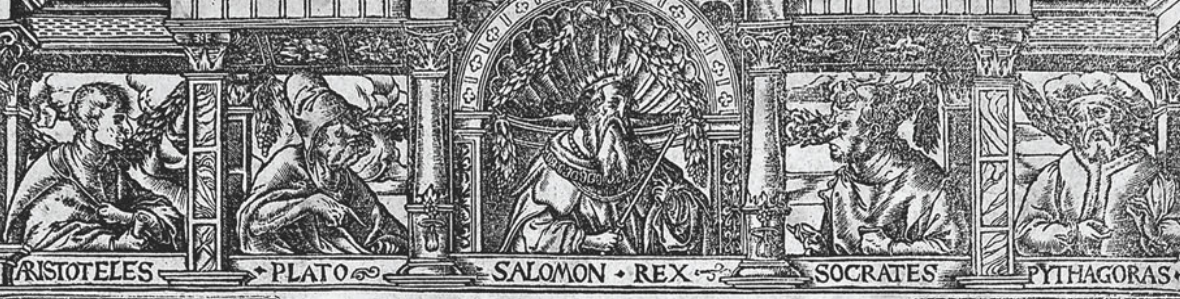
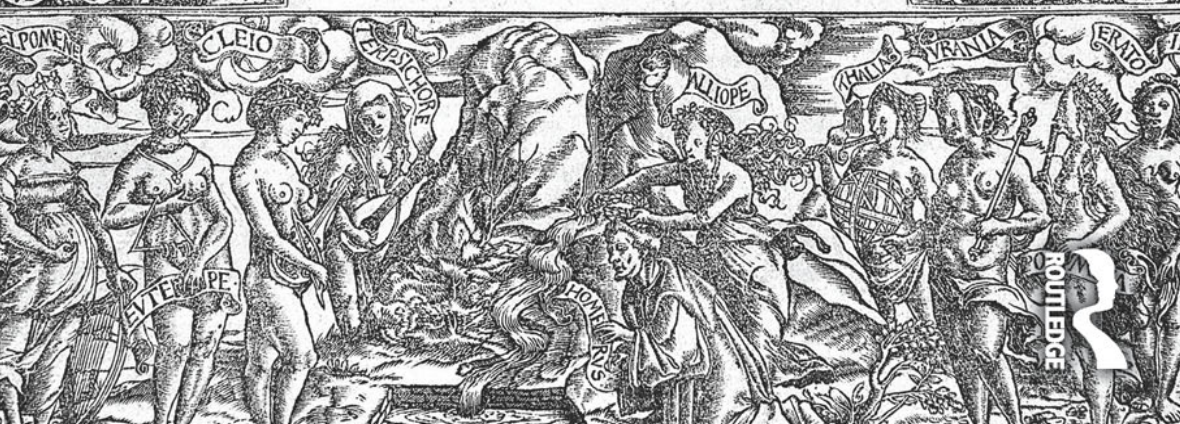


The 'Hippocratic' *Corpus*

Content and Context

Elizabeth M. Craik



ROUTLEDGE

The ‘Hippocratic’ Corpus

The ‘Hippocratic’ Corpus comprises some 60 medical works of varying length, style and content. Collectively, this is the largest surviving body of early Greek prose. As such, it is an invaluable resource for scholars and students not only of ancient medicine but also of Greek life in general.

Hippocrates lived in the age of Socrates and most of the treatises seem to originate in the classical period. There is, however, no consensus on Hippocratic attribution. *The ‘Hippocratic’ Corpus* examines the works individually under the broad headings:

- content – each work is summarised for the reader
- comment – the substance and style of each work are discussed
- context – context is provided in relation not just to the corpus as a whole but also to the work’s wider relevance.

Whereas the scholar or student approaching, say, Euripides or Herodotus has a wealth of books available to provide introduction and orientation, no such study has existed for the ‘Hippocratic’ Corpus. As *The ‘Hippocratic’ Corpus* has a substantial introduction, and each work is summarised for the reader, it facilitates the use and exploration of an important body of evidence by all interested in Greek medicine and society.

Elizabeth M. Craik is Honorary Professor at the University of St Andrews and Visiting Professor at the University of Newcastle, UK.

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The 'Hippocratic' Corpus

Content and Context

Elizabeth M. Craik

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Contents

Preface and acknowledgments

Birth, death, disease and injury are fundamental human experiences. Those who possess – or seem to possess, or claim to possess – skill in addressing them play an important part in the life of all people in all ages. This universal truth informs the historical, literary, philosophical, popular and religious thought of the ancient Greeks, as of other peoples, and incidental medical content is implicit in many Greek texts of many genres and of all periods. More significantly, the texts of the 'Hippocratic' Corpus, the subject of this book, contain explicit and valuable evidence for all aspects of medical theory and practice in the fifth and fourth centuries BC, a key period in the history of western medicine. The use of inverted commas ('Hippocratic') is intended to indicate that none of these very numerous and highly diverse texts can be definitely associated with the historical Hippocrates, though he did live in the classical period when most of them were written.

The Introduction considers the development of Greek medicine and addresses some preliminary questions of methodology. The core of the book is dedicated to a comprehensive overview: every work in the Corpus (here treated as an assemblage of fifty-one texts) is considered individually, with brief textual bibliography, résumé of content, comment on salient features in thought and presentation, discussion of context both in relation to the Corpus and beyond its confines, and, finally, a suggested date. To chart the entire collection in this way is a novel undertaking, and to focus on the detail of each text both separately and in context is new. This approach highlights both the richness of the component parts in the collection and the complex problems of intertextuality it presents. It is hoped that the policy of treating all texts alike will not disappoint readers looking primarily for insights on *The Oath* and other famous pieces. The aim is rather to introduce and illumine less familiar corners.

The book is aimed primarily at readers who know some Greek but are not familiar with Greek medicine. Greek quotations are translated and important terms are explained in a glossary. The book can be used as a general introduction to Greek medical writing, or as an approach to a particular Hippocratic work or set of works, or as a means to address a particular topic; it can be read from start to finish or dipped into at will. Used as a reference work, it will serve as a guide through the maze of a formidably large and varied corpus. In addition, it will

serve as an accessible companion to early Greek medicine for the many potential readers who have a non-specialist interest in the subject: the collection contains information not only on fundamental medical matters, such as ancient anatomy, physiology, pathology, gynaecology and therapeutics, but also on many wider topics, including a range of environmental, ethical and social issues. There is a complex two-way process of interaction between medical writers and writers in many other genres, most clearly philosophy but also history, oratory and drama, both tragic and comic. At the same time, linguistic and stylistic preferences illustrate amalgamation of simple oral traditions, typically marked by rhythmic elements, with self-conscious literary expression, frequently marked by rhetorical affectation. In short, few aspects of ancient life, literature and language are not illumined by study of this important body of early Greek prose.

I have spent three years on the writing and I fear that this has been too short a time. But I plead in the words of the first Hippocratic aphorism that 'Life is short . . .' Every ancient medical work, however rudimentary, repays careful scrutiny and I have been unable to devote equally careful scrutiny to all in the Corpus. I apologise in advance for any resulting unevenness and deficiencies. In the course of these years, I have incurred many obligations. I am particularly indebted to Vivian Nutton, who has been unstintingly supportive throughout and who has read a complete penultimate draft, making many perceptive comments and suggesting various improvements in presentation. Philip van der Eijk, despite hoping that I would write a rather different book, has been generous with advice and comments, especially on the Introduction. Jacques Jouanna has contributed much both in his writings and in personal communications. I am grateful to scholars who have read parts of the book in draft and given me the benefit of specialist input from their particular areas of expertise: Chloe Balla, Hynek Bartoš, Helen King, Oliver Overwien, Pilar Pérez Cañizares and Thomas Rütten. On medical, especially anatomical, matters I have relied on advice from Susan Whiten. I have profited from discussion with, and bibliographical information from, many colleagues; I hope that, though not individually named, they will accept my thanks.

It is a pleasure to acknowledge the benefits of my honorary attachments to the University of St Andrews and to the University of Newcastle upon Tyne. I have been sustained in the inevitably lonely business of writing by friendships made in the Hippocratic community, an exceptionally warm and positive scholarly environment. Above all, I have been very fortunate in my family. I thank them, especially Alex, for tolerant and uncomplaining acceptance of my preoccupation, verging at times on obsession, with the writings of a multitude of long dead doctors, all somehow associated with a figurehead who has remained strangely nebulous and elusive despite his monumental repute: 'Hippocrates'.

