THE HIPPOCRATIC QUESTION

THE question of determining the genuine works of Hippocrates, a topic already much discussed by the ancient commentators, still continues to be actively debated, although the disagreements among scholars remain, it seems, almost as wide as ever.[1] In comparatively recent times, Edelstein's *ΠΕΡΙ ΑΕΡΩΝ* and two subsequent studies of his written in the 1930s (Edelstein (*b*) and (*c*)) marked a turning-point in that they presented a particularly clear and comprehensive statement of the sceptical view, according to which Hippocrates is, as Wilamowitz put it long ago,[2] 'ein berühmter Name ohne den Hintergrund irgend einer Schrift'. But Edelstein's book was soon followed by studies by Deichgräber, Pohlenz ((*b*) and (*c*)), and Nestle, each of whom put forward positive, although quite widely differing, suggestions concerning the Hippocratic treatises that could be considered genuine, and since the end of the 1930s there have been more than twenty major, as well as a host of minor, contributions to the debate, the most important being those of Jones (*b*), Bourgey, Diller (*c*), Joly (*c*), and Knutzen.[3] Despite the arguments of Edelstein and other sceptics, fresh attempts continue to be made to establish the probable, if not the certain, genuineness of particular treatises in the Hippocratic Corpus. The line of attack is generally the same. Once the authenticity of one or a few treatises has been shown, to the author's satisfaction at least, on the basis of the external evidence (the references to Hippocrates in Plato, Aristotle, Anonymus Londinensis, and so on), the range of works that may be considered to be by Hippocrates is then extended by using arguments based on the internal evidence, that is on the connections between different treatises in the Corpus. The aim of this article is twofold, first to re-examine the strength of the external evidence, and secondly to analyse the assumptions underlying arguments based on the internal evidence and in particular to consider the criteria for establishing the common authorship of different treatises.

I

The main external evidence has often been discussed and our review can accordingly be quite brief. As is well known, there are four main pre-Alexandrian references to Hippocrates, namely those in Plato's *Phaedrus* (270 c) and *Protagoras* (311 b–c), in Aristotle's *Politics* ($1326^{a}14$ ff.), and in the account of Hippocrates' medical doctrines that is attributed to 'Aristotle' in Anonymus Londinensis (V 35–VI 42, ed. Diels)—that is, as is generally agreed, the account given in Meno's history of medicine. To these may be added three more doubtful references ascribed to Ctesias and Diocles by Galen and by the scholiast Stephanus Atheniensis.

Of these testimonies, the passage in Aristotle's *Politics* tells us only that

[1] The bibliography at the end of this article includes the most important contributions since 1930 and provides bibliographical details of other works that will also be referred to by the author's name with, where necessary, a distinguishing letter. Abbreviations for Hippocratic works are those in Liddell–Scott–Jones.

[2] Wilamowitz (*a*) 22. He was, however, later to change his mind; see Wilamowitz (*b*) 480 ff.

[3] Joly (*c*) and Flashar, especially, provide full surveys of the recent literature.

Hippocrates was known as a great doctor, and Plato's *Protagoras* 311 b–c that he taught medicine for a fee, both interesting pieces of information, but neither able to help us in any way to identify Hippocrates' writings.

The two main testimonies that have been used for that purpose are those in the *Phaedrus* and in Anonymus Londinensis. In both cases the interpretation is, in places, controversial, but certain points can be said to be by now well established. First, the *Phaedrus* passage provides us with information about, at most, Hippocrates' methods, not his specific medical theories. Phaedrus and Socrates agree, at this point in the dialogue, that Hippocrates held that the correct method in medicine is to study the 'nature of the whole'.[1] What 'the whole' means here is disputed—as it already was in antiquity—and at least four interpretations are possible, namely that it means (1) the whole of nature or the universe, (2) the whole of the body, (3) the whole of the body–soul complex, or (4) the whole of whatever subject happens to be under discussion.[2] Nor is it clear, when at 270 c 9–d 7 Socrates proceeds to elaborate what 'Hippocrates and the true account' have to say 'on this matter concerning nature' and suggests that the correct method consists in (1) first deciding whether a thing is simple or complex, and then (2*a*) if it is simple, asking what its capacity for acting or being acted upon is, or (2*b*) if it is complex, enumerating its parts and then asking the same question of each of them, how much of this method is supposed to have been made explicit by Hippocrates himself.[3] Yet so far as the Hippocratic question goes, these uncertainties are comparatively unimportant, for *whatever view we take* on the main disputed points, this text provides insufficient grounds for asserting the genuineness of any of the treatises in the Corpus.[4]

Thus if we assume that the complete method set out at 270 c 9 ff. is Hippocrates', we can certainly be clear about what that method consists in : it is indeed a quite formal one, and one that corresponds closely to Platonic division. Yet although there are plenty of Hippocratic texts that show an interest either in determining whether a thing is simple or complex, or in what effect something has on something else, there is no treatise that either advocates, or exactly puts into practice, the full formal two-stage method outlined at 270 c 9 ff.[5]

[1] *ΣΩ. Ψυχῆς οὖν φύσιν ἀξίως λόγου κατανοῆσαι οἴει δυνατὸν εἶναι ἄνευ τῆς τοῦ ὅλου φύσεως; ΦΑΙ. Εἰ μὲν Ἱπποκράτει γε τῷ τῶν Ἀσκληπιαδῶν δεῖ τι πιθέσθαι, οὐδὲ περὶ σώματος ἄνευ τῆς μεθόδου ταύτης* (*Phaedrus* 270 c 1–5). The passage has, of course, to be taken in the whole context of the discussion from 269 e to 270 e.

[2] The problem has been very extensively discussed : for an analysis of both ancient and modern views see Kucharski and Joly (*c*) especially.

[3] Cf., e.g., Hackforth 151 : 'I strongly suspect that when the question is asked *τί ποτε λέγει Ἱπποκράτης καὶ ὁ ἀληθὴς λόγος*, Plato is about to read into Hippocrates what he wants to find there; it is analogous, I suggest, to what Protagoras told his disciples in secret (*Theaet.* 152 c) or the real meaning of what Heraclitus expresses badly (*Symp.* 187 a).'

[4] The principal, though far from the only, attempts to mount such a thesis have been those of Galen (who saw the passage as proof of the authenticity of *Nat. Hom.*), of Littré (arguing for the authenticity of *VM*), and of Pohlenz (*b*) (arguing for that of *Aër.* and other treatises).

[5] Although Galen (*In Hipp. Nat. Hom.*, *CMG* V 9, 1 8 31 ff. and 54 26 ff.) saw a reference to *Nat. Hom.* here, the writer of that treatise can hardly be said to proceed in the way Socrates describes at 270 c 9 ff. Although the opening polemic against those who assert that man is one thing can be represented as addressed to the question of whether man is one or many, once the writer has stated his own view that there are four

On the other hand, if, with the majority of scholars, we assume that all that Plato means to ascribe to Hippocrates at 270 c 1–5 is the *general* recommendation of the study of 'the nature of the whole' (in whatever sense of whole), then the main problem about using that as evidence for the authenticity of any given Hippocratic work lies in its very vagueness and generality. Thus if we take 'whole' to refer to the whole body, all that Hippocrates may be represented by Plato as recommending is that the doctor should study the whole patient. This is, of course, consistent with what is commonly assumed and quite often stated in the medical works, namely that the doctor should proceed to his diagnosis and prognosis only after a careful and thorough examination of all the patient's signs and symptoms.[1] But the difficulty here is that the idea of examining the patient thoroughly is not only so common, but also so obvious, that we can hardly take the text of Plato to establish the authenticity of any of the works in which it is introduced.[2]

It is true that if we take 'whole' at 270 c 1–5 to refer to nature or to the universe in general, the recommendation there ascribed to Hippocrates has a more definite content, or at least greater point, that is, that the physician should study 'natural science', and on this interpretation the passage in the *Phaedrus* has often been taken to refer to (and therefore establish the authenticity of) one or other of the treatises in the Corpus that bear on this point, the favourite candidates being *On Ancient Medicine* and *Airs Waters Places*. Thus in *On Ancient Medicine* ch. 20 the writer says that the only way to study nature (that is, for example, such problems as the constituent substances of man) is through medicine. If 'whole' in the *Phaedrus* passage is taken in the sense of nature as a whole, then a point of similarity between the two texts is that both suggest a connection between medicine and natural inquiry in general. Yet in this case a far more important contrast lies in the fact that—as has often been pointed out

main constituent substances in the body (blood, phlegm, yellow and black bile) he does not then proceed—as according to the methodology of *Phaedrus* 270 c 9 ff. he would have been expected to—to ask concerning each of these substances in turn what its capacity for acting and being acted upon is. There are, moreover, reasonable grounds for supposing that the author of *Nat. Hom.* chs. 1–8 and 11 is Polybus (see below, p. 181). There is a closer, though still not perfect, fit between *Phaedrus* 270 c 9 ff. and *Vict.* I chs. 2 ff., where the writer says that anyone who intends to write correctly about regimen must first study the nature of man in general, that is, such questions as his primary constituents, and he goes on not only to identify these as fire and water but also to consider their δυνάμεις in the body. But although this covers the subject-matter that Socrates says should be dealt with at 270 c 9 ff., the correspondence is still not exact in this respect, at least, that the Hippocratic writer does not set out his arguments in the clear, logical order that Socrates' method suggests. Moreover the possibility that *Vict.* I itself is referred to in the *Phaedrus* is generally dismissed on other grounds: it is clearly an eclectic and derivative work, and its claims to be a genuine work of Hippocrates were generally considered weak even in antiquity.

