

Three Treatises on the Nature of
Science, R. Walzer & M. Frede (eds.)
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Introduction

This volume contains translations of three treatises by Galen which introduce us to a philosophical debate among Hellenistic doctors which has not received the attention it seems to deserve. This debate, which arose towards the middle of the third century B.C., concerns first of all the nature of medical knowledge. But though the debate also addresses questions which arise due to the specific nature of medical knowledge, what is at issue for the most part is the nature of expert or scientific knowledge quite generally, even if this issue is discussed almost exclusively in terms of medicine. It was in this debate that, for the first time, a sharp and clear contrast was developed between rationalism and empiricism. In fact, the very terms *empiricist* and *rationalist* have their origin in this debate. The dispute divided the medical profession so much that it fell into two warring camps, whose partisans came to be called "Rationalists" and "Empiricists". Both groups proceeded to articulate and refine their respective positions in great detail and to attack their opponents with considerable verve and ingenuity. But neither side saw reason to yield. Those on each side seemed to have developed a sufficiently stable and coherent position, from which they were able to answer the objections of their opponents. Thus the dispute threatened to become rather barren and somewhat academic. And this all the more so since, at least to Galen, it seemed that both sides agreed as to how patients were to be treated and disagreed only as to how the right treatment had been discovered, by experience or on the basis of some scientific theory. Hence it was only natural that, after more than two centuries of debate, some doctors should try to look for a way out of this stalemate by trying to find a position which would be immune to what seemed to be justified empiricist criticisms of rationalism and also to what seemed to be equally justified rationalist criticisms of empiricism. Such a position the so-called Methodists claimed to have found. Thus, from the first century A.D. onwards,

the debate became a three-cornered dispute among Rationalists, Empiricists, and Methodists, which died out only in the course of the third century A.D.

In spite of its great importance and interest, not much attention has been paid to this dispute. Historians of philosophy have hardly taken notice of it. This is easy enough to understand: they primarily are concerned to understand the thought of philosophers. Moreover, the evidence for this debate is to be found almost exclusively in medical authors. And, finally, it is only recently that historians of philosophy have begun again to try seriously to understand the thought of the Hellenistic period, in particular, Hellenistic epistemology. It is precisely for this reason that one can hope that they soon will direct their efforts also to the epistemological debates within the schools of Hellenistic medicine. After all, there are obvious connections, which have been noticed a long time ago, between the philosophical debates and the debates within medicine. The Rationalists follow dogmatic philosophy, in particular the Stoics, whereas both Empiricists and Methodists rely on philosophical scepticism. Indeed, some of the later Empiricists, like Menodotus and Sextus Empiricus, are themselves major representatives of Pyrrhonian scepticism who can truly be considered philosophers. Thus it is obvious that the debate in medicine at that time is directly relevant to some of the main interests of current historians of ancient philosophy. Historians of medicine have naturally shied away from a discussion of the dispute, because philosophical debates are not their primary concern and because the technical nature of the debate makes it necessary to have some philosophical knowledge and, in particular, some knowledge of the history of Hellenistic philosophy to be able to follow the details of the dispute. Hence, it was classicists such as K. Deichgräber and L. Edelstein, who had taken a strong interest both in the history of ancient medicine and in the history of ancient philosophy, who began to open up the subject, though without being able to stimulate the further research which would have been necessary to get a complete and reasonably detailed and accurate picture of the debate as a whole, let alone to stimulate the wide interest in the subject it seems to deserve.

One reason for this, no doubt, is the relative inaccessibility of the evidence. Deichgräber collected a good deal of the evidence for the Empiricists in his admirable *Die griechische Empirikerschule*, but there is no corresponding collection for the Methodists, and it would be almost pointless to try to produce one for the Rationalists, given the enormous diversity of their positive views. But, though much of the evidence is scattered in obscure and often rare texts, four treatises tradition attributes to Galen are specifically devoted to the dispute. One of them, "On the

Best Sect", seems to be spurious, but three of them—"On the Sects for Beginners", "An Outline of Empiricism", and "On Medical Experience"—are indeed Galenic. They constitute our main evidence for the dispute, jointly giving us enough detail to reconstruct the three competing views fairly accurately. But, since even these texts are not easily accessible, it seemed desirable to present them together in an English version. "An Outline of Empiricism", except for a short fragment in Greek, is extant only in a medieval Latin translation by Nicolaus of Reggio which, primarily because of its technique of translation, is rather difficult to read. It was edited by M. Bonnet and then reedited by Deichgräber in his *Die griechische Empirikerschule*. Apart from two fragments, "On Medical Experience" is extant only in an Arabic version, edited and translated into English by R. Walzer in a book which, because of the circumstances of its publication, is extremely rare. It is only "On the Sects for Beginners" which is easily available in an edition of the Greek text by G. Helmreich and an incomplete translation by A.J. Brock (*Greek Medicine*, London: 1929, pp. 130–51).

With the kind permission of the Wellcome Foundation and Oxford University Press, I have reproduced Walzer's translation of "On Medical Experience". Walzer did not translate from the Arabic the two sections of the text which are extant in Greek but instead printed the Greek text. Therefore, in those places, I have translated from the Greek rather than from the Arabic. Moreover, I have taken the liberty to transliterate the Greek words and, in one place, the Arabic which Walzer used in his English translation. It would have been more convenient to replace them by English translations, but I hesitated to tamper with Walzer's translation any further. The translations of "On the Sects for Beginners" and "An Outline of Empiricism" are mine. In one place, which is marked, I have decided to change the transmitted text, but in general I have tried to render the text as edited, even when I have had doubts about its correctness.

Galen

Though Galen's treatises present themselves as fair, balanced accounts of the respective positions of the three sects or schools of medicine and of the views they took of each other, they nevertheless do reflect a point of view, even a bias, on the matters at issue. Hence it might be best to begin with some introductory remarks on Galen and then to proceed to a brief

discussion of the dispute which forms the subject matter of the three treatises.

First, a few remarks on Galen's life. We are unusually well informed about his life in general and about his literary activity, because Galen, throughout his voluminous writings, repeatedly refers to episodes in his life and to other writings of his. Claudius Galenus was born around A.D. 129 in Pergamum, a lively, wealthy city in Asia Minor, famous for its temple of Asclepius, a god of healing to whom Galen felt particularly devoted, but also famous as a center of learning, with a library which competed with that of Alexandria. His father, Nicon, was a well-educated architect, who provided his son not only with an inheritance which allowed Galen to live comfortably, securely, and independently but also with an education of encyclopedic range, with emphasis on the mathematical sciences, philosophy, and medicine. One gets the impression that Galen's upbringing was very conservative. On the one hand, it fostered a respect for tradition and its values; on the other, it encouraged independence within this traditional framework. Thus it was Galen's father who insisted that Galen should study philosophy with the exponents of all four schools of philosophy which were represented in his hometown, the Platonists (by a pupil of Gaius), the Peripatetics, the Stoics, and the Epicureans. To learn what there is to learn from all sides and to make up one's own mind is a recurrent theme in Galen's life. At the age of sixteen, he formally began to study medicine, both with Rationalists and with an Empiricist. When his father died, he left Pergamum to seek out the best teachers of medicine. He first went to Smyrna, where he also heard the Platonist Albinus, then to Corinth, then to Alexandria, where he stayed for roughly five years (A.D. 152-157). In 157 he returned to Pergamum to practice medicine. He soon was appointed doctor of the gladiators, a sad opportunity. But in 162 social unrest broke out in Pergamum. Galen left and slowly made his way to Rome, where he set out to make a reputation but also managed to make enemies. In 166 he left the city under obscure circumstances, only to be recalled from Pergamum in 168 by the emperors Marcus Aurelius and Lucius Verus, who wished him to join them with their army in their winter camp in Aquileia. But the plague broke out, and the court hurriedly moved to Rome. Galen would have liked to return to Pergamum, but he was named physician to Marcus Aurelius's son, Commodus, and later to Marcus Aurelius himself. Except for some travels, Galen stayed in Rome even after Marcus Aurelius's death; in spite of all the political turmoil which surrounded him. In 191, when the Temple of Peace burnt down, a large part of his library, in particular most of his philosophical writings, which he had deposited in the library

