



CHICAGO JOURNALS

5333 pdf
TEMKIN, O.
1953



History
of
Science
Society

Greek Medicine as Science and Craft

Author(s): Owsei Temkin

Source: *Isis*, Vol. 44, No. 3 (Sep., 1953), pp. 213-225

Published by: The University of Chicago Press on behalf of The History of Science Society

Stable URL: <http://www.jstor.org/stable/227086>

Accessed: 30/10/2013 15:37

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



The University of Chicago Press and The History of Science Society are collaborating with JSTOR to digitize, preserve and extend access to *Isis*.

<http://www.jstor.org>



CHICAGO JOURNALS



History
of
Science
Society

Greek Medicine as Science and Craft

Author(s): Owsei Temkin

Source: *Isis*, Vol. 44, No. 3 (Sep., 1953), pp. 213-225

Published by: [The University of Chicago Press](#) on behalf of [The History of Science Society](#)

Stable URL: <http://www.jstor.org/stable/227086>

Accessed: 30/10/2013 15:37

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



The University of Chicago Press and *The History of Science Society* are collaborating with JSTOR to digitize, preserve and extend access to *Isis*.

<http://www.jstor.org>

Greek Medicine as Science and Craft[§]

BY OWSEI TEMKIN *

IF asked to give a sketch of the development of Greek medicine that could count on general acceptance, I should offer the following outline: Little is known of Greek medicine before the fifth century B.C.; the earliest medical writings that have come down to us are represented by the so-called works of Hippocrates, although this collection is not the work of one man. Its individual books originated approximately between 450 and 350 B.C. They deal with internal diseases, surgery, and gynecology; they offer rational physiological as well as pathological theories often at discord with one another; clinical observations, with emphasis on the prognostic significance of signs, are found side by side with a schematic cataloguing of diseases. Surgical therapy of dislocations and fractures is often quite modern, the *materia medica* well developed, but where internal diseases are concerned, the dietetic treatment stands in the foreground. The medical literature of the subsequent 400 years is lost; events during this period have to be reconstructed from fragmentary remains and the accounts of later authors. Yet during this period, some decisive changes took place in Alexandria and Rome. The great scientist physicians of Alexandria in the early third century B.C., notably Herophilus and Erasistratus, consolidated the dogmatic school with its stress on research and theory of disease. But the dogmatic school was rivalled by the new empirical sect that banished the search for hidden causes and referred the physician to experience (his own and that of others), supplemented by analogical reasoning in unprecedented cases. After Greek medicine had established a foothold in Rome, it again gave rise to a new sect fitting the new environment. The methodists opposed the dogmatists' scientific theories as well as the empiricists' trust in experience. Instead, they stressed what is common in diseases, laxity and tenseness of the body as a whole or its parts and periods in their course, and advocated a methodical treatment by astringents and laxatives, and a metasyntactic cycle in chronic conditions.

The split into sects is brought to a certain standstill towards the turn of the first to the second Christian centuries. The available literature is more abundant: the herbal of Dioscorides, some works of Rufus of Ephesus and of the methodist Soranus; the book of Aretaeus the Cappadocian may also hail from this time. Then, of course, with the second century A.D., the wealth of the Galenic writings allows us an insight into the medical conditions of this last scientifically creative century. Galen himself appears as a careful anatomist, although monkeys and other animals are the sole material for his dissections. His pretended physiology of man is a synthesis of animal anatomy and experiment, and speculation, and it is constructed from a rigidly teleological point of view. As a pathologist he is the self-confessed heir of Hippocrates whom he interprets as the author of the system of the four humors, blood, phlegm, yellow and black bile, embodying pairs of the contrasting qualities warm-cold and moist-dry. Galen's therapy although rich in dietetic and pharmacological detail is yet dogmatically systematized to correspond to his humoral pathology. With Galen ancient medicine has reached its turning point. What follows is on the one hand, encyclopedias and shorter treatises serving practical purposes, and on the other, com-

[§] Paper (modified) read at the joint session of the American Historical Association and the History of Science Society at Washington, D. C.,

28 December, 1952.

* *The Johns Hopkins University.*

mentaries explaining the classical authors, which means Hippocrates and Galen, for the use of the schools. In this encyclopedic and scholastic form, Greek medicine is bequeathed to the peoples of the East.

As it stands, the sketch might have the approval of many scholars not only of today, but even of fifty years ago, since it has carefully avoided any controversial points. Its chief weakness is its almost exclusive attention to Greek medicine as it found literary expression. True, the books are by far the main sources on which we have to rely, but did Greek medicine as a whole really follow the development mirrored by the books? Is it not conceivable that as a craft Greek medicine remained unchanged during the thousand years our sketch encompassed? In short, what is the relationship between science and craft in Greek medicine?

A tendency to distinguish two types of medical practitioners is discernible in Hippocratic times, for we find designations for medical men which hint at some difference of status.¹ Aristotle flatly claims that "‘physician’ means both the ordinary practitioner, and the master of the craft, and thirdly, the man who has studied medicine as part of his general education."² This statement is not surprising if taken as an evaluation. We need only think of the interest in medical matters evinced from pre-Socratic philosophers down to laymen like Celsus to recognize Aristotle’s third type of physician. Likewise, the physician Diocles of Carystus who, as Werner Jaeger³ has shown, was associated with Aristotle and indebted to his philosophy, obviously appeared as a master of his craft who could explain what he did, if compared with the ordinary practitioners.

But Aristotle’s terminology does not necessarily indicate a distinction between two social classes of professional physicians. Here we may refer to a passage in Plato’s *Laws* which has received attention.⁴ Plato contrasts the free-born doctor who deals chiefly with "the ailments of free men" with those practitioners, often slaves themselves, who find their patients among the slaves. Slave doctors are, of course, a known institution throughout antiquity. Since highly educated persons could become slaves, there is no reason to assume that physicians belonging to this social class were *eo ipso* of inferior skill or knowledge. Varro states that farmers near a city or near large estates "prefer to have in their neighborhood men whose services they can call upon under a yearly contract — physicians, fullers, and smiths — rather than to have such men of their own on the farm; for sometimes the death of one artisan wipes out the profit of a farm."⁵ The "medicus" on the farm obviously would be a slave; the one hired from the neighborhood might be slave or free. In either event the social difference would hardly be decisive for any difference in quality.⁶ Nor was it altogether decisive for Plato, according to whom those who deal with the ailments of free men do so "by investigating them from the commencement and according to the course of

¹ See chs. 1 and 7 of *On Ancient Medicine* and the edition by A.-J. Festugière, *Hippocrate: L’ancienne médecine*, Paris, C. Klincksieck, p. 27 f., notes 6 and 7.