[1] The fullest statements of what the doctor should look for in examining the patient come in *Prog.* (ch. 1 and *passim*) and *Epid.* I ch. 10 Littré (23 Kühlewein): but the idea that the doctor should pay attention to all the factors relating to a patient's condition, his age and constitution, the season of the year, and so on, appears in many other contexts and works, e.g. *Nat. Hom.* ch. 9, *Salubr.* ch. 2, *Aph.* I 2 and 17, II 34, *Hum.* chs. 1, 2, 4, and 5, *Vict.* I chs. 2 and 32, *Morb.* I ch. 16, *Nat. Mul.* ch. 1, *Mul.* II ch. 111, and *Prorrh.* II ch. 39.

[2] Alternatively, if 'whole' is taken to refer not to all a patient's signs but to his physical constituents, the problem is again that such a recommendation could be said to tally with any of a large number of treatises in the Corpus that discuss the elements of which a man is composed and propose different theories on that subject (see further below, p. 183).

—whereas the *Phaedrus* passage would imply that medicine depends on natural science, in *On Ancient Medicine* the reverse is asserted, that the study of nature depends on medicine. As Festugière and many others have said, the position ascribed on this view to Hippocrates at *Phaedrus* 270 c is closer to that *criticized* by the author of *On Ancient Medicine* when at the beginning of the same chapter he attacks certain doctors and sophists who had suggested that the study of man in general is prior to medicine proper.[1]

As for the other main suggestion, that *Phaedrus* 270 c may allude to *Airs Waters Places*,[2] it is true that that treatise recommends that the doctor should study, among other things, the seasons of the year, the winds, the locations of cities, and the properties of waters for the purpose of prognosis, and in ch. 2 meets the objection that this smacks of 'meteorology' by saying that the contribution of *ἀστρονομίη* to medicine is no small one.[3] But here too the similarities are quite general and they fall far short of establishing, or even making it likely, that Plato had *Airs Waters Places* in mind in this passage in the *Phaedrus*. Moreover there is a well-known difficulty in this or any other view that sees the method ascribed to Hippocrates as one that involves the detailed empirical study of natural phenomena in general, and this lies in the implausibility of representing *Plato* as agreeing with, let alone recommending, any such method.[4] This point comes out quite clearly in the continuation in the *Phaedrus*, in that what Socrates chooses to attribute to 'Hippocrates and the true account' at 270 c 9 ff. turns out to be, not a broadly observational or empirical method at all, but, as we should expect from Plato, a formal, analytic method of classification. Those who wish to argue for the authenticity of any Hippocratic work that employs or advocates an empirical methodology on the basis of what we have in the *Phaedrus* have, then, a problem in that they must also argue that at 270 c 9 ff. Socrates does not so much develop or elaborate Hippocrates' actual methods as ignore them, substituting his own, quite different, procedure.

In sum, an examination of the evidence in the *Phaedrus* leads to negative conclusions. (1) That evidence relates only to methods, not to medical theories. (2) If the method is taken to include Socrates' elaboration at 270 d 1–7, we do not find that adopted or recommended in any of the Hippocratic treatises.

[1] *VM* ch. 20, *CMG* I, 1 51 6–17. On the text of 51 6–12 see Dihle, 145 ff.

[2] See especially Pohlenz (*b*) 77 ff., and cf. Edelstein (*d*) 226 ff.

[3] *εἰ δὲ δοκέοι τις ταῦτα μετεωρολόγα εἶναι, εἰ μετασταίη τῆς γνώμης, μάθοι ἄν, ὅτι οὐκ ἐλάχιστον μέρος συμβάλλεται ἀστρονομίη ἐς ἰητρικήν, ἀλλὰ πάνυ πλεῖστον* (*CMG* I, 1 57 7 ff.). An additional point of similarity has been found in that at *Phaedrus* 269 e 4 ff. Socrates said that all the greatest *τέχναι* need *ἀδολεσχίας καὶ μετεωρολογίας φύσεως πέρι*: yet the sense of *μετεωρολογία* there may be simply high-flown speech, and the reference to Anaxagoras at 270 a 4 seems to be rather to his doctrine of *νοῦς* (see a 5) than to his explanations of natural phenomena.

[4] We can gain some idea of what Plato thought a theory of diseases should look like from *Timaeus* 81 e ff. Three features of that account that should be noted are: (1) the form that the discussion takes is to give a classification of diseases; (2) consideration is given not only to diseases of the body, but also to those of the soul arising *διὰ σώματος ἕξιν* (86 b): the discussion relates not just to the body, but to the whole individual, that is, the complex of body and soul; and (3) the whole theory forms part of an account of nature where the emphasis is on final causes. Despite what has sometimes been claimed, Plato did not hope to determine the causes of diseases, or of any other natural phenomena, by using purely *a priori* methods, to the total neglect of observation and experience: yet nothing in the *Timaeus* modifies his usual view of the superiority of reason to sensation, and indeed at 29 c–d he emphatically reasserts the distinction between *certain* accounts of *Being* and *probable* accounts of *Becoming*.

(3) If not, although several different constructions of the sense of 'whole' are possible, we again find that the correspondences that can be suggested between the *Phaedrus* and particular treatises in the Corpus are tenuous.

But if one of the principal limitations of the evidence in the *Phaedrus* is that the information it provides concerns Hippocrates' methods, not his actual medical doctrines, the testimony of Meno's account, preserved in Anonymus Londinensis,[1] suffers from no such drawback. Rather, the description of Hippocrates' views on the causes of diseases is both quite clear and quite definite. The problem here is—as has been recognized ever since the papyrus was first discovered[2]—that the particular theory ascribed to Hippocrates, namely that diseases are caused by *φῦσαι*, does not correspond exactly to anything in the Corpus. The closest approximation to it is in the treatise *On Breaths*, a sophistic *ἐπίδειξις* which sets out simple-mindedly to prove that the origin of all diseases is the same, that is, air or breath, and which may well not have been composed by a practising physician.[3] Even here, although both Meno's account and *On Breaths* share the idea that *φῦσαι* are the causes of disease and hold that *πνεῦμα* is a or the most important factor in the body,[4] they differ at certain points, notably in that whereas in Meno the breaths that cause diseases arise from residues (*περισσώματα*) in the body, in *On Breaths* there is no mention of residues: the breaths there come into the body direct from the outside air.[5]

This provides an argument in support of the view that Meno did not have *On Breaths* itself in mind, and indeed there are few, if any, scholars who would wish to conclude that it is a genuine work of Hippocrates. Yet attempts to take the evidence of Meno as establishing the authenticity of *any other* Hippocratic treatise have been quite unsuccessful. There is, for instance, nothing in Meno's account to justify the claim that he was referring to the doctrine of *Airs Waters Places* that atmospheric air is a major contributory factor in disease. Although at VI 14 ff. he says that *πνεῦμα* in us is connected with the (outside) air, he refers quite unmistakably to the air produced by residues *within the body* when he reports Hippocrates' theory of diseases. Again, although air is assigned an important function in the body, particularly as the vehicle of consciousness, in *On the Sacred Disease*, that treatise develops a much more elaborate theory of diseases than that ascribed to Hippocrates by Meno.[6] Finally Meno does not

[1] The writer of Anonymus Londinensis himself disagrees with 'Aristotle' and goes on to put forward an alternative account of Hippocrates' medical doctrines (VI 43 ff.). This appears (although the papyrus is particularly fragmentary at this point) to correspond with views found in *Nat. Hom.* The value of this evidence is, however, small, since the author of Anon. Lond. was probably not writing before the first century A.D.; see Diels (*a*) 412 ff.

[2] Diels (*a*) 422 ff. The most important recent discussions are those of Edelstein (*a*) 135 ff., (*d*) 221 ff., Pohlenz (*b*) 66 ff., Steckerl 166 ff., Bourgey 84 ff., Diller (*c*) 276 f., and Schumacher (*b*) 143 ff.

[3] See, e.g., Jones (*a*) II 221 ff., Bourgey 116 ff.