of the temple, were lost. But Galen had found his place in Roman society, and there he stayed till his death around A.D. 200.

Galen was a prolific writer. Just those of his writings which are extant in Greek fill some twenty volumes. In addition, a good number of Galenic treatises are extant only in Arabic, such as "On Medical Experience" in this collection. Furthermore, there are treatises, such as the "Outline of Empiricism", which are only extant in Medieval Latin versions. But we know from Galen's extant works that what has come down to us is only a part of what he wrote. Not only does Galen constantly refer to writings now lost, there are also two extant monographs on his own works: "On My Own Writings" and "On the Order of My Writings". From all this, it is clear that Galen's literary activity covered mainly three areas: medicine, philosophy, and philology. But tradition has been very partial to his own medical writings, the majority of which are preserved, whereas his philosophical writings for the most part have been lost, and his philological writings have disappeared altogether. This is easily understood if one keeps in mind how selective tradition is. The corpus of Galen's medical writings presents itself as the sum of ancient medical knowledge, judiciously sifted, critically understood, and systematically organized by one who had carefully studied the whole tradition of Greek medicine from Hippocrates onwards and who had mastered the subject in all, or almost all, of its aspects so as to be able to judge and assimilate the contributions his predecessors had made to medicine. This was certainly the way Galen was received. With a few—though important—exceptions, such as Soranus's Gynecology and Dioscurides' Materia Medica, Galen just replaced the whole of the earlier medical literature. The greatest exception, of course, was Hippocrates himself, who, in no small part because of Galen's veneration for him, remained the classical medical author. But, though Galen also had a reputation as a philosopher, even in his lifetime, there was nothing clearly singular about his philosophical treatises, let alone about his philological writings, which would have protected them.

Galen, then, is known to us primarily as a physician, in antiquity second in fame only to Hippocrates, the father of the art of medicine, and also as the author of a vast corpus of medical writings which dominated medical thought into modern times, when his influence came to be felt as a burden and a yoke, much as, somewhat earlier, Aristotle's influence in philosophy and, in particular, in natural philosophy had come to be felt as stifling. Like Aristotelianism, Galenism had finally shown its severe limitations, but, since both had taken firm roots over the course of many centuries, it took a certain amount of violence to extirpate them. Thus Galen and Aristotle came to be seen in a negative, critical way, even if the criticism often was unfair and unbalanced. This continued for a long

time, even though scholars no longer found it necessary or profitable to study their writings and hence had to rely for their critical judgments on received opinion. It was the classicists who, with a changed conception of their own subject, could turn again without prejudice and with a good amount of enthusiasm to this vast body of writings which sheds so much light on so many aspects of ancient life and, in particular, on medicine in antiquity, its theories and practice, the doctor's ethos and his position in society, and his attitude towards his clients. Thus we can also now see again Galen's positive contributions to the development of the medical art. We can appreciate as strengths some of the very features of Galen's work to which it owed its negative influence. It was his mastery of the medical tradition which made it seem largely unnecessary to continue to read earlier medical authors. It was his overpowering command of this vast subject which proved so discouraging to his successors. One cannot but admire the great care, the enormous skill, and the often considerable ingenuity with which Galen tried to discover the most minute details of anatomy and physiology by patient, careful observation. One may also sympathize with Galen's efforts to provide some theoretical framework for the discoveries he and his predecessors had made. But the framework he actually provides is rather schematic and dogmatic. It is supposed to define a position which does justice to as much of the tradition as possible. In spite of all his criticisms of his predecessors, there is a strong conservative and harmonizing element in Galen's thought which tends to make differences in point of view and conflicts appear much smaller than they actually were and which emphasizes areas of possible agreement, when real progress is made only by sharpening the differences and the conflicts, to bring them to a resolution on a higher level of understanding. Given his enormous learning and erudition, not just in medicine but also in the medical tradition, in physical theory, in logic, and, as we might say, in the philosophy of science and given the rapid decay which we observe in the succeeding centuries in almost all fields of learning, but certainly in logic, in physics, and in medical theory, Galen must have seemed to have achieved a resolution of these differences at a higher, philosophically grounded level of understanding. In fact, he had constructed just another theory which was loose and schematic enough to accommodate much of the medical tradition.

But, though Galen traditionally has been known as a medical authority, there also is, as we have already indicated, Galen the philosopher. Though most of his philosophical writings have been lost, even what remains is still quite impressive, at least in sheer size. There is an introduction to logic, the "Institutio Logica", the sad remnant of a considerable body of writings on logic. In particular, we have to deplore the loss of

a large work "On Proof", of which only fragments remain (ed. I. v. Müller, *Abh. Bay. Akad. d. W.*, vol. 20, 1897). We have two treatises on causality ("De causis procatarcticis", ed. K. Bardong, 1937; "De causis contentivis", *CMG Suppl. Orient.* II, ed. M.C. Lyons et al., 1969); various treatises on moral psychology, in particular the "On the Passions of the Soul" (*CMG* V, 4, 1, 1, ed. W. DeBoer 1937); at least substantial fragments of a commentary on Plato's *Timaeus*, the voluminous "On the Views of Hippocrates and Plato" (*CMG* V, 4, 1, 2, ed. P. De Lacy, 1978-80), which among other things also deals with philosophical psychology; and, last but not least, the three treatises in the present collection on the nature of the art of medicine.

Galen was a philosopher of considerable reputation already in his lifetime. Though this reputation no doubt was due in good part to his authority as a medical writer, it would be rash to say that it was based entirely on his reputation as a physician. After all, Galen's philosophy has not been studied systematically as a whole, even though, as we have seen, various of his philosophical treatises are still extant and the rest of his writings abound in philosophical remarks, to which we have to add references in later authors to philosophical views he formulated in treatises now lost. The task of forming a critical view of Galen as a philosopher is made no easier by the fact that we have no coherent, reasonably comprehensive picture of the history of philosophy in the first two centuries of our era, and it is only against this background that we could judge to what extent there is any originality in Galen's philosophical thought. Galen had a respectable training in philosophy. He attended the lectures of four philosophers in Pergamum; he continued to study philosophy with Albinus in Smyrna; and, as late as his first stay in Rome, he seems to have attended the lectures of his friend, the Peripatetic Eudemus. He obviously was very widely read in philosophy, and there is no reason to think that his reading was superficial or perfunctory. Rather the opposite: as we know, e.g., from his two monographs on his own writings, he composed monographs and commentaries on a good number of the texts he had studied and on specific problems and questions these texts raised. He was obviously determined—and sufficiently confident in his own philosophical judgment—to make up his own mind in philosophy, too.