² Aristotle, *Politics* III, 6; 1282 a (translation by H. Rackham, Loeb Classical Library, p. 227).

³ Werner Jaeger, *Diokles von Karystos*, Die griechische Medizin und die Schule des Aristoteles, Berlin, De Gruyter, 1938.

⁴ Plato, *Laws*, IV; 720 (translation by R. G. Bury, Loeb Classical Library, vol. 1, pp. 307-309), also IX; 857, C-D; Werner Jaeger, *Paideia*, 3 vols., New York, 1939-44; see vol. 3, p. 215; Ludwig Edelstein, The Role of Eryxi-

machus in Plato’s Symposium, *Transactions of the American Philological Association*, 1945, vol. 76, p. 99; O. Temkin, in *Social Medicine, Its Derivations and Objectives*, ed. Iago Galdston, New York, Commonwealth Fund, 1949, p. 4 f.; and T. A. Sinclair, Class Distinction in Medical Practice: a Piece of Ancient Evidence, *Bull. Hist. Med.*, 1951, vol. 25, p. 386 ff.

⁵ Varro, *On Agriculture*, I, 16, 4 (translation by W. D. Hooper, revised by H. B. Ash, Loeb Classical Library, p. 221; adapted).

⁶ Joseph Schumacher, *Die naturphilosophischen Grundlagen der Medizin in der griechischen Antike*, Berlin, De Gruyter, 1940, p. 238.

nature," while the others "whether they be free-born or slaves, acquire their art under the direction of their masters, by observation and practice and not by the study of nature — which is the way in which the free-born doctors have learnt the art themselves and in which they instruct their own disciples."⁷ Whatever else Plato may have in mind here, one of the distinctions he establishes is the study from nature by one type of physician, and learning by rote by another. It is possible that illiteracy was also found among the latter type. On the whole, however, the great number of medical books written in antiquity hints at an equally great number of physician authors as well as a large reading public.⁸ When Galen says that "the majority of those nowadays pursuing medicine or philosophy cannot even read well,"⁹ the association of physicians with philosophers is consoling and indicates that the statement must not be taken too literally. It is somewhat reminiscent of the remark supposedly made by the head of the medical school of Harvard when President Eliot proposed written examinations for the M.D. degree: "I had to tell him that he knew nothing about the quality of Harvard medical students. More than half of them can barely write."¹⁰

Let us then say that there were two types of medical men in antiquity and, for convenience's sake, let us designate them as physician and leech. After all, our term physician is derived from *physicus*, the student of nature, and the name seems appropriate for those who study diseases according to nature, as Plato says. We shall, however, beware of thinking of physician and leech as two exclusive classes. We must admit the possibility of a large intermediary group, just as we must admit the possibility of the existence of good leeches and bad physicians. Our distinction is made with an eye on the nature of the physician's science and the leech's craft.

Now it has to be said that our knowledge of the content of Greek medical science has not changed considerably during the last thirty years. That is to say, the comparison between our knowledge and that of the Greeks in anatomy, physiology, pathology, and *materia medica* was made rather thoroughly by the older medical historians, and we have added details only. Nor can there be any doubt that many modern scientific methods, taken as such, were known to Greek physicians. Heidel has shown this very well for the Hippocratic collection.¹¹ Cohen's and Drabkin's source book¹² demonstrates it for the whole period. I would even go so far as to say that some ancient works contain valuable and still unexploited information from the modern point of view. Thus I doubt whether we possess a description of the muscular system of the Barbary ape which, in fullness of detail, can compare with that in Galen's "Anatomical Administrations."

Nevertheless, we are no longer able to speak of Greek medical science with the assurance of previous generations. This uncertainty is not due so much to considerations of content as of form and purpose. Obviously, Greek medicine was somehow different from modern medicine. We can name the disciplines and their methods which make modern medicine scientific, but can we do the same for antiquity? The answer to this question depends very much on our judgment of the Hippocratic writings. Even at the end of Greek civilization they were still classical textbooks. To deny their scientific nature means to deny that Greek medicine had a scientific orientation throughout its history.

⁷ See above, footnote 4.

⁸ I. E. Drabkin, On Medical Education in Greece and Rome, *Bull. Hist. Med.*; 1944, vol. 15, p. 350.

⁹ Galen, *De libris propriis, Scripta minora*, vol. 2, ed. I. Mueller, Lipsiae, Teubner, 1891, p. 91.

¹⁰ Quoted from Esther Lucile Brown, *Physi-*

cians and Medical Care, New York, Russell Sage Foundation, 1937, p. 17.

¹¹ William Arthur Heidel, *Hippocratic Medicine, Its Spirit and Method*, New York, Columbia University Press, 1941.

¹² M. R. Cohen and I. E. Drabkin, *A Source Book in Greek Science*, New York, McGraw-Hill, 1948.

The hostility of many Hippocratic works to magic has always been considered a factor in favor of their scientific spirit. The rationalism of the treatise *On the Sacred Disease* with its condemnation of supernatural explanations is shared by many of the other works. And since the appearance of Edelstein's *Asclepius*¹³ we have also obtained a better understanding of the relationship of this rationalism to religion. There is neither competition nor enmity between the god and the physician. On the contrary, the Asclepieion takes care of many cases with which the physician cannot cope. Although it is probable that Asclepius, before becoming a healing god, was the patron saint of the medical men, this relationship did not affect the lay character of Greek medicine.

