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## Greek Medicine from Hippocrates to Galen

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# Greek Medicine from Hippocrates to Galen

Selected Papers

*By*

Jacques Jouanna

*Translated by*

Neil Allies

*Edited with a Preface by*

Philip van der Eijk



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*Cover illustration:* Miniature from the first page of Galen's Commentary on Hippocrates' Prognostic as preserved in a Latin manuscript from Naples, VIII D 25 f. 85.

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## EDITORIAL PREFACE

Philip van der Eijk

The purpose of this volume is to make available for the first time in English translation a selection of Jacques Jouanna's papers on medicine in the Graeco-Roman world. Following the enthusiastic reception of *Hippocrates* (1999),<sup>1</sup> the English translation of his 1992 monograph *Hippocrate*, this project hardly needs justification. Interest in ancient medicine has continued to grow, especially in the anglophone world,<sup>2</sup> where the subject appears frequently in undergraduate courses and graduate programmes at British and North American Universities. The annual conferences *Approaches to Ancient Medicine* in the UK, the panel of the *Society for Ancient Medicine* at the annual meeting of American Philological Association and the regular presence of ancient medicine and related topics in panel sessions at the annual general meeting of the Classical Association in the UK further testify to the expansion of studies in ancient medicine in the English speaking world. Moreover, ancient medicine continues to command broad appeal among members of the medical profession and in wider social and cultural discourse on issues such as health and disability, life style and quality of life, happiness and flourishing, medical ethics, the body and gender.

The need for greater and easier access to the sources of information about Graeco-Roman medicine has risen accordingly, for the linguistic skills to read the relevant texts in the original have become ever more rare. Substantial progress has been made over the past decades in meeting that need as far as the primary sources are concerned: most of the Greek medical writings attributed to Hippocrates are nowadays available in modern translations,<sup>3</sup>

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<sup>1</sup> J. Jouanna, *Hippocrates*, transl. by M.B. DeBevoise (Baltimore 1999).

<sup>2</sup> For surveys of recent developments within the subject see G.E.R. Lloyd, 'The transformations of ancient medicine', *Bulletin of the History of Medicine*, 66 (1992), 114–132; V. Nutton, 'Ancient medicine: Asclepius transformed', in C. Tuplin and T. Rihll (eds.), *Science and Mathematics in Ancient Greek Culture* (Oxford, 2002), 242–255; V. Nutton, 'Ancient medicine, from Berlin to Baltimore', in F. Huisman and J.H. Warner (eds.), *Locating Medical History* (Baltimore, 2004), 115–138; P.J. van der Eijk, *Medicine and Philosophy in Classical Antiquity* (Cambridge 2005), 1–8; P.J. van der Eijk, 'Medicine and health in the Graeco-Roman world', in M.A. Jackson (ed.), *The Oxford Handbook for the History of Medicine* (Oxford 2011) 21–39.

<sup>3</sup> The Loeb Classical Library currently boasts 9 volumes of works of Hippocrates; in addition, most current editions with commentaries contain translations in a modern language.

a new series of English translations of Galen is under way,<sup>4</sup> and there are a number of source books on Greek and Roman medicine and science that present selections of primary texts in translation under thematic rubrics.<sup>5</sup>

Yet as far as accessing secondary literature is concerned, there is still a long way to go. Scholarship on Greek and Roman medicine has a long and venerable history, much of which is still relevant today, and much of which is in languages other than English. The academic study of ancient medicine was, for a long time, a predominantly French, German, Italian and, more recently, Spanish business, and although publications in English were by no means absent, it is indisputable that the majority of contributions came from Continental Europe. While no serious scholar of Graeco-Roman medicine can afford to ignore this, the reality is that many students in the English speaking world, including a new generation of researchers, have more and more difficulty accessing these scholarly works in the original. Efforts are therefore needed to make scholarship on ancient medicine more accessible. To this end, a project "Accessing Ancient Medicine" was initiated at the Northern Centre for the History of Medicine at Newcastle University in 2009 (with Wellcome Trust support), subsequently continued at the Humboldt-Universität zu Berlin, which aims to make available in English translation a number of key texts in the history and historiography of ancient medicine.

The present publication has arisen from this project. For Jacques Jouanna's work is a powerful example of Continental scholarship that has had an enormous impact on the study of ancient medicine over the last forty years. In the early 1970s, Jouanna founded the Colloque International Hippocratique and thus created a major focus for the study of the medical writings transmitted under the name of Hippocrates. Since its inception in Strasburg in 1972, the Colloque has been held every three or four years and it has acted like a strong magnet for scholars in ancient medicine, providing a training ground for a younger generation of PhD students and junior postdocs and a venue for them to present their work. Over the years, the Colloque Hippocratique has expanded in size as well as in intellectual and geographical horizon, extending beyond the strictly philological study of

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<sup>4</sup> The Cambridge Galen Translations, a series of scholarly translations of works of Galen in a unified format, in which the first volume is scheduled to appear in 2012. The Loeb Classical Library has recently published a three volume translation of Galen's *Method of Medicine*.

<sup>5</sup> For example, J. Longrigg, *A Sourcebook in Greek Medicine* (London, 1998); G.L. Irby-Massie and P.T. Keyser, *Greek Science of the Hellenistic Era. A Sourcebook* (London, 2001).

texts to embrace more contextual and socio-cultural approaches and gradually gaining ground also in the English speaking world, where it was organised first in Newcastle upon Tyne (2002) and then (after Leiden in 2005) in Austin, Texas (2008). And it is a nice irony that the publication of the present volume, the 40th in the *Studies in Ancient Medicine*, coincides with the 40th anniversary of the Colloque Hippocratique in Paris in 2012.

Yet the purpose and, one hopes, the value of this volume does not just lie in its provision of English translation, or in the practical convenience of having gathered in one volume a number of papers whose original publication was scattered over a wide range of sometimes rather specialised volumes. A further, and potentially even more weighty point of presenting a selection of Jacques Jouanna's papers in the context of one collection is to highlight certain dominant strands in scholarship on ancient medicine to which he has made major, innovative contributions. This, indeed, has been the most important criterion underlying the selection of the papers for this volume, apart from considerations of interest for a wider than just philological readership and from practical considerations of translatability.<sup>6</sup>

The volume ranges from the early beginnings of Greek medicine to late antiquity and covers more than thirty years of Jouanna's scholarship, most of which was conceived and developed during his Professorship at the Sorbonne (1981–2004), where for many years he taught a weekly seminar on Hippocrates and where he founded and directed the CNRS Research Group 'Médecine Grecque', and subsequently at the various conferences

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<sup>6</sup> The selection of papers was made by the editor, in consultation with the author. Since the subtleties and nuances of translation of medical Greek into French can only be partially captured by a translation into another language, a number of Jouanna's more text-centred, philological papers had to be excluded from consideration, although even in the present volume this difficulty could not entirely be avoided, some papers containing detailed observations about the semantics of Greek medical terms and expressions (not to mention the difficulties involved in trying to convey, in the English translation, the more subtle interpretive features of Jouanna's French translations of longer quotations from the Greek). Jouanna's work as a philologist, editor and textual critic of Greek medical texts is best illustrated by his editions, for the *Corpus Medicorum Graecorum* (Akademie Verlag, Berlin) and for the *Collection des Universités de France* (Les Belles Lettres, Paris), of the Hippocratic works *Nature of Man* (Berlin, 1975; revised edition 2002), *Diseases II* (Paris, 1983), *Breaths. The Art* (Paris, 1988), *Ancient Medicine* (Paris, 1990), *Airs Waters Places* (Paris, 1996), *Epidemics V and VII* (with M.D. Grmek, Paris, 2000), *Sacred Disease* (Paris, 2003) and of the Galenic treatise *Avoiding Distress* (with V. Boudon-Millot and A. Pietrobelli, Paris, 2010), by his monograph *Hippocrate. Pour une archéologie de l'école de Cnide* (Paris, 1974; second edition with postface, Paris, 2009), and by his contributions to the conference series *Écologie des Textes médicaux grecs*, of which he has been one of the initiators.

and workshops he organised at the Villa Kérylos as a member of the Académie des Inscriptions et Belles-Lettres.<sup>7</sup> Within this wide range, three strands are distinguished in this volume:

Part One is concerned with the relationship between Greek medicine and its historical and cultural background as manifested in politics, rhetoric, tragedy and religion. Greek medicine did not develop in a vacuum, and many of its features, both doctrinal and literary, cannot be adequately understood without consideration of their historical and cultural context. Here, two important qualifications are in order. First, ‘context’ is not necessarily confined to the Greek world but also includes other parts of the ancient Mediterranean, as Jouanna shows in chapter 1, which is devoted to the relationship between Egyptian medicine and Greek medicine and to the way this relationship is represented in Greek sources. Secondly, the relationship of Greek medicine to its historical context was not a one way process in which medicine was only on the receiving end. On the contrary, medicine itself has been a significant, formative player in the development of Greek culture, literature and thought. This is made particularly clear in chapter 2 for political thought, in chapter 3 for rhetoric, as indicated by its subtitle “a contribution to the history of rhetoric in the fifth century” and in chapter 4 for Greek tragedy.<sup>8</sup> Another example is religion, discussed in chapter 6, where Jouanna stresses the compatibility of the rationalism of Greek medicine with the continuation of traditional religious beliefs—a compatibility that is nowadays taken for granted in scholarship but which, at the time the paper was first published, was less commonly accepted.

The papers gathered in Part Two are concerned with a number of salient ideas that can be regarded as characteristic of what is usually referred to as Hippocratic medicine, i.e. the core of ideas, concepts, principles and practices expressed and advocated in a number of 5th and 4th century BCE Greek medical writings attributed to Hippocrates.<sup>9</sup> A leading thread here are the close connections, in the Classical period and beyond, between Greek medical thought and the ideas of a number of Greek philosophers, most notably

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<sup>7</sup> A comprehensive list of Jouanna’s publications on Greek medicine up to 2007 can be found in V. Boudon, A. Guardasole and C. Magdelaine (eds), *La science médicale antique. Nouveaux regards* (Paris 2007) 1–18.

<sup>8</sup> Jouanna has also published widely on Greek tragedy, most notably his monograph *Sophocle* (Paris 2007).

<sup>9</sup> The question of the composition and doctrinal unity of the so-called ‘Hippocratic Corpus’ is discussed by Jouanna on several occasions in the present volume; see p. 55, 74 n. 30, 97.

Plato, Aristotle and Empedocles. In the present volume, these connections are made particularly clear in Jouanna's study of Hippocratic ideas about the transmission of disease (air, miasma and contagion, chapter 7), in concepts of health and its maintenance through dietetics (chapters 8, 9, 10), in theories of cognition and sensation (chapter 11) and in models of psychosomatic interaction (chapter 12). In these latter two chapters, a further recurrent point of interest in Jouanna's work manifests itself in his study of medical accounts of mental health and insanity, such as the explanation of degrees of intelligence and their dietetic treatment in the Hippocratic treatise *Regimen* (chapter 11) and the development of the well-known, influential Greek concept of melancholy in Hippocratic and post-Hippocratic thought (chapter 12). Here, again, Jouanna challenges widely held views (also in more popular thought) by pointing out that in the study of the history of the concept of melancholy one needs to make careful distinctions between the idea of *melancholia* as a disease, the notion of black bile as a bodily fluid and the concept of the melancholic constitution or temperament, first in the sense of a predisposition to certain illnesses and later, in the transition of late antiquity to the early middle ages, as the physical basis for a certain personality type (see also chapter 16).

Part Three studies the reception of Hippocratic medicine, especially medical ethics (chapter 13) and the theory of the four humours, in Galen and in late antiquity. Here, Jouanna's analysis ties in with other recent work on Galen's Hippocratism that stresses the transformations and adaptations that Galen applied to the traditional picture of Hippocrates as this had been handed down by earlier generations. Galen had a strong personal agenda, and this colours his representation of Hippocrates and of his own relationship to Hippocrates, even if some of his ideas, such as his concept of nature (chapter 14), owe more to other thinkers, most notably Aristotle, than to the Father of medicine from Cos. A *Leitmotiv* within this section is Jouanna's long standing interest in the Hippocratic work *The Nature of Man*, a treatise that according to some (including, most prominently, Galen) represents the core features of Hippocratic teaching, such as the theory of the four humours. Yet as Jouanna shows in chapters 14, 15 and 16, this treatise had a long, varied and, at times, troubled aftermath, and later authors went far beyond the tenets which the Hippocratic author had originally envisaged. The final chapter also reveals a number of exciting new discoveries of hitherto unknown medical texts from the late antique and early Byzantine period. Apart from thus showing how new material continues to be found beyond the traditional canons of Hippocratic and Galenic works, it also demonstrates how these texts both confirm and significantly enrich

our picture of the ways in which Greek medicine from Hippocrates to Galen continued to be of profound influence on the subsequent history of Western medicine.

## ACKNOWLEDGEMENTS

All translations are based on the papers as they were originally published (see below). In some selected cases, information on more recent relevant publications was added in the footnotes; these updates are marked \* [...].

Chapter 1, “Egyptian Medicine and Greek Medicine,” was originally published in J. Jouanna and J. Leclant (ed.), *La médecine grecque antique—Actes du 14e colloque de la Villa Kérylos à Beaulieu-sur-Mer les 10 et 11 octobre 2003* (Paris 2004), 1–21, under the title “Médecine égyptienne et médecine grecque” and is here translated with the kind permission of the Académie des Inscriptions et Belles-Lettres/De Boccard.

Chapter 2, “Politics and Medicine. The Problem of Change in *Regimen in Acute Diseases* and Thucydides (Book 6),” was originally published in M. Grmek and F. Robert (ed.), *Hippocratica—Actes du Colloque hippocratique de Paris, 4–9 septembre 1978, Colloques internationaux du CNRS, n° 583* (Paris 1980), 299–319, under the title “Politique et médecine. La problématique du changement dans le *Régime des maladies aiguës* et chez Thucydide (livre VI)” and is here translated with the kind permission of CNRS Éditions.

Chapter 3, “Rhetoric and Medicine in the Hippocratic Corpus. A Contribution to the History of Rhetoric in the Fifth Century” was originally published in *Revue des Études grecques* 97 (1984), 26–44, under the title “Rhétorique et médecine dans la *Collection hippocratique*. Contribution à l’étude de la rhétorique au V<sup>e</sup> siècle” and is here translated with the kind permission of the Association pour l’encouragement des études grecques en France.

Chapter 4, “Hippocratic Medicine and Greek Tragedy,” was originally published in P. Ghiron-Bistagne (ed.), *Anthropologie et Théâtre antique—Actes du colloque international Montpellier 6–8 mars 1986* (Montpellier 1987), 109–131, under the title “Médecine hippocratique et tragédie grecque” and is here translated with the kind permission of Presses Universitaires Montpellier 3.

Chapter 5, “Disease As Aggression in the Hippocratic Corpus and Greek Tragedy: Wild and Devouring Disease” was originally published in P. Potter,

G. Maloney and J. Desautels (ed.), *La maladie et les maladies dans la Collection hippocratique—Actes du VI<sup>e</sup> Colloque international hippocratique, Québec, 28 sept.–3 oct. 1987* (Québec 1990), 39–60, under the title “La maladie comme agression dans la *Collection hippocratique* et dans la tragédie grecque: la maladie sauvage et dévorante” and is here translated with the kind permission of Sphinx.

Chapter 6, “Hippocrates and the Sacred,” was originally published in *Koinonia* 12 (1988), 91–113, under the title “Ippocrate e il sacro” and is here translated with the kind permission of the Associazione di Studi Tardoantichi.

Chapter 7, “Air, Miasma and Contagion in the Time of Hippocrates and the Survival of Miasmas in Post-Hippocratic Medicine (Rufus of Ephesus, Galen and Palladius),” was originally published in S. Bazin-Tacchella, D. Quérueu and É. Samama (ed.), *Air, miasmes et contagion. Les épidémies dans l’Antiquité et au Moyen Âge* (Langres 2001), 9–28, under the title “Air, miasme et contagion au temps d’Hippocrate et survivance des miasmes dans la médecine posthippocratique (Rufus d’Éphèse, Galien et Palladios)” and is here translated with the kind permission of Éditions Dominique Guéniot.

Chapter 8, “Dietetics in Hippocratic Medicine: Definition, Main Problems, Discussion,” was originally published in J. Leclant, A. Vauchez and M. Sartre (ed.), *Pratiques et discours alimentaires en Méditerranée de l’Antiquité à la Renaissance, XVIII<sup>e</sup> Colloque de la Villa Kérylos à Beaulieu-sur-Mer les 4,5 et 6 octobre 2007* (Paris 2008), 53–72, under the title “Le régime dans la médecine hippocratique: définition, grands problèmes, prolongements” and is here translated with the kind permission of the Académie des Inscriptions et Belles-Lettres/De Boccard.

Chapter 9, “Water, Health and Disease in the Hippocratic Treatise *Airs, Waters, Places*,” was originally published in R. Ginouvès, A.M. Guimier-Sorbets, J. Jouanna and L. Villard (ed.), *L’eau, la santé et la maladie dans le monde grec—Actes du colloque 25–27 novembre 1992* (Athens 1994), 25–40, under the title “L’eau, la santé et la maladie dans le traité hippocratique des *Airs, eaux, lieux*” and is here translated with the kind permission of the École française d’Athènes.

Chapter 10, “Wine and Medicine in Ancient Greece,” was originally published in *Revue des Études grecques* 109 (1996), 54–64, under the title “Le vin

et la médecine dans la Grèce ancienne” and is here translated with the kind permission of the Association pour l’encouragement des études grecques en France.