Though, as we will see, it is somewhat artificial to do so, we may distinguish three reasons for Galen's active interest in philosophy. Firstly, in Galen's time, it was part of the ideal of a reasonably educated person to have an interest in philosophy. His father certainly thought so, when he sent Galen to listen to the four major philosophers in Pergamum. But Galen's own interest clearly went beyond that. He clearly thought it mattered that one have one's own philosophical views. Secondly, he also

believed that the perfect doctor has to be a philosopher. He devoted a whole treatise to this question ("That the Best Doctor Also Is a Philosopher", *Scripta Minora*, vol. II, ed. I. v. Müller, 1891). To understand this, one has to keep in mind that Galen thinks that the perfect doctor is scientifically trained and has mastered enough of the natural sciences to understand human physiology, anatomy, pathology, and pharmacology. Thus he has to know what in antiquity was called "physics" and was regarded as one of the three major parts of philosophy. Galen also took the view that, to be able to do science or even to understand it, one had to be thoroughly versed in logic; one had to know how to give proper definitions, make the right kinds of conceptual distinctions, give strict scientific proofs, be able logically to analyze proofs, and not fall victim to fallacies. So the Galenic physician also has to know logic. As to the third part of philosophy, ethics, it is easy even for us to see that being a good doctor requires the proper moral attitude and sound moral judgment. Ancient doctors had a lot to say about medical ethics, and it would be of interest to study this material systematically. Galen, in any case, thought that medicine presupposed all parts of philosophy, and his medical writings show abundantly how serious he was about this. Thirdly and finally, we have to keep in mind that it had been a long tradition in medicine, going back to the fifth century B.C., to take an interest in certain philosophical questions, e.g., the question of the nature of medical knowledge, explanation in medicine (hence an interest in causality), and the relation between body and soul. So it was only natural that Galen would join his great predecessors in medicine, who again and again had shown a more than passing interest in such questions.

How can one best characterize Galen's philosophical position in general terms? He himself claims that he does not want to subscribe to the position of any of the schools of philosophy. Hence it is fair to characterize him in his own words as an "eclectic" (cf. *De libr. prop. I*, *SM* II, p. 95; *De dign. aft. 8*, *CMG* V, 4, 1, 1, p. 28f.). But for us this term has the negative connotation of describing someone who does not have the philosophical power to construct his own system or to develop his own views, who rather somewhat uncritically borrows his thoughts from diverse sources. For obvious reasons, however, this is not how Galen looks at his own position, and it may indeed be unfair to see him this way. It seems, as we have seen, that his father had tried to foster a sense of independent judgment in him, when he sent him to attend the lectures of all four schools of philosophy. It is also noteworthy that Galen seems as a student to have taken issue with some of the views of his teachers, though he also had great admiration for some of them. Galen repeatedly criticizes in his works the dogmatic attitude of those who, in the face of

truth, try to uphold the view of their school and who are slaves to received doctrine, whether this be in medicine or in philosophy. Thus Galen himself at least saw his eclecticism as a result of critical judgment, attachment to the truth, and moral strength. We may have a more modest view of his eclecticism, but we should grant that Galen made an effort to develop his own philosophical beliefs, that he quite sensibly thought reasonable beliefs were not the sole property of any one philosophical school, and that he believed it best to come to one's own views on the basis of a full understanding of the debates between the schools. That Galen did not have the philosophical power to bring about such a synthesis of the philosophical tradition in a meaningful and constructive fashion is another matter.

Though this is a subject of controversy, Galen's basic outlook, in spite of his professed eclecticism, nevertheless seems to be rather like that of a Platonist. He had studied in Pergamum with a student of Gaius, one of the most important Middle Platonic philosophers. When he went to Smyrna, he continued his philosophical studies with Albinus, another of the most influential Platonists of the period. He clearly has great admiration for Plato, who for him plays a role in philosophy somewhat similar to the role he attributes to Hippocrates in medicine. But Galen is by no means willing to accept Plato's views uncritically. Hence his eclecticism, at least on one level, is not the sign of an uncritical, dependent mind, but rather the opposite. On the other hand, one does have to acknowledge, in his case and even more so in that of his eclectic contemporaries, that it is an independence of mind within the limits of tradition, a somewhat backward-looking rather than a forward-looking independence, which tends to choose from among the old rather than to create the new.

It also has been argued that Galen basically is a Peripatetic. The reason for this is that Galen, in principle and in practice, attributes great importance to logic and to natural philosophy and in both relies quite heavily on Aristotle. But we have to remind ourselves that his logic is the syncretistic logic of his day which, in one form or another, we also find in Platonists such as Apuleius, Albinus, and the commentators on Aristotle, a logic which is very much influenced by Aristotle but still contains many elements of the logic of the Old Academy and is markedly influenced by Stoic logic. We also have to remember that, in logic and natural philosophy, the Platonic schools of late antiquity used the Aristotelian writings as textbooks. Hence we should not infer from the mere fact that Galen is heavily indebted to Aristotle in logic and physics that his basic outlook is Peripatetic. Though Galen rather resembles the Platonists of his day, there is one respect in which he differed quite markedly from them and from Plato himself, namely in his sceptical attitude towards what he

regarded as speculation. Quite generally, Galen has a tendency to look at whole series of questions which had occupied philosophers for a long time and over which they had fallen into different camps, as questions one cannot settle, but only speculate about. Galen was determined not to waste his time on such speculations. Thus he thinks that there is no point in trying to take a stand on the questions of the nature of God, the substance of the soul, its embodiment and immortality, the eternity of the world, the number of worlds, or whether the world exists in a void (Plac. Hipp. et Plat. IX, 6, 19-9, 9, CMG V, 4, 1, 2, 1.576-600; In Hipp. de morb. ac. comm. I, 2, CMG V, 9, 1, p. 125; De subst. nat. fac. Kühn IV, 762 = De sent. 15.1; Quod animi mores 3, SM II, p. 36; De sent. 2 Nutton). It is not just that he thinks that one cannot have full confidence in one's views on such matters. He refuses to take *any* view on them. Since it is exactly on questions of this kind that the schools of philosophy are divided, Galen's attitude towards these questions goes some way to explain his refusal to identify himself with any of the schools.