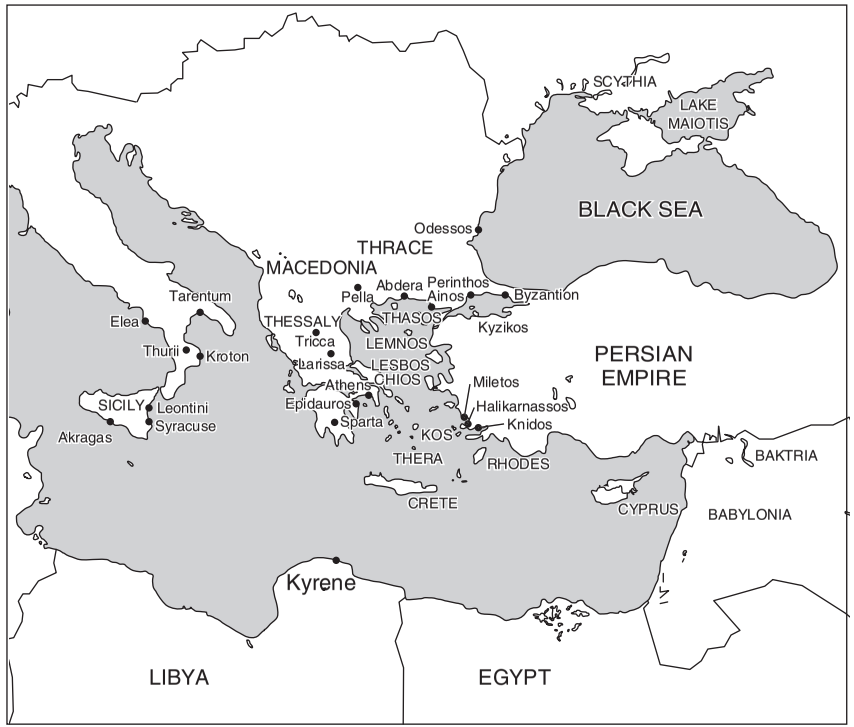
List of abbreviations

Anon. Lond.	Anonymus Londinensis
BMD	*Black's Medical Dictionary*
CIH	papers from the triennial Colloques Internationaux Hippocratiques
CIH I	Strasbourg, 1972 – L. Bourgey and J. Jouanna (eds), *La Collection Hippocratique et son rôle dans l'histoire de la médecine* (Leiden, 1975)
CIH II	Mons, 1975 – R. Joly (ed.), *Corpus Hippocraticum* (Mons, 1977)
CIH III	Paris, 1978 – M. D. Grmek and F. Robert (eds), *Hippocratica* (Paris, 1980)
CIH IV	Lausanne, 1981 – F. Lasserre and Ph. Mudry (eds), *Formes de pensées dans la Collection Hippocratique* (Geneva, 1983)
CIH V	Berlin, 1984 – G. Baader and R. Winau (eds), *Die hippokratischen Epidemien: Theorie, Praxis, Tradition* (= *Sudhoffs Archiv*, Beiheft 27, Stuttgart, 1989)
CIH VI	Quebec, 1987 – P. Potter, G. Maloney and J. Desautels (eds), *La Maladie et les malades dans la Collection Hippocratique* (Quebec, 1990)
CIH VII	Madrid, 1990 – J. A. López-Ferez (ed.), *Tratados Hipocráticos* (Madrid, 1992)
CIH VIII	Erlangen-Nurnberg, 1993 – Ph. van der Eijk, H. F. J. Horstmanshoff and P. H. Schrijvers (eds), *Ancient Medicine in its Socio-Cultural Context* (Amsterdam and Atlanta, 1995)
CIH IX	Pisa, 1996 – I. Garofalo, A. Lami, D. Manetti and A. Roselli (eds), *Aspetti della Terapia nel Corpus Hippocraticum* (Florence, 1999)
CIH X	Nice, 1999 – A. Thivel and A. Zucker (eds), *Le normal et le pathologique dans la Collection Hippocratique* (Nice, 2002)
CIH XI	Newcastle, 2002 – P. van der Eijk (ed.), *Hippocrates in Context* (Leiden, 2005)
CIH XII	Leiden, 2005 – M. Horstmanshoff (ed.), *Hippocrates and Medical Education* (Leiden, 2010)

CIH XIII	Austin, Texas, 2008 – forthcoming
CIH XIV	Paris, 2012 – forthcoming
CMG	*Corpus Medicorum Graecorum*
CUF	*Collection des Universités de France* (Budé editions)
DGP	J. D. Denniston, *The Greek Particles*, 2 ed. (Oxford, 1954)
DK	H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker* (Berlin and Zurich, 1964)
K.	C. G. Kühn (ed.), *Claudii Galeni Opera Omnia* (Leipzig, 1821–1830) References are given in square brackets to volume and page of Kühn's edition
L.	E. Littré (ed.), *Oeuvres complètes d'Hippocrate* (Paris, 1839–1861) References are given in square brackets to volume and page of Littré's edition
LSJ	H. G. Liddell, R. Scott and H. S. Jones, *Greek-English Lexicon*

References to ancient authors follow the conventions set out in LSJ

The ‘Hippocratic’ world



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Introduction

I Origin and development of Greek medicine

1. Aspects of the art of medicine

> 'Cheiron the Centaur, son of Kronos, was first to practise surgery, with the use of plants, and Apollo was first to carry out oracular medicine, and in the third place Asklepios son of Apollo discovered medicine of the sickbed.'[1]

To name an inventor for human activities and achievements, and especially for different arts and crafts (τέχναι), was a common pursuit in ancient intellectual debate. Here Hyginus, a near contemporary of Galen (second century AD), presents a succinct and arresting view of successive innovations in medicine. In giving a picturesque mythical shape to developments in medical practice, it over-simplifies and distorts the complexities of the tradition, yet in essence the account can be interpreted if not as a plausible outline of phases in early Greek medical history then surely as an accurate statement of continuing aspects in Greek medical practice. Cheiron's twin activities, surgical and herbal, reflect the two main types of therapy long practised by physicians. The oracular or prophetic medicine of Apollo corresponds to public practice at shrines where cures were sought and where the element of prognosis, so important to medical prestige, was long allied with divination. And the medicine of the sickbed, an invention attributed to Asklepios, is evidently the more private and personal treatment of illnesses in the home.

The narrative begins, as most Greek narratives do, with Homer. In Homeric epic the centaur Cheiron, whose very name is etymologically connected with working by hand (χεῖρ), was a culture-hero and educator in various crafts, in a quasi-paternal relationship with his numerous pupils. In medicine these included Asklepios, who passed on his knowledge to his sons, physicians to the Greek army at Troy (Hom. *Il*. 4. 218–219).[2] The family of Asklepios came from kingdoms in the region later known as Thessaly (Hom. *Il*. 2. 729–33) and King Eurypylos of Kos also had his origins there. Thessaly (where Hippocrates died) and Kos (his birthplace) were regions of enduring importance in the history of

Greek medicine. Greek medicine, as presented in the Homeric epics, already displays some of its most fundamental and enduring characteristics: it is connected with Asklepios, is connected with Thessaly, and is the preserve of families.

Further, the origins of Greek anatomy and physiology can be seen in the *Iliad*, where an extensive knowledge of the effects of battle wounds on the form and function of different bodily parts is evident. Homer's medical and, especially, anatomical knowledge was celebrated already in antiquity: Galen frequently cites epic verse in his Hippocratic commentaries and may himself have written a treatise on the subject of medicine in Homer. This knowledge is evident in descriptions of war wounds; they show awareness of the location of vital organs, such as the liver, and of the course of various vessels in the body. Greek anatomical terminology is rooted in epic and relatively few terms are invented later (though first occurrence known to us may not always be first actual invention). In the ensuing literary tradition, notably in tragedy, an easy familiarity with terminology apparently 'technical' is drawn from the enduring model of epic verse. In the war situation of the *Iliad*, as indicated in Hyginus' words, the quintessential activities of the doctor and of chieftains attending their wounded comrades are surgical and herbal: 'to cut out arrows and to apply soothing *pharmaka*' (Hom. *Il*. 11. 514–515; cf. 4. 218–219, 11. 842–848).

Hyginus' scheme relates to the war conditions of the *Iliad* rather than the peaceful conditions of the *Odyssey*, where doctors are described as workers in the community (*demioergoi*) with a social importance and personal mobility similar to that of seers and singers (Hom. *Od*. 17. 383–386). But here too the Homeric description prefigures later conditions and remains apt to the doctors – and poets – of the classical period. A significant aspect of Greek intellectual life is that writers and thinkers depended to a large extent on the patronage of powerful people in affluent localities and so were subject to widespread mobility. Even the tragic dramatists, after success in democratic Athens, presented plays at distant foreign courts, Aeschylus in Sicily and Euripides in Macedon. Pindar, the prestigious lyric poet from Thebes, composed victory odes to order for patrons in such far-flung regions as Thessaly, Sicily and Libya. The continuing use of the term *demioergos* and the peripatetic character of the doctor's life will concern us later.

