holds him back from science. It is not in his best interests for the physician to occupy himself with play and playthings so that he may not become weak-minded and silly. Flattery is not fitting for the physician since it is of the morals of the crowd. Envy is not good for the physician since it causes him to fall from his position.

When the physician wishes to drink wine, he must drink it only to an advantageous purpose, and he must drink alone as far as possible. The best time for him to drink is at the beginning of the night after he has digested his food. This is because, then, it penetrates the nutriment and helps the liver with its moderate hotness in digesting the pure nutriment into the blood

since wine is the nearest thing to being blood. It is necessary to drink of wine and water whatever is suitable. The drinking must be little by little. While he is as a familiar companion to the authors of his science, i.e. when he reads their books, and (at times he reads) at times he copies, and in this he drinks until time to go to sleep.

This, which has been described, is necessary for the improvement of the physician's body just as I described, in an earlier chapter, the improvement of his soul. What I have mentioned in this chapter regarding the affairs of the body is sufficient for those who have intelligence and are acquainted with the literature.

CHAPTER III

This Chapter Concerns What the Physician Must Avoid and Beware of.¹⁷¹

It is necessary that the physician, remembering the warnings and advice on the improvement of his soul (59b) and his body, beware of many other things in the maintenance of health and in treatment of the sick. Here, we shall mention that not already described which is fitting to be explained.

The first thing of which the physician must beware and which he must guard himself against, is that he not employ anyone else either in maintenance of health or in treatment of the ill, and also in choosing an intelligent one whom he wants to manage or to serve him [i.e. the physician]. The second is that he keep up improvement in what is beneficial in his therapy. Then he organizes to begin his treatment. Otherwise, it is best not to use any therapy for if he does then he will cause many sorts of difficulties for the patient and himself. In this case, to regain what was lost is then difficult for him. This is pertinent to the statement of the great Hippocrates when he said, "It is essential for you not to confine the purpose to the necessary action unless the patient and who attends him and the things which are from the outside are so."¹⁷² Hippocrates advised the therapist in this as the main admonition for the physician in the case of the ill and in the manner of himself. This is also true for the servants and visitors for, in his statement, there is "and who attends him."

As to his statement, "the things which are from the outside," by this is understood the factor of his situation as where he dwells, the air about him, his remedies, his food and the manner of their prearrangement, disposition, their improvement, and everything by which the patient is treated as by bathing, rubbing, anointing, exercising, and the like.

¹⁷¹ This chapter, as well as the remainder of the text, should be constantly compared with the contents of the Hippocratic oath as explained by L. Edelstein, Supplement no. 1 of the *Bull. Hist. of Med.* (Baltimore, 1943), and also with the four texts by Hippocrates mentioned in the Introduction as being relevant to medical deontology.

¹⁷² This is the first aphorism in Hippocrates' *Aphorisms*.