This attitude no doubt is the result of the influence of scepticism. But, in spite of early temptations to the contrary, Galen was too impressed by the mathematical sciences to despair of the ability to reason towards theoretical truths. Hence he was also convinced that large areas of philosophy were immune to serious sceptical doubt, sufficiently so to be able to develop a logic, a physical theory (in the sense of a theory of nature in general), and a moral theory. For this he drew on Plato and the Platonists, on Aristotle and the Peripatetics, and even quite heavily on the Stoics. He does not hide his preference for Plato and Aristotle, and often enough he takes the Stoics to task for their innovations. In part this is due to his neoclassicist leanings, which are also reflected by his concern for proper Greek usage and by his philological interests. In this he just follows a general trend to revert to the models set by classical antiquity, a trend which begins in the second century B.C. and which in philosophy has the effect that Plato, Aristotle, and their immediate followers, such as Xenocrates and Theophrastus, come to be regarded as the "ancient" and "classical" philosophers, as opposed to the "younger" or "modern" philosophers of the Hellenistic age, in particular the Stoics and the Epicureans. But he also follows another tradition closely linked to the first one. This tradition underplays the differences between Plato and Aristotle, as if they had shared a basic common doctrine, and sees the Stoics largely as just putting this doctrine into new garb or, where this interpretation seems too far-fetched, as wilfully and arbitrarily breaking away from the tradition of the ancients. This way of looking at the matter allowed philosophers in this tradition to go to any lengths in assimilating into their own system the advances made by the Stoics, yet to continue to

criticize them as entirely misguided. The only views one took to be distinctively Stoic were those one took exception to, while those views one found congenial were regarded as part of the common platonic heritage. In this way of looking at the history of philosophy, Galen does not differ from most of his contemporaries. If anything, it is easier for him than for them. That is, those questions which were thought to divide Plato and Aristotle and which were emphasized by the minority of later philosophers who rejected the harmonization of Plato and Aristotle were largely the very questions Galen regarded as speculative, e.g., the nature of God, the nature of the intellect, the nature of the human soul, the theory of ideas: what came to be regarded as the metaphysical questions.

It would be a mistake, though, to think of Galen as an agnostic in the modern sense. He readily accepts as fact that his father was inspired by a heaven-sent dream to have him study medicine, as if this was just another indication of the piety and rectitude of his father. He is not in the least critical of the assumption that there are divinely inspired dreams which prescribe a cure. As we can see from the "Outline of Empiricism" (chap. X, pp. 78-79 Deichgräber), he is even prepared to avail himself of therapeutic methods obtained in this way. In "On the Use of Parts" (III, 20), in which he tries to explain the functions of the different bodily parts, he calls his own treatise "a sacred book which I write as a hymn to our creator". It is easy to see how this fits into the long development in which theology as a philosophical discipline is more and more replaced by a theology of traditional belief or revelation, in which faith takes the place of reason, because human reason comes to be seen as limited, though the nature and the source of these limitations are as yet unclear.

On the other hand, if one looks for positive contributions Galen made to philosophy, the most promising place to search seems to be his discussions of the role reason and perception play in the acquisition of knowledge, in particular technical or scientific knowledge. This brings us to the debate which is the subject of our three treatises. Hence I will make some introductory remarks on this debate, before I return, in conclusion, to Galen, his position in the debate, and his contribution to the history of philosophy.

The Dispute on the Nature of Medical Knowledge

To understand the debate, one has to go back to the fifth century B.C., when the new art of medicine arose. Those who participated in the creation of this new art agreed that the traditional practice of medicine was insufficient, for reasons which in many ways are parallel to those for which the first philosophers thought that the traditional beliefs about the origin and the nature of the world were inadequate. They realized that there were many conflicting forms of traditional practices, that tradition itself provided no grounds to prefer one to another, and that some of those traditional practices involved beliefs an enlightened person could hardly accept, e.g., the belief that certain illnesses are due to possession by a demon. Moreover, they realized that traditional practice was not particularly successful and often could even see why it was bound to be damaging. The corpus of Hippocratic writings is full of such criticisms of traditional medicine, showing into what disrepute medicine and its practitioners had fallen in the fifth century, at least among the educated. But, though it was clear to some that traditional practice had to be critically reevaluated and replaced by a medical practice which would stand up to criticism, it was by no means obvious how one was to arrive at a new art of medicine. The philosophers provided a clear suggestion as to what was to be done. They had been trying to give a generally acceptable account of the world and its most interesting features. As their theories grew more powerful, they naturally tried to see to what extent they could also use those theories to explain the constitution of human beings, the way they function, and even the way they fail to function properly, especially in the fifth century, when the attention of philosophers quite generally turned to human beings. From this time onwards, at least into Hellenistic times, the philosophers regarded human physiology and pathology as part of natural philosophy. Aristotle claimed (De sensu 436^a 17–22) that it was the task of the natural philosopher to discuss the principles of health and disease, and he stated that this was indeed what most natural philosophers did (ibid. and De resp. 480^b 28–30). If we look at the evidence, this testimony seems to be borne out. Pythagoras, Alcmaeon, Empedocles, Anaxagoras, Diogenes of Apollonia, Democritus, and others had more or less detailed medical views or even wrote medical treatises (for Democritus, e.g., cf. D.L. ix, 46). Plato's *Timaeus*, with its long discussion of the constitution of the human body and of health and disease and its causes, gives us a clear idea of how natural it was for philosophers to engage in medical theory.

Thus the doctors who tried to develop a new art of medicine quite understandably tended to assume that the way to accomplish this task was to develop a medical theory which would allow one to understand the nature of the various diseases, to determine their causes, and, on this basis, to find the appropriate remedies. Such a theory would finally allow one critically to evaluate traditional medical practices.

This view was generally adopted, though it met with some opposition. The author of "On Ancient Medicine" claimed that there was a simple way in which mankind actually had made enormous progress in medicine over the ages. Men had learned from dire experience, by trial and error, what was conducive and what was detrimental to health. Not only did he claim that one should not abandon this simple method in favor of fanciful philosophical theories, which do not lead anywhere, he also argued that good doctors in practice relied on this experience anyway, since their theories were too vague and too general to guide their practice.

The majority of doctors, though, thought that they needed some theory which would guide and explain their practice. What they disagreed about was what kind of theory they should adopt, not just in the sense that they disagreed about the truth or falsehood of the various theoretical claims, but about the very nature of the theory, though it took some time for the issues involved to become clear. One choice the doctors faced was whether they should just adopt a philosophical theory of nature in general and of the constitution of human beings in particular, or whether they should try to work out their own theory. Some doctors obviously had grave misgivings about just adopting a philosophical theory. The author of the Hippocratic treatise "Nature of Man", for example, though he readily acknowledged the need for some kind of account of human physiology, was equally firm in his view that in medicine there was no use for the kinds of accounts in terms of the ultimate principles of physics which the philosophers liked to give. The doctors were looking for a theory which would suit their specific needs and which fitted their experience and observation. Given their knowledge of the human body, they naturally thought that a proper theory of physiology should take due account of and explain the features which they had come to think of as particularly relevant. In this respect, not only must the philosophical theories have seemed too global and too schematic to them, but they must have wondered how a philosophical theory, given the way it was arrived at, namely by rather global considerations, without particular attention to, let alone specialized knowledge of, the human body, could ever be sufficient. From this point onwards, there was a strong tendency among doctors to think that they had a right to develop their own physical the-

ory and to have their own views about how such a theory was to be formed. It was in this way that a tradition of independent philosophical thought arose in medicine. It is as part of this tradition that we must view the later debate.