Rationalism is a necessary but insufficient condition of science. In the quest for an additional feature, a passage in Plato's *Phaedrus* defining the method of Hippocrates himself has long offered a ready answer. Socrates asks: "Now do you think that one can acquire any appreciable knowledge of the nature of the soul without knowing the nature of the whole?" And Phaedrus replies: "If Hippocrates the Asclepiad is to be trusted, one cannot know the nature of the body, either, except by this method."¹⁴ "This method" refers to "knowing the nature of the whole." And if by "the whole" is meant the universe, then Hippocrates thought that the understanding of the body presupposed an understanding of surrounding nature. All that remained was to identify this method in those Hippocratic writings in which it was used in order to find both science and the genuine works of Hippocrates.¹⁵ It is an example of very much depending on very little, viz. the interpretation of the words "the whole." If the words "the whole" are understood differently, we arrive at a meaning, embodied in Jowett's translation, where Phaedrus' answer reads: "Hippocrates the Asclepiad says that the nature even of the body can only be understood as a whole."¹⁶ The interpretation of this passage is a matter of dispute,¹⁷ but the tendency to regard genuine Hippocratic science as interested in a study of the surrounding universe was, and still is, predominant. According to Nestle,¹⁸ the physician's practical preoccupation with prognostic signs impressed upon him the idea of the regularity of nature and led to an investigation of causal relationships. Hippocrates, in particular, assumed that man must be considered as under the influence of surrounding nature, and elaborated this view theoretically and as applied to individual and mass diseases. Having rejected all speculative elements, medicine became an independent science and conceived of itself "as a superpersonal, spiritual unit, a work of many individuals and generations in a process of continuous change, correction, and perfection."¹⁹ Medicine

¹³ Emma J. Edelstein and Ludwig Edelstein, *Asclepius*, a Collection and Interpretation of the Testimonies, 2 vols., Baltimore, The Johns Hopkins Press, 1945. See especially vol. 2, pp. 53 ff., 139, 169.

¹⁴ Plato, *Phaedrus*, 270 C (translation by H. N. Fowler, Loeb Classical Library, p. 549, adapted).

¹⁵ Attempts in this direction go back at least as far as Galen; see W. H. S. Jones, *Philosophy and Medicine in Ancient Greece*, with an Edition of *Peri archaies iatrikes*, Baltimore, The Johns Hopkins Press, 1946, p. 16 ff. (*Supplements to the Bulletin of the History of Medicine*, no. 8).

¹⁶ *The Works of Plato*, selected and edited by Irwin Edman, Modern Library, p. 317. The interpretation of "the whole" as referring to the body has been given in detail by Ludwig Edelstein, *Peri aeron und die Sammlung der hippo-*

kratischen Schriften, Berlin, Weidmann, 1931 (*Problemata*, Heft 4), pp. 118-135.

¹⁷ Karl Deichgräber, *Die Epidemien und das Corpus Hippocraticum*, Berlin, Akademie der Wissenschaften, 1933, p. 151, in argumentation against Edelstein has tried to uphold "the whole" as meaning the universe. For a very detailed discussion of the Phaedrus passage see P. Kucharski, La 'Méthode d'Hippocrate' dans le Phèdre, *Revue des Études Grecques*, 1939, t. 52, pp. 301-357. Edelstein has maintained his interpretation against Deichgräber and others in the article "Hippocrates," Pauly-Wissowa, *Real-Encyclopädie*, etc., Supplementbd. VI, 1935, col. 1318 ff.

¹⁸ Wilhelm Nestle, *Hippocratica*, *Hermes*, 1938, vol. 73, pp. 1-38.

¹⁹ *Ibid.*, p. 38.

shared the method of strict etiological research with history, and the spiritual father of this method was the philosopher Democritus.²⁰

In this view, etiological research appears as the essentially scientific element of Hippocratic medicine. The counterpart to this form of scientific medicine is represented by the treatise *On Ancient Medicine*. The book has interested historians of Greek culture, because its author starts out with a sophistic theory of the origin of civilization.²¹ Man raised himself from a brutish condition when, by trial and error, he learned to prepare food more suitable to himself. Likewise by trial and error he learned that sick people needed a diet different from that of the healthy. Thus medicine arose and with it the only promising method for further medical research. All attempts to base medicine on empty hypotheses as used in talk about heaven and the regions below are futile.

Some forty years ago, Diels²² called the author a positivist and pointed out that he paid attention to individual cases rather than general laws. This is not quite correct. In the first part of the treatise, its author argues from a therapeutic point of view and sees the perfection of medicine in an ever-increasing approximation of treatment to the manifold reactions of the human body.²³ In the last part, however, he interprets these reactions as founded in the quality of humors and the structure of organs.²⁴ He seems to think that by reasoning backwards from ascertained therapeutic facts, a science of nature will be possible. For this reason Gomperz,²⁵ as Littré before him, believed to have found here the truly Hippocratic method alluded to by Plato.²⁶

The attack upon mere hypotheses and the high value set upon trial and error in the first part, have made the treatise appear a kind of "Introduction to experimental medicine." And since today the experimental approach in science enjoys aristocratic privileges, so to speak, it is not surprising that attention has focussed upon *Ancient Medicine* which in the course of a few years has been the subject of three monographs.²⁷

These two examples show the difficulty of identifying Greek medicine with any of the forms of modern scientific medicine. They will also have prepared us for Edelstein's attempt at separating medicine and science in ancient Greece. Edelstein proceeded from an analysis of the role of prognosis in Hippocratic medicine. In his opinion this role has to be understood from the social position of the physician as a craftsman not backed by a degree or license.²⁸ Apart from its psychological significance,²⁹ correct prognosis was the means of acquiring a reputation and of warding off suspicion in

²⁰ *Ibid.*, p. 31. The role of Democritus (next to Empedocles) for the etiological research of Greek physicians has been stressed by Hans Diller, *Wanderarzt und Aitiologe*, Leipzig, 1934 (*Philologus*, Supplementband 26, Heft 3); while Max Pohlenz, *Hippokrates und die Begründung der wissenschaftlichen Medizin*, Berlin, De Gruyter, 1938, pp. 26 and 62, tries to make Democritus dependent upon the physicians. See also Diller's review of Pohlenz in *Gnomon*, 1942, vol. 18, pp. 65-88.

²¹ For details see Felix Heinimann, *Nomos und Physis*, Basel, Reinhardt, 1945 (*Schweizerische Beiträge zur Altertumswissenschaft*, H. 1).

²² H. Diels, Über einen neuen Versuch, die Echtheit einiger Hippokratischen Schriften nachzuweisen, *Sitzungsberichte d. königl. Preussischen Akademie d. Wissensch.* Philos.-hist. Classe, 1910, vol. 53, p. 1141, footnote 1.

²³ See ch. 9 and Walter Müri, in *Hermes*, 1936, vol. 71, p. 468, and Jones, *op. cit.*, p. 73.

Edelstein, *Empirie und Skepsis in der Lehre der griechischen Empirikerschule, Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin*, 1933, Bd. 3, Heft 4, p. 49, refers this to the individual reactions of each case.

²⁴ See ch. 19 and, especially, chs. 22-24.

²⁵ Theodor Gomperz, *Die hippokratische Frage und der Ausgangspunkt ihrer Lösung*, reprinted in *Hellenika*, 2. Bd., Leipzig, 1912, pp. 324-354; see p. 325.