If the part played by Cheiron in ancient medicine has been little discussed, the part of Apollo and, more especially, of his son Asklepios has received much attention. The two figures are not always readily separable. Greek religion was characterised by a constant process of adaptation and assimilation, with tendencies on the one hand to syncretism (seen in the effective union of healing gods – Zeus, Apollo and Asklepios – all given the same epithet Paian) and on the other to fragmentation (seen in the separation of healing deities – Apollo, Asklepios and Hygieia – regarded as different members of a family). Apollo was god of both prophecy and medicine. Asklepios took over the latter function, but retained an element of the former.[3] Poetic narratives powerfully demonstrate that secular and sacred healing coexisted in Greek thought patterns. The Aeschylean Prometheus claims that he gave all crafts to mankind: his claim is tripartite and centred on medical, mantic and technological activities, specified as firstly cures

by potions and unguents; secondly interpretation of dreams, omens and sacrifice; and thirdly the use of minerals (A. *PV* 476–507). Pindar in a Pythian ode similarly describes the healing activities of Asklepios as embracing incantations as well as drugs and surgery (Pi. *P*. 3. 47–53). Greek medicine cannot be regarded as entirely rational in its therapeutic techniques: rational shades into irrational.

The oracular or mantic medicine attributed by Hyginus to Apollo is attested at shrines of Apollo and Asklepios throughout Greek lands. Notable centres are Thessalian Trikka, Aegean Kos, Peloponnesian Epidauros and Libyan Kyrene. The evidence is almost exclusively archaeological, seen in finds of votive objects – terracotta images of affected parts of the body, such as the eyes – and (at Epidauros) short inscriptions recording cures. These epigraphical finds verify the accuracy of Pausanias' description of that temple (Paus. 2. 27. 3). There is corroborative literary evidence also: a play of Euripides centres on the consultation of Apollo's oracle at Delphi in a case of childlessness (E. *Ion*, see especially 64–67); a play of Aristophanes centres on a cure by Asklepios in a case of blindness (Ar. *Ploutos*, see especially 727–741); it is known that the orator Aischines travelled from Athens to a distant shrine of Asklepios where a sore on his head was successfully healed (*Anthologia Graeca* 6. 330). The medicine of the sickbed developed concurrently with such practices and was required especially for acute, rather than chronic, conditions.

2. Intellectual context

This book is concerned with a particular body of prose texts. The 'Hippocratic' Corpus is a monumental collection of medical works, collectively comprising the earliest extant body of Greek prose. In the background there is a vast quantity of related material, some written in verse, some in prose and some apparently of oral tradition. The interaction between Hippocratic writing and such other material is complex. Important information on medical ideas which were current in the fifth and fourth centuries BC is to be found in a papyrus dating from the second century AD, conventionally known as Anonymus Londinensis (abbreviated Anon. Lond.) or the Menoneia; despite this late date, the ideas seem to be derived, at least to some extent, from a history of medicine compiled by Aristotle's pupil Menon. The clumsy name arises from its location in London and its anonymous character. The discovery of the papyrus was announced at the end of the nineteenth century; it was edited soon afterwards and there is an (old) accessible commentary as well as a (modern) critical text.[4] In this compilation, devoted in large part to a summary of different views of the aetiology of disease, twenty-four doctors are named. The list begins with Euryphon of Knidos and includes Hippocrates, though without particular emphasis. Those named include many figures previously unknown, or scarcely known, and several – including Plato and the Pythagorean thinker Philolaos – known but regarded as belonging to the philosophical, not medical, sphere. This evidence shows that there was, in the fifth and fourth centuries BC, a very considerable body of writings on medical and related matters apart from those with Hippocratic attribution.

A second important collection of primary source material lies in the fragments of the so-called Presocratic philosophers, whose investigations of *physis* 'nature' embraced the nature of the body as well as the nature of the universe.[5] In the fifth century, writers who might now be classified as 'scientists', 'philosophers' or 'sophists' were not clearly differentiated from medical theorists and practitioners: all alike were concerned with a quest for 'beginnings' and with an exploration of 'nature'. Often these words are almost synonymous and many treatises are entitled simply 'On Beginnings' or 'On Nature'. Alkmaion's book on nature was said to embrace both medicine and natural philosophy and Protagoras' book on origins probably considered the human condition. The nature of man might be regarded as the theoretical (elemental) composition of the body or its practical (anatomical and physiological) constitution or even its social function. Concern with such topics exercised the intelligentsia generally: Prodikos, regarded primarily as a pedantic philologist, wrote a work on the nature of man and Epicharmos, best known as a comic dramatist, wrote also on veterinary medicine. Sophists and rhetoricians interacted with physicians; it is known that the brother of the celebrated rhetorician Gorgias was a doctor named Herodikos.

Hippocrates has not yet been central in our account. Herodotos, a fifth century contemporary of Hippocrates and a near neighbour to Kos, having originated in Halikarnassos (modern Bodrum) a short sea trip away, informs us that the best medical practitioner was Demokedes of Kroton and that Kroton, enhanced by him, was the foremost medical centre (Hdt. 3. 125, 131–2). Herodotos' statement on the prominence of Demokedes and Kroton in contemporary medicine, and his silence on the contribution of Hippocrates and Kos, is surprising to say the least. Perhaps, having himself migrated to Thourioi close to Kroton in south Italy, he changed his own focus. But in other ancient accounts too, other doctors and other places are named. Even Galen, the greatest devotee of Hippocrates and advocate of Hippocratic pre-eminence, accords a place to others: 'In the old days there was great rivalry between the doctors of Kos and of Knidos . . . joined by the doctors from Italy: Philistion, Empedokles, Pausanias and their followers' (*de methodo medendi* 1, 10. 5-6 K.). Celsus too extensively quotes from and summarises Hippocratic works, yet in his introduction mentions as representatives of early medicine Pythagoras, Empedokles and Demokritos as well as Hippocrates (*de medicina* Proem 7–8). In these accounts there is a wide geographical sweep from cities of Italy and Sicily to regions of the north Greek mainland and of the southern Aegean.

That medicine impinged on other areas of Greek intellectual life and thought is peculiarly evident in the work of Plato and Aristotle, both of whom had extensive medical interests. The dialogue *Timaios* contains, embedded in much mystical content, an account of human bodily development and of human physiology in health and sickness. Similarly, Plato's depiction of the doctor Eryximachos in *Symposium* is realistic and knowledgeable, though not entirely sympathetic. Aristotle was the son of a distinguished doctor and much in his biological writing meshes with contemporary medical research on embryology, respiration and other topics; even his writing on rhetoric and literature is imbued with medical

imagery and allegory. More specifically, medical questions are addressed in question and answer format in the Aristotelian *Problemata*. This collection is probably based on a long oral tradition with a poetic tenor; for the most part, the content displays pure intellectual curiosity where exploration of therapeutic issues has no place. There are many later examples of the genre, in which the same or similar questions tend to be repeated. Relations between doctors, sophists and the philosophical schools were evidently complex, and these categories overlapped. In *On Sense and Sensible Objects*, Aristotle observes that there is a convergence in thought between writers on *physis* and the more 'philosophical' physicians, asserting that the former end by turning to medical matters while the latter begin with matters of *physis* (Arist. *de sensu* 436 a–b; cf. 439 a, 444a). In the ensuing consideration of sense perception, Aristotle engages with the thought of Demokritos, Empedokles, Herakleitos and Plato but there is no identifiable reference to any Hippocratic writer. While there is other evidence for the two-way traffic envisaged, Aristotle cites only 'philosophers'.

The medical interests of the historian Thucydides are evident not only in the celebrated description of the plague at Athens, but also in elements of linguistic choice and figurative expression. Verse writers too evince familiarity with the medical tradition, not only in use of medical language and imagery, but also in thematic content and elements of plot. The tragedians Aeschylus, Sophocles and Euripides all draw on medical ideas.[6] Aristophanes in *Clouds*, of which the first version was produced in 423 BC, parodies intellectual 'doctor-scientists'. This was a two-way process. There was extensive mutual interaction between writers in different genres, including poets and physicians. Tragic verse is quoted in some medical treatises, especially in contexts of 'madness' or aberrant behaviour, and there is some use of quite sophisticated metrical patterning.

The rise of democratic Athens fostered the growth of rhetorical expression and a change of emphasis from orally transmitted lore (commonly in verse) to written texts (regularly in prose) for a widely literate public. The origin of rhetoric was traditionally placed in Sicily and its diffusion associated with the name of Gorgias. There was considerable infiltration of rhetorical tropes and techniques into all kinds of writing, including scientific prose. The fifth century saw the origin of debate on the character of different kinds of art, craft or science, related to the specialist skill of a profession. In the dialogue *Gorgias*, Plato explores the nature and subject of rhetoric with extended reference to the nature and subject of other arts, including medicine; in the *Theaitetos* doctors concerned with the body are aligned with farmers concerned with the land (167b). The distinguished sophist Protagoras is named as author of a work on the art of wrestling (Pl. *Sophist* 232 d). This may have concerned a rhetorical technique designated by a metaphor from wrestling; in any case the usage is revealing.