The fourth and the beginning of the third century B.C. saw enormous advances in medical theory. In particular, one has to mention the work of Diocles, of Fraxagoras, of Herophilus, and of Erasistratus. One can notice, especially in Diocles and in Herophilus, a certain uneasiness about the status of medical theory and about its relation to the physical theory of the philosophers and to observation. Diocles warned against the tendency to look for a theoretical causal account for everything (Galen, Kühn VI, p. 455). He explained that such knowledge rarely is of practical use. He also maintained that we should treat many facts of nature as primitive, rather than try to explain them in terms of some questionable theory which would serve no further purpose. Herophilus, too, took the view that in medicine one often has to take as a given or a principle what in the true nature of things, if we could only ascertain it, would turn out to be a derivative truth (cf. *Anonymus Lond.* XXI, 21; Galen *De meth. med.*, Kühn X, p. 107). In Herophilus we already find doubts about the way medical theory appeals to causes (cf. Galen *De causis procatarcticis* 197 ff.). But, in spite of this uneasiness, there is the general conviction that, underlying the phenomena of health and illness, there is a reality which we can grasp by means of reason, by making the right inferences from what we observe and by relying on some general theory which is supposed somehow to capture this reality, and that it is in terms of this theory that we have to understand and practically deal with the phenomena of health and illness.

By the beginning of the third century B.C., though, there had been a proliferation of such theories. Each school tried to defend a particular theory against its rivals and thus came to have a vested interest in maintaining this view. There were not just students of Herophilus and Erasistratus, there arose sects of Herophileans and Erasistrateans. Towards the middle of the third century, this state of affairs provoked a strong reaction, which gave rise to Empiricism, the view that the actual knowledge a competent doctor relies on in treating his patients is entirely a matter of experience, and that hence there is no need for medical theories, with their postulation of theoretical entities to be inferred or grasped by reason, such entities as atoms, invisible pores, the void, essences, forces, and hidden causes. The Empiricists attacked all existing schools as putting undue trust in the power of reason and labeled them "Rationalist". Though a lot divided the schools attacked as Rationalist, they all felt united in their defense of reason and joined in the counterattack on the

Empiricists, arguing that mere experience would never account for an art of medicine, the kind of expertise one could expect from an accomplished doctor. The question, as it is put by Galen in the first chapter of "On the Sects for Beginners", then, is whether experience alone suffices to arrive at the art of medicine or whether reason, too, is necessary.

The question is somewhat curious, as one would imagine that the Empiricists would not want to proscribe the use of reason quite generally. It is difficult to see how there could be any satisfactory medical practice which does not involve some amount of reasoning, some deliberation. It is clear that the Empiricists did not want to deny this, but it is difficult to say precisely what they wanted to deny, when they rejected the use of reason. There seems to have been some unclarity and some wavering in their position on this question, which Galen reports on in Chapter 12 of the "Outline of Empiricism". What the Empiricists clearly wanted to reject were formal inferences, either deductive or inductive, in particular inferences by means of which people were supposed to get a grasp on the theoretical truths which underlie what they could observe, and most emphatically those inferences which were supposed to lead to theoretical truths concerning theoretical entities, like the atoms, which can only be grasped by reason. The kind of reasoning they were willing to allow was the kind of reasoning we use in everyday life, when we consider things, think about things, and when such thoughts suggest to us an answer to the question which made us think about the subject, because we did not have a ready answer. But this is not a matter of making formal inferences according to the canons of some logic; it is a matter of becoming sufficiently convinced of a view, having thought about the matter for long enough. The Empiricists called reasoning in this sense "epilogism", and they insisted that this kind of reasoning could never lead to theoretical truths about theoretical entities, but only to the kinds of truths discovered in ordinary life. In any case, the question whether experience alone might suffice to arrive at the art of medicine or whether reason, too, was needed, was understood by both sides in the debate to refer to a special use of reason by means of which, according to the Rationalists, theories are arrived at.

This debate within medicine also has to be seen against the background of another, much more general debate, about which we unfortunately know very little today. It seems that, at the end of the fifth and in the course of the fourth century, some authors had taken the view that certain important bodies of technical knowledge or expertise were mere matters of experience and that perhaps all knowledge was of this kind. Plato in the *Gorgias* makes Socrates criticize Polus' claim that rhetoric is the highest of all human arts, the master discipline, by arguing that rhet-

oric, at least as Gorgias and Polus conceive of it, is merely a matter of experience and knack or practice [*tribe*] and not an art [*techne*]. But there is good reason to believe that Polus himself did in fact hold the view that rhetorical knowledge is a matter of experience (Ar. Met 981^a 4), and it is certainly no accident that two terms Plato here uses to discredit Gorgianic rhetoric, namely *empeiria* 'experience' and *tribe* 'knack' or 'practice', are both terms later Empiricists used in a positive sense.

There also was the view that political knowledge was just a matter of experience (Philodemus Rhet. B, I, 27–28). Some may even have held the view that medical knowledge is just a matter of experience. For this, in a way, is the expressed opinion of the author of "On Ancient Medicine". Moreover, some later Empiricists believed they had found the origins of Empiricism in Acron of Akragas, a fifth-century follower of Empedocles (Galen, "Outline of Empiricism", I, p. 42, 21 D.; Ps. Galen Isagoge, vol. XIV, p. 683 Kühn). Finally, Erasistratus and possibly Herophilus found it worthwhile to argue against the suggestion that medicine is a matter of experience (Galen, "De sect. ingred." 5 SM III, p. 9, 15; De meth. med. Kühn, X, p. 184; Pliny, *Historia naturalis*, 29, 5, 6). These arguments almost certainly predate the rise of Empiricism and hence most likely address themselves to an earlier suggestion that knowledge of medicine can be based on experience alone.

In any case, Plato and Aristotle quite firmly reject the idea that an art or a science can be a matter of mere experience. A true art or science has to be based on truly general knowledge, which only reason and not experience can provide us with. However much our experience may suggest that something is quite generally true, experience itself does not justify this assumption. Only reason can. Experience does not give us any explanations but, at best, facts. But we do expect from an expert or from a scientist that he can explain why he thinks what he thinks and why he does what he does. Experience does not allow us to deal with new or unforeseen cases, unless they are like those we have encountered in experience. Reason can deal with new cases by analyzing them and subsuming them under the various general truths which are applicable to them. In this view that experience does not suffice for an art or a science, the physicians followed the philosophers. Obviously the conception we find, at least in the rhetorical tradition in the fourth century, that an art or a science is just a matter of experience, was not sufficiently worked out to withstand the strong and determined attack the philosophers made against it.

There was another relevant fact. We can see from Plato's Laws (cf. 720 A–C; 857 C–D) that there were two kinds of doctors in the fourth century. There were the physicians who had acquired an understanding of

the workings of nature in general and of the human body in particular and who tried to practice medicine in the light of their theoretical understanding. There were also men who might, for example, have worked as assistants to a physician, who had learned enough from experience to take care of a good variety of medical problems, without having any theoretical understanding of their practice. It is clear from Plato's description that this distinction was associated with a social distinction, that between free doctors, who treated free men, and slave doctors or doctors of very inferior status, who treated slaves. Thus, when the physicians emphasized the importance of a theoretical understanding as the basis for medical practice, they were also emphasizing their education and their social status and thus distancing themselves from the lowly practitioners of a modest craft.