[4] Compare Anon. Lond. V 35 f. with *Flat.* ch. 4, *CMG* I, 1 93 18 f. and Anon. Lond. VI 30 f. with *Flat.* ch. 3, 92 21 f. These and other parallelisms, including certain similarities in phraseology, are set out by Diels (*b*) 8 f. and Jones (*d*) 34 ff.

[5] Contrast Anon. Lond. VI 11 f. *ἐγ δὲ τῶν περισσωμάτ(ων) ἀναφέρονται φῦσαι* with *Flat.* ch. 3, 92 20 f. *πνεῦμα δὲ τὸ μὲν ἐν τοῖσι σώμασιν φῦσα καλέεται, τὸ δὲ ἔξω τῶν σωμάτων ἀήρ.* In *Flat.* ch. 7 the breath that causes flatulence when food is taken into the body is not the product of residues from the food itself, but is clearly said to enter the body (i.e. from outside) at the same time as the food: *μετὰ δὲ πολλῶν σιτίων ἀνάγκη καὶ πολὺ πνεῦμα ἐσιέναι* (95 6 f.).

[6] Thus in ch. 18, VI 394 9 ff. Littré, the

provide any support for the view that *On Ancient Medicine* is an authentic work of Hippocrates.[1] It is true that a minor role in disease is ascribed to breaths in chs. 10 and 22 in that treatise. But it is a *minor* role, and the general theory of diseases put forward by the author in ch. 14 refers to a wide variety of factors (salt, bitter, sweet, acid, astringent, insipid, and so on) an imbalance in which may cause disease. To say of this author, what Meno says of Hippocrates at V 35 f., that 'breaths are the causes of disease', would be a grossly misleading caricature of his views.

Here too, then, as with the evidence in Plato and Aristotle, the conclusions we must reach are negative ones. Although Meno provides our earliest evidence of Hippocrates' medical theory,[2] and although the range of medical doctrines contained in the Corpus is remarkable, we cannot establish the authenticity of any treatise on the basis of this report. Indeed if the evidence of Meno is accepted, it provides a strong argument *against* the authenticity of those passages—and there are many of them[3]—that suggest alternative pathological doctrines which are incompatible with the account attributed to Hippocrates at Anonymus Londinensis V 35 ff.

Having exhausted our four earliest and most reliable testimonies, we may now turn to some of the evidence from other pre-Alexandrian writers whose views are recorded in later sources. (1) In Book IV ch. 40 of his Commentary on *Joints* (*In Hipp. Art.*, XVIII A 731 5 ff. Kühn), Galen reports that Ctesias of Cnidos,[4] among others, criticized Hippocrates for attempting to reduce a dislocation of the thigh at the hip.[5] Now an account of how to effect this reduction certainly appears in ch. 70 of *Joints* (IV 288 11 ff. Littré, II 224 18 ff. Kühlewein) in the passage on which Galen is commenting at this point. But to claim that the testimony of Ctesias establishes the authenticity of that treatise is to underestimate two major difficulties. First, we may not presume that Hippocrates was the only fifth-century doctor to suggest this surgical procedure. Secondly and more fundamentally, even if we assumed that Ctesias was criticizing this very passage in *Joints*, we could still not be certain that he took it to be by Hippocrates. When Galen writes that Ctesias was one of several authors who criticized Hippocrates' procedure, we must take into account the fact that Galen himself of course assumed that Hippocrates was the author of *Joints*.[6] This being so, the reference to Hippocrates may well have been supplied by Galen himself.[7] Given that Galen does not actually quote Ctesias

writer refers especially to changes in the winds and weather and to the imbalance of hot, cold, wet, and dry, as well as to 'what enters and leaves' the body. In chs. 2 and 5 (364 15 ff., 368 10 ff.) bile and phlegm represent innate constitutional differences: they are not residues that produce breaths that in turn produce diseases.

[1] *Pace* Steckerl 176 f.

[2] There have, of course, been scholars who have taken Meno to be mistaken about Hippocrates in whole or in part (e.g. Diels (*a*) 424 ff.). It is, however, only possible to diagnose his mistakes if we have *better independent* evidence concerning Hippocrates' medical theories—and this is not forthcoming.

[3] See below, p. 184 f.

[4] Ctesias was physician to Artaxerxes and so a close contemporary of Hippocrates.

[5] *κατεγνώκασιν Ἱπποκράτους ἐπεμβαλεῖν τὸ κατ' ἰσχίον ἄρθρον, ὡς ἂν ἐκπῖπτον αὐτίκα, πρῶτος μὲν Κτησίας ὁ Κνίδιος συγγενὴς αὐτοῦ, καὶ γὰρ αὐτὸς ἦν Ἀσκληπιάδης τὸ γένος, ἐφεξῆς δὲ Κτησίου καὶ ἄλλοι τινές.* The passage has been discussed by, among others, Littré I 69 ff., Schöne 466, Diels (*c*) 1148, Edelstein (*a*) 139 n. 1, Deichgräber 161 ff., Pohlenz (*b*) 80, Bourgey 99 f., and, most recently, Knutzen 66 ff.

[6] Indeed Galen counts *Art.* and *Fract.* among the 'most genuine and most useful' Hippocratic treatises, *In Hipp. Epid. III*, Book II intro., *CMG* V 10, 2, 1 60 15 ff.

[7] Elsewhere in his commentaries Galen

at this point, but merely records a view that he attributes to him, the status of the direct reference to Hippocrates is in serious doubt, and so too, therefore, must be the value of this text as evidence for his work.

(2) Precisely similar difficulties confront us concerning the passage in *In Hipp. Epid. I*, Book III ch. 2 (*CMG* V 10, 1 112 31 ff.) where Galen records a criticism of Diocles.[1] Here the Hippocratic doctrine criticized is that there are quintan, septan, and nonan fevers, a theory which is clearly stated in the text of the *Epidemics* (I ch. 11, II 672 2 f. Littré, = ch. 24, I 200 5 f. Kühlewein) on which Galen is commenting at this point. But again (*a*) we should probably not presume that Hippocrates was the only pathologist to hold that theory, and (*b*) even if we could be sure that Diocles was referring to this particular text in the *Epidemics* we could still not be certain that he took it to be by Hippocrates: once again the reference to Hippocrates does not itself come in a verbal quotation of Diocles and may well have been supplied by Galen.[2]

(3) Finally there is the evidence of another report of an objection that Diocles made to a Hippocratic doctrine, namely that contained in *Aphorisms* II 34 (IV 480 7 ff. Littré) to the effect that those suffering from a disease related to the season of the year (e.g. fevers in summer) run less danger than when the disease is not so related. Our evidence for Diocles' objection comes from two sources, Galen and the scholiast on the *Aphorisms* whose identity is not certain but who is generally taken to be Stephanus Atheniensis.[3] But of these two Galen merely records, at this point in his Commentary (*In Hipp. Aph.*, Book II ch. 34, XVII B 530 9 ff. Kühn), that both Diocles and the author of *On Sevens* contested the aphorism in question, without stating that either of these writers directly ascribed the doctrine to Hippocrates.[4] It is only Stephanus who reports Diocles' objection as an objection to Hippocrates and gives what purports to be a verbatim quotation of Diocles which begins with a direct invocation of Hippocrates.[5] If we could accept this quotation as reliable, this would provide good evidence that a particular text in the Hippocratic Corpus corresponds to something that Hippocrates believed.[6] Unfortunately, however, the reliability of the quotation is in serious doubt. First there is the minor point that Galen

commonly refers to the author of the treatises he is discussing as Hippocrates, even where he knows that the authenticity of the treatise is in doubt, and sometimes does so even when (as with *Epid.* II and VI, see, e.g., *CMG* V 10, 2, 2 5 7 ff. and 272 5 ff.) he himself suspects that the text has been subject to later editing.

[1] *πρὸς δ' οὖν τὸν Ἱπποκράτην τάχα καὶ λογικὴν ἄν τις ἀπόδειξιν εἴποι, καθάπερ ὁ Διοκλῆς· ἐπὶ τίσι γὰρ ἐρεῖς [τίσι] σηπεδόσιν ἢ χυμοῖς τὴν πεμπταίαν ἢ ἑβδομαίαν ἢ ἐναταίαν γίνεσθαι περίοδον, οὐχ ἕξεις.* See, e.g., Deichgräber 160, Edelstein (*b*) 1308 f., and Bourgey 100 f.

[2] That Diocles knew the treatise *Art.* does seem likely from the evidence of another passage in Galen (*In Hipp. Art.*, Book III ch. 23, XVIII A 519 11 ff. Kühn) which reports that in his work *On Bandages* Diocles paraphrased a text from that treatise containing the term *τύρσις*. But in that passage in Galen there is no mention of who Diocles thought was the author of *Art.*

[3] Or, alternatively, Meletius: see Dietz I xvi ff., II ix ff., and 236 f.