Chapter 11, “The Theory of Sensation, Thought and the Soul in the Hippocratic Treatise *Regimen*: Its Connections with Empedocles and Plato’s *Timaeus*,” was originally published in *AION—Annali dell’Università degli Studi di Napoli “L’Orientale”* 29 (2007), 9–39, under the title “La théorie de la sensation, de la pensée et de l’âme dans le traité hippocratique du *Régime*: ses rapports avec Empédocle et le *Timée* de Platon” and is here translated with the kind permission of Fabrizio Serra Editore.

Chapter 12, “At the Roots of Melancholy: Is Greek Medicine Melancholic?,” was originally published in J. Clair and R. Kopp (ed.), *De la mélancolie* (Paris 2007), 11–51, under the title “Aux racines de la mélancolie: la médecine grecque est-elle mélancolique?” and is here translated with the kind permission of Gallimard.

Chapter 13, “Galen’s Reading of Hippocratic Ethics,” was originally published in H. Flashar and J. Jouanna (ed.), *Médecine et morale dans l’Antiquité, coll. Entretiens sur l’Antiquité Classique XLIII* (Vandœuvres-Geneva 1997), 211–253, under the title “La lecture de l’éthique hippocratique par Galien” and is here translated with the kind permission of Fondation Hardt Entretiens sur l’Antiquité Classique.

Chapter 14, “Galen’s Concept of Nature,” was originally published in J. Barnes and J. Jouanna (ed.), *Galien et la philosophie, coll. Entretiens sur l’Antiquité Classique XLIX* (Vandœuvres-Geneva 2003), 229–268, under the title “La notion de nature chez Galien” and is here translated with the kind permission of Fondation Hardt Entretiens sur l’Antiquité Classique.

Chapter 15, “Galen’s Reading of the Hippocratic Treatise *The Nature of Man*: The Foundations of Hippocratism in Galen,” was originally published in M.O. Goulet-Cazé (ed.), *Le commentaire entre tradition et innovation—Actes du colloque international de l’Institut des traditions textuelles, Paris-Villejuif 22–25 sept. 1999* (Paris 2000), 273–292, under the title “La lecture du traité hippocratique de la *Nature de l’homme* par Galien: les fondements de l’hippocratism de Galien” and is here translated with the kind permission of Vrin.

Chapter 16, “The Legacy of the Hippocratic Treatise *The Nature of Man: The Theory of the Four Humours*,” was originally published in C.W. Müller, Ch. Brockmann, C.W. Brunschön (ed.), *Ärzte und ihre Interpreten. Medizinische Fachtexte der Antike als Forschungsgegenstand der klassischen Philologie. Fachkonferenz zu Ehren von Diethard Nickel, 14. bis 15. Mai 2004* (Munich-Leipzig 2006), 117–141, under the title “La postérité du traité hippocratique de la *Nature de l’homme*: la théorie des quatre humeurs” and is here translated with the kind permission of K.G. Saur.

The idea of publishing a selection of Jacques Jouanna’s papers on ancient medicine in English translation was suggested by Irene von Rossum from Brill Publishers at a most agreeable dinner for the members of the Editorial Board of the *Studies in Ancient Medicine* during the 13th Colloque Hippocratique in Austin, Texas, in August 2008. The papers were selected by Philip van der Eijk in consultation with Jacques Jouanna. The translation was made by Neil Allies (Newcastle University) and edited by Philip van der Eijk. Work on the translation was funded by the Wellcome Trust through a Strategic Award in the History of Medicine, held by the Northern Centre for the History of Medicine at Newcastle University; by a grant from the CNRS/Sorbonne research group ‘Médecine Grecque’; and by a grant from the Alexander von Humboldt Foundation, held at the Humboldt-Universität zu Berlin.

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## NOTE ON TRANSLATIONS AND ABBREVIATIONS

All English translations of quotations from the original Greek and Latin texts were made afresh in accordance with the author's own French translations in the original papers, except in the following cases, where existing English translations (sometimes with slight modifications) were used:

### Chapter 1, "Egyptian Medicine and Greek Medicine":

Isocrates, *Busiris*, tr. G. Norlin, published by Harvard University Press in the Loeb Classical Library as *Isocrates*, vol. 3/373 (1928)

Diodorus of Sicily, tr. C.H. Oldfather, published by Harvard University Press in the Loeb Classical Library as *Diodorus of Sicily*, vol. 1/279 (1933)

Aristotle, *Politics*, tr. H. Rackham, published by Harvard University Press in the Loeb Classical Library as *Aristotle. Politics*, vol. 21/264 (1932)

### Chapter 4, "Hippocratic Medicine and Greek Tragedy":

Sophocles, *Oedipus Rex*: tr. Sir Richard Jebb, published by Cambridge University Press as *The Oedipus Tyrannus of Sophocles*. Edited with introduction and notes by Sir Richard Jebb. Cambridge, Cambridge University Press, 1887

### Chapter 6, "Hippocrates and the Sacred":

Hippocratic Writings, *Airs, Waters, Places*: tr. W.H.S. Jones, published by Harvard University Press in the Loeb Classical Library as *Hippocrates*, vol. 1/147 (1923)

### Chapter 8, "Dietetics in Hippocratic Medicine: Definition, Main Problems, Discussion":

Hippocratic Writings, *Ancient Medicine*: tr. W.H.S. Jones, published by Harvard University Press in the Loeb Classical Library as *Hippocrates*, vol. 1/147 (1923)

### Chapter 9, "Water, Health and Disease in the Hippocratic Treatise *Airs, Waters, Places*"

Hippocratic Writings, *Ancient Medicine*: tr. C.D. Adams, published by as *The Genuine Works of Hippocrates*, New York and Dover 1868

### Chapter 10, "Wine and Medicine in Ancient Greece"

Hippocratic Writings, *Epidemics 5*: tr. W.D. Smith, published by Harvard University Press in the Loeb Classical Library as *Hippocrates*, vol. 7/477 (1994)

Chapter 11, “The Theory of Sensation, Thought and the Soul in the Hippocratic Treatise *Regimen*: Its Connections with Empedocles and Plato’s *Timaeus*”

Plato, *Timaeus*, tr. W.R.M. Lamb, published by Harvard University Press in the Loeb Classical Library as *Plato*, vol. 9/234 (1925)

Chapter 12, “At the Roots of Melancholy: Is Greek Medicine Melancholic?”

Hippocrates, *Airs, Waters, Places*, Transl. tr. C.D. Adams, published by as *The Genuine Works of Hippocrates*, New York and Dover 1868

Chapter 13, “Galen’s Reading of Hippocratic Ethics”

Hippocrates, *Precepts*, tr. W.H.S. Jones, *Hippocrates*, published by Harvard University Press in the Loeb Classical Library as *Hippocrates*, vol. 1/147 (1923)

Chapter 16, “The Legacy of the Hippocratic Treatise *The Nature of Man*: The Theory of the Four Humours”

Galen, *Commentary on Hippocrates’ On the Nature of Man*, tr. R.J. Hankinson, to be published in Galen, *Works on Human Nature*, ed. P.J. van der Eijk and P.N. Singer, Cambridge 2013.

The following abbreviations were used

- L. (in references to works attributed to Hippocrates) means Littré and the numbers refer to the volume, page (and sometimes line) numbers in E. Littré, *Oeuvres complètes d’Hippocrate* (Paris 1839–1861)
- K. (in references to works attributed to Galen) means Kühn and the numbers refer to the volume, page (and sometimes line) numbers in C.G. Kühn, *Claudii Galeni opera omnia* (Leipzig 1821–1833)

Further abbreviations

<i>AJPh</i>	<i>American Journal of Philology</i> . Baltimore (Md.): Johns Hopkins University Pr.
Anon. Lond.	Anonymus Londinensis
<i>ANRW</i>	<i>Aufstieg und Niedergang der römischen Welt</i> . Berlin – New York: De Gruyter
<i>BCH</i>	<i>Bulletin de correspondance hellénique</i> . Athènes: École française d’Athènes; Paris: de Boccard.
<i>BHM</i>	<i>Bulletin of the History of Medicine</i> . Baltimore (Md.): Johns Hopkins University Pr.
<i>BICS</i>	<i>Bulletin of the Institute of Classical Studies</i> . London: University of London, Institute of Classical Studies.
<i>CAG</i>	<i>Commentaria in Aristotelem Graeca</i> .
<i>CAM</i>	Galen <i>De consitutione artis medicae</i>
<i>CMG</i>	Corpus Medicorum Graecorum
<i>CNRS</i>	<i>Centre national de la recherche scientifique</i>

CRAI	<i>Comptes rendus / Académie des inscriptions et belles-lettres</i> . Paris: de Boccard.
CUF	<i>Collection des Universités de France</i> (Paris: Les Belles Lettres)
DK	Hermann Diels, Walther Kranz. <i>Die Fragmente der Vorsokratiker</i> . Berlin 1961 <sup>10</sup>
GP	J.D. Denniston, <i>The Greek Particles</i> , Oxford 1950 (second edition)
HNH	Galen <i>In Hippocratis de natura hominis</i> .
HVA	Galen <i>In Hippocratis de victu acutorum commentaria</i> .
IG	<i>Inscriptiones Graecae</i> , Berlin 1873–
LCL	Loeb Classical Library
LSJ	H. G. Liddell, R. Scott, H. S. Jones. <i>A Greek-English Lexicon</i> . Revised and augmented throughout. Oxford 1996. [1843]
<i>Med. Hist. Journal</i>	<i>Medizinhistorisches Journal</i> . Stuttgart.
MH	<i>Museum Helveticum</i> . Basel: Schwabe.
PG	J.P. Migne, <i>Patrologia Graeca</i>
Par. gr.	Parisinus graecus
PHP	Galen <i>De placitis Hippocratis et Platonis</i> .
PMG	Denys L. Page (ed.). <i>Poetae melici graeci</i> . Oxford 1962.
QSGN	<i>Quellen und Studien zur Geschichte der Naturwissenschaften und Medizin</i> .
QUCC	<i>Quaderni urbinati di cultura classica</i> . Pisa: Serra.
REG	<i>Revue des Études Grecques</i> . Paris: Les Belles Lettres.
REL	<i>Revue des Études Latines</i> . Paris: Les Belles Lettres.
RhM	<i>Rheinisches Museum für Philologie</i> . Frankfurt am Main: Sauerländer
RHT	<i>Revue d'histoire des textes</i> . Turnhout: Brepols.
SM	Galen, <i>Scripta minora</i> , ed. G. Helmreich et al.
SVF	<i>Stoicorum veterum fragmenta</i> , ed. H. von Arnim, Berlin: De Gruyter 1903–1924
TAPhA	<i>Transactions of the American Philological Association</i> . Baltimore (Md.): Johns Hopkins University Pr.



PART ONE

CLASSICAL GREEK MEDICINE IN ITS HISTORICAL,  
LITERARY AND CULTURAL CONTEXT



## CHAPTER ONE

### EGYPTIAN MEDICINE AND GREEK MEDICINE

Champollion never had the opportunity to decipher a medical papyrus. In his days, Egyptian medicine was known indirectly, notably through information from the Greeks, in particular Herodotus. The situation changed completely during the second half of the nineteenth century following the discovery and publication of Egyptian medical papyri. The first was the Berlin papyrus, published by Heinrich Brugsch in 1863; some ten years later, in 1875, the most important medical text from ancient Egypt, the Ebers papyrus (named after its owner and editor) cast light on general pathology. A particular aspect of Egyptian medicine, gynaecology, was subsequently revealed by the Kahun papyrus, published by F.L. Griffith in 1898. The start of the twentieth century continued to enrich the collection, notably with the Hearst papyrus, published in 1905 by G.A. Reisner. This resulted in attempts to produce overviews of Egyptian medicine, such as W. Wreszinski's three volumes *Die Medizin der alten Aegypter*, published in Leipzig between 1909 and 1913. His study also had the merit of publishing a new document, the London papyrus (Brit. Mus. 10059). The publication of medical papyri continued, rendering this first overview partially obsolete. The most important was that of the Smith papyrus by Breasted in 1930, whose significance stemmed from the fact that it opened up surgery, a new area of Egyptian medicine, whose rational aspect sharply contrasted with the magico-religious medicine that had been known up until then. The first half of the twentieth century ended with the publication of the Carlsberg papyrus no. 8 by the Danish scholar E. Iversen in 1939 and of the Chester Beatty papyrus no. 6 by the Belgian scholar F. Jonckheere in 1947. The second half of the century witnessed a second wave of studies. The work on Egyptian medicine in the Pharaonic era by Gustave Lefebvre, published in French in 1953, remained unsurpassed for half a century. However, the work that remains fundamental for our knowledge of Egyptian medicine is the *Grundriss der Medizin der Alten Ägypter*, published in eight volumes under the direction of H. Grapow from 1954 to 1963, with a supplementary volume in 1973. Of course, further papyri have since come to enrich our knowledge of Egyptian medicine; for example, the Brooklyn papyrus, dedicated to snake bites, which was published by Serge Sauneron in 1989. Finally,

there is a very useful recent study in French by Thierry Bardinet, *Les papyrus médicaux de l'Égypte pharaonique*, published in Paris in 1995, which has the great merit of discussing not only important aspects of Egyptian physiology, pathology and therapeutics (without masking the numerous difficulties of interpretation with which Egyptologists are confronted), but also of providing a French translation of the medical papyri, a very valuable tool for those who are not Egyptologists.<sup>1</sup>

As and when these medical texts from Pharaonic Egypt were published, scholars began to raise the question about the relationship that might have existed between this Egyptian medicine (whose most prestigious examples date from about 1550 BC) and Hippocrates, the first representative of Greek medicine, which manifested itself more than ten centuries later.<sup>2</sup> The considerable chronological gap is not in itself a major obstacle to a comparison, since the Egyptian medicine as reflected in the surviving papyri extends over a long period from the 1800s BC until the Ptolemaic age, a post-Hippocratic era, without undergoing any noticeable major evolution. This attempt at comparison appears all the more justified because the pharmacopeia of Hippocratic medicine expressly mentions products from Egypt, such as nitrate, alum and oil,<sup>3</sup> all of which are testimony at least to commercial exchanges, if not to an influence of one medicine on the other. Studies on the Egyptian presence in the pharmacopeia of Greek or Latin authors, such as Dioscorides, Celsus or Pliny the Elder, observe the same trend.<sup>4</sup>

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<sup>1</sup> Complete references to the publications of Egyptian medical papyri mentioned here in the brief historiography of their discovery can be found in its bibliography. The bibliography should also be consulted more generally for numerous works on Egyptian medicine or the comparison between Egyptian and Greek medicine. To these we should add G. Majno, *The Healing Hand. Man and Wound in the Ancient World* (Cambridge, Mass, 1975), pp. 69–140 (bibliography, pp. 434–441) and L. Green, “Beyond the Humors: Some Thoughts on Comparison between Pharaonic and Greco-Roman Medicine,” in Zahi Hawass (ed.), *Egyptology at the Dawn of the Twenty-First Century. Proceedings of the Eighth International Congress of Egyptologists, Cairo, 2000*, 2 (Cairo, 2003), pp. 269–275. It is supplemented by the CEPODAL on-line bibliography (University of Liège).

<sup>2</sup> See at the end of the nineteenth century Heinrich L. Emil Lüring, *Die über die medicinischen Kenntnisse der alten Ägypter berichtenden Papyri verglichen mit den medicinischen Schriften griechischer und römischer Autoren*. Inaugural-Dissertation zur Erlangung der philosophischen Doctorwürde an der Kaiser-Wilhelms-Universität Strassburg (Leipzig, 1888).

<sup>3</sup> For these references, see the *Index Hippocraticus* (Hamburg, 1986), s.v. Αἰγύπτιας.

<sup>4</sup> In particular, M.H. Marganne on Dioscorides (“Les références à l'Égypte dans la *Matière médicale* de Dioscoride,” in Université de Liège, Département des Sciences de l'Antiquité (ed.), *Serta Leodiensia Secunda. Mélanges publiés par les Classiques de Liège à l'occasion du 175<sup>e</sup> anniversaire de l'Université* (Liège, 1992), pp. 309–322); Celsus (“Thérapies et médecins d'origine ‘égyptienne’ dans le *De medicina* de Celse,” in C. Deroux (ed.), *Maladie et maladies*

The comparison has also been encouraged by more or less precise parallels that scholars have been able to draw following the discoveries of the papyri. The lists of remedies that we find in the gynaecological treatises of the Hippocratic Corpus recall those of the Egyptian papyri, both in their layout and also, to a certain extent, in their content. The transition formulas in the lists are the same ('another remedy', 'another method').<sup>5</sup> The clearest connection was made in 1939 by E. Iversen, the editor of the Carlsberg papyrus. He compared a test concerning women in the Egyptian papyri and in a Hippocratic treatise. We read in the Carlsberg papyrus (and also in Kahun 28), in the course of a series of tests to determine if a woman will give birth normally or not, the following method:

Another method. Leave overnight a clove of garlic moistened (with ...) in the body (i.e. in the vagina). If you smell garlic on her breath, she will give birth (normally). If you cannot smell it, she will not give birth normally, and this will always be the case.

In the Hippocratic treatise *On Sterile Women*, ch. 214, we read the following test, amongst a series of exploratory methods to determine if a woman will conceive or not:

Another (method): take a clove of garlic that you have cleaned and peeled, apply it through a pessary into the uterus, and the next day check if the smell of garlic is exhaled from the mouth; if it is exhaled, the woman will conceive; if not, she will not conceive.