It seems that material on the arts, available for instruction or recapitulation, was readily accessible in manuals (Pl. *Sophist* 232 d–e, *Politicus* 299c; cf. also *Protagoras* 322a, *Phaedrus* 267c). There is evidence of intellectual controversy on the idea of progress in the development of *technai*: both Thucydides and Isocrates express the view that novelty and change are bound to prevail

(Th. 1. 71. 3; Isoc. *Evagoras* 7). Poetic accounts of developing skills in a range of human activities present the common angle that control over the environment and progress of civilisation depends on progressive mastery of different *technai* including medicine, as in the lyric of Sophocles' *Antigone* (S. *Ant*. 332–375). The Hippocratic debate on the art of medicine belongs in this wider context and the aperçus of Hyginus quoted at the start of this chapter descend from it.

3. Hippocrates and the 'Hippocratic' Corpus[7]

The evidence for the life of Hippocrates is sketchy and for the most part dates from long after his lifetime.[8] But these basic data are consistently included: Hippocrates was born on the island of Kos in or around 460 BC and died at Larissa, a town in Thessaly, at an advanced age. An epitaph may, or may not, be genuine: 'Here lies Thessalian Hippocrates, a Koan by descent, born of the immortal stock of Apollo. By the arms of Hygieia he had many victories over disease and won great repute not by chance but by art' (*Anthologia Graeca* 7. 135). Soon after his death Hippocrates was elevated to heroic, that is semi-divine, status and honoured by the performance of sacrifices (Soranus *Vita Hippocratis*; Hp. *Ep*. 2; Pliny *NH* 7. 37). This honour of heroisation was accorded to very few fifth-century figures. But one individual similarly honoured was the tragic poet Sophocles, who had a peculiar association with Asklepios in that, according to a well-established ancient tradition, he received the god (perhaps in the form of a cult statue) in his house when Asklepios cult was introduced to Athens around 420 BC (*Vita Sophoclis* 17). It is notable that the spread of Asklepios worship throughout Greece came about during the lifetime of Hippocrates. Evidently, the sick and desperate sought cures where they could find them. Some near-contemporary evidence for the historical Hippocrates comes from Aristophanes and from Plato. In Aristophanes' *Women at the Thesmophoria*, produced in 411 BC, parody of the doctors' *Oath* suggests a general familiarity in late fifth-century Athens with Hippocratic ideas and practices (Ar. *Th*. 270–274). In Plato's *Protagoras*, the activities of Hippocrates as a teacher of medicine are compared with the activities of famous sculptors training young apprentices (Pl. *Prt*. 311 b). In *Phaidros*, the views of Hippocrates on the body are represented as analogous to those of Plato on the soul: that to understand a part of the soul or body it is necessary to understand the whole of it (Pl. *Phdr*. 270c). Aristotle mentions Hippocrates once, in a passing analogy, with stress on his greatness as a doctor (*Pol*. 1326a15).

The names given in the ancient genealogies for Hippocrates' immediate family are: grandfather Hippocrates, father Herakleides, sons Thessalos and Drakon and son-in-law Polybos. Hippocrates, taking his name from a grandfather (and then giving it to a grandson), has a place in a medical dynasty. The nomenclature is plausible enough, the names Thessalos and Drakon being authenticated at Kos. Polybos has a strong presence in the biographical tradition, both as Hippocrates' supposed successor in leading medical teaching at Kos, and, on the valuable early testimony of Aristotle, as supposed author of some 'Hippocratic' works

(Arist. *HA* 512b12). To the suggestions, likely and unlikely, already made for the reason(s) behind Hippocrates' departure from Kos – an injunction in a dream; the earthquake of 411 BC – it may be conjectured that he had personal or professional reasons to depart from a close working association with his son-in-law Polybos. It is probable that he travelled to the distant northern regions featured in *Epidemics* in the final decade of the century.

Ultimately, the quest for the historical Hippocrates remains inconclusive in details. However, it may be said with some certainty that Hippocrates lived through the tumultuous events of the fifth century, experiencing wars, revolutions, earthquakes and plague and that he was a contemporary of the philosophers Socrates and Plato, the historians Herodotos and Thucydides, the tragic poets Sophocles and Euripides, the comic poet Aristophanes and, more pertinently, of many, many medical writers from all over the Greek world whose names we know faintly or not at all.[9]

The 'Hippocratic' Corpus is a collection of some sixty medical writings, all in the Ionic dialect, but very different in length, content and style. See below on the number fifty-one in the present arrangement; Anastassiou and Irmer, 1997–2012, list and enumerate somewhat differently. Fundamental editions of the Corpus are: (standard) Littré (10 volumes, 1839–61) and Ermerins (3 volumes, 1859–64); (first) Calvus, Latin translation (1525) and Asulanus, Greek *editio princeps* (1526); reference is made also to Cornarius (1538), Zwinger (1579), Foesius (1595) and van der Linden (1665), as well as to the modern volumes of CMG (Corpus Medicorum Graecorum), CUF (Budé) and Loeb editions.

The diversity of the works is remarkable: formal treatises, aphoristic compilations, summaries, drafts, notes and rough amalgamations of material. Additionally, there is a substantial amount of biographical material generally viewed as apocryphal: two speeches, a decree and a collection of letters purporting to be to or by Hippocrates.[10] The corpus attributed to Hippocrates differs fundamentally from the corpus of works attributed to other ancient prose writers, such as Galen or Aristotle, where common authorship is generally taken for granted, or questioned in a few cases only. An exception is forensic oratory, where speeches involved collaboration, which might be more or less extensive, between a professional speechwriter and his client, the litigant. Thus, in the case of the Lysianic corpus, one speech (Lys. 12) is autobiographical and can be used as an index of authentic Lysianic style. There are some similarities also between Hippocratic and Homeric composition, as much material is of oral origin and there is much repetition in content.

The 'Hippocratic question', as it has come to be called, has long been subject to the changing fashions and cyclical processes of scholarly debate.[11] Already in antiquity it was recognised that neither Hippocrates nor any other single writer could be responsible for all the works to which Hippocratic authorship was imputed. Galen made an assiduous attempt to differentiate between true and false Hippocratic writings: he passed many judgments in the course of his commentaries on Hippocratic texts and, in addition, wrote a book (now lost) on the subject.[12] Celsus, writing a lengthy medical history in the previous century,

had no hesitation in attributing a large output to Hippocrates. Celsus is commonly, perhaps unfairly, dismissed as a mere amateur of limited ability. His stance may be regarded as uncritical or unimportant, but he was assuredly not alone in the supposition that a group of known texts authored by Hippocrates existed in his time; and many of the works cited or paraphrased by Celsus can readily be identified in the corpus as we have it. The quest for authenticity, such a preoccupation of Galen, preoccupied his successors in Hippocratic study centuries later.[13]

This approach was largely abandoned in the twentieth century, as scepticism grew about the validity of the traditional and often patently subjective criteria for declaring a work to be genuine or spurious. Instead, the categories Koan and Knidian became current.[14] Concerted attempts came to be made to distinguish among the 'Hippocratic' writings between treatises with apparently different distinctive characteristics, allowing attribution to a putative source in Kos or in Knidos. In recent decades the validity in categorisation of particular treatises or groups of works as Koan or Knidian has been increasingly questioned.[15] Rather, it appears that there is a real possibility of input from other regions to the west (the Greek cities of Italy as well as Sicily), to the north (such as Thracian Abdera) and to the south (such as Libyan Kyrene). Now, the sceptical suggestion has been made that the very concept of Hippocratic medicine may be flawed, and that treating the so-called 'Hippocratic' writings as a corpus has no historical justification, the canon being based on the arbitrary sanction of Hippocratic attribution at some point in a fluid and fluctuating tradition: the corpus as we know it is merely the end product of a long process of canonisation and is as such (in Nutton's arresting phrase) a 'renaissance construct'.[16]

This radical and challenging suggestion might seem to cut the Gordian knot of the longstanding Hippocratic question and so to free us from a hopeless quest for the true Hippocrates and his genuine works, but questions remain and perhaps old uncertainties merely give way to new. When and why were so many works attributed to Hippocrates? Is it purely on the basis of his supposed authority and prestige, or does chance play a part? Is it credible that nothing survived of Hippocrates' own oeuvre, whether or not we can identify it? Is Hippocrates to be regarded as a figure of influence rather than of personal output, resembling the celebrated Socrates or more nebulous Pythagoras? The argument that equal weight ought to be accorded to surviving medical material that falls outside the Aldine edition of 1526 – and it is undeniable that some works in contention did not make it into the earliest published collections – is at first sight appealing; but the fact remains that other extant material is, by comparison with the works in the recognised Corpus, sketchy and largely confined to titles or fragments.