²⁶ *Ibid.*, p. 330, where Gomperz asserts his belief that Plato, in the *Phaedrus*, when speaking of Hippocrates, had in mind the author of *Ancient Medicine*.

²⁷ Festugière, *op. cit.* (see above note 1), W. H. S. Jones, *Philosophy and Medicine in Ancient Greece* (see above, note 15), and Hermann Wanner, *Studien zu Peri archaies iatrikes*, Diss. Zürich, Zürich, 1939.

²⁸ Edelstein, *Peri aeron* etc., chs. 2 and 3.

²⁹ *Ibid.*, p. 65 f.

fatal cases.³⁰ The interest and knowledge of the physician were practical, not scientific.³¹ If he talked³² and wrote about the nature of man, of health and disease, he borrowed his concepts from contemporary, i.e. pre-Socratic, philosophy, and this relationship between medicine and philosophy remained basically unchanged.³³ Medicine was the practical art, acquired by apprenticeship and practiced "in accordance with traditional views and usages."³⁴ The sects were philosophical in character. The dogmatists were adherents of Aristotle and the Stoics, the empiricists followed the Academy in their denial that nature was understandable, the methodists accepted the scepticism of Pyrrho.³⁵ The dogmatists were connected with Aristotelian thought and thus it was in developing Aristotle's arguments that the Alexandrian physicians turned to the study of human anatomy.³⁶ But at no time before Galen did Greek medicine incorporate dissection and experimentation as indispensable parts; even Galen did not consider all his anatomical and physiological research essential for the physician *qua* professional healer.³⁷

Edelstein's views as recently summarized³⁸ have a profound bearing upon the whole relationship between Greek medicine and culture. We have now two almost diametrically opposed views. On the one hand, Greek physicians are considered as the great scientific teachers, to whom even the philosophers are greatly indebted and whom they quote from the time of Plato. This claim is denied by Edelstein who thinks that scientifically the doctors were the recipients and that the philosophers quoted them mainly as an example. People were willing to subject their bodies to the orders of the doctor, unpleasant as these orders often were. They should be willing to accept the commands of the philosophers who treated their souls.

I believe that Edelstein's work has provided a new basis for our understanding of Greek medicine and that its fruitfulness is demonstrated not least by the questions it permits the historian of medicine to ask. One of them is concerned with a closer scrutiny of the practitioner's role in this development. We shall attempt to draw a rough picture of ancient leechcraft and then ask ourselves for the possible factors that promised to make the leech a better practitioner by turning him philosopher.

Immediately we find ourselves embarrassed by the scanty information about ancient leechcraft. Jones³⁹ proposed to think of it in the likeness of a medieval guild, which refers to the master-apprentice relationship rather than to any social organization about which we know next to nothing. The question then before us is: what kind of medicine did the master teach and the apprentice learn? Or to simplify even further: what did the leech treat and how did he treat it?

³⁰ *Ibid.*, pp. 81 and 88.

³¹ *Ibid.*, p. 93.

³² *Ibid.*, p. 104 f.

³³ L. Edelstein, The Relation of Ancient Philosophy to Medicine, *Bull. Hist. Med.*, 1952, vol. 26, pp. 299-316, especially p. 304, where it is said (with reference to Aristotle, *De respiratione* 480 b 26 ff. and *De sensu*, 436 a 19 ff.): "physicians concerned with biology and physiology . . . took their departure from philosophy, just as truly systematic natural philosophy ended in a consideration of the principles of life, of health and disease, and of the constituents of the body."

³⁴ *Ibid.*, p. 301; see also Edelstein, *Peri aeron*, p. 92 f.

³⁵ Edelstein, *Empirie und Skepsis*, *op. cit.*, see also his article "Methodiker" in Pauly-Wissowa, *Real-Encyclopädie*, Supplementbd. VI, 1935, col. 367 ff.

³⁶ Edelstein, Die Geschichte der Sektion in der Antike, *Quellen u. Studien zur Geschichte d. Naturwissenschaften und der Medizin*, Bd. 3, Heft 2, Berlin, 1932, see p. 95 ff.; see also The Development of Greek Anatomy, *Bull. Hist. Med.*, 1935, vol. 3, pp. 235-248.

³⁷ Edelstein, The Relation of Ancient Philosophy to Medicine, *loc. cit.*, p. 304. G. Lebouque, Une anatomie antique du coeur humain, *Revue des Études Grecques*, 1944, t. 77, p. 7-40, believes that Philistion dissected human bodies and refers to the Hippocratic *On the Heart* which he thinks renders a lecture by Philistion.

³⁸ In Edelstein's last quoted article, *Bull. Hist. Med.*, 1952, vol. 26, pp. 299-316.

³⁹ W. H. S. Jones, *The Medical Writings of Anonymus Londinensis*, Cambridge, University Press, 1947, p. 161.

In the *Republic*, Plato says: "A carpenter, when he is sick expects his physician to give him a drug which will operate as an emetic on the disease, or to get rid of it by purging or the use of cautery or the knife."⁴⁰ Plato quotes this carpenter as an example of a patient who cannot afford complicated treatment. His physician may well be a leech and since drugs are mentioned, we may look for our answer to an herbal, perhaps the *Materia medica* of Dioscorides of the first century A.D. It is a large herbal, but then we want to get a picture of a good leech, not necessarily an ignorant one.⁴¹ Opening the book at random and leaving out some botanical and pharmaceutical details we read that the caper-plant "disturbs the belly, is good for the stomach and causes thirst, but is easier on the stomach when eaten cooked than raw. Its fruit makes the spleen shrink . . . it also moves the urine and causes bloody discharge, helps in sciatica and paralysis . . . and against ruptures and convulsions, likewise it moves the menses and purges away phlegm, and stops tooth ache. . . . The dry bark of the root is suitable for the aforesaid (conditions), and cleanses all chronic, dirty, and indurated sores. With barley meal it is used as a poultice in those suffering from the spleen, if chewed it helps the tooth ache, finely ground and mixed with vinegar it wipes off leprous spots and vitiligo."⁴²

Most of this is immediately understandable. The drug is useful in a number of complaints, most of them symptoms or syndromes with which we too are acquainted. Of others, especially the "leprous spots and vitiligo" we are not quite sure, but we can assume that the Greek leech had learned to diagnose them. The reference to shrinking of the spleen indicates that he knew where the spleen is and how to palpate it. In view of the prevalence of malarial fevers this is not surprising. Most of the symptoms mentioned like sores, paralysis, tooth ache, can easily be described without reference to complicated or theoretical concepts. We meet with more serious difficulties when reading about "sufferers from the spleen," which may refer to a disease entity, and "purging away phlegm," where we are confronted with a concept of humoral pathology. Disregarding the latter example for a moment, and generalizing somewhat broadly, we may say that the leech was acquainted with some disease entities and a large number of symptoms. The diseases are indicated by names like peripneumonia, pleurisy, phthisis, phrenitis, epilepsy, melancholy, many of which seem of popular origin.⁴³ We meet them in the Hippocratic collection as well as in later works. The leech can recognize diseases and symptoms and has remedies for them, partly drugs, partly simple dietetic measures; possibly he has also learned to take into consideration the strength, age, and sex of his patient. He treats internal as well as surgical complaints, relying on some anatomical knowledge, and an accumulated store of manual skills. This knowledge is passed on from teacher to pupil; it can be increased by contact with other physicians or by accidental observations.