For this reason, when the Empiricists argued that even the expertise of the most competent and learned doctor is nothing but a matter of experience, they not only had to develop a more detailed account of experience than their predecessors in the rhetorical tradition had done, they also had to show that experience itself could generate a competence which would distinguish the learned doctor from the lowly practitioner.

To achieve this, they followed a twofold line of argument. On the one hand, they tried to explain positively how mere experience might suffice to give rise to as complex an expertise as that of a competent doctor. On the other hand, relying on Sceptical arguments, they tried to undermine any confidence in medical theory. They argued that the theoretical assumptions which characterized these theories involved the postulation of unobservable theoretical entities, such as atoms or invisible pores, whose existence was questionable and that these assumptions were sheer unverifiable speculation. The competing theories had proliferated because the doctors had given themselves to such speculation, and because they were a matter of mere speculation, there was no way in which one could adjudicate between them. Whereas in a proper art or science we should expect that the experts can come to an agreement as to what is true and what is false, medical theorizing seems to lead to ever greater disagreement. If we do assume that, as early as the fourth or even the end of the fifth century, there already was the notion that medicine should be based entirely on experience, then the distinctive features of the Empirical school are the detail with which it tries to substantiate this view and in particular its alliance with scepticism that allows it to support its view by an attack on any form of Rationalism.

There is reason to suppose that the Empiricist position evolved considerably over time. We know from Galen's "Outline of Empiricism" that different Empiricists provided different formulations of their view, and

Galen himself thought that there were substantial disagreements among Empiricists. This must be correct, since Sextus Empiricus, who was without a doubt an Empiricist himself, to the great puzzlement of the commentators, in the "Outlines of Pyrrhonism" (I, 236 ff.) criticizes Empiricism and claims to find Methodism in some ways more acceptable. The explanation almost certainly is that, as Pyrrhonian Scepticism evolved after Aenesidemus in the first century B.C., Empiricism, to the extent that it relied on Pyrrhonian Scepticism, had to become more sophisticated. To Galen and to Sextus Empiricus, at least some of the major Empiricists, e.g., Menodotus, seemed to be rather dogmatic, not only in their rejection of theoretical truths concerning hidden entities, but perhaps also in their reliance on perception. The more sophisticated version of Empiricism, which we can gather from Galen's "Outline" and extrapolate from Sextus Empiricus, is not a position according to which, for dogmatic reasons, perception is given a privileged status and experience is taken to be just the accumulated observation of what has been perceived. It is rather the life experience which suggests, among other things, that the way to acquire medical expertise is to observe. The Empiricist position itself is supposed to be a matter of experience and not itself something arrived at by a priori reasoning. So we do have good reason to assume that the Empiricist position developed, but at present we know next to nothing about this development. The first Empiricists, Philinus of Cos (ca. 250 B.C.), Serapio of Alexandria (ca. 225 B.C.), and Glauclias of Tarent (ca. 175 B.C.), are little more than names to us, as far as their Empiricism is concerned, and the views Galen reports on are largely the views of such later Empiricists as Menodotus and Theodas of Laodicea, in the first part of the second century A.D.

The view of the Empiricists seems to amount to something like the following: The bases of medical expertise or of any expertise are one's own observations [*autopsia*]. But obviously expertise is not acquired in the ordinary course of events; otherwise, everybody would be an expert. We have to explain how it comes about that the medical expert has a special expertise which distinguishes him not only from the layman, who after all has some experience with medical matters, but also from the lowly practitioner, who has a fair amount of experience, though of a limited kind. Moreover, we have to take notice of the fact that one's own observations are always quite limited and will not suffice to deal with all cases one may be expected to deal with. We can solve both of these problems by doing two things: (i) We carefully study the reports other doctors give of their experience, what they tried in which cases with what success [*historia*]. This is a procedure ordinary life experience suggests; we often rely on the reports of others, when our own experience of a matter is insuffi-

cient. (ii) Ordinary life experience also suggests that, in cases in which we do not have any experience or in which we do not have ready the remedies our experience suggests, we proceed by transition to the similar, i.e., that we use remedies similar to the ones we normally use or that we use the remedies which we normally use in similar cases. Now, the successful use of both history and the transition to the similar requires a lot of experience which is described and discussed in detail. We have to find out that not all authors are equally trustworthy; we have to learn to weigh the evidence they supply. We have to learn what is to count as "similar". But in the end, we will come to have a rich experience of our own, based on our own observations, on our ability to make optimal use of history, and on our facility to make the right transitions to the similar. By means of the last, we will increase medical knowledge, once our transition has proved to be successful and has been tested over and over again. Hence it is this ability, together with the historical learning, which distinguishes the great doctor from both the layman and the simple practitioner.

Now, nowhere in all this does one have to refer to any theoretical, unobservable entities; rather, one just observes particulars, the effects certain conditions, circumstances, events have on them, and the effects the remedies one uses have on them. If one has enough experience, one will be able to say whether something precedes, accompanies, or follows something else invariably, for the most part, as it may happen, or rarely. Statements to this effect will form the theorems which one draws on in one's practice. But it is important to realize that the way one draws on these theorems is not the way the Rationalist claims one ought to draw on theorems. It is not that one takes these theorems to be theoretical truths, subsumes a particular case under them, and draws the appropriate logical inference for the particular case. It is rather that, in virtue of one's general knowledge and of one's knowledge of these theorems, a particular case will suggest a particular thought or a particular course of action with varying intensity, and one correspondingly follows or does not follow the suggestion. Or, rather, the particular case will suggest a particular thought or a particular course of action in such a way that, depending on our experience, we have higher or lower expectations as to the trustworthiness of the thought and the appropriateness of the action. Thus, if one knows from experience that a certain remedy helps in a certain kind of case, this means that, if one encounters a case of this kind, it will strongly suggest to one to apply the remedy that invariably has helped. If, on the other hand, the remedy has helped only occasionally, our expectations as to its success in this case will be correspondingly lower. So what expertise does is provide the doctor with an abundance of suggestions of different force, the strongest of which, with increasing experience, will tend

to be more and more reliable, for, if the treatment fails, this failure will diminish the force of the suggestion or the degree of confidence we have in it. Therefore, neither the way we acquire this general knowledge nor the way we actually use it in practice involves the use of formal inferences, let alone inferences to and from theoretical truths about theoretical entities. It is this kind of view which the Empiricists work out in great detail, to show that a doctor has no need for Rationalist reasoning and the kind of theory it gives rise to.

Thus the Empiricist can go on to argue against each and any Rationalist medical theory, using the kind of sceptical arguments with which we are familiar from Sextus Empiricus: that we have no reason to accept these theories, that they are ill-founded. But he can also agree that, even if there were a way to justify them, there would be no need for such theories, for what we need in any case is experience, and experience, as we have seen, suffices.