There is no doubt that fundamental questions relate to the genesis, diffusion, chronology, affiliations, interconnections and authority of the Hippocratic works. No prior assumptions can be made about the authorship of any Hippocratic treatise, and each individual work requires close study with attention to detail before wider conclusions can be drawn. However, an optimistic working hypothesis is that it may be possible to establish affinities among works and even,

in some cases, common authorship; and perhaps to align the works with other material not transmitted in the corpus. A preliminary distinction must be made, as it was already by the ancient lexicographers, between works presented as fully developed treatises, works comprising merely disjointed notes and collections of aphoristic sayings. The authorship question centres primarily on formal treatises, but at the same time there is much crossing of content between apparently disparate types of material. Very little external evidence can be adduced to supplement the scanty internal evidence for date and provenance. There are no claims to authorship by name, possibly because writing happened in a community rather than an individual milieu; there are few references to contemporaries by name and no named dedicatees. It can be seen that doctors worked sometimes in close collaboration with colleagues, but sometimes in combative opposition to them. In such conditions, the early circulation and diffusion of medical works must have been dependent to a large degree on the vagaries of chance. There is no question of definitive 'publication' and no notion of plagiarism.

A further question of intellectual history relates to the use and transmission of the works, once in circulation. It may be conjectured that individual physicians would make copies of and compile excerpts from works they wished to keep for future reference, and that non-physicians too would seek to secure copies of or excerpts from works containing information of interest to them. In such ways, both multiple copies and miscellaneous amalgamations would arise, created for personal use and of limited circulation. The range of material collected and the nature of notes compiled would doubtless reflect considerable diversity of interest and intent on the part of readers: topics likely to be favoured are information perceived in the medical community as fundamental in essential knowledge (such as anatomy) or useful in everyday practice (such as prognosis) and content viewed in the intellectual community as significant in abstract ideas (such as chance or luck) or in practical guidance (such as advice on choice of diet in the maintenance of health). It seems that, in some such way, certain works and certain passages could rise to the top of the pile and come to be regarded as key elements in an inchoate conception of a core supposedly Hippocratic output, regardless of actual original authorship. And there is indeed evidence of a period of consolidation – perhaps in the mid fourth century – when an industry apparently grew up, as doctor-scholars familiar with the new burgeoning of medical writings set about selecting and compiling or summarising such material as they thought most important, for the benefit of themselves and others.

It is extremely likely that works attributed to Hippocrates were collected and circulated in the circles of Plato and of Aristotle, in Academy and Lyceum. There is, however, no evidence of any such assemblage of works before the third century. But it is clear that the grammarians in Alexandria who compiled the first Hippocratic glossaries at that time were working with material that they might, or might not, choose to attribute to Hippocrates, although the reasons for such judgments are not known. There were strong cultural ties between Alexandria and Kos and opportunities to collect texts from the island surely existed. The information about such early collections comes from Erotian, the compiler of the

earliest glossary extant, from about a century before Galen. From Erotian we know much about the shape given to Hippocratic output by his predecessor Bakcheios of Tanagra (c. 270–200 BC), a pupil of Herophilos. The outline of the corpus as envisaged by Bakcheios, somewhat altered and augmented, was essentially that of Erotian himself. Even so, Erotian's vision of the Corpus was not without discrepancies: the works mentioned by title in the preface do not wholly correspond with the works apparently glossed in the main body of the lexicon.

Erotian's version of the Hippocratic Corpus, adopted in turn by renaissance editors (notably by the influential Foesius), became the basis of that most familiar today, the definitive nineteenth century collection of Littré, which forms the Corpus as it is generally conceived by classical scholars. But a caveat is required. There is an artificial element in all attempts at specification. The Corpus as we generally know and understand it has come to seem sharply delimited. However, there was no scribal consensus on the size and shape of the collection. It is remarkable that the two main groups of manuscripts, descending from M (the tenth-century Marcianus gr. 269) and V (the twelfth-century Vaticanus gr. 276) do not agree on the ordering of the texts, or even on their number, and this uncertainty is probably of ancient origin.[17] At the same time, in these two main lines of textual transmission, for which a common origin at a remote point in the early tradition can be postulated, two main ways of ordering and presenting the works are recurrent.

There is disagreement even between the content of the index list contained in the important manuscript V (Vaticanus gr. 276) and the content of that manuscript itself. No single manuscript contains all the works now regarded as belonging to the Corpus and some manuscripts contain only a few.[18] In addition, some works are known only in Arabic or Latin translation. The titles have survived of a few treatises now lost, notably a work on lethal injuries, included in the V index and evidently known to Erotian and Galen.[19] It is likely that, through the vagaries invariably attendant on manuscript tradition, others too, at one time attributed to Hippocrates, have failed to reach us. A final note of caution is important: many manuscripts known to and used by renaissance editors are now lost. Although the formidable problems which underlie our impressions of the shape and nature of the Corpus must be recognised, it remains possible to make critical judgments about parts of it and also, with due caution, about the collection as a whole.

II Principles and methods

1. Grouping and approaching the 'Hippocratic' works

How are we to group and address the vast and multifarious body of material? This is an important question. It is easy to be swayed by preconceived ideas about the works in the collection. The vagueness of Hippocratic status is itself a problem: differing perceptions of what is 'good' have led to slanted assessments of the value of different texts. In general, a few works have been regarded as

particularly 'important' and have attracted attention to the detriment of others; notable among these are *The Oath* (for its statement of medical ideals), *On the Sacred Disease* (for its apparently rational stance) and *Aphorisms* (for its timeless medical guidance). Here, the aim is first and foremost to consider each text on its merits.

Littré's analysis, in the ten volumes of his magisterial edition, was based on supposed Hippocratic authenticity and relative dating. Littré accorded a pre-eminent place to *On Ancient Medicine*, the only work printed in the first of his volumes; his first class included also *Prognostic*; *Aphorisms*; *Epidemics* 1 and 3; *On Regimen in Acute Diseases*; *On Airs, Waters and Places*; *On Joints*; *On Fractures*; *Leverage*; *On Head Wounds*; *The Oath* and *The Law*. In the second class were works attributed to Polybos, son-in-law of Hippocrates (*On the Nature of Man*; *On Regimen in Health*); in the third were works regarded as pre-Hippocratic (*Koan Prognoses*; *Prorrhetic* 1); in the fourth were works attributed to supposed Hippocratic contemporaries or pupils (*On Sores*; *On Fistulas* and *On Haemorrhoids*; *On the Sacred Disease*; *On Winds*; *On Places in Man*; *On the Art*; *On Regimen* 1–4; *On Affections*; *On Internal Affections*; *On Diseases* 1–3; *On the Seven-month Infant* and *On the Eight-month Infant*); in the fifth were works regarded as mere extracts or notes (*Epidemics* 2, 4, 5, 6 and 7; *In the Surgery*; *On Humours*; *On the Use of Liquids*); in the sixth were treatises viewed as forming a particular group in the Corpus (*On Generation*; *On the Nature of the Child*; *On Diseases* 4; *On Diseases of Women*; *On Diseases of Girls*); in the seventh was a single work (*On Superfetation*); in the eighth were treatises regarded as late (*On the Heart*; *On Nutriment*; *On Flesh*; *On Sevens*; *Prorrhetic* 2; *On Glands*); in the ninth was a mixed bag of fragments or compilations (including *On Anatomy*; *On Dentition*; *On the Nature of Woman*; *On Excision of the Foetus*); the tenth comprised works mentioned in antiquity but now lost; the eleventh comprised apocryphal pieces such as the *Letters*. Littré's insightful organisation has been justly influential. However, like every attempt to systematise the works, it has some drawbacks. One is that particular works are privileged to the detriment of others. It is due to Littré's favourable judgment that *On Ancient Medicine*, an important but not uniquely important treatise, came to hold a pre-eminent place in Hippocratic criticism, while other significant and probably 'early' works such as *On Flesh* and *Prorrhetic* 2 were relatively disregarded.