On the basis of this comparison, Iversen arrives at the following conclusion: "Thus, we have here one of the rare tangible examples of a direct influence of Egyptian medicine on Greek medical literature, in a period as ancient as Hippocrates."<sup>6</sup> The test is evidently very similar: a clove of garlic is placed in the woman's vagina in the evening before she goes to sleep, and the doctor inspects her the next morning to find out if the smell of garlic is exhaled from the mouth. In both cases, the test presupposes the belief that the woman's body contains, in one way or another, a passage between the

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*dans les textes latins antiques et médiévaux. Actes du Ve Colloque intern.* (Bruxelles, 4–6 septembre 1995) (Brussels, 1998), pp. 137–150) and Pliny the Elder ("L'Égypte médicale de Pline l'Ancien," in G. Sabbah (ed.), *Le latin médical. La constitution d'un langage scientifique. Réalités et langage de la médecine dans le monde romain* (Saint-Étienne, 1991), pp. 155–171).

<sup>5</sup> The connection was previously made by L. Bourgey, *Observation et expérience chez les médecins de la Collection hippocratique* (Paris, 1953), pp. 176, n. 1.

<sup>6</sup> E. Iversen, "Papyrus Carlsberg no. VIII, with some remarks on the Egyptian origin of some popular birth prognoses," in Det Kongelige Danske Videnskabernes Selskab (ed.), *Historisk-filologiske Meddelelser* 26/5 (Copenhagen, 1939), pp. 21–22.

vagina and the mouth. The two tests are also very similar in their form. They are situated in a list of treatments and both begin with the words ‘another method’ or ‘another way’. Moreover, the diagnosis is set out in two contrasting hypothetical subordinate clauses. However, the aim of the test is not exactly the same in the Egyptian papyrus and the Hippocratic treatise: one is a test to determine the good or bad development of the pregnancy, the other to determine if the woman is sterile or not. Thus, it is difficult to speak of a direct influence.<sup>7</sup>

Such specific connections urged scholars to go further in their comparison of theories. A decade after Iversen, Robert O. Steuer, first in a work that he published alone in 1948,<sup>8</sup> and then in a work written in collaboration with J.B. de C.M. Saunders in 1959, considered the Egyptian theory of *oukhedou* to be the origin of the pathological theories of Cnidian medicine. His first work emphasised the Egyptian theory according to which the *oukhedou* was understood to be a pathogenic agent that sticks to faeces, enters the body’s intestine and penetrates the blood and causes its coagulation and eventually its corruption into pus. His second work was more focussed on the influence of Egyptian medicine on a single part of Greek medicine, as shown by its title: *Ancient Egyptian and Cnidian Medicine: the Relationship of Their Aetiological Concepts of Disease*.<sup>9</sup> The authors perceived an influence of the pathological theory of the Egyptians on the theory of ‘residues’ attributed to Euryphon of Cnidus in a doxography well known to Hellenists, the Anonymus Londinensis.<sup>10</sup> This study had an impact even amongst Greek historians, who saw it as “an important contribution to the history of the School of Cnidus.”<sup>11</sup> Since then, an article by P. Ghalioungui, published in 1968 and entitled *The Relation of Pharaonic to Greek and Later Medicine*,<sup>12</sup> presents a good summary of what has been said concerning the influence of Egyptian medicine on Greek medicine.

However, scholars are currently more critical. In particular, Steuer and Saunders’ thesis on the *oukhedou* has been criticised by both Egyptologists

<sup>7</sup> Compare the reservations of Thierry Bardinnet, *Les papyrus médicaux de l’Égypte pharaonique* (Paris, 1995), p. 228f.

<sup>8</sup> R.O. Steuer, “*Oukhedou*, Aetiological Principle of Pyaemia in Ancient Egyptian Medicine,” *Supplement 10 to the Bulletin of the History of Medicine* (1948).

<sup>9</sup> R.O. Steuer and J.B. de C.M. Saunders, *Ancient Egyptian and Cnidian Medicine: the Relationship of Their Aetiological Concepts of Disease* (Berkeley, Calif., 1959).

<sup>10</sup> See the account given by Jean Leclant in *Bibliotheca Orientalis* 18 (1961), 144f.

<sup>11</sup> A. Thivel, “La doctrine des ΠΕΠΙΣΣΩΜΑΤΑ et ses parallèles hippocratiques,” *Revue de Philologie, de littérature et d’histoire anciennes* 39 (1965), 269.

<sup>12</sup> P. Ghalioungui, “The Relation of Pharaonic to Greek and Later Medicine,” *Bulletin of the Cleveland Medical Library* 15 (1968), 96–107.

and Hellenists. Thierry Bardinet, in his recent work on *Les papyrus médicaux de l'Égypte pharonique* does not believe the 'theory of the *oukhedou*' proposed by Steuer to be an acceptable reading of the Egyptian texts concerned, and goes on to say: "If this is not the case, the validity of the connections proposed still remains to be demonstrated."<sup>13</sup> Reservations have also been expressed for Greek medicine:<sup>14</sup> the connections proposed by Steuer and Saunders attribute a theory of residues (in Greek, *perittomata*) to Euryphon of Cnidus, on the evidence of the doxography of the Anonymus Londinensis. However, this theory, at least in this formulation, is hardly likely to be so ancient. Indeed, it is not attested expressly in the Hippocratic Corpus for a simple reason: the concept of *perittoma* is Aristotelian. Moreover, in our desire to emphasise connections, we risk forgetting the fundamental point that the rational medicine of the Hippocratic Corpus sharply contrasts with the magico-religious medicine of the Egyptians. We know that incantations regularly accompanied treatments in Egyptian medicine to render them effective,<sup>15</sup> yet it is well-known that such incantations were never used in Hippocratic medicine, and that one of the Hippocratic treatises, *The Sacred Disease*, even expressly condemns their use. This does not mean to say that it is never legitimate to pursue a comparison between these two medicines. I myself highlighted in a quite long footnote in my thesis on *The Archaeology of the School of Cnidus*, published in 1974, the similarities that we find in the technique of detailing diseases between Egyptian medicine and the Hippocratic nosologic treatises derived from the *Cnidian Sentences*.<sup>16</sup> We could also compare the problem of the prohibition of treatment in Egyptian and Greek medicine. However, we must be prudent in interpreting such similarities, avoid concluding influences too quickly from similarities, and distinguish between the different periods of Greek medicine.<sup>17</sup> In any case, the conclusions remain of a hypothetical nature.

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<sup>13</sup> Th. Bardinet, *Les papyrus médicaux* (see above, n. 7), p. 129.

<sup>14</sup> See J. Jouanna, *Hippocrate. Pour une archéologie de l'École de Cnide* (Paris, 1974), p. 509, n. 2.

<sup>15</sup> On this double magical and rational aspect of Egyptian medicine, see recently Kamal Sabri Kolta and Doris Schwarzmann-Schafhauser, *Die Heilkunde im Alten Ägypten. Magie und Ratio in der Krankheitsvorstellung und therapeutischen Praxis* (Sudhoffs Archiv. Beihefte, 42) (Stuttgart, 2000).

<sup>16</sup> J. Jouanna, *Hippocrate. Pour une archéologie de l'École de Cnide* (see above, n. 14) p. 508, n. 1.

<sup>17</sup> For a comparison between Hellenistic Greek medicine and Egyptian medicine, see Heinrich von Staden, *Herophilus. The Art of Medicine in Early Alexandria* (Cambridge, 1989), pp. 1–31 ('Alexandrian and Egyptian Medicine'), where there is a thorough and balanced comparison between the different aspects of medicine.

In order to move beyond hypotheses, it is possible to study the problem of the connections between Egyptian medicine and Greek medicine in a different way, one which I will adopt now: the image of Egyptian medicine in Greek thought. Rather than suggesting hypotheses about a reality that escapes us, we can observe in the Greek texts what the Greeks said and thought about Egyptian medicine. The title of a French Habilitation thesis written by Christian Froidefond in 1970 spoke of the Egyptian ‘mirage’ in Greece.<sup>18</sup> The term ‘mirage’ has the disadvantage of suggesting that the image in mind is systematically embellished and unreal. It is better to speak of an ‘image’ rather than a ‘mirage’. My aim will essentially be to attempt to see what image, in the domain of medicine, Egypt has in the eyes of Greek writers, in particular amongst doctors. I will draw on the most important texts: beginning with those that, between Homer (eighth century BC) and Diodorus of Sicily (first century BC), give a frankly positive image of Egyptian medicine, I will show that, following the development of Greek rational medicine in the Classical period, a reversal in perspective occurred when Egyptian medicine was compared to Greek medicine. Egyptian medicine, which Homer celebrates as superior, consequently appears only rarely in the histories of medicine that the Greeks wrote between Hippocrates (fifth century BC) and Galen (second century AD).

We begin, as usual, with Homer. The first passage concerning the image of Egypt in the realm of medicine is found in the *Odyssey*. We can speak of it as a foundation text, since it served as a point of reference for later authors, including doctors, as we will see in the last part of this paper. In book four of the *Odyssey*, Telemachus, the son of Odysseus, accompanied by Peisistratus, the son of Nestor, visits Menelaus and Helen in search of news about his father, who has still not returned home after the Trojan War. Homer recalls the gifts that Menelaus and Helen brought back from Thebes in Egypt, a town where the houses were packed with riches (4.125 f.). Reminiscence of the absent Odysseus leads to tears, and at this moment Helen puts a drug (φάρμακον) into the crater of wine, which eases grief or anger and makes one forget one’s woes. This drug also came from Egypt. Homer says (4.227–232):

Such were the cunning drugs that this daughter of Zeus had in her possession; beneficial drugs that had been a gift from Polydamna, the wife of Thon, from Egypt, where the fertile earth produces many different drugs, many being

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<sup>18</sup> Christian Froidefond, *Le mirage égyptien dans la littérature grecque d’Homère à Aristote*, (Publications universitaires des lettres et sciences humaines d’Aix-en-Provence) (Gap, 1970).

beneficial when mixed, many being harmful, and where each doctor is the wisest of men; yes, they are of the family of Paeon.

This passage shows the general judgement afforded to the land of Egypt and to Egyptian doctors. Nature and the art go hand in hand. The fertile earth provides numerous plants, which are the basis for medicines composed of simple mixes (μεμιγμένα), or, conversely, poisons. This statement probably reflects reality. When Theophrastus, in his *History of Plants* 9.15, speaks of the regions that produce medicines, outside Greece he quotes Etruria and Latium, where Circe is said to have lived, but above all Egypt. Theophrastus does not hesitate to refer to the authority of Homer, and even quotes the verses above. Confirmation of the richness of Egypt's medicinal plants is also verified by the mention in Graeco-Roman medical literature of products originating from Egypt that are used to make medicines. Returning to the text of Homer, the Egyptian doctor is qualified as "being the wisest of all men," clearly implying the superiority of Egyptian medicine over all other medicine, and in particular over Greek medicine. This superiority is immediately justified in the Homeric passage by the genealogy of Egyptian doctors. They descend from Paeon; in Homer, Paeon is the doctor of the gods. Thus, their superior knowledge comes from their divine origin. We also find this superiority in the praise of doctors in the *Iliad*, where the doctor himself is celebrated. For example, the famous description of the doctor in book XI of the *Iliad* (514–515):

A doctor is a man worth many others for his skill to cut out arrows and spread soothing medicines (on a wound).

This definition of a doctor is given by Idomeneus, when he urges Nestor quickly to mount his wagon and to remove the doctor Machaon from the fight, who has been wounded in the shoulder by an arrow shot by Alexander-Paris. However, unlike Egyptian doctors, this Greek doctor is not a descendant of Paeon. He is certainly from a well-known medical family; the same passage reveals that he is the son of Asclepius. However, in Homer's time Asclepius was not yet a god; he was simply an irreproachable doctor who had received his medical knowledge from the centaur Chiron (cf. IV.219). Thus, the origin of the knowledge of Egyptian doctors in the *Odyssey* appears more prestigious than that of the two best-known Greek doctors in the *Iliad*, the Asclepiads Machaon and Podalirius.

This judgement on the excellence of Egyptian doctors remained in the memories of Greek authors; it is this passage of Homer that comes most naturally to the mind of Greek authors when they speak of Egyptian medicine. For example, Diogenes Laertius (third century AD), in his biography of

Plato,<sup>19</sup> mentions the tradition according to which Plato was in Egypt with Euripides, who fell ill and was cured by the Egyptian priests who treated him with sea water. To confirm this, the biography quotes the verses from the *Odyssey* on the superiority of Egyptian doctors.

This prestige of Egyptian doctors, well attested in the time of Homer, is more obvious in the Classical period in Herodotus. In his description of Egypt, he declares: "It is all full of doctors."<sup>20</sup> However, in the same passage Herodotus reveals a peculiarity of Egyptian medicine compared with Homer: the specialisation of doctors. Herodotus says: "The practice of medicine is divided in Egypt as follows: each doctor is a specialist in one disease, and not more [...] some are doctors of the eyes, others of the head, others of the teeth, others of the stomach, and others of hidden diseases." This organisation of medicine into specialities would appear all the more remarkable to a Greek since Greek doctors were, in practice as well as in theory, generalists. Other passages of Herodotus confirm the prestige of Egyptian medicine. Egyptian doctors were sought-after throughout the rest of the world. In particular, oriental sovereigns surrounded themselves with doctors from Egypt. Cyrus demanded the best specialist in Egypt to treat his eyes, and the doctor chosen by the Pharaoh Amasis found himself uprooted from his wife and children to go to Persia. The resentment of this doctor towards the Pharaoh was the cause of the expedition of Cambyses, the son of Cyrus, against Egypt.<sup>21</sup> It was also Egyptian doctors who began to treat Darius when he injured his ankle jumping down from his horse during a hunt.<sup>22</sup>

In the fourth century, the prestige of Egyptian medicine reappears in Isocrates' *Busiris*. Without entering into a discussion of Isocrates' polemical intentions against a precursor, Polycrates, who had already composed a eulogy to this king of Egypt, Isocrates composes a general eulogy of Egypt, portraying not only the country, but also Egyptian society divided into specialist parts, its constitution and its laws, its piety and also its philosophy. During this eulogy, he also mentions medicine which is, according to Isocrates, a discovery of the Egyptian priests, as is philosophy. Isocrates says:

Busiris provided the priests with affluence through the revenues taken from the sanctuaries, with wisdom through the purifications imposed by the laws and, finally, with leisure through exemption from the hazards of fighting and

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<sup>19</sup> Diogenes Laertius, *Lives of the Philosophers* 3.7.

<sup>20</sup> Herodotus 2.84.

<sup>21</sup> Herodotus 3.1.

<sup>22</sup> Herodotus 3.129.

other work. Thanks to such conditions of life, the priests discovered the aid of medicine for the body, using not dangerous drugs, but drugs of such a nature that they are as harmless as daily food, yet in their effects are so beneficial that all men agree the Egyptians are the healthiest and most long lived; as for the soul, they demonstrated the practice of philosophy, which can establish laws and investigate the nature of the universe.<sup>23</sup>

Thus, medicine and philosophy in Egypt are parallel discoveries. If we compare this eulogy of Egyptian medicine with those that we find in Homer and Herodotus, we discover some new information: medicine appears both as temple medicine and as a medicine that is at the same time mild and effective, and it appears to be the cause of the good health of the Egyptians, who were “the healthiest of men.” Already in Herodotus, the Egyptians were said to be the healthiest of men, after the Libyans.<sup>24</sup> According to Isocrates, the good health of the Egyptians is the result of the excellence of their medicine. In Herodotus, the response is more nuanced. It is first the climate of the country that, in the absence of major seasonal changes, explains the health of its inhabitants, since it is major change that causes illness. This explanation is analogous to the principles that we find in the Hippocratic treatise *Airs, Waters, Places*, although a detailed comparison with the Egyptians is unfortunately impossible due to a great lacuna in this Hippocratic treatise, where the passage on the Egyptians has virtually totally disappeared.<sup>25</sup> In addition to the good climate, Herodotus mentions the good diet that the Egyptians follow to prevent diseases: “They purge themselves with *syрмаiē* three days every month, seeking good health by vomiting and enemas, believing that all diseases in men come from the food that they eat.”<sup>26</sup> This discussion of Egyptian diet reappears in another later historian, Diodorus of Sicily (first century BC):

In order to prevent diseases, they treat their bodies by means of enemas, fasts and vomiting, sometimes every day and sometimes at intervals of three or four days. Indeed, they say that whilst almost all the food is distributed (in the body), the surplus is a residue, which is the origin of diseases, and so the aforesaid treatment, by removing the causes of disease, is the best way to achieve good health.<sup>27</sup>

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<sup>23</sup> Isocrates, *Busiris* 21–22 (Trans. G. Norlin, slightly modified).

<sup>24</sup> Herodotus 2.77.

<sup>25</sup> Hippocrates, *Airs, Waters and Places* 12, ed. Jouanna, p. 222, 3 (with no. 2 on p. 222 = p. 299f.).

<sup>26</sup> Herodotus 2.77.

<sup>27</sup> Diodorus of Sicily 1.82.1–2 (transl. C.H. Oldfather, modified).

The two testimonia are comparable, despite variations in detail.<sup>28</sup> Diodorus clearly knew Herodotus. Nevertheless, he used other sources, amongst them the history of Egypt written by Hecataeus of Abdera (fourth / third century), and Diodorus himself also went to Egypt. This explains why he gives new information about the status of Egyptian doctors and about a law written in relation to treatment:

On their military campaigns and their journeys in the country, the Egyptians all receive treatment without payment of any private fee; for the doctors draw their support from public funds and administer their treatments in accordance with a written law which was previously composed by many famous doctors. If they follow the rules of this law as they read them in the sacred book, and yet are unable to save their patient, they are absolved from any blame; conversely, if they act contrary to the law's prescriptions in any respect, they must submit to a trial with death as penalty. The lawgiver clearly believed that but a few doctors would ever show themselves wiser than the mode of treatment which had been followed for a long time and had been originally written by the best practitioners.<sup>29</sup>

Diodorus displays a certain degree of objectivity in his presentation of Egyptian medicine, describing the organisation of this medicine rather than judging it. However, we note an implicit approval of this public and traditional medicine. The remuneration of doctors from public funds serves the interest of the patient, since he is treated for free when he is away from home. The need to respect the written tradition when applying treatment is justified by the wisdom of the law-maker, who balances the result of a long tradition established by the best doctors and the unpredictable individual competence of each doctor.