[4] He does, however, say that they argued that the doctrine contradicted the view of 'Hippocrates himself' that 'opposites are cures for opposites'. Whether the ascription of that dictum to Hippocrates comes from Diocles or Galen is again not clear: the doctrine in question is common in Greek medicine, but the dictum in that precise form occurs in *Flat.* ch. 1, *CMG* I, 1 92 8 (on which see above, p. 175).

[5] *καὶ ἀπορεῖ ὁ Διοκλῆς πρὸς τὸν Ἱπποκράτην λέγων, τί φῄς, ὦ Ἱπποκρατες . . . ;* Dietz II 326 f.

[6] Even so, it would not prove that *Aph. as a whole* is a genuine work of Hippocrates, since it is clearly a composite treatise (see below, p. 180).

does not record this text of Diocles, despite his fondness for quoting earlier sources. Secondly and more importantly, we must ask what source of Diocles' own words could have been available to the scholiast other than the fragments to be found in such writers as Galen himself. The date of Stephanus, the most likely author, is most uncertain, but he has been thought to belong to the eleventh century A.D.,[1] that is, nine centuries after Galen and fourteen after Diocles, and the chances of his having access to otherwise unknown texts of Diocles must be thought remote. Moreover when we add that it seems to be a particular stylistic feature of this writer to make his points in the form of an exchange of questions and answers in which a doubt or difficulty concerning the Hippocratic view is first raised and then resolved or elucidated,[2] it must be thought more likely that this text is the result of the scholiast's embroidering Diocles' objection, rather than a genuine fragment of that writer.[3]

None of the evidences we have considered can be said to establish with a reasonable degree of probability, let alone with certainty, the authenticity of any treatise in the Hippocratic Corpus. Although many different attempts have been made to mount such arguments, none can offer convincing proof, and the very variety of the theses that different scholars have put forward testifies to the weakness of the evidence on which they have to depend. Nor can arguments for authenticity be reliably based on the later evidence, that is, from the Hellenistic period, when a collection or collections of medical treatises began to be the subject of commentaries by scholars working mainly in Alexandria. It is clear that a collection of medical treatises—indeed the core of our own Hippocratic Corpus—was already in existence *as a collection* in the early third century, when the first commentaries, glossaries, and scholarly editions were made.[4] Now precisely what association the earliest collection or collections had with the name of Hippocrates we cannot say for certain: but the evidence of the terms commented on by Bacchius about the middle of the third century shows that at that period a collection already existed that contained quite heterogeneous and disparate works.[5] But if this, the earliest collection we can attempt to reconstruct, already contained works that could not conceivably be by Hippocrates, since they could not all be by the same man, it follows that the presence of any particular treatise among those commented on cannot be used as sound,

[1] See Dietz I xix.

[2] Cf., e.g., Dietz II 279 n. 2, 282 n. 4, 304 n. 1.

[3] See Diels (*c*) 1144f. and Deichgräber 160 n. 2 (who also argues against authenticity on the grounds of hiatus) and contrast Littré I 321 ff., Bourgey 100 f.

[4] A list of the early commentators is given by Erotian, who is responsible for our first extant glossary dating from the first century A.D. He names Xenocritus of Cos (probably early third century) as the first grammarian to write a Hippocratic commentary. He was soon followed by Bacchius, who edited *Epid.* III (see Galen, *CMG* V 10, 2, 1 87 10 ff.), commented on a number of other works, and wrote a lexicon, many of his glosses being preserved by Erotian. But individual terms that appear in Hippocratic treatises had begun to be commented on and explained earlier still: see above, p. 177 n. 2 on Diocles, and Herophilus appears to have commented on terms from *Prog.* and *Aph.*, see Galen, XVIII A 186 14 ff. Kühn, and Erotian 10, 10 Nachmanson. Cf. Littré I 80 ff., Bourgey 27 f.

[5] Cf. Diller (*c*) 281. Some sixty of Bacchius' glosses are mentioned by Erotian, and although, where the term in question occurs in several Hippocratic texts, there is some uncertainty as to which of these Bacchius was commenting on, he appears to have known some twenty or more treatises. These include such works as *Morb.* I (which is generally thought to be Cnidian), *Liqu.*, *Loc. Hom.*, *Oss.*, and possibly also *Mul.* I and *de arte*, as well as treatises such as *Prog.*, *Art.*, *Epid.* I and III, and *Acut.*, which are among those that modern scholars have usually preferred to consider genuine.

let alone conclusive, evidence for Hippocrates being the author. From the time when a group of treatises came to be the subject of scholarly commentaries in Alexandria, it appears that a considerable variety of medical works already passed as 'Hippocratic' or at least belonged to that corpus: but this in turn means that the evidence of such collections and commentaries can hardly be used to establish the authenticity of any particular treatise or treatises.

II

Each of the main pieces of external evidence that have been used to support hypotheses concerning the genuine works of Hippocrates should, then, be described as at best inconclusive. It might, however, be thought that, weak as each item of evidence is on its own, jointly they would establish the authenticity of a group of treatises provided there were good grounds for holding that the Corpus contains a recognizable body of work that can be ascribed to the same writer. This takes us to our second problem, that of the interrelations of the treatises within the Corpus, which are at issue throughout what may be called the second stage of arguments for authenticity, where the list of works that may be considered genuine is extended by suggesting connections between them (see above, p. 171). Many detailed studies, analysing the similarities and differences in the terminology, contents, and methods of different groups of treatises, have been carried out in recent years. Thus, following Schleiermacher, Knutzen and Grensemann (*c*) have examined the relations between the surgical works, Kahlenberg those of the embryological treatises, and Lonie (*b*) and others those of *On Diseases* I and II, *On Affections*, and other works that have been held to be of 'Cnidian' origin. But it is one thing to point to similarities in terminology or doctrine between various treatises: it is, of course, quite another to establish that they were composed by the same man. It is with the criteria for identity of authorship that we are chiefly concerned here.

Some general points concerning the nature of the Hippocratic collection as a whole are fundamental. This differs from the Platonic and (though to a lesser extent) the Aristotelian Corpus in two main ways. First, with Plato and Aristotle we have a central body of work accepted as by the author in question which can, accordingly, be used as a yardstick when judging whether other works are also his: in the case of the Hippocratic collection the existence of such a body of work is, at best, problematic. Secondly (though here we may compare parts of the Aristotelian Corpus), many of the Hippocratic treatises do not form a clearly defined unity. Both points are important and need elaboration.

So long as it was generally believed that the major, or at least a substantial, proportion of the Hippocratic Corpus was by Hippocrates, it could be assumed that, other things being equal, a treatise was by him unless shown otherwise. But while the possibility that particular groups of treatises are by a single author remains open, it is agreed on all sides that the Corpus contains the work of a considerable number of hands. An analysis of, for example, the pathological and physiological doctrines in the Corpus immediately reveals their extraordinary variety (see below, pp. 183 f.). And if this does not prove different authorship in every case (since the same man may have held different views on the same problem at different stages in his career), that remains, nevertheless, in most cases, the most likely explanation. While the heterogeneity of the

Corpus is generally acknowledged, the full implications of this for the Hippocratic question are not always recognized. In the circumstances, the burden of proof lies on those who wish to assert the unity of authorship of any group of treatises.

Secondly, in many, indeed perhaps in most, cases we are not dealing with works that form a clearly defined unity. No one fails to recognize this in such instances as *Aphorisms*, *Coan Prognosis*, *Prorrhetic* I, *Nutriment*, *Dentition*, *Crises*, and *Critical Days*. But apart from those works that consist of collections of aphorisms, other treatises too comprise several more or less distinct parts. The treatises we know as *On the Nature of Man* and *On Regimen in Health* sometimes passed as a single work in ancient times, as we learn from Galen.[1] But not only does *On Regimen in Health* evidently deal with a different topic from those tackled in *On the Nature of Man*, but the latter treatise itself (as is commonly acknowledged) is not a unity. Chapters 1–8 form a coherent discussion of the fundamental constituents of man and their role in disease, but in the subsequent chapters (9–15) we have a series of disconnected discussions of quite separate subjects. *On the Nature of Man* provides a particularly clear-cut case.[2] But the unity of such other treatises as *Airs Waters Places*[3] and *On Ancient Medicine*[4] is also a matter of some doubt.