Nothing prevents us from imagining Greek leechcraft being thus practiced at all times of Greek history with the addition of little else. But we must also realize that there are medical limitations to this type of practice. The limitations are those of any technique without theory. The leech may know very much, but his knowledge will always consist of a certain number of skills. Beyond this number he cannot go, that is to say he cannot deal with what is unfamiliar to him and he cannot individualize

⁴⁰ *Republic*, book III, ch. 15; 406 D (P. Shorey's translation, Loeb Classical Library, vol. 1, p. 275).

⁴¹ I have purposely chosen a late and sophisticated work, just because I want to show that even here one can still imagine the existence of a core of practical knowledge relatively little

affected by the course of time except for the broadened coverage of drugs.

⁴² Dioscorides, *Materia medica*, II, 173; ed. M. Wellmann, vol. 1, Berlin, Weidmann, 1907, p. 241.

⁴³ Henry E. Sigerist, *Antike Heilkunde*, München, Heimeran, 1927, p. 20.

his treatment. And while he may go in quest of new recipes and manipulations, he has no principle of research. Now we have had an indication that the leech was not quite without the help of some theoretical concepts; for we heard Dioscorides recommend the caper-plant as purging phlegm. Similar concepts, related to theory and yet not dependent on special theories, existed much earlier as we learn from the case histories in the first book of the so-called Hippocratic *Epidemics*. In the description of symptoms in individual patients, terms occur which are used like sense data although they transcend the realm of mere description. For instance, discharges are described as "thin, bilious, biting, scanty, black,"⁴⁴ etc., or as "uncocted as it were."⁴⁵ The reader is supposed to know what marks them as "bilious" or "uncocted." But the former term also refers to a humor and the latter involves the analogy between the process of digestion and cooking. If it is said that a woman having a sore throat showed a persistent "acrid, smarting and salt flux,"⁴⁶ this means a matter sensibly defined by these attributes, but it also refers to this matter as flowing. Besides, the reader is expected to have some anatomical knowledge, and be able to understand the note that a patient "at first suffered in the cardia and the right hypochondrium."⁴⁷ Similar concepts are used in other Hippocratic writings in the manner of a terminology common among all medical men at that time.⁴⁸ It is quite possible that one or the other term is of relatively late origin;⁴⁹ nevertheless it seems likely to me that some of them at least belong to a previous archaic stage. Just as some names of diseases, they may even reflect popular usage. This assumption would explain how the author of *Epidemics I* can describe the "flux" in the woman with the sore throat, how the author of *Ancient Medicine* can speak of fluxes "that turn to the throat,"⁵⁰ and how Herodotus can relate the measures the Lybians take to protect their children from a phlegm "flowing down" from the head⁵¹ — and how all three can count on immediate understanding. Such an assumption would relieve us of unproductive attempts at tracing medical comments in Greek writers to the few medical books that happened to come down to us.

With this broad picture in mind of a leechcraft as the core of the healing art providing a certain uniformity of practice, we ask why some leeches became physicians. In antiquity, medicine was a profession, philosophy was not — unless the philosopher became a teacher. This means that the philosopher might belong to any profession,

⁴⁴ Hippocrates, *Epidemics I*, case 14 (translation, adapted, by W. H. S. Jones, Loeb Classical Library, vol. 1, p. 211).

⁴⁵ *Ibid.*, case 2 (p. 191).

⁴⁶ *Ibid.*, case 5 (p. 197).

⁴⁷ *Ibid.*, case 4 (p. 193). L. von Brunn, *Hippokrates und die meteorologische Medizin*, *Gesnerus*, 1946, vol. 3, pp. 151-173, and 1947, vol. 4, pp. 1-18 and 65-85 has shown how supposedly empirical data of the *Epidemics* are imbued with theoretical notions, and how the firm belief in a definite order leads the Hippocratic author to doubtful generalizations. In the first book of the *Epidemics* to which I have confined myself (for reasons stated below, n. 73) the evidence is not as striking as in the third book. Schumacher, *op. cit.*, has given a very detailed interpretation of Hippocratic and pre-Hippocratic medicine in concepts of natural philosophy.

⁴⁸ Deichgräber, *Die Epidemien* etc., pp. 40-51, sketches the physiological and etiological system of the author of the *Epidemics*. While it is

quite possible that the author consciously held these tenets, he did not deem it necessary to explain his system and obviously counted on the understanding of his readers. The close relationship with *Prognostics* has also been noted by Deichgräber; *Prognostics* speaks a similar language and also takes understanding for granted.

⁴⁹ Plato, in the *Republic*, III, 14; 405 D refers to a medical neologism. He blames people who because of slothful living are full of winds and fluxes and thus "compel the clever Asclepiads to give to diseases the names of gases (physai) and catarrhs." To which is added the comment that these are indeed "new and absurd disease names." From this passage it evinces that "flux" was in common usage, whereas to label diseases "gases" (physai) or "catarrh" was considered new.

⁵⁰ *On Ancient Medicine*, ch. 19.