The most obvious alternative arrangement is one based on subject matter.[20] Here, it is hard to improve on the arrangement pioneered by Erotian. In his preface, Erotian begins with works on signs (*Prognostic*; *Prorrhetic* 1 and 2; *On Humours*) and then continues with works on aetiology and nature (*On Winds*; *On the Nature of Man*; *On the Sacred Disease*; *On the Nature of the Child*; *On Airs, Waters and Places*). These first two categories comprise an overarching approach to the basic theories of medical practice. Thirdly, Erotian goes on from the theory which underpins medical practice to the practice itself; that is, to the therapy which is based on the theory. This he subdivides as on the one hand 'surgical' (*On Fractures*; *On Joints*; *On Sores*; *On Head Wounds*; *In the Surgery*; *Leverage*; *On Haemorrhoids*; *On Fistulas*) and on the other hand 'dietary' (*On Diseases* 1

and 2; *On Regimen in Acute Diseases*; *On Places in Man*; *On Diseases of Women* 1 and 2; *On Nutriment*; *On Infertile Women* = *On Diseases of Women* 3; *On the Use of Liquids*). Fourthly, allowance is made for a small group of works mixed in character (*Aphorisms*; *Epidemics*). Erotian's fifth and final category comprises works on the *techne* 'art' of medicine (*The Oath; The Law*; *On the Art*; *On Ancient Medicine*). This is a visionary arrangement, which takes cognizance of such major and perennially recognised medical fields as anatomy, physiology, pathology, therapy and ideology. A final possible type of classification might be generic rather than thematic: aphorisms, manuals, manifestos, notebooks and so on. However, the concept of genre is somewhat anachronistic and in any case it is not easy to place all the works of the Corpus in acceptable generic categories, especially as – just as some works are mixed in content – many mix different genres.

Here we simply eschew categories and arrange the treatises in alphabetical order, using the standard Latin abbreviation for title. This avoids prejudgment and arbitrariness. No suppositions about common content, associated authorship or comparable date are made at the outset. However, in the interest of convenience and clarity of exposition, seven broad groupings may be suggested, for the benefit of the reader interested only in a certain type or in certain types of medical writing, such as gynaecology or surgery. The arrangement of Erotian is the basis of these proposed divisions, but here scientific principles replaces Erotian's 'aetiology and nature' and some other groupings are telescoped or expanded: 'dietary therapy' is subsumed in nosology and pathology and 'signs' is expanded to cases and signs. The new category of gynaecology and embryology is introduced, as these important topics are not separately recognised by Erotian but are included in dietary therapy, doubtless because of the prominence in gynaecological texts of recipe cures. It must be stressed that several works are hard to categorise and might be placed in one category rather than another, with equal justification. It will be evident that even the overall number of works can be differently computed and presented. The present arrangement of fifty-one works results from a degree of conflation: notably, the seven books of *Epidemics* (*Epid*.), as also the three books of *On Diseases of Women* (*Mul*.), are treated as an entity in the list, though there is differentiation in discussion.

The proposed broad groupings are:

first, scientific principles *Aer., Art., Carn., Flat., Hebd., Morb. Sacr., Vict.* 1–4, *VM* (*On Airs, Waters and Places*, *On the Art*, *On Flesh*, *On Winds*, *On Sevens*, *On the Sacred Disease*, *On Regimen* 1–4, *On Ancient Medicine*)

second, anatomy and physiology *Anat., Cord., Gland., Loc. Hom., Morb.* 4*, Nat. Hom-Salubr., Oss.* (On *Anatomy, On the Heart, On Glands, On Places in Man, On Diseases* 4*, On the Nature of Man-On Regimen in Health, On the Nature of Bones*)

third, nosology, pathology and therapy *Acut., Aff., Int., Morb.* 1, *Morb.* 2, *Morb.* 3 (*On Acute Diseases*, *On Affections*, *On Internal Affections*, *On Diseases* 1, *On Diseases* 2, *On Diseases* 3)

fourth, surgery *Fist.-Haem., Fract.-Artic., Mochl., Off., Ulc., VA, VC* (*On Fistulas-On Haemorrhoids*, *On Fractures-On Joints*, *Leverage*, *In the Surgery*, *On Sores*, *On Sight*, *On Head Wounds*)
fifth, cases and signs *Epid.* 1–7*, Hum., Iudic.-Dieb. Iudic., Liqu., Prog., Prorrh.* 2 (*Epidemics* 1–7*, On Humours, On Crises-On Days of Crisis, On the Use of Liquids, Prognostic, Prorrhetic* 2)
sixth, gynaecology and embryology *Foet. Exsect., Genit.-Nat. Pue., Mul.* 1–3*, Nat. Mul., Sept.-Oct., Superf., Virg.* (*On Excision of the Foetus, On Generation-On the Nature of the Child, On Diseases of Women* 1–3*, On the Nature of Woman, On the Seven-month Infant-On the Eight-month Infant, On Superfetation, On Diseases of Girls*)
seventh, guidance and ideals *Alim., Aph., Coac., Decent., Dent., Iusj., Lex, Medic., Praec*., *Prorrh.* 1 (*On Nutriment*, *Aphorisms*, *Koan Prognoses, Decorum*, *On Dentition*, *The Oath*, *The Law*, *On the Physician*, *Precepts*, *Prorrhetic* 1).

In the approach to the texts in the core of the book, each work receives separate treatment in three main sections; this arrangement is modelled on the valuable short Appendix 3 in Jouanna's *Hippocrates*.[21] After a brief textual bibliography, a straightforward summary is given of the content. In the case of a few short pieces, such as *The Oath*, a complete translation is preferred to the usual résumé. Some works cannot be fully summarised for reasons of length (and this applies to almost all of the gynaecological texts) or for reasons of intractably miscellaneous content (and this applies to the *Epidemics* and most of the aphoristic collections); but in all cases a sequential outline of content, more or less detailed according to the nature of the particular text, is provided. This first section serves as an introduction to individual works to orientate the reader and at the same time as an overview to enhance appreciation of the complex nature and rich content of the corpus overall. The second section is devoted to comment on the work viewed on its own terms, without regard to the rest of the Corpus, in relation both to subject matter and to expression or style. This serves to establish the significance of the content and the character of its composition. In the third section, an attempt, necessarily limited by considerations of space, is made to set the work in context, with regard primarily to its place in the Corpus but also to other extant material, especially the writings of near-contemporary prose authors – medical, philosophical and scientific – but where appropriate also of verse. Various kinds of intertextuality are identified and investigated. Finally, a brief suggestion is offered on date. Throughout, essential information is included on past scholarship.

The complexity of the interpenetration and interdependence between the elements of the Hippocratic Corpus is formidable. It has long been recognised that some works transmitted separately in fact cohere (*On Fractures* and *On Joints*; *On Fistulas* and *On Haemorrhoids; On Generation* and *On the Nature of the Child*); that some fall into two parts (*On Airs, Waters and Places*); that some have a false start (*On Diseases* 2) or an apparently extraneous ending (*On the Nature of Man*); that some are evident amalgamations (*On the Nature of Bones*)

or summaries (*Leverage*) or reworkings (*On Anatomy*). In such cases there are often preliminary questions of ordering the whole and numbering its parts to be considered. It is here argued that consecutive numbering is appropriate for *On Generation* and *On the Nature of the Child*; also for *On the Seven-month Infant* and *On the Eight-month Infant*. There are affinities, more or less clear, between some treatises (*On Ancient Medicine* and *On the Art*) and there are works with blocks of material in common (*Epidemics*, especially 5 and 7; prognostic or semeiotic works, especially *Prorrhetic* 1 and *Koan Prognoses*; the gynaecological treatises). These aspects of content and context are fully examined.

Within many treatises, as will readily be seen from the analysis of content, there are elements apparently extraneous or intrusive in character and certainly of limited relevance. There is evidence of amalgamation in content, of duplication of material seen elsewhere (but of uncertain relative date) and of apparent layers in composition, some perhaps due to rewriting and so effectively a second edition. The structure frequently suggests careless compilation over a period of time, possibly by a group, rather than the unified composition of a single author. In some cases, an introductory prologue is not integral to the whole, but serves merely to tie various pieces together. There is frequently an apparently oral element in the source material. (Somewhat similar cases of repetition may be seen in Homeric epic, which is similarly oral in origin and formulaic in character. Thus, a passage embedded in the start of *Odyssey* 5 replicates a passage at the start of *Odyssey* 1: there is a double description of the divine assembly with its decisions setting the action in motion.) Perhaps all medical texts are derivative to a degree and few, if any, are original in an accepted literary sense. The terms ‘redactor’ rather than ‘author’ and ‘compile’ rather than ‘compose’ are frequently appropriate. Interpolation, so common in literary texts, may be suspected but the process of composition is such that, if identified, it cannot be simply condemned and deleted.