Where a treatise does not form a well-defined whole, the risks of interpolations, additions, and disruptions to the text are, of course, increased. In the case of such works as the *Epidemics*, for instance, particular case-histories would be easy to interpolate, as has been suspected with regard to some of those included at the end of *Epidemics* III.[5] Again, not only does the same material often figure in different treatises, but some treatises consist largely of excerpts from other works. As is well known, *Aphorisms* and *Coan Prognosis* not only have more than sixty aphorisms in common, but also contain dicta that appear in other treatises in substantially the same terms.[6] The treatise *Instruments of Reduction* consists very largely of passages, often abridged, from *Joints* and *Fractures*,[7] and the work known as *On the Nature of Bones* contains chapters that also appear in other treatises.[8]

Now the fact that a work is a composite one does not mean that its various

[1] *In Hipp. Nat. Hom.*, *CMG* V, 9, 1 57 4–21 (Galen, remarking on the unscrupulous practices of those who sold books to the Attalid and Ptolemaic kings, suggests that since both books are short, someone may have joined them together to make a more imposing article for sale). Cf. the ancient dispute as to whether *Art.* and *Fract.* form one work, Galen, *In Hipp. Art.*, XVIII A 300 ff. Kühn.

[2] We have another in *Acut.* and what is known as its 'Appendix', which have been studied by, for example, Blum, Regenbogen (*b*), Lonie (*a*), and Joly (*f*).

[3] That the treatise falls into two main parts (chs. 1–11, 12–24) has been generally recognized at least since Fredrich (32 n. 2) and Wilamowitz ((*a*) 16 ff.), though differing views continue to be taken on whether the parts are or are not by the same author: for unity of authorship see, e.g., Deichgräber 113 ff., Pohlenz (*b*) 3 ff., 31 ff., Heinimann 170 ff., against Edelstein (*a*) 57 ff., Diller (*a*) 89 ff. (but cf. (*b*) 65 ff.).

[4] It has, for example, been suggested that *VM* proper ends with ch. 19; see Jones (*c*) 91 f. and cf. Festugière xxx f.

[5] e.g. Jones (*a*) I 270 n. 1.

[6] e.g. *Aph.* contains passages identical with, or similar to, ones that appear in *Aer.*, *Epid.* II, IV, VI, *Hum.*, *Nat. Hom.*, *Liqu.*, *Morb.* I and II; *Coac.* contains passages that are identical with, or similar to, ones that appear in *Epid.* II, VI, *Morb.* I, III, *VC*, and *Prog.*

[7] The relations between *Fract.*, *Art.*, and *Mochl.* have been analysed by, for example, Littré I 248 ff., IV 328 ff., and Withington 84 ff.

[8] e.g. *Oss.* ch. 9 corresponds to *Nat. Hom.* ch. 11, *Oss.* ch. 10 to *Epid.* II 4 1.

parts are necessarily by different authors. Indeed in one notable case, *On the Nature of Man*, we have good grounds for believing that both chs. 1–8 and ch. 11, at least, are by the same man, namely Polybus.[1] On the other hand we cannot, in such cases, ignore the possibility that the different parts are the work of several hands. Thus with parts of *On the Nature of Bones* this can actually be shown by referring to the evidence of Aristotle, who ascribes passages that appear in different chapters to different authors.[2]

Moreover although several Hippocratic authors refer to themselves in the first person singular, some works may well have been the result of a collective effort. It is noteworthy that when the work called *Cnidian Sentences* (now lost) is referred to in *On Regimen in Acute Diseases* it is ascribed not to a single man, but to (several) *authors*, οἱ ξυγγράψαντες, ch. 1, II 225 1 Littré, I 109 2 Kühlewein. Indeed in this case a distinction is drawn between the original author*s* and the later revisers of the work, οἱ . . . ὕστερον ἐπιδιασκευάσαντες, 226 8 Littré, 110 3 Kühlewein, where again the plural shows that more than one man is involved. As the context indicates,[3] the aim of such later revisers was not to preserve or restore an original text, but to improve the contents of the treatise. We do not know how common either joint authorship or later revisions of medical treatises were, but these passages from *On Regimen in Acute Diseases* show that both sometimes occurred, and we may draw a lesson from this concerning some of the works in the Corpus. Many of the Hippocratic treatises are practical manuals, and those who used them in the fifth and fourth centuries were, no doubt, less concerned with such questions as the exact original text or the identity of the author or authors, than with the substance of their contents, the useful medical knowledge they conveyed. We may presume that many such treatises were subject to frequent minor additions, adjustments, and improvements. The conception of authorship we apply to a philosophical dialogue, to a lyric poem, or to a tragedy would be quite inappropriate to such works. We might think rather of the way in which some standard textbooks, including modern medical and scientific textbooks, are subject to revisions and improvements, though there is still this point of difference, that in their case, unlike the ancient medical treatises, the various contributors are identified by name.[4]

All these points are relevant to arguments that set out to establish that the

[1] That Polybus is the author of *Nat. Hom.* chs. 1–8 is likely from Anon. Lond. XIX 1 ff. (even though this section of the papyrus is in a very damaged state); that *Nat. Hom.* ch. 11 is also by him appears from Aristotle *H.A.* 512^{b}12 ff.

[2] At *HA* 511^{b}23 ff. Aristotle ascribes an account of the veins that also occurs at *Oss.* ch. 8 to Syennesis of Cyprus; at *HA* 512^{b} 12 ff. he ascribes other views on the same topic, which also occur at *Oss.* ch. 9, as well as at *Nat. Hom.* ch. 11, to Polybus.

[3] *Acut.* refers to the 'more medical' approach to the subject of the remedies to be used that was shown by the 'later revisers'.

[4] Thus the ninth edition (Oxford, 1952) of Samson Wright's textbook *Applied Physiology* (originally written in 1926) was ascribed to him 'with the collaboration' of M. Maizels and J. B. Jepson and described in the *Introduction* as follows: 'this edition of *Applied Physiology* is virtually a new book; more than half the text has been rewritten and the rest has been carefully revised to reflect the present state of knowledge.' After Samson Wright's death in 1956, the revisers of the tenth and subsequent editions were C. A. Keele and E. Neil (the latest edition being that of 1971). One may also compare the later revisions of Sir William Osler's *The Principles and Practice of Medicine*, first written in 1892, then revised for subsequent editions by Osler himself, then by Osler working with T. McCrae, then (after Osler's death in 1919) by McCrae, and finally by H. A. Christian (the last edition, the sixteenth, came out in 1947).

same author—be it Hippocrates or anyone else—composed a number of different treatises. In judging theses based on the correspondences in the ideas or style of different texts, we must first take into account the nature of the treatises in which the texts in question occur. Given that the collections of aphorisms are composite works, it would, for example, certainly be unjustified to infer from a similarity between a given aphorism and a text in another treatise that the treatise and the collection of aphorisms in question were by the same man.

That indeed is obvious: but we must go further. It has been a recurrent weakness in arguments for authenticity based on the interrelations of treatises that alternative explanations for the similarities between particular texts have been too easily discounted, or even totally ignored. Yet one such alternative explanation often lies to hand in the common background of ideas and methods shared by groups of medical writers. Thus no one would wish to argue from similarities between medical or biological doctrines that we find in Aristotle and those in a particular Hippocratic treatise that Aristotle wrote the latter.[1] Yet some arguments for the common authorship of different Hippocratic works have been based on evidence that is little stronger than this.

A second possibility is the deliberate borrowing by one writer of another's ideas. There are some particularly obvious examples of this where the medical writers imitate—without acknowledgement—the theories of the philosophers. Several passages in *On Regimen* I, for instance, follow well-attested fragments of Heraclitus, Parmenides, Empedocles, and Anaxagoras closely.[2] And we may presume that medical writers borrowed from medical sources even more freely. Even when we are dealing with two reasonably coherent and unified discussions, the existence of a closely similar, or even identical, passage in both does not necessarily mean that the same author has chosen to use the same passage in different contexts, and in assessing the likelihood of that being the case, it is clearly essential to take *all* the evidence into account, that is, points of difference as well as of similarity between the texts in question.

That a large number of medical writers was at work in the fifth and fourth centuries is not only obvious from the heterogeneity of the extant texts but also confirmed by the testimony of Anonymus Londinensis.[3] The onus of proof, we said, lies with those who would assert that a group of treatises is by a single author. It is difficult enough to establish this from correspondences of style and content where we have a recognizable body of work from the author concerned: it is far harder to do so when we are dealing with texts such as those that

[1] Compare *PA* 655^{a}32 ff. with *Aph.* VII 28 and *Coac.* 495 (cartilage and bone when cut off do not grow again), *PA* 657^{b}3 f. and *HA* 493^{a}29 f. with *Aph.* VI 19 and *Coac.* 494 (the prepuce when cut does not grow together), *PA* 670^{b}4 f. and *Morb.* IV 37 and 39 (the spleen draws excess fluids from the stomach).