⁵¹ Herodotus, IV, 187; the description as "flowing down" must not be identified with Plato's criticism of catarrh as a disease name.

and the intellectual adventure of pre-Socratic philosophy may have attracted leeches among others. The Hippocratic author who argued that all diseases, including the sacred disease, were natural and that magic had no place in their cause or treatment may well have been a leech stimulated by Democritus as Diller thinks.⁵² The competitive character of Greek medicine certainly induced many leeches to borrow from the philosophers in order to construct medical theories and systems which could form the content of speeches to impress patients and whole audiences.⁵³ After Plato and Aristotle had declared a mere craftsman inferior to the master who could give reasons for what he did,⁵⁴ social ambition was strong enough to make a leech appear in the philosopher's dress. All these possibilities have to be conceded. But it does not follow that philosophy and science were mere epiphenomena to true leechcraft. I believe that there were medical reasons combined with social incentives that induced the leech to become a physician and that made it imperative, later on, for every physician to belong to a medical sect. These reasons I find in the rise of dietetic medicine which Edelstein has so well described,⁵⁵ and the individualization of Greek life.⁵⁶

The rise of the dietetic physician who regulates the whole life of his patient seems to fall within the fifth century. The ancients themselves thought so; ⁵⁷ Plato ascribes his emergence to Herodicus of Selymbria,⁵⁸ who from a gymnastic trainer turned into a physician. Without limiting ourselves to a single name, we can yet see a connection between the gymnast who builds up the athlete and the physician who protects the health of man and cures him by similarly regulating food and drink, work, rest, and sleep.⁵⁹ The dietetic physician who believes he knows "how to cause in men by regimen moist or dry, hot or cold," believes himself able to cure even the sacred disease ⁶⁰ once he has learned from its course and causes the right moment at which to interfere with the propitious and inimical factors. Dietetic medicine is mainly concerned with the treatment of internal diseases, those which affect the whole man. There are physicians who identify medicine with dietetic medicine. It is a curious thing that the author of *Ancient Medicine* who tries to explain the development of medicine, makes no references to pharmacology and surgery at all. Asclepiades who, in the first century B.C., laid down a doctrine which was eventually to lead to the methodist sect "dispensed with the use of [medicaments] for the most part," as we are informed.⁶¹ On the other hand, many dogmatists and the empiricists set great store by drugs. These examples suffice to show that dietetics was the great dynamic element within Greek medicine. In the dietetic treatment of diseases radical differences are sometimes noticeable; the methodists, in particular, vary widely from the other two sects. And among the dogmatists and empiricists, individual differences appear which cannot merely be laid down to difference in training and experience, but in which theory plays a guiding

⁵² Hans Diller, *Wanderarzt und Aitiologe*, p. 111 ff.

⁵³ See above, n. 32.

⁵⁴ Plato, *Gorgias*, 465 ff., Aristotle, *Metaphysics* I, 2.

⁵⁵ Ludwig Edelstein, *Antike Diätetik, Die Antike*, 1931, vol. 7, pp. 255-270; and his description of the dietetic physician in *Peri aeron* etc. and, *ibid.*, p. 114, the comments on individualization.

⁵⁶ Max Neuburger, *History of Medicine*, translated by Ernest Playfair, vol. 1, London, 1910, p. 133, says of the Hippocratic physician that he found his goal in the sick individual "as Socrates individualised abstractions, as Thucydides placed personality in the foreground."

⁵⁷ Menon begins his account of dietetic etiologies of disease with Euryphon (Jones, *The Medical Writings of Anonymus Londinensis*, p. 32).

⁵⁸ Plato, *Republic*, III, 14; 406 E.

⁵⁹ On the competition between physician and gymnast see Ludwig Englert, *Untersuchungen zu Galens Schrift Thrasymbulos*, Leipzig, Barth, 1929 (*Studien z. Geschichte d. Medizin*, Heft 18).

⁶⁰ Hippocrates, *On the Sacred Disease*, last chapter (translation by Jones, Loeb Classical Library, vol. 2, p. 183).

⁶¹ Celsus, *De medicina*, V, preface (translation by W. G. Spencer, Loeb Classical Library, vol. 2, p. 3).

role. Greek medicine became split into sects not over preferences for one or the other drug or one or the other surgical technique, but over different explanations of diseases⁶² or the very need for such explanations.⁶³

As we remarked before, theory is a guide to the unknown⁶⁴ and allows individualization in treatment. Now there is no more individualized form of therapy than the minute regulation of a man's life in all its details.⁶⁵ And in the fifth century B.C. Greek life became increasingly individualistic,⁶⁶ especially with the advent of the sophistic movement when the flow of medical literature too set in. Plato's free doctor treats his patients by "learning himself from the sufferers and imparting instruction to them . . . and gives no prescription until he has gained the patient's consent"⁶⁷ etc. Plato's remark is corroborated by the following beginning of a Hippocratic work: "He who wishes to interrogate properly concerning treatment and answer him who interrogates and also object properly, must ponder the following things":⁶⁸ whereupon follows a long list of theoretical questions.

Once the expansion of medicine beyond the limits of a craft had become a necessity, this expansion could follow different directions. Systems could be built in which anatomy, crude as it was, formed a cornerstone, or where the older semi-popular concepts of humors were elaborated, or qualities emphasized. In all these attempts, the contact with philosophy was close; they were to lead to the science of the dogmatist school, of Galen, and, subsequently, to the modern medical sciences of anatomy, physiology, and pathology. This line of development is understandable to us, above all where anatomical reasoning in surgical cases occurs.⁶⁹ But we can even understand how an individual case might be diagnosed in terms of deranged humors and then treated correspondingly,⁷⁰ though we no longer believe in the theory of humors. Peculiarly enough, we experience greater difficulties with some of the clinical writings of the Hippocratic collection where we would expect an immediate contact. When we read the individual case histories of the first book of *Epidemics* we are at some loss to determine the purpose of their composition. Instinctively we try to "diagnose" these cases, i.e. to identify them with one or the other disease entity we are familiar with. But even when we succeed, we realize that a diagnosis of this kind was not the author's aim. It has been suggested with some degree of probability, that the book has a prognostic character.⁷¹ From these illustrative case histories, the reader is to

⁶² This accounts largely for the many sects among the dogmatists. As to the different explanation and treatment of disease by dogmatists see Caelius Aurelianus' (i.e. Soranus) criticism in his works on acute and chronic diseases and the so-called Anonymus Parisinus, edited by R. Fuchs, *Rheinisches Museum für Philologie*, 1894, N.F., vol. 49, pp. 532-558 and 1895, vol. 50, pp. 576-599.

⁶³ Even before the advent of the empiricists, Diocles claimed that one should not listen to people who believe that they must state a cause for everything. This he thinks is often quite unnecessary for practice and one should rather put one's trust in things well known from long experience (Werner Jaeger, *Diokles von Karystos*, p. 37 f.). But this criticism does not prevent Diocles from being a dogmatist.

⁶⁴ It is significant that to the empiricists the reference to mere experience became problematic in cases where the physician was confronted with a new kind of disease.