It is apparent that many titles give a misleading impression of the content of a work and reasons for this are noted in each case. There are problems also in disentangling books with superficially similar titles. The four treatises on diseases are in no way sequential or even closely related. By contrast, the four books comprising *On Regimen* clearly constitute an integrated and closely argued organic unity. In many cases, there are uncertainties about the relationship of part and whole (*On Acute Diseases* A and B). The aphoristic works, some elements of which surely originate in oral tradition, present their own peculiar problems in all aspects: content, comment and context. It is possible that some elements originate in, or are somehow related to, records kept in healing shrines such as those at Kos and Trikka (cf. Str. 8. 6. 15; 9. 5. 17). The content of *Koan Prognoses* and *Prorrhetic* 1 has poetic and archaic features particularly evocative of mantic or temple medicine. The content of *Aphorisms* seems, rather, to be drawn exclusively from contemporary or recent medical writings.

2. Reading and interpreting the 'Hippocratic' works

There are few certain landmarks to orientate the reader. The geographical framework is extremely wide and it is clear that the roots of Greek medicine, as of Greek culture generally, lay far beyond the regions where it came to flower. In tracing apparent parallels with the medical practice of other civilisations, there are fundamental questions of relative dating and of evidence for early or ongoing connections: it is easy to point to similarities, much more difficult to substantiate their significance. Medical conservatism may be invoked: it has been remarked that there is no evidence for any major change in the format or content of Egyptian medicine over the long period 2600 to 525 BC.[22] But at the same time, such arguments from silence are hazardous. While the account presented in Greek sources tends to be chauvinistic, allowance must still be made for the infiltration of techniques and ideas from the medicine of neighbouring regions.

A scholarly consensus acknowledges eastern influence on many aspects of Greek culture in the archaic period.[23] There had already been considerable interaction of Mycenaean and Minoan peoples with their neighbours around the Aegean and beyond. Egypt was doubtless familiar long before the seventh century, when Greek mercenaries served under the pharaohs and when trade in grain and other goods between Greece and the southern landmass was enhanced. Similarly, while it is generally believed that Greek knowledge of India began with Alexander's expeditions, it may be that he opened up routes already partially known. That there were trade routes from east to west – which might be covered by contiguous stages, rather than encompassed in a single journey – is evident from the presence of scraps of silk in Egypt and Europe (notably in Baktria) long before our first written sources allude to it. We may wonder if it is a coincidence that Kos, home of Hippocrates and centre of Greek medicine, became a centre also of sericulture. Certainly, a lively trade in specialist and luxury goods extended to medical specifics. Throughout the Corpus, and especially in the gynaecological works, there is quite casual reference to goods, such as cinnamon and other spices, unavailable in Europe but sourced from Egypt or from the Far East.

Egyptian medicine surely exerted an influence on early Greek medicine; indeed, there are traces of this in Homer. Homer mentions Egypt as a source of *pharmaka* 'drugs' (Hom. *Od*. 4. 227–228). Surviving papyri from Egypt indicate specialist interests in ophthalmology (Ebers papyrus, c. 1500 BC) and gynaecology (Kahun Papyrus, c. 1820 BC). There is much stress also on remedies for the gastro-intestinal tract, especially the use of purgatives. In *On Places in Man*, which is probably one of the earliest Hippocratic works, all these aspects are paralleled, both in general approach and in points of detail; and other treatises too show markedly similar elements in both gynaecological and ophthalmological content. The short treatise *On Sight* shows strong affinities in surgical procedures with those traditionally followed in Egypt. General purgatives are applied before starting specific ocular treatment. Common treatments include scarification, venesection, cautery of the temples, application of copper sulphate, prescription

of liver to be eaten with honey and prescription of unguents to be mixed in a copper vessel.[24]

Kyrene, named by Herodotos as a significant medical centre, may have played a part in the dissemination of knowledge from Egypt to Greek lands: to Italy through Sicily and to Kos and Knidos through Crete and Thera. The medical importance of Kyrene is corroborated by its place as the centre of trade in the rare healing plant silphion, depicted on coins of the region (Theophrastus, *HP* 4. 3. 1 and also 9.1, 4, 7). Like Kos and Epidauros, it was a centre too of Asklepios worship. The range of localities mentioned in a concluding generalisation in the Hippocratic treatise *Prognostic* about the common validity of prognostic observations – in Libya, Delos and Scythia – may identify significant regions of contemporary medical practice, rather than merely southern, central and eastern regions of the known Greek world.

It is possible that Babylon (conquered by the Persians in 539 BC) had some influence on early Greek medicine. The catalogue structures followed in the nosological texts of the Hippocratic collection – for instance in *On Diseases* 2, a key paradigm of this style of writing – are reminiscent of the structures seen in Babylonian medical texts.[25] However, in discussing different diseases, the use of lists is perhaps a natural methodological recourse and the coincident elements in disease taxonomy do not seem so remarkable. Similarly, in discussing therapeutic recipes, the listing of large collections of plants and drugs is naturally a common feature of Greek and Babylonian texts.

There is certainly good fifth-century evidence for medical contact between Greece and Persia and for the activity of Greeks as court physicians; the names of several are known. Herodotos tells of two signal successes achieved by Demokedes: Demokedes cured both King Dareios, who had seriously dislocated his ankle in a hunting accident and Queen Atossa, who suffered from a breast abscess (Hdt. 3. 129-131). Herodotos' account provides independent evidence for gynaecological and orthopaedic expertise in early Greek medicine; these subjects, along with acute forms of chest or lung disease, occupy a substantial portion of the 'Hippocratic' Corpus. Even if the stories are apocryphal, they were evidently plausible as narratives of Greek medical practice from around 500 BC.

Persian conquests in Scythia, Thrace and Macedonia made Greek and Persian frontiers coterminous. Scythia especially came to be regarded as a vast remote area (scene of the wanderings of Io, A. *PV* 696–741; described, but acknowledged to be little known, Hdt. 4. 16–58). The Scythians were known as a nomadic people with a wide-ranging habitat. The physicians of *Epidemics* practised on the fringes of the Greek peninsula, not only in regions to the north such as Thessaly, Thrace and the island of Thasos but also in regions to the east such as cities bordering the Black Sea; a case is recorded at Odessa on its western shore. The Black Sea region is contiguous to the regions inhabited by the Scythians. Familiarity with the customs of the Scythians is seen in other Hippocratic texts: *On Airs, Waters and Places* and *On Diseases* 4. The use of mares' milk by the Scythians (Hdt. 4. 2) recalls a prescription common in certain Hippocratic works. Many of the places mentioned in the *Epidemics* exported timber, grain, dried fish

and various luxury goods to the Greek mainland: there are glimpses of the commercial importance of such cities as Abdera, Kyzikos and Perinthos alongside glimpses of life in some quite isolated mountain villages in Thessaly. To some extent, doctors themselves followed trade routes. The evidence of *Epidemics* for a peripatetic lifestyle is compelling. It is reasonable to suppose that ideas travelled these routes along with merchants and their goods. Contact between the continents and the cultures, with nomadic peoples such as the Scythians as intermediaries, is a certainty; only the extent and precise nature of this are debatable.

Certain Hippocratic works contain elements reminiscent of the Ayurvedic medicine of India.[26] First, the general point may be made that in Ayurvedic thought, as in early Greek speculation on *physis* 'nature', microcosm and macrocosm are viewed as parallel. Such ideas are prominent in *On Flesh*, *On Sevens* and elsewhere. In *On Sevens*, an important but somewhat enigmatic work, an archaic allegorical anatomy (possibly drawn from Zoroastrian sources) is presented. Mystical alliances are posited between different parts of the body and different parts of the earth: back to sky, tissues to soil, bones to mountains, vessels to rivers and so on. A more specific point relates to detail in content. A central Ayurvedic doctrine is that of three *dosas*, physiological substances which course through the body in a functional equilibrium dependent on a dynamic fluctuating interplay; disease results when their balance is disturbed. In some schemes, there is a fourth *dosa*, blood. The Ayurvedic *dosas* (*vata*, *pitta* and *kapha*) have Greek analogues. Or rather two evidently do; the third is more elusive. *Pitta* has the characteristics of Greek bile (hot, fluid, acrid); *kapha* has the characteristics of Greek phlegm (cold, stable, oily). *Vata,* usually translated as 'wind' (clear, dry, moving), has a possible Greek analogue also.

In two works in particular wind plays an important part. The first part of *On Airs, Waters and Places* treats the importance of environmental factors in health and disease. The second part sets out to discuss characteristics of the inhabitants of 'Asia'. The two parts are generally viewed as disparate; but perhaps oriental ideas may be viewed as a unifying factor. The conjunction may be explained if the treatise is drawing on oriental source material, obliquely in the first part where climate and air (~ *vata*) feature and more directly in the second, on the subject of comparative anthropology. In the work *On Winds* (*physai*) wind or breath (variously *physa*, *aer* or *pneuma*) is a fundamental principle with a pervasive place both as an indicator of health and as a morbific factor. Ayurvedic thought may underlie some elements of *On Regimen* also: in broad terms, there is the same interest in interlocking microcosm and macrocosm and also, more narrowly, the principles *agni* and *soma* present parallels to fire and water.