This obligation of Egyptian doctors to conform to the law had previously been mentioned by Aristotle (fourth century BC) in his *Politics*: "In Egypt, doctors have the right to alter their prescription only after four days; and if one of them alters it earlier, he does so at his own risk."<sup>30</sup>

The two testimonies refer to the obligation of the Egyptian doctor to follow in his treatment a law that is imposed on him and does not give place to individual initiative at the outset. However, they are not compatible in their detail. Aristotle speaks of a period of four days, after which they have

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<sup>28</sup> The chronological divisions are different (prescriptions are more frequent in Diodorus than in Herodotus: three consecutive days a month in Herodotus; according to Diodorus, every day continuously, or after intervals of three of four days). Diodorus also includes fasts, which Herodotus does not mention.

<sup>29</sup> Diodorus of Sicily 1.82.3 (transl. C.H. Oldfather, modified).

<sup>30</sup> Aristotle, *Politics* 3.15, 1286a12–14.

authorisation to innovate a treatment without risk of judicial proceedings, something that is not mentioned in Diodorus. The biggest difference lies in the judgement given to this practice. We saw that Diodorus' judgement on this organisation of Egyptian medicine was favourable. It is a method of limiting the risk of individual mistakes. By contrast, in Aristotle this organisation of Egyptian medicine is taken as a negative example. It illustrates the general proposition according to which an art cannot be practiced when restrained by written laws, because general prescriptions cannot account for individual circumstances. However, we must put this criticism into perspective; the same argument is used by supporters of the monarchy, a system which Aristotle believes to be far from ideal.

Apart from the passage of Aristotle's *Politics*, all the texts that we have seen from Homer to Diodorus present a positive image of Egyptian medicine. However, compared to Homer, the Classical period witnesses a reversal in the relationship between Egyptian and Greek medicine following the development of Greek medicine. In Homer, the superiority of Egyptian medicine is uncontested. As late as the sixth century, Egyptian medicine still exported its specialists to the oriental courts, as Herodotus clearly shows. When Darius 'twists his foot' dismounting his horse,<sup>31</sup> he firstly summons for the Egyptian doctors that he had at his court. Herodotus says: "It had been his custom for some time to keep in attendance certain Egyptian doctors, who had a reputation for the highest eminence in the art of medicine; he now consulted them."<sup>32</sup>

A clearer statement of the continuing superiority of Egyptian medicine over Greek medicine at the end of the sixth century is hardly possible. Yet we know what happened. Egyptian doctors, Herodotus tells us, "in twisting and forcing the foot, made it worse." For seven days, his suffering prevented Darius from sleeping. He then summoned Democedes, a Greek from Croton, and an old doctor of Polycrates, whom he found amongst his prisoners. This is the moment in which the reversal takes place. Herodotus says: "After this, Darius was treated by Democedes, who used Greek treatments and applied mild remedies after the vigorous remedies of the Egyptian doctors, and

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<sup>31</sup> On the nature of dislocation and the comparison of this dislocation with the surgical treatises of the *Hippocratic corpus*, see M.D. Grmek, "Ancienneté de la chirurgie hippocratique," in F. Lasserre and Ph. Mudry, eds., *Formes de pensée dans la Collection hippocratique: actes du IVe Colloque international hippocratique: Lausanne, 21-26 septembre 1981*, (Publications de la Faculté des lettres) 26 (Geneva, 1983), pp. 285-295.

<sup>32</sup> Herodotus 3.129.

enabled the king to get some sleep, and very soon returned him to health, although Darius had never expected to be able to use his foot again.”<sup>33</sup> Greek medicine is characterised by its mildness, contrasted with the violence of Egyptian medicine. This mildness was more effective than violence. The Egyptian doctors were revealed as inferior to the Greek doctor. Darius wanted to impale them, but the Greek doctor asked for and obtained their pardon; even in human relations, the Greek doctor showed his mildness. This moment seems symbolic of the reversal of image of Egyptian medicine compared to Greek medicine.

However, it is with the development of Hippocratic medicine in the second half of the fifth century that the image of Egyptian medicine disappears in the eyes of Greek practitioners. The most significant witness is the Hippocratic treatise *Ancient Medicine*.<sup>34</sup> This treatise of rational medicine recounts, for the first time, a history of the medical art. Medicine is a human invention: it is the work of men who were the first to discover a diet adapted to the state of the patient; and this invention is so valued that they attributed it to a god, which was the normal belief in the period when the author was writing. The text does not clarify who this god is. It could be Apollo, who had the name of Paeon, the doctor of the gods, appended to his cult, or Asclepius who, from the prince of Trikka we find in Homer, became a demi-god, and then the god of medicine. The text of *Ancient Medicine* is no clearer about who these first men were that discovered medicine. However, there is a significant passage in the treatise which discusses those who, in the author’s own time, did not make use of medicine, and it clarifies this category as “barbarians and a few Greeks.”<sup>35</sup> Egyptian medicine is no longer, as in Herodotus, defeated by Greek medicine. It no longer exists. The antithesis between Greeks and barbarians eliminates Egyptian medicine, since Egypt finds itself included in the category of barbarians, a group that does not make use of medicine. Thus, the Hellenocentrism of classical Greek medicine is quite striking.

Similarly, Egyptian medicine plays no role in Plato, who presents in his *Republic* the second history of medicine that has been preserved amongst the Greek authors.<sup>36</sup> According to Plato, the first stage of medicine (which in his eyes is ideal, since modern dietetics seemed to him the result of

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<sup>33</sup> Ibid. 3.130.3.

<sup>34</sup> See J. Jouanna, *Hippocrate. L’ancienne médecine*, II, 1 (Collection des universités de France) (Paris, 1990).

<sup>35</sup> Hippocrates, *Ancient Medicine*, ch. 5, ed. Jouanna, p. 124,5 f.

<sup>36</sup> Plato, *Republic* III, 405d–406a.

moral and political degradation) is that of the time of Asclepius. In order to recreate this first stage, Plato draws on some examples from the *Iliad* where the sons of Asclepius, Machaon and Podalirius, are the most famous doctors of the expedition. In any case, there is no reference to the passage in the *Odyssey* on Egyptian medicine. This silence regarding the Egyptians is comparable to that of the author of *Ancient Medicine*.

Even when Isocrates praises Egyptian medicine in his *Busiris*,<sup>37</sup> he is very careful not to do so at the expense of Greek medicine. In this respect, there is a difference in the role which he accords Egypt in the formation of Greek civilisation. When he talks, as we saw, about Egyptian priests who discovered medicine for the body and knowledge for the soul, he recalls that Pythagoras of Samos “was the first to bring to Greece philosophy in general, and in particular was more evidently passionate than any other about the sacrifices and the ceremonies in the sanctuaries.” Greek philosophy came from the school of Egypt. By contrast, Isocrates says nothing similar regarding Greek medicine. Greek doctors in the classical period did not consider themselves part of the school of Egypt, and non-specialists, admirers of Egypt, did not pretend as such.

Following the conquests of Alexander, after the traditional Greek medical centres lost their pre-eminence to Alexandria and one of the biggest centres of Greek medicine developed on Egyptian soil, the place of Egyptian medicine in rational Greek medicine did not noticeably change. There is, in this respect, a very interesting treatise in the Galenic corpus entitled *Introduction or Doctor*.<sup>38</sup> It was very probably not written by Galen, but by a Greek doctor who lived in Egypt, since he makes very clear references to Egyptian doctors or Egyptian medical practices. In particular, he alludes to the practice of circumcision in Egypt. Indeed, whilst discussing the parts of the body, he comes to the male and female genitalia; of the clitoris, he declares: “the small bit of flesh that protrudes from between the lips of the crevice is called *nymphē* (= clitoris); since it protrudes too much, the Egyptians think it wise to circumcise young girls.”<sup>39</sup> It is not surprising that this doctor reintegrates Egypt in the history of medicine, which constitutes the first chapter of his treatise. The chapter merits being read in its entirety, but I will simply quote the most significant extracts:

<sup>37</sup> See *supra*, p. 10.

<sup>38</sup> Pseudo-Galen, *Introductio sive medicus* (14.674–797 K.).

<sup>39</sup> Id., *ibid.* 706,12–15. See also Philumenus (second century AD) *apud* Aetius, *Iatricorum liber* 16, ed. Zervos, p. 115,1–27, where there is a detailed discussion about how the clitoris was circumcised by the Egyptians in young girls before marriage.

The Greeks attribute the invention of the arts to the children of the gods, or to beings similar to them, who were the first to be given a share by the gods in whichever art. Thus, for medicine in particular, Asclepius, it is said, learnt firstly from his father Apollo, and then passed it on to men. This is why he is said to be the inventor of medicine. Before Asclepius, the art of medicine did not yet exist amongst men, but the ancients possessed experience of remedies and plants, such as those who, amongst the Greeks, knew the centaur Chiron and the heroes who received his teaching ... But the Egyptians also used plants and other remedies, as Homer attests when he says:

‘the Egyptian, where the fertile earth produces many different drugs, many being beneficial when mixed, many being harmful’.

Moreover, it is from the dissection of dead bodies when they are embalmed that many treatments used in surgery came to be discovered by the first doctors; others, it is said, were discovered by chance, such as paracentesis of the eyes of patients suffering from cataracts, thanks to the encounter of a goat which, afflicted from cataracts, recovered its sight after a sharp rush leaf became stuck in its eye. It is also said that the enema was invented by watching the ibis, which fills its neck with Nile water or sea water, like an enema syringe, and injects itself below with its beak ... But this practice was not rational and did not reveal the art: medicine in its accomplished form, fully developed into its constituent parts, that which is really divine, was invented by Asclepius alone, and the medicine that is used amongst men was passed on by the Asclepiads, instructed by him, to their descendants: in particular Hippocrates, who is the most important of all, and who was the first to establish a more advanced medicine, which is practised by the Greeks.<sup>40</sup>

This reconstruction of the history of medicine is not very different from Plato's, which it post-dates, at least in its original invention. Both attribute the discovery of medicine to Asclepius, who passed down his knowledge to his two sons, the Asclepiads Machaon and Podalirius. As in Plato, it is the medicine of the *Iliad* that serves as a basis for the historical reconstruction. However, one of the innovations compared to Plato is the reinsertion of Egyptian medicine, for which the author took as his fundamental point of reference, again from Homer, the famous verses of the *Odyssey* relating to Helen who acquired a drug from Egypt. However, the way in which the verses are used in the quotation requires careful attention: the author stops his quotation after the eulogy of the fertility of the Egyptian soil and does not continue the praise of Egyptian doctors whose knowledge is superior to that of all others. Why? It has to do with the relatively modest place

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<sup>40</sup> Ps. Gal., *Intr.* 674–676 K. On this passage, see A.E. Hanson “Papyri of medical content,” *Yale Classical Studies* 28 (1985), 25–47 (particularly 25–30).

that the author accords Egyptian medicine. Egyptian medicine is part of the medical empiricism that preceded the discovery of the art. It belongs to the prehistory of medical art, when it was devoid of reason and was not yet a true art. It is only since Asclepius that medicine was truly discovered, before his sons, the Asclepiads, transmitted this art to their descendants, all the way to Hippocrates, who was the first to establish a more advanced medical art. Thus, Egyptian medicine, whilst being reinserted in the prehistory of Greek rational medicine, was just a shadow: thanks to a Platonic distinction between empiricism and art, a distinction that became of crucial importance in Graeco-Roman medicine due to the existence of two opposing sects, the Empiricists and the Dogmatists (or Rationalist doctors), the history of medicine as an art remained, in the eyes of Greek doctors and also in those of the Greek doctors of Egypt, a Greek discovery.

This modest role attributed to Egyptian medicine in the origins of medicine, by a doctor whose work has been preserved in the corpus of works of Galen, contrasts sharply with the position of Galen himself, who is more reserved about the image of Egyptian medicine. Galen, who did not value Egyptian magic,<sup>41</sup> had himself occasion to recall the origins of medicine in a treatise entitled *Thrasybulus*, dedicated to the question of whether health belongs to medicine or gymnastics.<sup>42</sup> Discussing the three principal parts of medicine (surgery, pharmacology and dietetics), Galen, like Plato, uses the authority of Homer to claim that surgery and pharmacology were known from the most distant period that he was able to reach, and then directly uses the testimony of Plato's *Republic* to state that dietetics was not known to Homer and that it is a more recent branch of medicine. The collection of Homeric quotations used by Galen to prove that medicine was, in its first stage, uniquely surgical and pharmacological, merits detailed examination. Galen is careful to vary his quotations compared with those of Plato. His new selection is well-made, since he takes from the *Iliad* the fundamental quotation: "A healer is a man worth many others for his skill to cut out arrows and spread soothing medicines on wounds."<sup>43</sup> However, to this quotation from the *Iliad*, he attaches two verses taken from the famous

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<sup>41</sup> Galen, *On the Powers of Simple Drugs (De simplicium medicamentorum temperamentis ac facultatibus)* 6, prol. (11.792,12 f. K.): he criticises Pamphilus, author of a treatise on plants, for having spoken about 'longwinded Egyptian sorcery' (τινας γοητείας Αἰγυπτίας ληρώδεις); see V. Boudon, "Aux marges de la médecine rationnelle: médecins et charlatans à Rome au temps de Galien," *Revue des Études grecques* 116 (2003), 109–131 (particularly 119).

<sup>42</sup> Galen, *Thrasybulus*, ch. 32, (5.869 K.) (= ed. Helmreich *SM* III, p. 78).

<sup>43</sup> *Iliad* XI, 514–515.

passage on Egyptian medicine from the *Odyssey*, creating a montage so skilful that the four verses appear to be concerned with medicine in general. All reference to Egyptian doctors has disappeared. All that emerges from these four verses is the excellence of the doctor in general and, above all, the idea, essential in Galen's eyes, that the medical art in the era of Homer treated the body with pharmacology and surgery.

Thus, we can see how the fundamental passage on the prestige of Egyptian medicine in Homer was quoted in a truncated manner in both pseudo-Galen and Galen, in the form of two verses, one of which is identical in both cases, and this with a view to different intentions: either to minimise the prestigious image of Egyptian doctors in pseudo-Galen, or to eliminate them in the authentic Galen.

Moreover, the mention of Egyptian doctors is exceptional in Galen. It is found once in his treatise *On the Composition of Drugs according to Places*, regarding eye-drops, called "disagreeable" against great fluxes.<sup>44</sup> It is said that only doctors in Egypt had success with this remedy, and above all with rural patients. In this case, how can we pretend, with G. Lefebvre and J.F. Porge, that "Theophrastus, Dioscorides and Galen continually quote recipes that they take from Egyptian doctors, or rather that they had taken, as Galen says, through consultation of the works preserved in the library of the temple of Imhotep in Memphis, still accessible in the second century AD, and where Hippocrates, the 'father of medicine', had been taught seven centuries before"?<sup>45</sup> Where does Galen say that he consulted works preserved in the library of the temple of Imhotep? The authors are very careful not to give any references. As a matter of fact, in the treatise *On the Composition of Drugs according to Kinds*, there is a reference to the temple of Hephaestus in Memphis regarding two recipes that were inscribed in the temple's adyton.<sup>46</sup> Although Galen had travelled in Egypt, he had not seen them: he refers to what his sources say, as his use of the verb 'to say' implies. There is no reason to doubt the Egyptian origin of these two recipes, but Galen does not mention a library where he consulted works containing these recipes. Furthermore, what can we say about the impossible hypothesis that, seven centuries before, Hippocrates had visited a library that Galen did not, and

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<sup>44</sup> Galen, *On the Composition of Drugs according to Places* (*De compositione medicamentorum secundum locos*) 4.8 (12.749,14 K.).

<sup>45</sup> G. Lefebvre and J.F. Porge, "La médecine égyptienne," in R. Taton (ed.), *La science antique et médiévale. Des origines à 1450* (Paris, 1966).

<sup>46</sup> Galen, *On the Composition of Drugs according to Kinds* (*De compositione medicamentorum per genera*) 5.1 (13.776,18 f. K); cf. 13.778,7 f. K.

that perhaps did not even exist? The influence of Egyptian medicine on Greek medicine is, at least in this case, a mirage reconstructed by modern scholars who mislead us by distorting the ancient testimonia; this mirage does not correspond to the image that the Greek doctors held themselves.<sup>47</sup>

The Hellenocentrism of classical medicine in the time of Hippocrates was certainly able to mask borrowings from Egypt in more ancient Greek medicine; and the presence of products originating from Egypt in classical medical recipes is without doubt testament to commercial and, probably, medical, relations with a land that always was, as we saw, famous for the richness of its medicinal plants. The relationship with Egypt certainly changed in the post-classical phase of Greek medicine, from the moment when Greek medicine was established in Egypt, in Alexandria.<sup>48</sup> However, we do not observe, for all that, a marked rupture in the representation of Egyptian medicine by Greek doctors: it remains, with the exception of the Pseudo-Galenic *Introduction*, absent from reconstructions of the history of medicine. Even when Egyptian medicine is present, it does not undermine the image of a Hippocrates who brought the medical art to its peak.<sup>49</sup>

The change, if there is a change, comes from the ambiguity that might arise concerning Egyptian doctors in the Hellenistic and Roman era. Are they Greek doctors from Egypt or Egyptian doctors? For example, when the author of the *Introduction*, ch. 9, speaks of “Egyptian doctors” who divide the body into four parts, (head, hands, thorax and legs), with some subdivisions, whilst ‘all the others’ divide it into a greater number of parts, what does he mean by this? Greek doctors in Egypt or Egyptian doctors?