[2] Compare, for example, *Vict.* I ch. 4, VI 474 12 ff. Littré (*οὕτω δὲ τούτων ἐχόντων, πουλλὰς καὶ παντοδαπὰς ἰδέας ἀποκρίνονται ἀπ' ἀλλήλων καὶ σπερμάτων καὶ ζῴων, οὐδὲν ὁμοίων ἀλλήλοισιν οὔτε τὴν ὄψιν οὔτε τὴν δύναμιν*) with Anaxagoras Fr. 4 (*τούτων δὲ οὕτως ἐχόντων χρὴ δοκεῖν ἐνεῖναι πολλά τε καὶ παντοῖα ἐν πᾶσι τοῖς συγκρινομένοις καὶ σπέρματα πάντων χρημάτων καὶ ἰδέας παντοίας ἔχοντα καὶ χροιὰς καὶ ἡδονάς*), and, later in the same ch., *Vict.* 474 16 ff. (*ἀπόλλυται μὲν οὖν οὐδὲν ἁπάντων χρημάτων, οὐδὲ γίνεται ὅ τι μὴ καὶ πρόσθεν ἦν· ξυμμισγόμενα δὲ καὶ διακρινόμενα ἀλλοιοῦται*) with Anaxagoras Fr. 17 (*οὐδὲν γὰρ χρῆμα γίνεται οὐδὲ ἀπόλλυται, ἀλλ' ἀπὸ ἐόντων χρημάτων συμμίσγεταί τε καὶ διακρίνεται*).

[3] It should be recalled that several of the medical writers referred to in Anon. Lond. were quite unknown before the discovery of that papyrus.

make up the Hippocratic collection. For such arguments to be acceptable, we must specify first that the treatises, or parts of treatises, in question should be fairly clearly defined unities, and secondly that the correspondences between them should be such as to render alternative explanations either in terms of a shared background of ideas, or in terms of a deliberate borrowing, unlikely. The strongest evidence is provided by explicit cross-references, where a writer says that he has discussed, or will discuss, a particular problem elsewhere. Yet even here caution is in order. As is well known, the chances of such references being later editorial insertions are often high; and in fact the number of such cross-references in the Corpus is small, the most notable being, perhaps, those in the embryological treatises.[1]

After these methodological remarks, we may turn to consider some particular points of comparison between treatises in the Corpus. A full investigation is far beyond the scope of this study. Some test cases may, however, illuminate aspects of our problem, even though definite conclusions are usually out of the question.

We may begin with two examples where the opportunities to make direct comparisons are most favourable, that is, between passages that deal with the same subject-matter. Two general problems that are repeatedly discussed from different points of view in different treatises are the constituents of the human body and the origin of diseases, and in both cases the variety of ideas expressed is great. Thus on the question of the constituents of the human body we find the following suggested as answers in different places:[2] fire (associated with hot and dry) and water (associated with cold and wet);[3] earth, air, 'the hot', and water;[4] blood, phlegm, yellow bile, and black bile (analysed in terms of hot, cold, dry, and wet);[5] blood, phlegm, bile, and water;[6] an indefinite number of opposed savours;[7] and air by itself.[8] Now although some of these theories, notably those in *On the Nature of Man* and *On Regimen* I, are quite complex, they represent different, indeed unless qualified, incompatible, answers to the question of what the fundamental constituents of man are.[9] Again we must allow that the same author may hold now one theory, now another, on the same topic at different times. Yet if these major differences of view on the elements of man do not *necessarily* reflect different authors, they nevertheless constitute prima-facie evidence for that conclusion. Nor should we be in any way surprised that such a wide variety of ideas is expressed on this subject when we also find this in the doctrines reported—and explicitly attributed to different writers—by Anonymus Londinensis.[10]

[1] e.g. *Genit.* ch. 3, VII 474 9 ff. Littré, an apparent reference to *Morb.* IV (though cf. Kahlenberg 252 ff. and Plamböck 106), and *Genit.* ch. 4, 476 15 f., a possible reference to *Mul.*

[2] Cf. the analysis in Schumacher (*a*) 194.

[3] *Vict.* I chs. 3 f., VI 472 12 ff., 474 8 ff. Littré.

[4] *Carn.* ch. 2, VIII 584 9 ff. Littré.

[5] *Nat. Hom.* chs. 3–7, e.g., VI 38 10 ff., 40 15 ff. Littré.

[6] *Genit.* ch. 3, VII 474 7 ff., and *Morb.* IV chs. 32 and 38, 542 6 ff., 556 7ff. Littré.

[7] *VM* ch. 14, *CMG* I, 1 45 26 ff.

[8] *Flat.* chs. 3 ff., *CMG* I, 1 92 21 ff., 93 18 ff., 94 1 ff.

[9] Besides advocating their own theories on this topic, some of the works mentioned in the preceding notes also criticize competing doctrines. Thus monistic theories based on air, fire, water, or earth, or one of the humours, are rejected in *Nat. Hom.* chs. 1 f., VI 32 3 ff. Littré, and theories based on hot, cold, dry, or wet in *VM* ch. 1, *CMG* I, 1 36 2 ff.

[10] e.g. the theories ascribed to Hippon (based on water, XI 22 ff.), Philolaus (the hot, XVIII 8 ff.), Polybus (hot and cold, XIX 1 ff.), Menecrates (blood and bile, breath and phlegm, the former pair hot, the

Precisely similar conclusions emerge from an examination of the general pathological theories proposed in different Hippocratic texts, where again the variety is considerable. First there are theories that relate directly to a view of the elements in the body. Thus in *On Breaths* we find the doctrine, worked out in great detail in the bulk of the treatise, that air is the cause of disease: indeed in ch. 2 we are told that 'of all diseases the manner is the same, but the place varies . . . All diseases have one form and cause' (*CMG* I, 1 92 13 ff.). Both *On Ancient Medicine* and *On the Nature of Man* hold that disease is due to an imbalance in the constituents of the body, but the application of that idea in each case reflects a quite different notion of what those constituents are.[1] Other theories invoke other factors, for example the humours (not always conceived as elemental), or diet, or external factors such as the changes in the seasons or the winds. To give just two examples, in *On the Sacred Disease* ch. 18 (VI 394 9 ff. Littré) it is stated that 'the disease called sacred comes from the same causes as the rest, from the things that enter and leave the body, from cold, sun, and the changing and never resting winds', and in *On Affections* ch. 1 (VI 208 7 ff. Littré) we find this: 'in men, all diseases are caused by bile and phlegm. Bile and phlegm give rise to diseases when they become too dry or too wet or too hot or too cold in the body.'[2] Now some treatises put forward several different suggestions concerning possible causes of diseases, and of course statements concerning the origins of *some* diseases may without contradiction be combined with other such statements. But as our quotations illustrate, we also find statements claiming to give the origins of *all* diseases that constitute *competing* theories on that subject. As before, these *may*, to be sure, have been put forward by the same man at different stages in his career. But in most cases they more probably represent the work of different authors.[3]

The frequent contrasts and occasional incompatibility between the various general physiological and pathological doctrines in the Hippocratic Corpus are well known, but several of the treatises that figure prominently in discussions of the 'genuine works of Hippocrates' put forward no such theories. Pride of place, in such discussions, has usually been given to such works as *Prognosis*, Books I and III of the *Epidemics*, some of the surgical treatises (especially *Joints* and *Fractures*), and, though less often, *Airs Waters Places*, *On Ancient Medicine*, and *On Regimen in Acute Diseases*. These treatises are concerned with a wide range of subjects, and direct points of comparison between texts dealing with the same topic are correspondingly harder to find. On a few occasions, however, such comparisons are possible and we may take three examples to illustrate some of the difficulties that face theses concerning the common authorship of most or all of these works.

First there is some evidence relating to doctrines of critical days. Some idea

latter cold, XIX 18 ff.), Petron (hot and cold, XX 1 ff.), and Philistion (fire, air, water, and earth, XX 25 ff.). Though there are grounds for supposing that Polybus wrote *Nat. Hom.* chs. 1–8, it should be stressed that in general the fact that the same theory appears in an account of a particular theorist in Anon. Lond. and in a Hippocratic treatise does not *prove* that the former wrote the latter.

[1] *VM* ch. 14, *CMG* I, 1 46 1 ff., *Nat. Hom.* ch. 4, VI 40 4 ff. Littré.

[2] Cf. also *Morb.* I ch. 2, VI 142 13 ff.