Just as the Empiricists rely on Sceptical arguments for their attack on the Rationalists, the Rationalists seem to rely heavily on the philosophers for their own positive views concerning the nature of medical knowledge, and, depending on their philosophical leanings, they tend to adopt rather different epistemological views. There is no one general positive view all Rationalists share. All they agree on is that experience is not sufficient to explain an art or science and that we have to appeal to the cognitive powers of reason which provide us with knowledge beyond what is given to us by experience. In particular, they allow us to make inferences and assumptions about entities which can never be observed but which are accessible only to reason. There are many different ways in which reason may be supposed to have such cognitive powers. Followers of Plato and Aristotle appealed to the powers of the intellect to grasp immediate, ultimate truths. Stoics and Epicureans, each in their own way, believed in innate ideas, conceptions which naturally arise in us and which we draw on in our reasoning. Platonists, Peripatetics, and Stoics believed in intrinsic relations between truths which reason can grasp and which allow reason to make inferences according to the rules of logic. But it is noteworthy that, as likely as not, when we actually learn something about the epistemological views of a Rationalist doctor, it turns out that his view goes well beyond what we are already familiar with from the history of philosophy. Obviously, Diocles' view, as reflected by the long fragment in Galen's *Hygieina* (Kühn VI, p. 455 H), is not just a reflection of Aristotle's views. Herophilus' views, especially his remarks on causes, a topic of central importance to a Rationalist, seem to be tinged by scepticism, as if our medical theories were never a matter of knowledge but only of reasonable belief. Asclepiades of Bithynia is conventionally

thought of as an Epicurean, but neither his atomism nor his epistemology is straightforwardly Epicurean. A lot more work needs to be done on rather meager sources to get a more comprehensive idea of the various positive views of the Rationalists.

As to their criticisms of Empiricism, we are reasonably well informed, especially when it comes to Asclepiades of Bithynia, since Galen, in his "On the Sects for Beginners" and in particular in his "On Medical Experience", spells out in some detail what Asclepiades' objections were.

Asclepiades is a pivotal figure in this debate in two respects. First, the dispute between Rationalists and Empiricists flares up again due to his violent attacks on Empiricism, which will provoke an equally violent response, e.g., on the part of Menodotus. Second, we can also trace the origins of Methodism back to him, not to his epistemological but to his physiological views. Asclepiades' medical position is characterized by the assumption that internal diseases are due not to the humours but in general to the disruption of the orderly flow of the atoms through the channels or pores which permeate the relatively fixed concatenation of atoms constituting the frame of the body. In particular, he assumed that many diseases were caused by the disruption of the flow of atoms through minute invisible pores whose existence had to be inferred by reason.

Now, there is a controversy about the precise origin of Methodism which I do not want to enter into here, because its discussion would invoke complex questions of chronology, for instance. But it seems that the Methodist position was arrived at in two steps: (i) Asclepiades' view of at least certain diseases was generalized to the view that all diseases are a matter of undue constriction of pores, of undue dilation of pores, or of the combination of the two. (ii) Whereas, in Asclepiades' theory, these states of constriction, dilation, or a combination of both were hidden states, to be inferred from the symptoms, the Methodists assumed that they were phenomenal states, that one could train oneself to see that this example is a case of dilation, this is a case of constriction, and this a case of both. The first step was taken by Themison and his followers in the second part of the first century B.C.; the second step was taken by Thessalus in the first part of the first century A.D., if not earlier. Since Thessalus was the great propagandist of "the method", as it was called, he came to be thought of as the founder of the school, though one also realized that the movement somehow went back to Themison and ultimately had its roots in Asclepiades' position. To understand why the Methodists took the second step, which gave their view the distinctive character that radically distinguished it from Asclepiades' view, we have to consider how the Methodists could find a position besides Empiricism and Rationalism, when the two seemed to exhaust all possible options.

When the Methodists claimed that all diseases are, as they put it, manifest communities or generalities, i.e., a manifest state of constriction, or dilation, or the combination of both, they meant to agree with the Empiricists that the diseases are not hidden states, to be inferred by reason from observable symptoms, but manifest states, open to observation. They agreed with the Empiricists quite generally that the beliefs the doctor bases his practice on should not involve reference to hidden, theoretical entities, like Asclepiades' atoms and invisible pores, since we do not have certain knowledge of those entities and should not base our practice in matters of health and illness, let alone of life and death, on anything but certain knowledge. But exactly for this reason, experience does not suffice either, because all experience can give us is more or less reliable generalizations. Experience itself cannot provide us with the assurance that what has worked a hundred times will work on the one hundred and first time. In this respect, the Rationalists were right when they claimed that the doctor requires more than experience, namely, the firm knowledge that is to be obtained only by reason. It is reason and not experience which tells us that somebody who is constricted needs to be dilated and that somebody who is dilated needs to be constricted. It takes no experience to see that, just simple reason. Similarly it takes no experience, but simple reason, to see that a particular form of constriction or dilation needs the corresponding form of dilation or constriction. This is a matter of certain knowledge. It is only when we follow reason into speculations about the nature of things, causes, essences, forces, and other hidden entities that we leave the realm of certain knowledge and follow mere opinion. It was a mistake on the part of the Rationalists to think that certain knowledge could and in fact had to be gained in this way, and, moreover, it was a mistake to think that medical practice could be based on conclusions thus obtained.

To defend this view of Rationalist theories, the Methodists, just like the Empiricists, relied on Sceptical arguments. But, whereas the Empiricists utterly rejected all theory, often in a rather dogmatic fashion, the Methodists allowed theory, as long as it was understood that theory is mere speculation and that one's practice should not be based on it.

Methodism had a great success in Rome. Nevertheless, the aggressive way it was propounded by Thessalus could not but offend more traditionally minded doctors. When Hippocrates had said that life is short and art long, Thessalus claimed that life was long and art short, a matter of six months. This was a deliberate affront not only to all those who venerated Hippocrates but also to all those who, like Galen, prided themselves on their long and no doubt expensive medical training. It seems fairly clear that Methodism was also felt and presumably meant to be a social

threat: a clear medical doctrine to be learned in six months, even by slaves and the poor, who had not the education to master the secrets of philosophy, mathematics, and the whole of learned medical tradition going all the way back to Hippocrates.

Galen certainly spoke of the Methodists with a good amount of bile. Little would one gather from his general discussion of the Methodists and of Thessalus and his followers that one of the greatest ancient doctors, *Soranus*, was a Methodist, for whose work, moreover, Galen himself had the greatest respect. But, since Galen is our main source for Methodism, our evidence makes it somewhat difficult to appreciate properly whatever subtleties Methodist thought may have involved.

Galen's Position in the Debate

As we have noted, Galen's reports of the dispute are somewhat coloured by his own position, especially when it comes to the Methodists. Here, too, Galen refuses to join any of the parties in the debate (*De libr. prop. 1, SM II, 95*), trying rather to take his own stand, from which he then judges the different positions.

It may have been Galen's influence which accounts in good part for the fact that, in the course of the third century, doctors seem to have lost their interest in this dispute. Galen certainly tries to give one the impression that he has found a position from which one can see that there is an important place in medicine for the Empiricist approach, just as there is a need for Rationalist theory, that the two do not exclude but rather complement and supplement each other, indeed, that they depend on each other in an accomplished doctor.