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<sup>47</sup> For a serious and detailed study of the connections between Galen and Egypt, see V. Nutton, “Galen and Egypt,” in J. Kollesch and D. Nickel, eds., *Galen und das hellenistische Erbe. Verhandlungen des IV. Internationalen Galen-Symposiums veranstaltet vom Institut für Geschichte der Medizin am Bereich Medizin (Charité) der Humboldt-Universität zu Berlin 18.-20. September 1989*, (Sudhoffs Archiv. Beihefte 32) (Stuttgart, 1993), pp. 11–31 (particularly pp. 23–26: IV, ‘A traveller remembers’).

<sup>48</sup> See P.M. Fraser, *Ptolemaic Alexandria*, 1 (Oxford, 1972), pp. 338–376 (particularly pp. 374–376); and above all H. von Staden, quoted in footnote 17.

<sup>49</sup> We find a counter-example in Clement of Alexandria’s *Stromateis* (second century AD), where the origin of the arts is attributed to the barbarians. Medicine (*Stromateis* 1.16.75) is linked to “Apis, a native Egyptian, before Io arrived in Egypt; and afterwards Asclepius further developed the art.” This tradition mentioned by the Christian philosopher contrasts with the view of his contemporary pagan Greek doctors. We should not understand the testimony of Pliny the Elder on the origins of medicine as belonging in the same context (*Natural History* 7.114). When Pliny says that “according to the Egyptians, the discovery of medicine was achieved by them,” he gives a point of view that is purely Egyptian, without taking into account the relationship between Egyptian and Greek medicine. On Pliny and Egypt, see M.-H. Marganne, quoted in footnote 4.

Let me quote a very important final passage that demonstrates the complexity of this problem. Rufus of Ephesus, a Greek doctor from the first century AD (thus pre-dating Galen), notes in his work *On the Names of the Parts of the Human Body*, that sutures in the skull did not have ancient names in Greek, and he continues:

Some Egyptian doctors who had a poor command of Greek named them in the following way: coronal (στεφανιαία), the suture of the bregma; lambdoid (λαμβδοειδής), that of the occipital bone; and the sagittal (ἐπιζευγνύουσα), down the middle of the skull; finally, the scale-like (λεπιδοειδής), sutures of the temporal bone. These same doctors named certain parts of the bones of the skull that did not have a name; I do not wish to pass over these names in silence; they are used by doctors today.<sup>50</sup>

He clearly refers here to Egyptian-speaking doctors who wrote in Greek. Their precise knowledge of cranial anatomy led them to create Greek technical words to describe sutures or bones of the head that did not have names in Greek. Despite Rufus of Ephesus' purist contempt for the coining of these barbarian Greek words, he points them out because, he tells us, they are found in the works of medicine of his time. This is confirmed in the work of Galen, where all these terms are found. Thus, here is a clear example of an original contribution of Egyptian-speaking Egyptian doctors to Greek rational medicine. Whilst speaking Greek badly, they contributed to the enrichment of Greek medical technical vocabulary. This is evidence of the superiority of the Egyptian doctors in the precision of anatomical description.

Thus, in conclusion, we find here a hint of the excellence of the Egyptian doctors, which had been celebrated nine centuries before by Homer.

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<sup>50</sup> Rufus of Ephesus, *On the Names of the Parts of the Human Body* 133–134, ed. Daremberg, p. 150f.

## CHAPTER TWO

### POLITICS AND MEDICINE.

#### THE PROBLEM OF CHANGE IN *REGIMEN IN ACUTE DISEASES* AND THUCYDIDES (BOOK 6)\*

Although Plato was the first Greek thinker to refer in a systematic manner to the art of the doctor as a model for the art of the politician, he was not the first Greek writer to compare the leader of a city with a doctor. For example, Pindar's Fourth *Pythian Ode*, written in 462–461, compares the king of Cyrene, Arcesilaus IV, with a doctor (line 270, ἰατῆρ), when he asks for clemency towards the exile Damophilus, in a passage where the four terms of the Platonic analogy are already implicitly present: the political leader corresponds to the doctor, and the city, wounded by the exile Damophilus, corresponds to the body; the doctor's action on the wound, undertaken with mildness, serves as the model for the political leader's action on the city.<sup>1</sup> Thus, in Pindar politics is already therapeutics.

This metaphor, which Pindar draws from an archaic belief in the healing power of kings,<sup>2</sup> reappears notably in Thucydides 6, ch. 14, in what is definitely a non-specialist context. At the end of his speech, Nicias, who casts doubt on the decision to depart for Sicily, asks the prytanis to reconsider the issue and to be “the doctor of the city that made a bad decision”

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\* This paper is an exact reproduction of the text as it was delivered orally. It is a shortened version of a longer paper written in 1977–1978 under the auspices of the seminar on the Hippocratic Corpus, held at the University of Paris IV.

<sup>1</sup> Pindar, *Pythian Odes* 4, 270 ff. This passage of Pindar is an excellent example of the king-doctor metaphor in fifth-century BC poetry. On this metaphor in tragic poetry, see for example Aeschylus (in 458) *Agamemnon*, 848–850: upon his return, the king outlines his political programme (cf. 844 πρὸς πόλιν); with the city assembly, he will ensure to make durable that which is good; he continues: “But where there is need for healing remedies (φαρμάκων παιωνίων), either cautery or the knife (ἤτοι κέαντες ἢ τεμόντες), we will try hard to divert benevolently the suffering caused by the disease.” Cf. on this passage, E. Petrounias, *Funktion und Thematik der Bilder bei Aischylos*, Hypomnemata 48, Göttingen, 1976, p. 256: “Dann ist Agamemnon nicht nur derjenige, der die ‘Diagnose’ stellt, sondern auch der Heiler.” See also Euripides, *Phoenician Women* 892–893; cf. Id., *Suppliants*, 252. The king-doctor metaphor is less frequent in the fifth century than that of the king-pilot. On the metaphor of king-pilot in lyric poetry and tragedy, see J. Péron, *Les images maritimes de Pindare*, Paris, 1974, pp. 104–120.

<sup>2</sup> See J. Duchemin, *Pindare. Pythiques* (3, 9, 4, 5), Paris, 1967, p. 150.

(6.14 = document no. 1, left hand column, 1,38 ff.: τῆς δὲ πόλεως κακῶς βουλευσαμένης ἱατρὸς ἂν γενέσθαι).<sup>3</sup> Like the king in Pindar, the prytanis in Thucydides should be the city's doctor. However, at the end of Nicias' and Alcibiades' antilogic speeches, the medical metaphor in Thucydides takes on a wider meaning that has not been clearly studied and, above all, a significance that has never been unravelled. In this paper I will show that this medical metaphor in Thucydides in fact centres on a problem of change that is in all respects comparable to what we find in the Hippocratic treatise *Regimen in Acute Diseases*; for reasons of space, I will give only the most important outlines of the debate.

Of course, I am not the first to highlight the connections between medicine and politics at the end of Nicias' and Alcibiades' two speeches. There are some detailed parallels with medical literature that have long been acknowledged. Let us start by taking stock of the evidence.

The first parallel occurs at the very end of Nicias' speech. Immediately after the reference to the doctor, Nicias closes his speech with a definition of the good governor (6.14 = doc. no. 1, left column, 1,40 ff.): τὸ καλῶς ἄρξαι τοῦτ' εἶναι, ὃς ἂν τὴν πατριδα ὠφελήσῃ ὡς πλείστα ἢ ἐκὼν εἶναι μηδὲν βλάβῃ, "Good governance is to do as much good for the country as possible, or at least no voluntary harm." Following Ilberg (1925), we know that this definition is an extension of the medical metaphor, because it corresponds to the definition of the ideal doctor given in *Epidemics* 1.5: "to keep two things in mind with regard to disease: to be useful (ὠφελεῖν), or at least to do no harm (ἢ μὴ βλάπτειν)."<sup>4</sup>

<sup>3</sup> The texts discussed in this paper are printed *infra*, p. 37 ff. Thucydides' text (document no. 1) is from the edition by J. de Romilly, *Thucydide*, t. IV, Paris, 1955, p. 11f. and p. 16f. The passages from *Regimen in Acute Diseases* (document no. 2) are taken, apart from one modification, from the edition of R. Joly, *Hippocrate. Du régime des maladies aiguës ...* Paris, 1972, p. 47f. and p. 50. The text of *Aphorisms* 2.50 (document no. 3) is taken from the edition of W.H.S. Jones, *Hippocrates*, vol. IV, Cambridge, Mass., London, 1931, p. 120.

<sup>4</sup> J. Ilberg, *Die Ärzteschule von Knidos*, Leipzig, 1925, p. 9, n. 1; the connection was made in studies on Thucydides and medicine; see K. Weidauer, *Thukydides und die hippokratischen Schriften*, Heidelberg, 1954, p. 72 and Ch. Lichtenthaeler, *Thucydide et Hippocrate vus par un historien médecin*, Geneva, 1965, p. 69f.; cf. also W. Müri, *Arzt und Patient bei Hippokrates*, Bern, 1936, pp. 5–8, and F. Heinemann, "Eine vorplatonische Theorie der τέχνη," *Museum Helveticum*, 18, 1961, p. 119. The opposition ὠφελεῖν-βλάπτειν (vel ὠφελίη-βλάβη) is frequent in the medical prose of the Hippocratic Corpus; G.H. Knutzen, *Technologie in den hippokratischen Schriften* περι διαίτης ὀξέων, περι ἀγμῶν, περι ἄρθρων ἐμβολῆς (= Abhandl. der Geistes- und Sozialwissenschaftlichen Klasse der Akademie der Wissenschaften und der Literatur in Mainz, 1963, nr. 14), Wiesbaden, 1964, p. 1330 (20) f., has highlighted the particularly high

We find the second parallel some pages later, at the end of Alcibiades' speech, 6.18, 6. Whilst Nicias urged the elderly to disassociate themselves from the young, Alcibiades opposes him, affirming (doc. No. 1, right column, 1,9 ff.): *καὶ νομίσατε νεότητα μὲν καὶ γῆρας ἄνευ ἀλλήλων μηδὲν δύνασθαι, ὁμοῦ δὲ τὸ τε φαῦλον καὶ τὸ μέσον καὶ τὸ πάνυ ἀκριβές ἂν ξυγκραθὲν μάλιστ' ἂν ἰσχύειν*, "and understand that neither the young nor the elderly can do anything without each other, and that the inferior, the middle and the perfectly exact are strongest when united." The explanation of the city's strength or weakness by the balanced combination or separation of the elements that comprise it has long<sup>5</sup> been compared with definitions of health or disease in terms of the balanced mixture or separation of the constituting elements of the body. We find it expressed in similar terms in the Hippocratic Corpus, for example *Ancient Medicine*, ch. 14, or *Nature of Man*, ch. 4, definitions that probably date back to Alcmaeon of Croton.<sup>6</sup> However,

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frequency of the antithesis in *Regimen in Acute Diseases* and in the surgical treatise *On Fractures. On Joints*. However, it is also frequently used in other treatises, in particular *Humours* (five times), *Nutriments* (six times), *Affections* (four times), *Use of Liquids* (five times). A passage from *The Art* (ch. 5, 6.8,11–19 L.) is a good example of the frequency of the antithesis in medical literature. The couplet *ὠφελεῖν-βλάπτειν* seems to be particularly favoured, since it closes two treatises (*Affections*, ch. 61, 6.270,21 L. and *Use of Liquids*, ch. 7 *ibid.*, 136,4 f.). Thus, it is not surprising that the opposition is found elsewhere in Thucydides in a medical context, in the description of the Athenian plague (2.51,2); on this point see Ch. Lichtenthaeler, *Thucydide et Hippocrate ...*, p. 69f. On the use of *ὠφελία* in a medical metaphor, see Euripides, *Frag.* 78 Nauck (*καὶ ὠφελίαν / καὶ νόσον*). However, the opposition *ὠφελεῖν-βλάπτειν* is not limited to medical prose, as was noted already by J. Ilberg, *Die Ärzteschule von Knidos ...*, p. 9 ("die nicht nur den Medizinern geläufige Maxime"). It appears, outside any medical context, in the prose of the Pre-Socratics and the Sophists; see the *Index to Diels-Kranz* III, p. 488, s.v. *ὠφελεῖν*. It is found notably in the maxim according to which it is necessary to be useful to friends and harmful to enemies; cf. Gorgias DK 82 B 11 a (2.298,24 f.): *φίλους ὠφελεῖν ἢ πολεμίους βλάπτειν*; Thucydides also uses the antithesis in a context where there is a *φίλος* and *ἐχθρός* in 1.43.

<sup>5</sup> See A.W. Gomme, A. Andrewes, K.J. Dover, *A Historical Commentary on Thucydides*, vol. IV, Oxford, 1970, p. 255 and later J. de Romilly, *Problèmes de la démocratie grecque*, Paris, 1975, p. 153 f.

<sup>6</sup> *Ancient Medicine* ch. 14, 1.602 9–14 L. (= ed. Heiberg 45,26–46, 4): "For there is in man the salt and the bitter, the sweet and the acid, the sour and the insipid, and a multitude of other things having all sorts of powers, both as regards quantity and strength (*παντοίας δυνάμιας ἔχοντα πλήθος τε καὶ ἰσχύον*). These principles, when they are mixed and mingled with each other (*μεμειγμένα καὶ κεκρημένα ἀλλήλοισιν*) are not perceptible and do not damage man; but when one is separated or isolated from another, then it is perceptible and damages man." *Nature of Man* ch. 4, 6.38,19–40,6 L. (= ed. Jouanna 172,13–174,3): "The body of man contains blood, phlegm, yellow bile and black bile. In these conditions, there is perfect health when these humours are balanced between themselves in quality and quantity (*τῆς πρὸς ἀλλήλα δυνάμιος καὶ τοῦ πλήθεος*) and when their mixture (*μεμειγμένα*) is perfect;

despite the similarities with medical literature, there is something peculiar about Alcibiades' political theory that has led some to doubt its medical origin:<sup>7</sup> whilst from a medical perspective, the constituting elements of the body which are mixed or separated are equal, in Alcibiades' political theory, the constituting elements of the city are hierarchical: there is the inferior (τὸ φαῦλον), the middle (τὸ μέσον) and the perfectly exact (τὸ πάνυ ἀκριβές); thus, from a political perspective, this leads to the peculiar idea that a mixture of good and bad is superior to the good element on its own. However, this idea can also be compared to medicine, as M<sup>me</sup> de Romilly has recently pointed out in an excellent article devoted to this phrase of Thucydides.<sup>8</sup> In particular, she reminds us that Aristotle, in his *Politics* 1281b34 f., justifies a political theory similar to that of Alcibiades, the

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disease occurs when one of these humours, in a small or large quantity, is isolated in the body instead of being mixed (κεκρημένον) with all the others." For Alcmaeon of Croton, see D.K. 24 B 4 (= Aetius 5.30.1): "According to Alcmaeon, the principle of health is the equal balance (ἰσονομία) of the qualities, wet, dry, cold, hot, sweet etc.; whilst dominion (μοναρχία) is the cause of disease; indeed, the domination of one principle within a pair is dangerous ... Good health is the proportioned mix (τὴν σύμμετρον ... κρᾶσιν) of the qualities." The two texts of the Hippocratic Corpus, like Thucydides, envisage two opposing states of the mixture and separation of the constituting elements. For the mixture, compare Thucydides ξυγκραθέν, *Ancient Medicine* κεκρημένα and *Nature of Man* κεκρημένον; see also ξύγκρησιν, used very frequently in ch. 32 of *Regimen* to describe the mixture of constituent elements of the body in a state of good health. For the separation, ἄνευ ἀλλήλων in Thucydides corresponds to τι τούτων ἀποκριθῆ in *Ancient Medicine* and τι τούτων χωρισθῆ in *Nature of Man*. The solidarity of these elements implied through the reciprocal ἀλλήλων in Thucydides is shown by the same reciprocity in two medical texts (*Ancient Medicine* ἀλλήλοισιν; *Nature of Man* πρὸς ἀλλήλα). We find the vocabulary of force and power in both medical treatises and Thucydides: compare Thucydides μηδὲν δύνασθαι ... ἰσχύειν, *Ancient Medicine* δυνάμιας ἔχοντα πλήθός τε καὶ ἰσχύιν and *Nature of Man* τῆς δύναμιος ... καὶ τοῦ πλήθους. However, the similarity in the vocabulary of power is not of the same extent as the preceding comparisons. In Thucydides, ἰσχύειν can of course refer both to the strength of an individual and the power of a city; cf., for example, Xenophon, *Hellenica* 6.4.18 ἰσχύειν ἐξ ἀσθενείας. However, the presence of the vocabulary of power is natural in politics; in medicine, it is explained by the tendency of Greek thought to explain biological phenomena in terms of struggle. This explains why the influence between politics and medicine could take place in both directions. If the medical theories on mixture and separation of constituent elements served as a point of reference for political thought in Thucydides, it is conversely not impossible that at the root of these same medical theories we find a political model in Alcmaeon of Croton, who borrowed from politics the concepts of ἰσονομία and μοναρχία, at least if we can trust the metaphorical formulation transmitted by Aetius.

<sup>7</sup> See A. Aalders, *Die Theorie der gemischten Verfassung im Altertum*, Amsterdam, 1968, p. 28.