[3] Another area where we can make direct comparisons between texts in different treatises is anatomy. Thus Harris has recently analysed the (widely differing) accounts of the system of φλέβες that occur in texts in *Epid.* II 4 1, *Nat. Hom.* ch. 11, *Loc. Hom.* ch. 3, *Morb. Sacr.* chs. 3 f. (Littré), *Anat.*, *Carn.* (especially chs. 5 f.), *Cord.*, *Alim.*, and *Oss.* especially.

that the courses of diseases, particularly 'acute' diseases, are governed by set periods is common ground to a large number of Hippocratic works. Indeed some such idea underlies the usual Greek classification of fevers into tertians, semi-tertians, quartans, quintans, and so on.[1] But more elaborate theories are sometimes proposed concerning the periods of acute diseases. It has often been remarked that both *Prognostic* and *Epidemics* I and III share an interest in such periodicities,[2] and it has generally been assumed[3] that this tells for the conclusion, favoured by many scholars, that both works are by the same man, often identified as Hippocrates himself. Yet the actual theories put forward in *Prognostic* ch. 20 and *Epidemics* I ch. 12, at least, differ more fundamentally than has sometimes been appreciated. Thus in *Prognostic* ch. 20 (II 168 6 ff. Littré, I 100 8 ff. Kühlewein) the writer notes, cautiously, both that the periods of diseases cannot be calculated exactly in whole days any more than the lengths of the solar year or of the lunar month can be, and that it is difficult to forecast the crisis of a disease at the outset when the crisis comes after a protracted interval. But this does not prevent him from putting forward an elaborate doctrine in which he suggests the following series of critical days, the 4th, 7th, 11th, 14th, 17th, 20th, 34th, 40th, and 60th.[4]

Now at the end of the third 'constitution' in *Epidemics* I (chs. 11 f.) there are some general remarks about the modes of fevers, including some specific suggestions about their periodicities in ch. 12. Yet the theory elaborated there is quite different from that in *Prognostic* ch. 20 in that it is based on a distinction between *odd* and *even* days.[5] The chapter begins (II 678 5 ff. Littré = ch. 26, I 201 18 ff. Kühlewein): 'when the exacerbations are on even days, the crises are on even days. But when the exacerbations are on odd days, the crises are on odd days', and the writer proposes two series of critical days, one of even days (4th, 6th, 8th, 10th, 14th, 20th, 24th, 30th, 40th, 60th, 80th, and 120th)[6] and the other of odd days (3rd, 5th, 7th, 9th, 11th, 17th, 21st, 27th, and 31st).[7] Although one cannot rule out the possibility that the same physician held each of these two contrasting theories at different times, the differences between the two doctrines are quite fundamental and once again they constitute prima-facie evidence that these two chapters (at least) are not from the same hand.[8]

[1] The classification was a comprehensive one when fevers that could not be assigned to a definite period were called 'irregular', πλάνητες.

[2] As has often been noted, the interest in critical periods provides one reason for the *daily* recording of changes in a patient's condition in the case-histories in the *Epidemics*.

[3] See, e.g., Wellmann 19, Deichgräber 20 ff., but contrast Alexanderson 19–23.

[4] Other critical days are to be added between the 20th and 34th, the 34th and 40th, and the 40th and 60th (viz., probably, 24th, 27th, 31st, 37th, 44th, 47th, 51st, 54th, and 57th). The writer says that both up to the 20th day and thereafter the periods are obtained by adding four days at a time (that is, every three days by our way of counting), but this is presumably meant only as a rough guide, since the periods concerned are not all divisible by three.

[5] Cf. also *Morb.* IV ch. 46, VII 572 1 ff., and *Acut.* ch. 4, II 250 11 ff. Littré. Odd and even (which figure in the Table of Opposites ascribed to certain Pythagoreans by Aristotle, *Metaphysics* 986a22 ff.) also occur in other contexts in medical theories: e.g. *Hum.* ch. 6 (V 486 4 ff. Littré) says that evacuations on the odd days should be upwards, on the even days downwards.

[6] Kühlewein. Littré omits the 24th and has 100th for 120th.

[7] The writer envisages the possibility of crises occurring on other days, but remarks that, if this happens, there will be relapses. Pains or exacerbations regularly occurring on even days are noted, for example, in case 1 of *Epid.* I, cases 3, 10, and 12 in the second set in *Epid.* III, and cf. *Epid.* I ch. 9 (II 652 4 ff. Littré) and *Epid.* III ch. 6 (III 82 1 ff.).

[8] The relation between *Epid.* I ch. 11 f. and

Other briefer passages in other works also bear on the same general topic, and one in *Airs Waters Places* ch. 11 may be mentioned in particular. There the writer says that the physician should guard against the most violent changes in the seasons and against the risings of the stars, 'especially the Dog Star, then Arcturus, and also the setting of the Pleiads. For it is especially at these times that diseases have their crises' (*CMG* I, 1 67 8 ff.). While it would clearly be wrong to put too much weight on a single brief passage, we may observe that the view it implies is in one important respect quite different from those expressed in the texts of *Prognostic* and *Epidemics* I that we have considered. Whereas the notion of critical days found in both those texts is that fevers follow periods of crises and exacerbations that are determined *by the type of fever itself*, in *Airs Waters Places* ch. 11 the idea is that the crisis is influenced by a purely *external* factor, namely the changes in the seasons and the risings and settings of stars.

My second example concerns theories of prognosis. Here again there are, as is well known, many similarities between *Prognostic* and *Epidemics* I and III. Thus *Prognostic* chs. 11–14 sets out general rules for interpreting the signs to be found in a patient's stools, urine, vomit, and sputum, and there are repeated references to these in the case-histories in *Epidemics* I and III. There are, to be sure, also distinctions between the two works. Thus whereas the indications provided by the appearance of a patient's face are given great prominence at the beginning of *Prognostic* (ch. 2), very little reference is made to such indications in either the individual case-histories, or the general constitutions, of *Epidemics* I and III.[1] But in general it is clear that there is a great deal of common ground on the question of what signs the doctor should look for between the theory of *Prognostic* and the practice (and also in some cases the theory)[2] of *Epidemics* I and III. Yet *Airs Waters Places* also advocates the practice of prognosis and the instructions it gives about what a doctor should attend to take a very different form. Chapters 1–11 of that treatise deal with such external factors as the positions of cities in respect of the winds, the differences in the waters used, and the changes in the seasons. Now an interest in these external factors is not by itself in any way incompatible with an appreciation of the importance of the information to be gained from the indications in an individual patient's stools, urine, and so on. Yet not only does *Airs Waters Places* not mention those factors in prognosis, but ch. 2 (at least) appears to leave no room for them at all. There we are told that the physician 'knowing the changes of the seasons and the risings and settings of the stars . . . will know beforehand how the year will turn out. Carrying out his inquiry thus and knowing the times beforehand, a man will have full knowledge about each case[3] and will best succeed in secur-

the rest of the work is problematic. The observations of crises and relapses in ch. 9 (which in some cases, e.g. Philiscus, correspond to individual case-histories in the set that follows—though there are also discrepancies, e.g. Silenus) do not tally with the theory based on the distinction between odd and even days in ch. 12. Yet many of the generalizations in ch. 9 (e.g. II 662 3 ff. Littré) do not correspond with *Prog.* ch. 20 any more than they do with *Epid.* I ch. 12. In fact we may have not two, but three distinct theories of critical periodicities in these works, to which a fourth, less elaborate, doctrine can be added from *Aph.* IV 36 (cf. also II 24).

[1] Conversely, such signs as nausea, loss of appetite, coma, and epistaxis are all given greater prominence in *Epid.* I and III than they are in *Prog.*, where they are only occasionally mentioned (e.g. epistaxis in chs. 7 and 21, loss of appetite twice in ch. 17).

[2] e.g. *Epid.* I ch. 10, II 668 14 ff. Littré, which sets out what the doctor should look for.

[3] περὶ ἑκάστου at 57 6 presumably refers to the individual patient or his disease, rather

ing health . . . For men's κοιλίαι change along with the seasons.'[1] The contrast between this statement and the detailed account of what the physician should consider in *Prognostic* is striking,[2] and we have what amounts to two quite different theories of prognosis in the main parts of these works.

The fact that the constitutions in *Epidemics* I and III begin by referring to seasonal factors provides a further point of comparison with *Airs Waters Places* ch. 10, and again the differences both in general approach and in detail are marked. The constitutions in the *Epidemics* describe the year under consideration season by season, noting whether each season was 'southerly' or 'northerly', wet or dry, and so on, and whether there were marked changes within a particular season, but no attempt is made to set up general theories covering how the occurrence of particular diseases might be deduced from the weather. Moreover the great variety of diseases, and the different reactions of different individuals to the same disease, are frequently remarked.[3] In *Airs Waters Places* ch. 10, on the other hand, not only is the description of the seasons more schematic,[4] but also the writer attempts an aetiology of diseases. Although differences between the sexes, the old and young, and the phlegmatic and bilious are all incorporated into his over-all schema, less attention is paid than in the *Epidemics* to possible variations between individuals *within* the categories recognized. Indeed the writer presents a number of dogmatic theories concerning why (as he believes) particular changes in the seasons produce particular diseases, asserting, for example, that if the seasons have such and such a character, then such and such diseases follow of *necessity*.[5]

My third and final example concerns dietetics, where a detailed comparison is possible between two treatises especially, *On Regimen in Acute Diseases* and *On Ancient Medicine*. The similarities between *On Ancient Medicine* ch. 10 and *On Regimen in Acute Diseases* ch. 9 have often been noted. Both texts recommend studying the effects of bad diet on the sick by referring to its effects on healthy men. Both consider what happens to a man who changes his usual habits, either by taking a midday meal when he is not used to one, or by missing it when he is, and the detailed descriptions of both cases are similar not only in doctrine but also in terminology.[6] These correspondences are such as to leave little doubt that *either On Ancient Medicine* ch. 10 is copying *On Regimen in Acute Diseases* ch. 9, *or* vice versa, *or* both are following a common source. But if that much may be agreed, the question of authorship is still an open one, and against those who would conclude that the two works as a whole are by the same man there are strong counter-arguments.

than to the circumstances of the changes in the seasons.