⁶⁵ I find it very difficult to imagine the complicated hygienic prescriptions for healthy per-

sons as emanating from leechcraft. According to Adolf Palm, *Studien zur Hippokratischen Schrift Peri Diaites*, Diss. Tübingen, 1933, p. 38 f., the first zoological system in Greece developed among the physicians of the late fifth century B.C. when they endeavored to study the dietetic significance of different animals.

⁶⁶ On the individualization of Greek life and the concomitant release of intellectual energy, see E. R. Dodds, *The Greeks and the Irrational*, Berkeley, 1951.

⁶⁷ See above, footnote 4.

⁶⁸ *On Diseases*, I, ch. 1; ed. Littré (*Oeuvres complètes d'Hippocrate*), vol. 6, p. 140.

⁶⁹ The surgical works of the Hippocratic collection have thus remained the most modern ones; see Owsei Temkin, *The Role of Surgery in the Rise of Modern Medical Thought*, *Bull. Hist. Med.*, 1951, vol. 25, p. 248.

⁷⁰ That is by diminishing the quantity of the humor through bleeding, phlegmagogues etc. or acting upon the quality involved according to the principle of *contraria contrariis curantur*.

⁷¹ See Edelstein, *Peri aeron* etc. p. 79-81;

learn how to evaluate the appearance and disappearance of symptoms in their significance to the outcome of the disease and moreover how to recognize the right "moment" for therapeutic interference.⁷² But whatever the underlying motive may have been,⁷³ I believe that in their form these case histories offer an explanation of Plato's saying that the free doctor treated diseases "by investigating them from the commencement and according to the course of nature." The origin, course, and outcome of sickness in the individual are under observation and the symptoms are evaluated in relation to one another. That means that the physician can learn from the comparison of many case histories, but must judge for himself in each case and cannot rely on routine as his helper may do.

The individual approach to disease as documented in these case histories has so often been stressed that it needs no further elaboration. But it is worth pointing out that here, more clearly than ever before, disease is conceived as a process in time.⁷⁴ Thereby, disease becomes more than a symptom or a syndrome, designated by a popular or scientific name. The time-implied character of disease is also evident in that (first) part of *Epidemics I* which has led Deichgräber to coin the term "meteorological medicine."⁷⁵ Here the author described climatic events and the course of such diseases as showed seasonal variations of prevalence and character as they occurred during certain periods on the island of Thasos. Sporadic diseases are excluded and this part is less individualized. But even where the author deals with disease entities he does not view them as mere static combinations of symptoms but ascribes to them beginning and end, severity, complications, etc., in short imparts to the diseases a "history." So obvious is all this to us that we easily forget how essential the temporal concept of disease is for clinical medicine.⁷⁶ This concept could survive the particular prognostic motives from which it had originated as well as the physiological notions of the author,⁷⁷ and remain as a pattern of clinical study independent as it were from the philosophical "sciences." Small wonder then that the *Epidemics* became of interest to the empirical sect which denounced science. This interest, however, shows that the empirical sect does not represent a return to mere leechcraft. There is studied method in the empiricist's gathering of experience; it is merely a different form of research. Least of all does the methodist fall back upon the tradition of the leech, for he more than all others upsets the accustomed ways. The great

Deichgräber, *Die Epidemien* etc. p. 10 f. Von Brunn (*Gesnerus*, 1947), p. 14, doubts the exclusively prognostic character.

⁷² Cf. Edelstein, *ibid.* Neuburger, *op. cit.*, p. 133, finds the essence of Hippocratic art "in the fact that it knew how, in individual cases, to decide which impressions collectively permitted of conclusions upon prognosis and indicated the occasion for therapeutic measures and the form they should take."

⁷³ One of the great difficulties presenting itself is the disregard of therapy. This has long been noticed and "Hippocrates" has been criticized for neglecting his patients. However, the patients received nourishment or they did not; in either case their "diet" — even if not prescribed by the physician — was right or wrong and somehow influenced the course of the disease. This consequence seems to follow from the premises of ancient dietetic medicine. Since the attitude to therapy is not quite the same in *Epidemics I* and *III*, I have limited myself to the former in spite of the generally accepted connection of the two books. The Hippocratic

case histories have recently been discussed in detail by Pedro Lain Entralgo, *La Historia Clínica*, Madrid, Consejo Superior de Investigaciones Científicas, 1950.

⁷⁴ Sigerist, *Antike Heilkunde*, p. 17, with regard to *Epidemics* writes: "Die ägyptische, die babylonische Literatur geben uns nur Augenblicksbilder. Schilderungen vom Verlauf einer Krankheit würden wir dort vergeblich suchen."

⁷⁵ Deichgräber, *op. cit.*, p. 12 f.

⁷⁶ See Otto Guttentag, On the Clinical Entity, *Annals of Internal Medicine*, 1949, vol. 31, p. 490, and Two Diagrams on the Clinical Entity, *The Journal of Pediatrics*, 1950, vol. 37, pp. 530–534.

⁷⁷ Thus the empiricists reinterpreted Hippocrates; see Karl Deichgräber, *Die griechische Empirikerschule*, Berlin, Weidmann, 1930, p. 319. The *Epidemics* are, of course, not the only Hippocratic work where disease is seen as a process; see e.g. the writing *On the Sacred Disease* which gives a complete pathogenesis culminating in the idea of the *kairos in treatment*. This shows how closely related etiological and prognostic writings could be (see p. 221).

methodist, Soranus, demands even of the future midwife that she should be literate "so that she may be able to grasp the art by theory too."⁷⁸

Accustomed as we have become to scientific precision in modern medicine and its statistically proved therapeutic results, we have difficulties in conceiving of the clashes of the ancient sects as more than quibbles. But within the framework of ancient civilization the practitioner who wishes to overcome the narrowness of the craft in medical matters has no choice but to join a sect. This alone gives him the chance not only to enhance his prestige but to become a better, because broadly thinking, physician.⁷⁹ A final argument for this thesis seems to lie in the fact that even a dogmatist like Galen who loudly proclaimed "that the best physician must also be a philosopher" appears sincere in his medical demands and limitations upon philosophy. In the booklet bearing that title,⁸⁰ Galen claims that the majority of physicians, though would-be admirers of Hippocrates, do nothing to emulate him. They study neither astronomy nor its basic science, geometry, and even despise those who do so. They are ignorant of anatomy and think it useless to divide diseases into species and genera. They are so lacking in prognostic skill that "if anybody foretells a hemorrhage or a sweat, they call him a sorcerer and a narrator of marvels."⁸¹ They are hardly able to ordain the sick man's regimen with a view to the future climax of the disease. Finally, they cannot even explain things properly.