<sup>8</sup> J. de Romilly, "Alcibiade et le mélange entre jeunes et vieux: politique et médecine," *Mélanges Lesky, Wiener Studien*, N.F. 10 (89), 1976, pp. 93–105.

mixture of common people and the elite in the assemblies, by drawing on a comparison borrowed from dietetics: “Common people mixed with the elite” declares Aristotle, “brings benefits to the State, just like an impure food, combined with a pure food, makes the food as a whole more beneficial than the small part of pure food.”<sup>9</sup> This explicit reference to dietetics in Aristotle seems to confirm the implicit reference to medicine in the passage of Thucydides and suggests its complexity. Alcibiades transposes onto politics a mixture of two distinct medical theories: a physiological theory on the mixture of constituting neutral elements of the body, and a dietetic theory on the mixture of the more or less nutritious principles which constitute food.<sup>10</sup>

M<sup>me</sup> de Romilly (ibid. p. 103) finds confirmation of this implicit reference to medicine elsewhere in Alcibiades’ speech, at the end of ch. 18, 6. Against the politics of inaction recommended by Nicias, Alcibiades highlights its dangers and contrasts these with the advantages of an active politics in the following terms (doc. no. 1, right column, 1,13 ff.): και τὴν πόλιν, ἂν μὲν ἡσυχάζῃ, τρίψεσθαι τε αὐτὴν περὶ αὐτὴν ὥσπερ καὶ ἄλλο τι, καὶ πάντων τὴν ἐπιστήμην ἐγγηράσσεσθαι, ἀγωνιζομένην δὲ αἰεὶ προσλήψεσθαι τε τὴν ἐμπειρίαν καὶ τὸ ἀμύνεσθαι οὐ λόγῳ ἀλλ’ ἔργῳ μᾶλλον ξύνηθες ἔξειν, “(understand that) the city, if it sinks into inaction, like everything else, will wear itself out and its skill in everything will decay; by contrast, each fresh struggle will give it fresh experience and make it more used to defend itself not with words but with actions.” It is clear, as M<sup>me</sup> de Romilly (ibid. p. 103) points out, that the combat training advocated here by Alcibiades keeps the city in good shape and prevents it from growing old, just as gymnastics, and more particularly combat, “exercises the muscles of a man and keeps him in good shape.” We could supplement M<sup>me</sup> de Romilly’s remarks by recalling ch. 64 of *Regimen*, which insists on the positive benefits of combat, which develops the flesh,<sup>11</sup> and above all by comparing Alcibiades’ praise of habitual training (ξύνηθες 1.20) with *Aphorism* 2.49, where it is said that “people who habitually undertake

<sup>9</sup> Πάντες μὲν γὰρ ἔχουσι συνελθόντες ἱκανὴν αἴσθησιν καὶ μιγνύμενοι τοῖς βελτίσι τὰς πόλεις ὠφελοῦσιν, καθάπερ ἢ μὴ καθαρὰ τροφή μετὰ τῆς καθαρᾶς τὴν πᾶσαν ποιεῖ χρησιμωτέραν τῆς ὀλίγης. This connection between Thucydides and Aristotle, rightly highlighted by M<sup>me</sup> de Romilly, was previously mentioned, as she notes on p. 99, by Th. Arnold, ΘΟΥΚΥΔΙΔΗΣ. *The History of the Peloponnesian War*, 2nd ed., vol. III, Oxford, 1842, p. 31.

<sup>10</sup> However, the reference to dietetic theory seems secondary, since the principal analogy throughout the passage in Thucydides is that of the city and the body. Thus, the elements that compose the city, youth and old age, are naturally compared to elements that constitute the body.

<sup>11</sup> *Regimen* ch. 64, 6.580,9 ff. L. (= ed. Joly 64,22–65,1 ff.).

exercise (τοὺς ξυνήθεας πόνους) cope better, even if they are weak or aged, than strong or young people who are not accustomed to it."<sup>12</sup> Thus, here is a third connection between Thucydides' text and medicine.

M<sup>me</sup> de Romilly's article, which I have known since its drafting,<sup>13</sup> prompted me to re-examine the connections between politics and medicine in Nicias' and Alcibiades' antilogy. It seems to me that the medical metaphor continues also at the very end of Alcibiades' speech, in ch. 18, 7. Continuing to denounce the disadvantages of a policy of inaction and the benefits of a policy of action, Alcibiades closes his speech in the following way (doc. no. 1, right column, 1,20 ff.): Παράπαν τε γιγνώσκω πόλιν μὴ ἀπράγμονα τάχιστ' ἂν μοι δοκεῖν ἀπραγμοσύνης μεταβολῇ διαφθαρῆναι, καὶ τῶν ἀνθρώπων ἀσφαλέστατα τοῦτους οἰκεῖν οἱ ἂν τοῖς παροῦσιν ἤθεσι καὶ νόμοις, ἦν καὶ χεῖρω ἦ, ἤκιστα διαφόρως πολιτεύωσιν, "And I think that a city that absolutely does not know inaction could not choose a quicker way to ruin itself than by suddenly adopting such a policy, and that the people who live most safely are those who depart as little as possible from their customs and present laws, even if they are inferior." This warning against change from a habitual politics, even if it is inferior, finds a clear parallel in *Regimen in Acute Diseases* ch. 36 (doc. no. 2, right column, text no. 3): Πολλὰ δ' ἂν τις ἠδελφισμένα τοῦτοισι τῶν ἐς κοιλίην καὶ ἄλλα εἴποι, ὡς εὐφόρως μὲν φέρουσι τὰ βρώματα, ἃ εἰθίδαται, ἦν καὶ μὴ ἀγαθὰ ἢ φύσει· ὡσαύτως δὲ καὶ τὰ ποτά· δυσφόρως δὲ φέρουσι τὰ βρώματα, ἃ μὴ εἰθίδαται, κῆν μὴ κακὰ ἦ· ὡσαύτως δὲ καὶ τὰ ποτά "We can say quite a few other things that are related to the previous comments regarding the stomach to show that people cope better with the foods they are used to, even if these are not naturally good; the same goes for drinks; by contrast, they cope less well with foods they are not used to, even if they are not bad; the same goes for drinks." The idea is similar in the doctor and the historian. For the politician, the habitual regime of the city is preferable, as the habitual regime of the body is for the doctor, even if it is not good. The terms also correspond: to the final subordinate clause of Alcibiades ἦν καὶ χεῖρω ἦ (doc. no. 1, right column, 1,26) corresponds the final subordinate clause of the Hippocratic doctor ἦν καὶ μὴ ἀγαθὰ ἦ φύσει (doc. no. 2, right column, 1,22 f.). This striking parallel was previously noted by Ch. Lichtenthaeler in his *Thucydide et Hippocrate vus par un historien médecin*, 1965, p. 70, no. 20, on the suggestion of H. Grensemann.

<sup>12</sup> *Aphorisms* 2.49, 4.484,3–5 L. (= ed. Jones 4.120,4–7). The importance of habit in training is also highlighted by Democritus DK 68 B 241 πόνος συνεχῆς ἐλαφρότερος ἑαυτοῦ συνηθείη γίνεται, "exercise that is regularly practiced becomes easier to endure due to habit."

<sup>13</sup> See J. de Romilly, "Alcibiade et le mélange ...," p. 104 (n. 25 of p. 103 *in fine*).

With this fourth parallel, we come to the end of the list of connections between this section of book 6 of Thucydides and medicine, whether it is Hippocratic or not. Of course, the dossier of parallels remains open, and we can add, for example, a passage from *Aphorisms* which also expresses the idea that habitual regimen, even if harmful, causes the least damage. It is aphorism 2.50 (doc. no. 3): Τὰ ἐκ πολλοῦ χρόνου συνήθεια, κἂν ἢ χεῖρω τῶν ἀσυνηθέων, ἦσσον ἐνοχλεῖν εἴωθεν: “The things which the patient has been accustomed to for a long time, even if they are more harmful than things he is unaccustomed to, usually cause less damage.” Here, the aphorism’s final subordinate clause κἂν ἢ χεῖρω corresponds exactly to Alcibiades’ ἦν καὶ χεῖρω ἦ.<sup>14</sup>

However, despite all these important close parallels that have been progressively added, the exact breadth, structure and, above all, significance, of this implicit medical metaphor in Nicias’ and Alcibiades’ political debate has never been unravelled. This is due to the lack of an overall study of the context in which these connections appear, both in Thucydides and in the medical text to which it is closest, *Regimen in Acute Diseases*.

First, for Thucydides, we should begin by observing something that has never been exploited in the study of the medical metaphor; namely that the medical references that were highlighted in the section of book 6 are situated, in each case without exception, at the end of the two speeches, in two passages of Nicias’ and Alcibiades’ antilogy that concern the same subject and respond to each other.<sup>15</sup> For the purpose of clarity of the demonstration,

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<sup>14</sup> The danger resulting from a change in habitual regime is highlighted particularly in the case of athletes submitted to a “forceful regime” (ἀναγκοφαγία). See Euripides, *Autolykos*, frag. 282 Nauck, lines 4–9, particularly 8f. ἔθῃ γὰρ οὐκ ἐθισθέντες καλὰ / σκληρῶς μεταλλάσσουσιν εἰς τὰ μῆχανον, compared with *Antiope*, frag. 201 Nauck (XX Kambitsis), lines 1–4, particularly 3f. δεῖ γὰρ ἄνδρ’ εἰθισμένον / ἀκόλαστον ἦθος γαστρὸς ἐν ταύτῳ μένειν; the same idea will be taken up again in Plato’s *Republic* 3 404 a: the regime of athletes is dangerous for their health, since it only needs a small departure from the regime prescribed for them to fall ill with grave and violent diseases (ἐὰν σμικρὰ ἐκβῶσιν τῆς τεταγμένης διαίτης, μεγάλα καὶ σφόδρα νοσοῦσιν οὗτοι οἱ ἀσκηταί). Compare in *Prorrhetic* 2, ch. 1 (9.6,19 L.) concerning the regime of athletes οὐδ’ εἰ σμικρόν τι εἴη ἀπειθήσας ὄνθρωπος. The theme of danger resulting from a modification of regime, even if minimal, should be compared with the benefits of a dietetic treatment, the best known promoter of which is Herodicus. This connection seems to be taken up again in *Republic* 3 where Plato, discussing the regime of athletes, widens his criticism to include the dietetic medicine of Herodicus, who continually tortured himself throughout his life “whenever he made the smallest difference to his habitual regime” (εἴ τι τῆς εἰωθυίας διαίτης ἐκβαίῃ).

<sup>15</sup> Ch. Lichtenthaler (*Thucydide et Hippocrate ...*, p. 70, n. 20) noted that Alcibiades, in the final sentence of his speech (6.18,7) “seems to take Nicias’ comparison between politics

I have selected these two passages and placed them facing each other at the end of this paper. Alcibiades expressly refutes two points of Nicias' speech at the end of his own, from ch. 18, 6: his politics of change against inaction and his effort to disassociate young and old (doc. no. 1, right column, 1,2ff. ἡ Νικίου τῶν λόγων ἀπραγμοσύνη καὶ διάστασις τοῖς νέοις ἐς τοὺς πρεσβυτέρους). These two points are discussed at the end of Nicias' speech in ch. 13 and 14: Nicias effectively invites the elderly to disassociate themselves from the young (doc. no. 1, left column, 1,3ff. τοῖς πρεσβυτέροις ἀντιπαρακελεύομαι) and encourages them in particular to renounce the politics of active alliance that was habitual in Athens (doc. no. 1, left column, 1,25f. καὶ τὸ λοιπὸν ξυμμάχους μὴ ποιῆσθαι, ὥσπερ εἰώθαμεν, "and that in the future we renounce the politics of alliance which we are used to"). Through a detailed comparative study—which I cannot carry out here—we could show that the medical metaphor is placed in the interplay of correspondences, oppositions and reversals that govern the composition of the end of the two antithetic speeches, according to a well-known technique of Sophist inspiration, but which acquires in Thucydides a form that is both subtle and rigorous.<sup>16</sup> Far from appearing here and there at random

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and medicine to flight," which is in 6.14; J. de Romilly "Alcibiade et le mélange ..." p. 98 also sees confirmation of the presence of the implicit medical metaphor at the end of the speech of Alcibiades by the explicit reference to the doctor of the city in 6.14 at the end of Nicias' speech. However, it has not yet been shown that the medical metaphor at the end of these two speeches is part of a wider political and medical debate, whose two opposing theses contrast each other.

<sup>16</sup> A more detailed analysis would show that some expressions and themes respond to each other without necessarily occupying a parallel place in the argument of the two speeches; compare Nicias 6.14 (doc. no. 1, left column 1,36f.) τὸ μὲν λύειν τοὺς νόμους and Alcibiades 6.18,7 (doc. no. 1, right column 1,25ff.) τοῖς παρούσιν ... νόμοις ... ἤκιστα διαφόρως; compare also Nicias 6.13 (doc. no. 1, left column, 1,26) ὥσπερ εἰώθαμεν and Alcibiades 6.18.6 (doc. no. 1, right column, 1,4f.) τῷ δὲ εἰωθότι κόσμῳ (1,20) ξύνηθες and above all (1,25) τοῖς παρούσιν ἤθεσι. It would also show that some formal parallelisms do not have exactly the same contents. The two definitions that conclude the two speeches present a remarkable formal parallelism: we find two statements expressed in the same way, through two final relative pronouns (Nicias 1,41f. ὃς ἂν ... ὠφελήσῃ; Alcibiades 1,25ff. οἱ ἂν ... πολιτεύωσιν); these relative pronouns are both preceded by a demonstrative pronoun (Nicias 1,41 τοῦτ' in neuter; Alcibiades 1,24 τοῦτους), and they set out an ideal to attain, positive or negative, as is shown by the parallel and opposing superlatives modifying the two verbs of the two relatives (Nicias 1,42 ὡς πλεῖστα; Alcibiades 1,26 ἤκιστα). Despite this formal symmetry, there is a slight difference in their contents: Nicias' definition concerns the manner in which the politician should govern, whilst Alcibiades' definition concerns the manner in which the people should be governed. This subtle difference is significant at the level of political discussion and the medical metaphor. On a political level, Alcibiades leaves to one side the action of the head of the city, and he skilfully insists on the decision of the city assembly; on the level of the

in the text, the medical metaphor acquires its coherence and significance in opposition to the two conceptions of politics enshrined by Nicias and Alcibiades, to which Thucydides implicitly connects two conceptions of therapeutics. These are the two conceptions of politics and therapeutics that I will now outline.<sup>17</sup>

Nicias and Alcibiades agree on the aims of politics and medicine. We have seen that Nicias, like the doctor in *Epidemics* 1, wants to do the best possible, or at least not to do any harm; Alcibiades' ideal is no different, since he advocates a politics of security (doc. no. 1, right column, 1,24 ἀσφαλέστατα). We might even say that Alcibiades makes a concession to Nicias concerning the diagnosis. Nicias' diagnosis is that the harmful decision of the city is based on an active politics of alliance, which is habitual in Athens (doc. no. 1, left column, 1,25 f.: ξυμμάχους ... ποιείσθαι, ὥσπερ εἰώθαμεν). Alcibiades, despite the very general outlook at the very end of his speech, concedes to the eventuality that the habitual politics of Athens could be harmful (right column, 1,25 f. τοῖς παρούσιν ἤθεσι καὶ νόμοις, ἣν καὶ χεῖρω ἦ).

However, beyond these real or rhetorical convergences, there are significant differences in the remedies to be used. For Nicias, a harmful habit must be radically changed; this is the sense of the end of ch. 13 (left column, 1,25 f.: καὶ τὸ λοιπὸν ξυμμάχους μὴ ποιείσθαι, ὥσπερ εἰώθαμεν, "and that in the future we renounce the politics of alliance, which is habitual to us"). If a decision is harmful, he does not hesitate to remedy it by violating the laws (left column, 1,36 f.: λύειν τοὺς νόμους). Conversely, for Alcibiades the radical change of

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medical metaphor, he substitutes the image of a sick body that needs treatment by a doctor with that of a healthy body that should not change its habitual regime, even if this is not perfect.

<sup>17</sup> In fact, the study that follows treats only one aspect of opposition between the political and medical conceptions of Nicias and Alcibiades. The problem of change and habit, highlighted here, concerns essentially one of the two points of the discussion: that of the inaction (ἀπραγμοσύνη) advocated by Nicias. The second point of discussion, the dispute (διάστασις) between youth and the elderly brings into play another problem, common to politics and medicine, that of the relationship between the constitutional elements of the body and the city in states of illness and of health. For Nicias, the youthful element, due to its haste and passion, risks leading the city to its downfall; thus, it is necessary to counteract it (cf. 6.13 doc. no. 1, left column 1,14 ἀντι- in ἀντιχειροτονεῖν) by the opposing principle, the elderly, who represent wisdom over passion (cf. the opposition ἐπιθυμία—προνοία in 6.13, doc. no. 1, left column, 1,10 f.). Conversely, for Alcibiades, who tries to weaken the opposition by envisioning three elements instead of two, the youthful element is a constitutional principle of the city, which should be tempered by its mixture with the others (cf. 6.18, 6, doc. no. 1, right column, 1,13 ξυγκραθέν). The equilibrium that Nicias wants to restore through the tension between contraries opposes the equilibrium that Alcibiades seeks in the mix of all the elements, and in particular of the opposing elements.

habit would lead to the loss of the city. Indeed, he replies to Nicias, in ch. 18.7 (previously quoted, right column, 1,20 f.): “I think that a city that absolutely does not know inaction (μὴ ἀπράγμονα) could not choose a quicker way to ruin itself (διαφθαρήναι) than by suddenly adopting such a policy of inaction (ἀπραγμοσύνης μεταβολή).” Through the process of retaliation, which is frequent in the antilogies of Thucydides,<sup>18</sup> Alcibiades shows that the politics and therapeutics of radical change advocated by Nicias would lead to an aim that is the very opposite of what he was looking for, not to the good or even the absence of damage, but in fact to the greatest damage that can occur to a city: its ruin. Having criticised Nicias’ position, Alcibiades proposes, in the sentence that closes his speech, a politics and therapy that, far from breaking with habit, far from violating laws, constitute the smallest departure (1,26 f. ἥκιστα διαφόρως) from the existing laws and customs, even if they are harmful. To the politics and therapy of radical change and rupture advocated by Nicias, Alcibiades contrasts a politics and therapy of the least change.