Galen sees no merit in the epistemological position of the Methodists. But he does have considerable sympathy for Empiricism, which goes back all the way to his days as a student in Pergamum, where one of his teachers was the Empiricist *Aeschrion*. This sympathy is apparent not just from the medical writings, but also from the two monographs he devoted to Empiricism and which are to be found in this collection: "On Medical Experience" and "An Outline of Empiricism". Though Galen, in particular in the latter treatise, does criticize certain Empiricists, both treatises on the whole are defenses of Empiricism against certain standard Rationalist criticisms. The Rationalists had claimed that experience does not suffice to arrive at the art of medicine, i.e., to gain the kind of expertise we expect in a competent, artful doctor. In the "Outline of Empiricism", Galen tells us that the very point of writing this monograph

was to show that somebody could acquire the art of medicine by experience without the use of reason, though such a person would not be able to find out all that there is to be known about medicine (chap. 12, Deichgräber p. 88). But the qualification also indicates why Galen thinks that the Empiricist position is inadequate. There are matters of use to the doctor which are not known by experience, but by reason, in virtue of a medical theory of the Rationalist type (De methodo med. V, 1, Kühn X, p. 306; XIV, 5, Kühn X, 962; De comp. med. p. gen. VI, 7, Kühn XIII, 887), just as there is useful medical knowledge that is won only by experience (cf. ibid.). Thus the Empiricists are wrong when they claim that the whole of the art of medicine is a matter of experience. They are also wrong in rejecting the use of reason and the so-called rational method to arrive at a well-founded medical theory, for not only does human reason allow us to arrive at such theories, such theories also are necessary to understand and explain medical practice. Experience may provide us with facts, but it cannot provide us with their explanation (De simpl. med. II, 5, Kühn XI, p. 476; De caus. puls. III, 1, Kühn IX, p. 106). So it is true that Empiricist medicine, as opposed to what the Rationalists had claimed, truly is an art, a technical expertise, but it fails to be scientific. In this way, Galen can claim to be neither a Methodist nor an Empiricist nor a Rationalist.

He takes the matter a step further, and it is this further step which makes his position rather interesting, if not original. Galen does believe in the Rationalist idea of a science based on first principles, axioms which are not mere hypotheses to be confirmed by experience, but which are seen by reason to be true by virtue of some insight into the nature of things. But he also reveals a surprising amount of diffidence as to how we know that reason has grasped the right principles and arrived at the truth by derivation from these principles. Thus he says that he wishes everything were a matter of perception; for then there soon would be no more disagreement and no need to appeal to reason to settle doubts (De simpl. med. II, 2, Kühn XI, p. 462). He also tells us that experience is the most reliable criterion (De simpl. med. I, 40, Kühn XI, 456). If theory and observation disagree, it is the theory which has to be rejected (De fac. nat. I, 13, 501 III, p. 132; II, 8, 500 III, p. 186).

Thus Galen comes to suggest that we should, on the one hand, learn as much as possible from experience and develop a body of empirical knowledge that is quite uncontaminated by any theory, and, on the other, develop a Rationalist theory, then check the results of the theory against our body of empirical knowledge (De methodo medendi I, 4, Kühn X, p. 31; II, 7, Kühn X, p. 127; III, 1, Kühn X, p. 159; IV, 3, Kühn X, p. 246).

Whatever the merits of this suggestion may be, the fact still remains that Galen's position on this debate discouraged further discussion. It

now was perfectly all right to try to acquire a body of empirical knowledge, as the Empiricists had done, as long as one did not go on to reject theory, and it was similarly perfectly all right to construct theories, as the Rationalists had done, as long as these theories did not conflict with experience and as long as one did not go on to deny that there could be a whole body of knowledge based on experience or even to deny that there could be anything known by experience. Put this way, Galen's position just seemed too sensible to be rejected, and it must have been difficult to see why there ever had been such excitement about the issue, particularly when, in the third century A.D., Scepticism lost all attraction. Without some sympathy for and understanding of Scepticism, it is difficult to understand and to appreciate the antitheoretical bias of Empiricism. Given Galen's own somewhat less than confident attitude as to the actual truth of any theory we may have, the difference between Rationalism and Methodism must have seemed less clear-cut, too. This is especially true if, in this case also, one no longer appreciated the Sceptical background of the position. Thus it may well be the case that Galen here, too, instead of carrying the issue a step further by, for example, critically reexamining the Rationalist notion of a science, rather changed the issue in a way which would allow him to propose a solution which seemed to accommodate the best the tradition had to offer, and this with so much learning and persuasiveness that it would have taken a lot to realize that the real problems which had given rise to the debate might have been put out of sight but had not disappeared.

But, though I think that Galen ultimately did not do justice to the issue that had provoked this debate, another element in Galen's thought on the matter did have an important future. Galen thought that the role of reason and observation in knowledge is twofold. Reason and observation are instrumental in that they serve to arrive at the truth, but they also play a critical role in that they are used to decide or to confirm the truth of a view which one already has arrived at. Galen made a great effort to spell out in detail how reason and observation are to be used in either case. Traditionally philosophers had concentrated on a rational method of proof. Aristotle's *Analytics*, in particular the *Posterior Analytics*, had served this purpose, and Stoic logic had focussed on the same aim. What one seemed to lack, though, was a rational method of discovery, an *ars inveniendi*. We see an interest in such a method in Cicero, not surprisingly, given the needs of an orator (Topica 6; De orat. II, 157–59; De fin. IV, 10). There is a tradition of such an interest which we also find in Quintilian and in Boethius (In Cic. top. 1045 A) and which expands enormously during the Renaissance. But Cicero's own remarks show that this is an interest which is already recognized by the philosophers of his time,

if not by the Stoics, then at least by the Peripatetics. And, indeed, we do find reflections of this interest, e.g., in the account of Aristotle's philosophy in Diogenes Laertius (V, 28–29) and in Alexander of Aphrodisias' commentary on Aristotle's *Prior Analytics* (p. 1, 7 ff). In the syncretistic logic of late antiquity, beginning with Middle Platonists such as Albinus (cf. *Isagoge* 5, p. 156 Hermann), such a method of invention or discovery occurs under the name of *analysis* or *analytics*. Thus Galen can rely on some tradition when he tries to work out in detail the method of synthesis or composition and in particular the method of analysis or resolution. There is good reason to believe that his remarks on synthesis and analysis were directly and indirectly of great influence on scientific thought in the Renaissance. From the thirteenth century onwards, Galen's writings in Latin translation played an increasing role in the medical schools of the universities and had an influence far beyond the faculties of medicine, in particular in those universities, such as Padua, which were dominated by the medical school. Two treatises were studied with particular care, the *Ars medica* and the "On the Method of Healing," which also came to be known respectively as the *Ars parva* or the *Tegni* (i.e., *techne*) and the *Ars magna* or the *Megategni*. Now, the *Tegni* starts out with rather obscure remarks about analysis and synthesis, but it was also a text which was widely lectured and commented on. So it gave ample opportunity for reflection on the ways of scientific discovery and of scientific demonstration within the framework of a Galenic position. For this position, there was ample evidence in his other writings, but in particular in the *Megategni*, which in its introductory pages (De meth. med. I, 3, Kühn X, p. 29) makes the claim that there is a systematical, logical method of discovery and which in fact itself has as its aim to spell out the rational method of discovering the appropriate treatment for a given disease.

It is presumably here that we have to look for a positive, lasting contribution Galen made to philosophical thought.

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