[1] *CMG* I, 1 57 2–10 Heiberg. In the last sentence Jones reads καὶ αἱ νοῦσοι after ὧρῃσι, following Kühlewein, who, however, deleted καὶ αἱ κοιλίαι.

[2] This remains true, even though (as ch. 2 shows) *Prog.* is chiefly concerned with acute diseases.

[3] See, e.g., *Epid.* I ch. 3, II 612 3 ff. Littré.

[4] The writer evidently correlates southerly and rainy, northerly and dry, and appears not to allow cross-correlations (southerly and dry, northerly and wet): contrast, e.g., *Epid.* I ch. 1, II 598 7 ff.

[5] Cf. the use of ἀνάγκη at *CMG* I, 1 65 5, and cf. 65 11 and 66 14.

[6] Compare especially *VM* ch. 10, *CMG* I, 1 42 11 f., with *Acut.* ch. 9 II 280 8 f. Littré (= ch. 28, I 122 16 f. Kühlewein); *VM* 42 22–5 with *Acut.* 282 10–284 3 Littré (= 123 6 ff. Kühlewein); and *VM* 42 27–43 7 with *Acut.* 288 3–290 4 Littré (= ch. 30, 124 3 ff. Kühlewein). Other correspondences between the two works are also noted by, for example, Littré I 314 ff. and Festugière 41, though contrast Lonie (*a*) 60 f.

(1) Thus in ch. 20[1] *On Ancient Medicine* discusses the kind of knowledge that the physician should have concerning the effects of foods and drinks and he takes as an example (*CMG* I, 1 52 1 ff.): 'undiluted wine, drunk in large quantity, produces a certain effect on a man.' Although the text of the next sentence is corrupt, it is clear from what follows that the writer considers wine to be an instance where the effects are clearly known. But with this one may contrast two texts in *On Regimen in Acute Diseases*. Chapter 10 Littré (ch. 37 Kühlewein) notes briefly that a change from white to red wine (or vice versa) or one from sweet to vinous wine (or vice versa) may produce many alterations in the body, and in ch. 14 Littré (chs. 50–2 Kühlewein) the writer gives a detailed account of the different effects produced by four main types of wine and uses this analysis as the basis of equally detailed recommendations about how each of them should be used in treatment. Evidently in *On Regimen in Acute Diseases* the differences between different types of wine are thought to be of great importance: yet the generalization in *On Ancient Medicine* ch. 10 not only does not mention these distinctions, but in treating wine as a *simple* case appears to leave no room for them.

(2) In *On Ancient Medicine* chs. 5–6 the writer argues that medicine proper developed from dietetics and he suggests that the early discoverers of medicine learned how to modify diet by observing the beneficial effects of giving patients less food. Thus they gave gruel (*ῥυφήματα*) to those patients who were able to assimilate it, and gave only liquids to those who could not take even gruel. He clearly assumes that the treatment of these early dieticians in reducing the diet of the sick was along the right lines, and he concludes this part of his discussion by saying: 'all the causes of the pain can be reduced to the same thing: it is the strongest foods that harm a man most and most obviously, both the healthy man and the sick' (*CMG* I, 1 40 9 ff.). These confident pronouncements in *On Ancient Medicine* are in marked contrast to the cautious and critical position in *On Regimen in Acute Diseases*. So far as the diet for acute diseases goes, that writer castigates both the assumptions of laymen and the mistakes of physicians who disagree violently among themselves and whose treatments generally cause more harm than good.[2] He devotes several pages (chs. 4–6 Littré, chs. 10–20, 24–5 Kühlewein) to detailed instructions about the giving of gruel (*ῥύφημα*) or *πτισάνη* (barley-gruel), noting the difficulties of working out the right treatment and the dangers that accompany mistakes, and being particularly critical of the wrong use of a reduced diet.[3]

The relations between these other passages in the two treatises have been mentioned both for their bearing on the specific problem of the correct interpretation of the obviously close correspondences between *On Ancient Medicine* ch. 10 and *On Regimen in Acute Diseases* ch. 9, and as an illustration of our general problem. Although a natural view of those correspondences, taken on their own, might be that the treatises in question were composed by the same man, that is, as we remarked, by no means the only possible explanation, and the greater the disparities between other sections of these works, the less likely it becomes that we are dealing with the same author (even allowing for the possibility that the

[1] See above, p. 180 n. 4, on the relation between this chapter and the rest of *VM*.

[2] e.g. *Acut.* chs. 2 and 3 (II 234 2 ff., 238 8 ff., Littré = chs. 6–8, I 111 12 ff., 112 6 ff., 19 ff., Kühlewein).

[3] e.g. *Acut.* ch. 4, 246 4 ff., Littré (ch. 11, 114 6 ff. Kühlewein); cf. also ch. 7, 276 9 ff., Littré (ch. 25, 121 15 ff. Kühlewein); and ch. 11, 308 2 ff., Littré (chs. 40 f., 129 3 ff., 13 ff. Kühlewein).

same author changed his mind on certain points) rather than with two (or more). The disparities, in this case, are certainly not such as to *demonstrate* different authorship: on the other hand they provide good reason for hesitating before we conclude from the similarities between the two treatises that the same author was responsible for both.

We may now attempt to summarize the conclusions of our study. First an examination of the external evidence shows that no convincing case can be mounted, on its basis, for the authenticity of any particular treatise. Secondly, theses concerning the interrelations of treatises within the Corpus face greater problems than is sometimes allowed. Arguments for identical authorship that depend on correspondences of style and content are difficult enough in the most favourable circumstances, where we have a set of demonstrably authentic works as a standard of comparison. Such arguments are far more hazardous when we are dealing with a group of texts such as the Hippocratic collection. (1) With the exception of some rhetorical ἐπιδείξεις, they are not polished literary works. (2) In many cases, the treatises do not form clearly defined unities, but are composite works, compilations consisting of several more or less disparate parts. (3) Additions, interpolations, and borrowings whether from other medical, or from non-medical (e.g. philosophical) sources can be established on many occasions and may be suspected on many others. (4) There is some evidence of joint authorship and of later revisions of medical works in the fifth and fourth centuries, and although we do not know how common either was, it would clearly be wrong to attribute our own concerns for establishing an original text and preserving it intact to those who used and transmitted practical medical manuals in this period.[1]

So far as the Hippocratic question itself goes, the radical scepticism of the Wilamowitz of 1901 and of Edelstein does not seem misplaced.[2] Although the precise origin of the collection or collections that came to form our Corpus is highly problematic,[3] the evidence for the earliest such collections clearly points to the conclusion that they already contained quite disparate and heterogeneous works. It may be that some of Hippocrates' work has come down to us in the Corpus, but we cannot now prove this, nor determine which his work is; moreover our best witness for his medical theories, Meno, reports them in terms that do not tally with anything we find in the Corpus. But if little progress can be hoped for on the subject of the 'genuine works of Hippocrates', the detailed analysis of the interrelations of treatises in the Corpus is an area where—despite the many fruitful studies undertaken in recent years—much work still remains to be done. Here scholars will, no doubt, continue to disagree in their precise evaluation of the affinities and differences between

[1] Even Galen, many centuries later, is more concerned with the question of the truth of what is contained in Hippocrates' works than with the question of their authenticity (see, e.g., *In Hipp. Nat. Hom.* I ch. 42, *CMG* V 9, 1 55 26 ff.)—and Galen's interests, and ability, in philology and textual criticism were, comparatively speaking, highly developed.

[2] That is not to say, of course, that the sceptics' arguments are all sound. In particular Edelstein was clearly wrong to insist (though in (*c*) 243 n. 25 he cited Deichgräber 163 on his side on this point) that *all* of Hippocrates' known teaching should be found in any particular treatise claimed as genuine.

[3] See, for example, Littré I 44 ff.. Jones (*a*) I xxix ff., Edelstein (*a*) 152 ff., Bourgey 27 ff., Diller (*c*) 277 ff.

particular texts. But I hope to have given grounds for insisting on caution as regards claims for identical authorship and to have illustrated that even in some apparently promising examples (such as parts of *Prognostic* and of *Epidemics* I and III) the verdict should remain open.

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