Thus, an overall study of Thucydides’ text shows that at the very end of the antilogy between Nicias and Alcibiades we find a debate on the modes of a leader’s action on a city which seems constantly tied in to a debate on the modes of a doctor’s action on a patient. Two types of politics clash, which seem to be the transposition of two therapies, in a controversy centred on ideas of change and habit. It is interesting to note that Thucydides, in a Sophistic reversal that is dear to him, places the conservative argument in the mouth of young Alcibiades in the service of adventure, and the thesis of change in the mouth of the old Nicias in the service of wisdom.<sup>19</sup>

Does this medical debate, read between the lines of Thucydides’ political debate, correspond to the reality of medical discussions of its era? A

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<sup>18</sup> On the process of retaliation in the antilogies of Thucydides, and more generally on the processes of the antilogic art in Thucydides, see J. de Romilly, *Histoire et raison chez Thucydide*, Paris, 1967, pp. 180–239; cf. in particular p. 185: “By contrast, the most decisive processes will be those which consist in turning against the adversary the same argument that he employed; showing that what he thought was favourable is actually unfavourable, or even favourable to yourselves. It is essentially a reversal, turning it on its head: it leaves the adversary entirely defenceless.”

<sup>19</sup> A Sophist use comparable to the theses on change or conservatism in politics is found some years later in Aristophanes’ *Assembly of Women* (394–392 BC). The great political innovation which consists in entrusting the government to women (455–457) is justified by their conservatism (453 and above all 216 f.), which contrasts with men’s desire for change (218–220). However, in a comic reversal they propose an entirely new political programme (577 and 584), which they fear might be ended by the conservatism of the men (584 f.).

response to this question appears possible, provided that we adopt an overall investigation of *Regimen in Acute Diseases* similar to what we did for Thucydides.

To begin, we can take ch. 36 of *Regimen in Acute Diseases* which has been compared, as we saw (*supra*, p. 26), to the end of Alcibiades' speech, and where we find a statement of the idea that habitual regime, even if it is not healthy, is well supported by the organism. In fact, this idea was expressed earlier in the treatise, in ch. 28, in a passage that was not correctly edited and understood by editors after Littré, with the exception of Ermerins.<sup>20</sup> Here is the passage (doc. 2, right column, text 2): ἀλλὰ μὴν εὐκαταμάθητόν ἐστιν, ὅτι φαύλη διαίτα βρώσιος καὶ πόσιος αὐτῆ ἑωυτῆ ἐμπερῆς αἰεὶ ἀσφαλεστέρη ἐστὶν τὸ ἐπίπαν ἐς ὑγιείην, ἢ εἴ τις ἐξαπίνης μέγα μεταβάλλοι ἐς ἄλλο κρέσσον ("But it is true that it is easy to understand that an unhealthy regimen of food and drink, however similar, is safer for good health than if a sudden and important change is effected to a healthier diet.") The second passage is interesting because it reinforces the connections between *Regimen in Acute Diseases* and the end of Alcibiades' speech. Like the politician, the Hippocratic doctor looks for the safest regime (ἀσφαλεστέρη in the medical writer, 1,9 f.; ἀσφαλέστατα in Alcibiades 1,24); and like Alcibiades, the author of *Regimen in Acute Diseases* warns against radical change from a habitual regimen to a regimen that is theoretically better (the doctor's μεταβάλλοι 1,11 corresponds to Alcibiades' μεταβολή 1,23). However, both this new connection and the previous one can only be properly understood if they are read contextually. They both belong to one and the same discussion, in a long and important passage on change, where the author of *Regimen in Acute Diseases* criticises traditional treatment and confronts it with his own conception. Traditional treatment is defined as a treatment of change in a sentence in ch. 26, where the author of *Regimen in Acute Diseases* presents the logic of the attitude he is criticising (doc. 2, left column: καὶ ἴσως τι καὶ εἰκὸς δοκεῖ αὐτοῖσιν εἶναι μεγάλῃς μεταβολῆς γινομένης τῷ σώματι μέγα τι κάρτα καὶ ἀντιμεταβάλλειν "And it may well seem logical to them that when a major change happens in the body, they should vigorously effect a change that is opposite to this"). Thus, traditional treatment defined in this way logically follows on from the conception of disease as μεταβολή, change in the body.<sup>21</sup> Treatment should

<sup>20</sup> For a detailed discussion concerning the textual tradition of this passage, see J. Jouanna, 'Le traité hippocratique du Régime dans les maladies aiguës: remarques sur la tradition manuscrite et sur le texte', *Revue d'Histoire des Textes*, 6, 1976, p. 24 f.

<sup>21</sup> Thucydides also considers the disease as μεταβολή in the body in his description of the plague of Athens in 2.48.3: "I allow each person, doctor or layman, to form his own

suppress this change with an opposing change (ἀντιμεταβάλλειν); and this change, elicited by treatment, should be proportioned to that of the disease, as shown by the replacement of *μεγάλης*, describing the pathological change, with *μέγα*, describing the therapeutic change. In the light of this traditional therapy by means of a change that is both opposed and proportioned to the cause, which we can sum up with the hapax ἀντιμεταβάλλειν,<sup>22</sup> the author of *Regimen in Acute Diseases* advocates a therapy involving the smallest change. At the start of ch. 27 (doc. no. 2, right column, text no. 1), he

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opinion on the disease, by showing its possible origin and causes which, to my mind, are likely to provoke such a large change (μεταβολῆς).” On the connection between *Regimen in Acute Diseases* ch. 26 and Thucydides 2.48.3, see F. Kudlien, *Der Beginn des medizinischen Denkens bei den Griechen*, Zurich/Stuttgart, 1967, pp. 129–130; compare also Thucydides 7.87 ἐς ἀσθένειαν ἐνεωτέριζον, where the verb νεωτερίζειν is another way of showing the change that is produced in the body when it becomes ill. It can be easily shown that this change in the body was generally caused, according to the Hippocratic doctors, by a major change either in the seasons (cf. for example *Airs, Waters, Places* ch. 2, 2.14,10 and 18 f. L. = ed. Diller 26, 14 and 20 f. τῶν ὥρέων τὰς μεταβολὰς and ἅμα γὰρ τῆσιν ὥρησι καὶ αἱ κοιλίαι μεταβάλλουσι τοῖσιν ἀνθρώποισιν), or in regimen (cf. *ibid.* 2.14,9 f. L. = Diller 26,13 ἐκ μεταβολῆς τῆς διαίτης; cf. also *Regimen in Acute Diseases* ch. 9, 2.282,9 f. L. = ch. 28, ed. Joly 48,6 f. where it is said that sudden changes (αἰ ἐξαπινῶσι μεταβολαί) in regimen cause damage and weakness). In Herodotus 2.77, we find a very clear expression of the idea that changes, in particular those of the seasons, are the cause of disease: ἐν γὰρ τῆσι μεταβολῆσι τοῖσι ἀνθρώποισι αἱ νοῦσοι μάλιστα γίνονται, τῶν τε ἄλλων πάντων καὶ δὴ καὶ τῶν ὥρέων μάλιστα. The idea is also known to Thucydides 7.87,1, who explains disease by change (τῆ μεταβολῆ) in temperature and seasons. Excessive changes are harmful not only for the body, but also for the soul; see Democritus DK 68 B 191 (2.184,5–9).

<sup>22</sup> This conception of treatment is advocated by several treatises of the Hippocratic Corpus, which are inspired by diverse sources, suggesting that this conception was widespread. According to *Breaths*, which is close to the Sophistic milieu (ch. 1), and the treatise *Nature of Man*, written by the school of Cos (ch. 9), treatment consists in opposing the cause of the disease: compare *Breaths* ch. 1 6.92,4–5 L. = ed. Heiberg 91,1 ἐκ τῶν ἐναντίων ἐπιστάμενος τῷ νοσήματι and *Nature of Man* ch. 9, 6.52,8–9 L. = ed. Jouanna, 188,7 f. ἐναντίον ἴστασθαι τοῖσι καθεστηκόσι νοσήμασι; cf. also *The Sacred Disease*, ch. 18, 6.396,2 f. L. = ed. Grensemann 88,24 προσφέροντα τῆ νοῦσω τὸ πολεμιώτατον ἐκάστη καὶ μὴ τὸ σύνηθες. Such definitions of treatment are best illustrated by the prefix ἀντι- rather than the verb -μεταβάλλειν in *Regimen in Acute Diseases*, since the change brought about by treatment is only implicit. However, we find a definition of treatment as change in a treatise from the Hippocratic Corpus that is of unknown origin, in *Places in Man* ch. 45 (6.340,3 ff. L. = ed. Joly, 75,1 ff.), where treatment consists in changing at any price the present state of the patient, since in the absence of change the disease will grow (ἅπαντα δὲ νοσέοντι μετακινεῖν ἐκ τοῦ παρέοντος ἀρχγεῖ· ἦν γὰρ μὴ μετακινήσης τὸ νοσέον αὐξεται); on this connection, see R. Joly, *Hippocrate. Du Régime des maladies aiguës ...*, Paris, 1972, p. 47, n. 2; yet the treatise *Places in Man* is not, for all that, the particular target of the author of *Regimen in Acute Diseases*, whose polemics is more general. On treatment regarded as change, see also, outside the Hippocratic Corpus, the speech of the doctor Eryximachus in Plato’s *Symposium*, 186d1 ff.: “and he who operates a change (ὁ μεταβάλλειν ποιῶν), so that the body acquires a type of armour instead of another ... he is a good practitioner.”

concedes to his adversaries the need for change: τὸ δὲ μεταβάλλειν μὲν εὖ ἔχει μὴ ὀλίγον, “To bring about a change which is not small is a good thing.” However, the most important thing is the way in which the change is brought about. Indeed, he continues: ὀρθῶς μέντοι ποιητέη καὶ βεβαίως ἢ μεταβολή, “the change must be effected correctly and safely.” To effect change correctly, it is necessary to avoid all important and rapid change because, as he says in ch. 46, “all rapid change beyond what is needed is, in one way or another, harmful.”<sup>23</sup> Thus, the doctor should take into account not only the cause of the disease, but also the reactions of the patient’s nature, which tolerates change that goes against its habit only with difficulty; this is the meaning of texts 2 and 3 of document no. 2 (right hand column), on which we have already commented.

We can now understand the problem of change from the perspective of the author of *Regimen in Acute Diseases*: the doctor must bring about a change through treatment that restores the patient from a pathological state to a normal one, but the change that is theoretically better—i.e. that which is proportionate to the cause—is practically the worst, due to the reactions of the individual who, even in a state of good health, cannot tolerate a great departure from his habitual regime. The contrast between these two types of treatment in the mind of the author of *Regimen in Acute Diseases* is such that in ch. 37 he uses the expression τῷ ἐναντίῳ λόγῳ, ‘the opposing principle’, to describe the traditional concept that he is criticising.<sup>24</sup>

Following this overall analysis of the text of *Regimen in Acute Diseases* in combination with the text of Thucydides, the agreement between the historian and the doctor appears throughout. The two conceptions of therapy that surface in between the lines of the political debate in Thucydides are

<sup>23</sup> Ch. 46 ed. Joly 56,16–18 (= ch. 12, 2.324,3 f. L.): πάντα ἕξαπίνης μέζον πολλῶ τοῦ μετρίου μεταβαλλόμενα καὶ ἐπὶ τὰ καὶ ἐπὶ τὰ βλάπτει.

<sup>24</sup> Ch. 37 ed. Joly 51,23 f. (= ch. 11, 2.302,6 L.). In contrast to this apology for a habitual regime, even if it is harmful, we find a reflection on the change of a good regime for a bad one in Euripides’ *Antiope*, Frag. 213 Nauck (XLII Kambitsis): “Satiety is reached in all things. In fact, I have seen people who, abandoning a decent union, were disrupted by a disgraceful union. And once they have eaten their fill of good food (δαίτης), they delight in returning to a harmful diet (φασύλη διαίτη).” Compare also the more general formulation of Euripides’ *Orestes*, 234 μεταβολή πάντων γλυκύ with the criticism of a comic author cited by the scholiasts ad loc. (ed. Schwartz 1.121 f.). These two texts of Euripides, which date from the years 412–408 BC, are practically contemporary with Thucydides. They testify to the currency of the problem concerning change or continuity of regime in the years 415–410. However, the apology for change in Euripides is of the *agreeable* type, while the apology for continuity in the Hippocratic doctor and in Alcibiades is of the *useful* type.

explicitly attested in the polemic of the author of *Regimen in Acute Diseases*. Nicias represents the traditional treatment criticised by the author of the *Regimen in Acute Diseases*, a treatment that desires to re-establish the normal state through a rupture with the pathology by opposing the cause of the harm and by radically changing harmful habits.<sup>25</sup> Alcibiades criticises Nicias' position with arguments that agree with those of the author of *Regimen in Acute Diseases* against traditional treatment. Faced with adversaries who support rupture and change, Alcibiades and the author of the *Regimen in Acute Diseases* denounce the dangers of a change in an albeit harmful habit.

Thus, there is remarkable agreement between Thucydides and the author of the *Regimen in Acute Diseases* on the problem of change and habit. And this is all the more remarkable because the doctor claims originality in discussing questions that have been ignored by his colleagues.<sup>26</sup> How, then, can we explain this close agreement? Should we accept that the historian knew the treatise *Regimen in Acute Diseases*? The hypothesis is possible, but it cannot be proven.<sup>27</sup> In any case, it is not necessary because the connection that we can make between Thucydides and *Aphorism* 2.50 seems to show that the problem of change and habit in medicine is not the prerogative of *Regimen in Acute Diseases*, despite what its author might say. In truth, if there is close agreement on this point between Thucydides and the author

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<sup>25</sup> We might even consider connecting the composites of ἀντι- used by Nicias in ch. 13 (doc. no. 1, left column 1,4 ἀντιπαρακελεύομαι and 1,14 ἀντιχειροτονεῖν) with ἀντιμεταβάλλειν, which serves in ch. 26 of *Regimen in Acute Diseases* to characterise traditional treatment. Of course, the prefix ἀντι- is only natural in an antilogic context, where the recommendations of Nicias are opposed to those of Alcibiades: ἀντιπαρακελεύομαι (1,4) responds to παρακελεύστος (1,2 f.). However, although the old Nicias is contrasted with the young Alcibiades by his advice (ἀντιπαρακελεύομαι), the elderly should contrast themselves with the young by their vote (ἀντιχειροτονεῖν). Thus, Nicias and the elderly should be opposed through their respective action to the imperialist politics of Alcibiades and the young. We might compare their role with that of the prytanis; they should also be the doctors of the city and contribute to the re-establishment of its health by contrasting the cause of its disease. In Nicias' mind, the πρόνοια of the elderly should be opposed to the ἐπιθυμία of the young for the health of the city.

<sup>26</sup> See ch. 7 ed. Joly 38,19 ff. (= ch. 3, 2.238,8 ff. L.): "It seems to me worthwhile to write down all the matters that are ignored by doctors despite the importance of knowing them."

<sup>27</sup> There is no reason to resist the idea that *Regimen in Acute Diseases* might be anterior to the 'ancient' redaction or to the definitive redaction of book 6 of Thucydides (413–after 404). Scholars agree in dating the medical treatise to the end of the fifth century: "the last third of the fifth century" according to R. Joly (*Hippocrate. Du régime des maladies aiguës ...*, p. 23); "um das Jahr 400 v. Chr." according to G.H. Knutzen, *Technologie ...*, p. 1380 (70). Unfortunately, it is not possible to date the technical treatises with any certainty.

of *Regimen in Acute Diseases*, it is because they both dramatised, in their own way, the problem of habit and change. For the author of *Regimen in Acute Diseases*, the dramatisation consists in having boldly contrasted, in a polemic context, two methods of treatment that, according to other doctors in the Hippocratic Corpus, are not contradictory, but constitute two complementary aspects of therapy. We note the comparison with *Aphorism* 2.50, which, whilst highlighting, as we saw, the dangers of a change in habit, knows that it is also fitting to break with habit (doc. 3): δεῖ δὲ καὶ ἐς τὰ ἀσυνήθεα μεταβάλλειν, “it is necessary to bring about change against the unusual.” For Thucydides, the dramatisation consists in having portrayed, also in a polemic context, two conceptions of politics and therapeutics in two rival politicians who clash in two antithetic speeches.