Perhaps we may venture to look still further to the east, beyond India to China. A central similarity between traditional Chinese medicine and early Greek medicine can be seen in surgical procedures, the application of cutting (phlebotomy or acupuncture) and cautery (heat applied by instruments or by plants, moxibustion) to particular parts of the body, viewed as channels or ducts, the purpose being to rid the body of noxious matter and so of disease.[27] Both the

Hippocratic physicians and Chinese practitioners viewed anatomical structures and orifices in terms of the vessels or channels supposedly linking them to one another and to other areas of the body. Greek *phlebes* and Chinese *mo* are significant in physiology (normal, in carrying blood and *pneuma,* analogous to *qi*) and pathology (abnormal, in carrying noxious matter). More specifically, the Chinese *du* channel ('governor vessel') from the spine to the back of the head, carrying the life force, is similar to that of the Greek vessel carrying vital *myelos* or cerebro-spinal fluid, described in *On the Nature of Bones*.[28]

In the works of the collection, there is scant reference to Kos. The title of the aphoristic collection *Koan Prognoses* suggests a connection with the island, but the content does not obviously show this. Explicit allusion (in *On Acute Diseases*) and apparent implicit reference (in *On Diseases* 2 and elsewhere) to a work entitled *Knidian Opinions* raises more problems than it solves. Kos and Knidos are both mentioned as sources of medical material and comestibles, Kos of wine and Knidos of a special berry, but so are many other regions of Greece. For example, honey was commonly obtained from Attica, wool from Miletos and nuts from Thasos. More specialised materials came from other regions: such plants as dittany, a gynaecological panacea, from Crete and silphium from Kyrene. Other medical requisites, such as simple types of equipment, were widely sourced: in *On Joints*, we hear of a Thessalian chair, of Carthaginian leather and of Chian boots as desiderata to be acquired. The prescription of choice foodstuffs seen in some works, notably in *On Internal Affections*, indicates access to the produce of a rich agrarian and maritime region; but that would exclude few Aegean communities.

As seen above, there is disappointingly little evidence, external or internal, to serve as a guide to the dates and provenance, still less the affiliations and authorship, of Hippocratic texts. Such scanty material as does exist, concerning astronomical phenomena and climatic features, relates primarily to *Epidemics*.[29] Apart from the special case of *Epidemics,* Hippocratic works cannot readily be pinned to a particular place or even to a general region. Explicit reference to known individuals is confined to brief allusions to Empedokles in *On Ancient Medicine* and to Melissos in *On the Nature of Man*. We turn to analysis of content, especially medical content, and analysis of expression.

Analysis of content has been essayed in the past. An important group of treatises centres on discussion of the art of medicine, on the *techne* and its practitioners, variously described as *cheirotechnai*, *demiourgoi, demotai, technitai* and opposed to non-professionals, described as *idiotai*. Lack of skill, *atechnie*, is disparaged by contrast, especially in the surgical works. These treatises, somewhat introspective in character, seem to reflect a new self-awareness on the part of physicians: in *On Winds*, *On the Art* and *On Ancient Medicine* there is a strongly personal note with much use of declarative verbs in the first person. The question of the proper scope and appropriate limits of medicine and in particular its concern – or not – with more universal subjects is commonly aired at the outset in such works as well as in others, notably *On Flesh* and *On Airs, Waters and Places*. The self-conscious attitudes apparent in these

treatises, when the very existence of medicine as a *techne* along with its fundamental character was being debated, are very different from the confident spirit seen in the deontological declarations of *The Oath* and *The Law*. As noted above, this can be viewed in the context of general and long-standing debate on the character of different kinds of art, profession or specialist skill.

Many attempts have been made to analyse information, whether clearly and explicitly presented or apparently latent and implicit, indicative of different medical doctrines in different texts. In anatomy, different accounts are given of the course of the blood vessels; in physiology, different versions are found of the significance of bodily components such as bile and phlegm; in pathology, different causes of disease are regarded as most serious; in treatment by surgery, some doctors have recourse primarily to cutting (bloodletting, phlebotomy) and others to burning (cauterisation); in treatment by regimen, some doctors confine their prescriptions to dietary practice and others stress the importance also of exercise and baths; also different drugs are favoured by different practitioners and at different times; in prognosis, there are varying schemes of critical days. Different views prevail about the location and function of the mind within the body, the head, the heart or even the blood being variously regarded as centre of reason. Some medical catchphrases become current in some texts, expressing conditions, such as *apokrisis* and *pepsis*, viewed as important. Some physicians express strong views on the detrimental effects of change; different views of causation, expressed in different terms, are advanced.

Analysis of expression, language and style has been somewhat less favoured. Here too many different avenues can be explored. Dialect is an obvious recourse. Ionic is used throughout, but not in a completely homogeneous way: at times, it is close to the language of Herodotos, at other times more idiosyncratic. There are traces of Attic, perhaps for the most part due to scribal interference. More significantly, there are traces of Doric, and in some cases of Sicilian Doric (as in *On Places in Man*). On the evidence of Hesychios and other lexicographers it seems that a few terms are drawn from such esoteric local patois as that of Chios (as in *On Diseases* 1). Sentence construction and other syntactic features, such as the use of particular conjunctions to introduce temporal or conditional clauses, yield some indications of peculiar individual, or perhaps group, preferences. That compound verbs are favoured in certain types of composition – particularly in precise description of surgical techniques – is readily explicable. The apparent preference in some texts, predominantly in gynaecology, for diminutives and for the dual number is less obvious in rationale. The use of different formations for abstract nouns (endings in –σις or in –μα, as ἐρώτησις or ἐρώτημα ‘question’) is a chronological indicator, rather than a matter of personal choice. Similarly, use of adjectives with the ‘medical’ terminations -ωδης or -ικος indicates date rather than authorship. Caution is required too in that many medical ideas (on, for example, the significance of climatic factors and the dangers of change) and many medical catchphrases (such as expressions involving *kairos* and *prophasis*) were matters of common currency so that coincidences in expression of them are little more than bromides, casually drawn from a common stock. And authors

writing on similar subjects inevitably tend to display common elements in style and expression.

Structural patterns differ. Some of the formal treatises conform closely to literary norms in terms of the overall coherence seen in selection and integration of material. There is in several works, evidently through familiarity with rhetorical techniques, a somewhat artificial demarcation into sections, corresponding to the four traditional divisions in Greek oratory: prologue or proem, narrative or statement of the case, proof or demonstration and epilogue or peroration. Different critics elaborated different theories of these divisions but in practice most speeches, and almost all forensic speeches, follow the same pattern. Aristotle went so far as to declare that only the middle two parts were necessary, the first and last being optional extras (*Rhet.* 3. 1414a). Clear examples of this patterning, which is commonly employed in works of a polemical or combative character, are *On the Art* and *On Winds*. Other works evince a more modified use of these techniques. In some cases, there is a self-conscious proem but the formal arrangement is abandoned or breaks down as the work progresses; in some, apparent accretions militate against the logic of structural unity. Examples of works with a partial but not fully realised rhetorical arrangement are *On the Sacred Disease* and *On the Nature of Man*. In a similar way, in *On Airs, Waters and Places* a proem precedes arrangement in two distinct parts.

Frequently, it is evident that much effort has been expended on the beginning of a work and considerably less on the ensuing part: this can be seen in the careful preambles to *On Affections*, to *On Diseases* 1 and to *On the Nature of Woman*. Structural disintegration, or the addition of apparently random elements, marks many endings, as in the case of *On Flesh* and *On Places in Man*. In some cases, parallel accounts of the same material are presented in succession, as in *On Diseases* 2. These features strongly indicate that the process of composition involved selection from and arrangement of a body of pre-existing material, with a varying degree of personal input. Originality, inventiveness and novelty of expression were not precluded but not extensively exercised. The repetition of the same passages in different works is a guide to the existence of interaction, though its exact nature and even relative priority are rarely obvious.

In some texts, poetic citation (occasionally from an identifiable source, such as a tragic play where the date of production is known) is favoured; the author of *On Diseases* 4 clearly knows Sophocles' *Oedipus Coloneus*, produced at Athens in 401 BC. A related stylistic affectation, apparent in the same author, is use of metrical patterns and of poetic vocabulary. This must be distinguished, however, from use of metrical mnemonics and adaptation of oral metrical material (seen in *Koan Prognoses* and *Prorrhetic* 1 and also in the gynaecological works). As noted above, the growth of rhetoric had a significant impact on prose writing. Such features as alliteration, anaphora and antithesis are used in different ways, with different levels of sophistication, in different works. It is possible to make deductions and occasionally to formulate a hypothesis on the basis of stylistic peculiarities. A promising line of investigation is idiosyncratic choice of particles, especially unusual particles. In vocabulary, shared preferences in use of