It is not without interest that Galen thinks that the majority admire Hippocrates and, as he says, "declare him to be the first of all." *Hoi polloi* are not philosophical opponents to science but practical men who cannot be bothered. For this reason Galen does not simply admonish the physician to devote himself to scientific studies. The prerequisite for such study is a contempt for money. The true physician must have a balanced mind and follow truth. He must practice the logical method to know how many diseases there are as to species and genera and how to find the therapeutic indication for each. The same method will teach him the composition of the body of elements, tissues, and organic parts, and will be needed to prove things concerning the use and function of each part. "What then remains that the physician worthy of Hippocrates in his practice of the art be a philosopher? If, in order to discover the nature of the body, the difference of diseases, and the indications of treatment he must be trained in the theory of logic, if in order to practice these things diligently and steadfastly he must disdain money and must exercise self control, then indeed he has all the parts of philosophy: logic, natural science, and ethics."⁸² At the end of the booklet, Galen says it would be foolish to argue over words. But as a matter of fact, his ideal physician is a limited philosopher, a man who is interested in ethics and science, and in logic because it is a tool for the latter.

Certain agnostic and eclectic trends in Galen's thought have long been obvious⁸³ and have received further confirmation from Galen's Synopsis of Plato's *Timaeus*, preserved in Arabic translation and quite recently published by Kraus and Walzer. Galen knows that Plato and Aristotle ascribe divinity to the stars, but he does not mention it. Likewise, he does not confirm, on his part, that the world has a soul.⁸⁴

⁷⁸ Soranus, *Gynaecia* I, 3, ed. I. Ilberg, 1927, p. 4, 19 (*Corpus Medicorum Graecorum*, IV).

⁷⁹ This holds good in principle; individually a good leech might have been a better practitioner than a theorizing physician.

⁸⁰ I used the edition by Ernst Wenkebach, *Der hippokratische Arzt als das Ideal Galens, Quellen u. Studien zur Geschichte d. Naturwissenschaften und der Medizin*, 1933, vol. 3, pp. 363-383. For a French translation see Ch.

Daremberg, *Oeuvres anatomiques, physiologiques et médicales de Galien*, vol. 1, Paris, 1854, pp. 1-7.

⁸¹ *Ibid.*, p. 379, 8 f.

⁸² *Ibid.*, p. 382, 8-13.

⁸³ Eduard Zeller, *Die Philosophie der Griechen in ihrer geschichtlichen Entwicklung dargestellt*, 3. Theil, 1. Abtheilung. Dritte Auflage, Leipzig, 1880, p. 830 f.

⁸⁴ *Galenus Compendium Timaei Platonis* etc.

This goes well together with his consistent refusal to pronounce on the essence of the human soul and the question of its immortality. "To know this," Galen states elsewhere, "is not necessary for the healing of diseases or the preservation of health; nor for ethical, practical and political philosophy. Indeed every one may call the latter as he wishes, separating it from theoretical philosophy."⁸⁵ Kraus and Walzer conclude that in cosmology and psychology, Galen tended towards the view of the sceptics.⁸⁶ I do not wish to argue the formal correctness of this statement. But I would think that Galen's indifference to contemplative philosophy is tinged by his being a physician. The physician must be a philosopher in so far as philosophy represents science and ethics; science will give him an understanding of nature and disease. Ethics will give him the attitude he needs to be a student of nature, and a guide for men whom he is to treat by diet, i.e. by regulating their way of life. And ethics, in Galen's mind, demands recognition of a divine providence.⁸⁷ Thus Galen can even admit that the immediate practical value of anatomy for the physician is limited, and can yet cultivate anatomy and physiology as studies which reveal nature and thus glorify God.⁸⁸

We can now sum up by returning to our original problem. Having given a brief sketch of its history, we asked whether Greek medicine as a whole really followed the development mirrored in the books of its physician authors, or whether as a craft it might not have remained unchanged? Our answer was that Greek leechcraft, unaided by science or broad generalizing concepts may always have existed. But we suggested that, however great his skill, the mere leech was inferior to the physician whose philosophical indebtedness expressed itself by his membership in one of the sects. We may imagine a broad stratum of practical men between the leaders whose ideas the literature reflects, and the practitioner bound by mere tradition. But even the latter will not have remained entirely unaffected by the thought trickling down to him; in this sense I believe that the literature from Hippocrates to Galen, incomplete as it is, contains the essential history of Greek medicine. And to this we may add an epilogue. In the Greek East, the date of Galen's death coincides with the end of the empiric and methodist sects. By the middle of the fourth century Galen has emerged as the great medical authority next only to Hippocrates, and his true heir. From now on there is only one medical science, based on just those parts of philosophy which Galen accepted. And since, moreover, this science at an increasing rate is acquired from books, the break is prepared between the mere craftsman, the mechanic, and the learned doctor. In antiquity this break was never complete within the medical profession. Even the most learned physician was still expected to have acquired the necessary skill and practical insight. But together with the systematization of Galen a tradition of medical science was formed that was to influence deeply the Latin West, even beyond the Middle Ages. The doctor is expected to have studied logic, he is to know astronomy, which often means astrology, and the study of human anatomy and physiology are integral parts of medicine, as are pathology, hygiene, and therapeutics. The transmittal of that tradition to the West transformed the physician of 400 B.C. into a physicus in the literal sense, while the craftsman found his own way of life in the guild.

edd. Paulus Kraus et Richardus Walzer, Londinii, 1951 (*Plato Arabus*, vol. 1), p. 13.

⁸⁵ Kühn edition, vol. 4, p. 764; the passage is quoted by Kraus and Walzer, *op. cit.*, p. 15, footnote 4. See also Zeller, *loc. cit.*

⁸⁶ *Op. cit.*, p. 15.

⁸⁷ *De placitis Hippocratis et Platonis*, IX, chs. 7 and 8 (ed. I. Mueller, Lipsiae, 1874, especially pp. 799 ff.).

⁸⁸ *On the Use of Parts*, XVII, 1. Galen claims that the search for the usefulness of parts constitutes the principle of a perfect theology which is of greater importance than all medicine. I think that this statement has to be understood in connection with Galen's pragmatic evaluation of "theology" as indicated in *De placitis Hippocratis et Platonis*, *loc. cit.*