Whatever the reasons might ultimately be to account for the agreement between Thucydides and *Regimen in Acute Diseases*, it is essential to recognise that it exists and sheds light, at the end of the antilogy of Nicias and Alcibiades, on political debate and medical metaphor. As to political debate, it seems that this passage is the first clear formulation of the problem of change in laws, a problem well known in Pythagorean circles, but which would not reappear in the form of two opposing theories before Aristotle's *Politics*.<sup>28</sup> The medical metaphor, which in this analysis acquires both

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<sup>28</sup> Alcibiades' warning against changing the laws is already found in book 3 in the mouth of Cleon and, in similar terms, in the debate on Mytilene. “The most dreadful risk,” declares Cleon, “would be to have nothing fixed in our decisions and not to see that laws (νόμοις) that are imperfect but immovable make a city stronger than laws that are well-made but lack authority” (3.3.3). We should note that both orators use this argument in a similar situation: they are both opposed to the reconsideration of a decision taken by the assembly. It is probably a sign that this theme was already a commonplace in this period. On these two passages, see E. Braun, ‘Νόμοι ἀκίνητοι’, *Jahreshefte des Österreichischen Archäologischen Instituts*, XL, 1953, p. 144 ff. We also find in a Pythagorean context a warning against change in laws which is very close to Alcibiades' formulation; see Iamblichus, *Life of Pythagoras* 175 (= Frag. 33 Aristoxenus, ed. Wehrli, p. 18): “These people thought that remaining in ancestral customs and laws was a good thing, even if they were far more harmful than others. For to change existing laws suddenly ... is neither useful nor healthy” (τὸ μένειν ἐν τοῖς πατρίοις ἔθεσι καὶ νομίμοις, ἔδοκίμαζον οἱ ἄνδρες ἕκείνοι, κὰν ἢ μικρῶ χεῖρω ἐτέρων τὸ γὰρ ῥαδίως ἀποπηδᾶν ἀπὸ τῶν ὑπαρχόντων νόμων ... οὐδαμῶς εἶναι σύμφορον οὐδὲ σωτήριον). This last connection was made by E.F. Poppo, *Thucydides De Bello Peloponnesiaco libri octo*, Pars III, vol. IV, Lipsiae, 1838, p. 88, who also refers to Herodotus 3.82 and Sophocles, *Antigone*, 1113 f. On the opposing thesis of the need or usefulness of change, there is an echo in Thucydides, in the speech of the Corinthians in 1.71.3: “And inevitably, as in the arts, the new must always prevail over the old. In a city that lives in peace, the unchangeable customs are of course to be preferred: but when circumstances are changing and men are compelled to meet them, much originality is required.” In the speech of the Corinthians, two attitudes to the problem of change in politics are implicitly contrasted (cf. J. de Romilly, *La loi dans la pensée grecque*,

scope and coherence, testifies first of all to the interests of the Athenian cultivated milieu for medical matters in the second half of the fifth century, since a historian can, without any implausibility, place in the mouths of two orators of the assembly of the people in 415 such clear allusions to medical literature;<sup>29</sup> but above all it constitutes, to my knowledge, the first known attempt in Greek thought to go beyond the simple level of comparison between leader and doctor, such as that found, for example, in Pindar, and to transpose medical elements onto a political model in a concerted and consistent manner. Thus, Thucydides inaugurates an analogical method that Plato applied very early in his career, but on a subject that the philosopher did not treat until much later, in a famous passage of *Laws* (7.797 d ff.), where he denounces the dangers of change of habit in medicine and politics.<sup>30</sup> Thucydides appears here as a precursor to both Plato and Aristotle, after a necessary and healthy detour via the Hippocratic Corpus.<sup>31</sup>

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Paris, 1971, p. 214); but the antilogy of Nicias and Alcibiades is the first preserved testimonium that explicitly contrasts two theories on the problem of change of customs and laws, as will be taken up in Aristotle's *Politics* 1268b26 ff. A precise comparison between the two debates would be interesting, but falls outside the scope of this study. Suffice it to say that the topic of the discussion is identical and that certain themes are similar, in particular the importance of habit in the argument of the supporters of the least change; medicine also makes its appearance in the debate in Aristotle, but only in the argument of the supporters for change, as a model of politics that should imitate an art that has progressed by departing from traditional practices (1268b35 οἷον ἰατρικὴ κινήθεισα παρὰ τὰ πάτρια).

<sup>29</sup> For the context of the antilogy, J. de Romilly (*Thucydide et l'impérialisme athénien*, Paris, 1951, p. 176) thinks that the line of argument "translated both sides of the thought of the two orators and their arguments"; in particular, the theme of opposition against young and old is confirmed by Eupolis' *Demes*, frag. 94 Kock; cf. J. de Romilly, *ibid.*, p. 176, n. 2.

<sup>30</sup> Although in Alcibiades, the reference to medicine in his argument to warn against political change is a metaphor, in Plato it is an explicit comparison. In order to show that change is damaging to the soul (798 to 7f.), and consequently for the city, he pays particular attention in a very long passage to the dangers of change in the seasons and in diet, combining the well-known themes of Hippocratic medicine (see *supra*, p. 32, n. 21); in particular his analysis of the troubles resulting from change in food, drink, and exercise is comparable to the discussions found in *Regimen in Acute Diseases*.

<sup>31</sup> I am most grateful to M<sup>me</sup> de Romilly and Jean Irigoien, who read the long version of this paper; it is regrettable that the presentation by J. Irigoien, entitled *Hippocrate et Thucydide*, held at Poitiers and Aix in 1958, has never been published; there are two brief descriptions, one in *Estudios Clásicos* IV, 1958, p. 366, and the other in *Bulletin de l'Association Guillaume Budé*, 4th series, no. 1, 1959, p. 37 f. Acknowledgement goes equally to Paul Demont and Suzanne Saïd, as well as Vincenzo di Benedetto; I owe many of the connections with Greek tragedy and comedy to them.

## Texts

## I. Text No. 1: Thucydides, Book 6

## Nicias

- 1 XIII. Οὓς ἐγὼ ὁρῶν νῦν  
ἐνθάδε τῷ αὐτῷ ἀνδρὶ παρακελευ-  
στοὺς καθημένους φοβοῦμαι, καὶ τοῖς  
πρεσβυτέροις ἀντιπαρακελεύομαι  
5 μὴ καταισχυρθῆναι, εἴ τῷ τις παρα-  
κάθηται τῶνδε, ὅπως μὴ δόξη, ἂν  
μὴ ψηφίζηται πολεμεῖν, μαλακὸς  
εἶναι, μηδ', ὅπερ ἂν αὐτοὶ πάθοιεν,  
δυσέρωτας εἶναι τῶν ἀπόντων, γνόν-  
10 τας ὅτι ἐπιθυμία μὲν ἐλάχιστα  
κατορθοῦνται, προνοία δὲ πλείστα,  
ἀλλ' ὑπὲρ τῆς πατρίδος, ὡς μέγιστον  
δὴ τῶν πρὶν κίνδυνον ἀναρριπτούσης,  
ἀντιχειροτονεῖν καὶ ψηφίζεσθαι τοὺς  
15 μὲν Σικελιώτας οἷσπερ νῦν ὄροις  
χρωμένους πρὸς ἡμᾶς, οὐ μεμπτοῖς,  
τῷ τε Ἰονίῳ κόλπῳ, παρὰ γῆν ἦν  
τις πλῆθ, καὶ τῷ Σικελικῷ, διὰ  
πελάγους, τὰ αὐτῶν νεμομένων  
20 καθ' αὐτοὺς καὶ ξυμφέρεσθαι· 2 τοῖς  
δὲ Ἐγεσταίοις ἰδίᾳ εἰπεῖν, ἐπειδὴ  
ἀνευ Ἀθηναίων καὶ ξυνήψαν πρὸς  
Σελινουντίους τὸ πρῶτον (τὸν) πόλε-  
μον, μετὰ σφῶν αὐτῶν καὶ κατα-  
25 λυέσθαι· καὶ τὸ λοιπὸν ξυμμάχους  
μὴ ποιείσθαι, ὡσπερ εἰώθαμεν, οἷς  
κακῶς μὲν πράξασιν ἀμυνοῦμεν,  
ὠφελίας δ' αὐτοὶ δεηθέντες οὐ τευ-  
ξόμεθα.
- 30 XIV. Καὶ σύ, ὦ πρῦτανι,  
ταῦτα, εἴπερ ἡγεῖ σοι προσήκειν  
κῆδεσθαι τε τῆς πόλεως καὶ βούλει  
γενέσθαι πολίτης ἀγαθός, ἐπιψήφισε  
καὶ γνώμας προτίθει αὐθὺς Ἀθη-  
35 ναίοις, νομίσας, εἰ ὀρθῶδεις τὸ  
ἀναψηφίσαι, τὸ μὲν λυεῖν τοὺς  
νόμους μὴ μετὰ τοσῶνδ' ἂν μαρ-  
τύρων αἰτίαν σχεῖν, τῆς δὲ  
πόλεως κακῶς βουλευσαμένης ἱατρὸς  
40 ἂν γενέσθαι, καὶ τὸ καλῶς ἄρξαι  
τοῦτ' εἶναι, ὅς ἂν τὴν πατρίδα

## Alcibiades

- 1 C. XVIII. 6. Καὶ μὴ ὑμᾶς  
ἢ Νικίου τῶν λόγων ἀπραγμοσύνη  
καὶ διάστασις τοῖς νέοις ἐς τοὺς  
πρεσβυτέρους ἀποτρέψη, τῷ δὲ εἰω-  
5 θότι κόσμῳ, ὡσπερ καὶ οἱ πατέρες  
ἡμῶν ἅμα νέοι γεραιτέροις βουλευ-  
οντες ἐς τάδε ἦραν αὐτά, καὶ νῦν  
τῷ αὐτῷ τρόπῳ πειράσθε προαγαγεῖν  
τὴν πόλιν, καὶ νομίσατε νεότητα  
10 μὲν καὶ γῆρας ἀνευ ἀλλήλων μηδὲν  
δύνασθαι, ὁμοῦ δὲ τὸ τε φαῦλον καὶ  
τὸ μέσον καὶ τὸ πάνυ ἀκριβές ἂν  
ξυγκραθῆν μάλιστ' ἂν ἰσχύειν, καὶ  
τὴν πόλιν, ἂν μὲν ἡσυχάζῃ, τρίψεσθαι  
15 τε αὐτὴν περὶ αὐτὴν ὡσπερ καὶ  
ἄλλο τι, καὶ πάντων τὴν ἐπιστήμην  
ἐγγρασσεσθαι, ἀγωνιζομένην δὲ αἰεὶ  
προσλήψεσθαι τε τὴν ἐμπειρίαν καὶ  
τὸ ἀμύνεσθαι οὐ λόγῳ ἀλλ' ἔργῳ  
20 μᾶλλον ξυνήθες ἔξειν. 7 Παράπαν  
τε γινώσκω πόλιν μὴ ἀπράγμονα  
τάχιστ' ἂν μοι δοκεῖν ἀπραγμοσύνης  
μεταβολῇ διαφραρῆναι, καὶ τῶν ἀν-  
θρώπων ἀσφαλέστατα τοῦτους οἰκεῖν  
25 οἱ ἂν τοῖς παροῦσιν ἦθεσι καὶ  
νόμοις, ἦν καὶ χεῖρω ἦ, ἥκιστα  
διαφόρως πολιτεύωσιν.

ώφελήση ὡς πλείστα ἢ ἐκὼν εἶναι  
μηδὲν βλάβη.

## II. Text No. 2: Regimen in Acute Diseases

- 1 C.XXVI (end) καὶ ἴσως τι  
καὶ εἰκὸς δοκεῖ αὐτοῖσιν εἶναι μεγά-  
λης μεταβολῆς γινομένης τῷ σώματι  
μέγα τι κάρτα καὶ ἀντιμεταβάλ-  
5 λειν.
- 1 C.XXVII. 1 Τὸ δὲ μετα-  
βάλλειν μὲν εὖ ἔχει μὴ ὀλίγον·  
ὀρθῶς μέντοι ποιητὴ καὶ βεβαίως  
ἢ μεταβολή.
- C. XXVIII (middle)  
2 ἀλλὰ μὴν εὐκαταμάθητόν ἐστιν,  
ὅτι φαύλη δίαιτα βρώσιος καὶ πόσιος  
αὐτῆ ἐωυτῆ ἐμπερήσ αἰεὶ ἀσφαλεσ-  
τέρη ἐστὶν τὸ ἐπίπαν ἐς ὑγιείην,  
10 ἢ εἴ τις ἐξαπίνης μέγα μεταβάλλοι  
ἐς ἄλλο κρέσσον (ἄλλο κρέσσον  
[νεὶ κρείσσον νεὶ κρείττον] MV  
Gal. Gal. [Ar.] Gal. [cit.] edd.  
15 ante Littré Ermerins: ἄλλο A  
Littré ἄλλα A<sup>corr</sup> Kühlewein  
Jones Joly).
- C. 10 L. XXXVI. 1 Πολλὰ  
δ' ἂν τις ἠδελοφισμένα τούτοισι τῶν  
20 ἐς κοιλίην καὶ ἄλλα εἴποι, ὡς  
εὐφόρως μὲν φέρουσι τὰ βρώματα,  
ἃ εἰθίδαται, ἢν καὶ μὴ ἀγαθὰ ἢ  
φύσει· ὡσαύτως δὲ καὶ τὰ ποτά·  
δυσφόρως δὲ φέρουσι τὰ βρώματα,  
25 ἃ μὴ εἰθίδαται, καὶ μὴ κακὰ ἢ·  
ὡσαύτως δὲ καὶ τὰ ποτά.

## III. Text No. 3: Aphorisms 2.50

- 1 L. Τὰ ἐκ πολλοῦ χρόνου συνήθεα,  
κὰν ἢ χεῖρω τῶν ἀσυνηθέων, ἦσσαν  
ἐνοχλεῖν εἴωθεν. δεῖ δὲ καὶ ἐς τὰ  
ἀσυνήθεα μεταβάλλειν.

### CHAPTER THREE

#### RHETORIC AND MEDICINE IN THE HIPPOCRATIC CORPUS. A CONTRIBUTION TO THE HISTORY OF RHETORIC IN THE FIFTH CENTURY

The second half of the fifth century BC is characterised by the birth and development of various arts, or τέχναι.<sup>1</sup> Amongst these arts, rhetoric and medicine do not seem to share anything in common: one of them is the art of persuasion with speech, the other is the art of healing bodies with medicine. However, there were close relationships and reciprocal influences between these two arts. The influence of medicine on rhetoric is well-known. In the fifth century, Gorgias, in his *Encomium of Helen*, compared the power of speech on the soul with the power of drugs, φάρμακα, on the body.<sup>2</sup> And Plato, in both his *Gorgias* and *Phaedrus*, takes medicine in general, and Hippocrates in particular, as a model to define the aims and method of genuine rhetoric.<sup>3</sup> However, despite its evidence and importance, the reverse relationship of the influence of rhetoric on medicine is currently poorly understood. It is this rhetorical aspect of medical literature that I would like to stress; more precisely, I would like to show that knowledge of certain works of the Hippocratic Corpus is indispensable for the history of rhetoric during its initial development in the fifth century.

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<sup>1</sup> See, for example, A.-J. Festugière, *Hippocrate. L'Antienne Médecine (Introduction, traduction et commentaire)* (Études et commentaires, 4) (Paris, 1948), p. 32.

<sup>2</sup> Gorgias, *Encomium of Helen* DK 82 B 11 (14) = Radermacher 39 (14). See, for example, J. de Romilly, *Magic and Rhetoric in Ancient Greece* (Cambridge, Mass., 1975), pp. 20–21. We recall that Gorgias had close links with the medical world; see Plato *Gorgias* 456b (quoted *infra*, p. 51).

<sup>3</sup> Plato, *Gorgias*, *passim*, from 464a; *Phaedrus* 270 b ff. There is a substantial bibliography on this passage in the *Phaedrus*. See, for example, the different points of view of R. Joly, “La question hippocratique et le témoignage de Phèdre,” *Revue des Etudes Grecques* 74 (1961), 69 ff. and J. Jouanna, “La Collection hippocratique et Platon (Phèdre, 269c–272a),” *Revue des Etudes Grecques* 90 (1977), 15 ff. R. Joly, “Platon, Phèdre et Hippocrate: vingt ans après,” in F. Lasserre and Ph. Mudry (eds.), *Formes de pensée dans la Collection hippocratique* (Actes du IV<sup>e</sup> Colloque international hippocratique, Lausanne, 21–26 septembre 1981) (Lausanne, 1983), pp. 407–421, with the comments by J. Jouanna, *ibid.* p. 422. See also F. Robert, “En marge du Colloque hippocratique de Lausanne: du nouveau sur Hippocrate et le Phèdre,” *Revue des Etudes Grecques* 95 (1982), xviii–xxii.

The history of the origins of Greek rhetoric is a frustrating topic, due to the great contrast between the abundance of testimonia about the men and their works and the rarity of preserved texts. As with other arts, the birth of rhetoric was marked by the publication of treatises that defined its conditions and rules. Although we know the names of authors such as Tisias, Thrasymachus and Theodorus, amongst others, as well as indications of the content of their works, notably thanks to Plato's *Phaedrus*,<sup>4</sup> we do not possess any of these theoretical works. If we refer to the traditional corpus, judicial speeches from the fifth century preserved in their entirety are limited to school exercises and the speeches of Antiphon, as well as Gorgias' *Defence of Palamedes*, and epideictic speeches to Gorgias' *Encomium of Helen*, to which we should probably add Ps.-Xenophon's *Constitution of Athens*. No example survives of the political speeches, known indirectly through the reconstructed speeches of Thucydides.<sup>5</sup> According to this traditional corpus, then, there exist only one or two examples of epideictic speeches from the fifth century. However, we possess two other fully preserved epideictic speeches that date from the same period and that are composed, just like Gorgias' *Encomium of Helen*, according to the rules of rhetoric. In a strange twist of fate, the very reason that explains their survival also explains why they are unknown to specialists of rhetoric. These epideictic speeches have been transmitted faithfully to us not because of their genre, but rather because of their content, for they are about medicine. And if specialists of rhetoric neglect or do not know these speeches, whose rhetorical qualities are undeniable, it is because they have been passed down as part of a vast medical collection, the Hippocratic Corpus, where they are surrounded by other works that sometimes do not have any rhetorical character. These two epideictic speeches, of unknown authorship, are the treatise *Breaths*, which shows that all illnesses, in spite of their diversity, originate from a single source, the air, and the treatise *The Art*, which constitutes a speech in defence of medicine by refuting its detractors.<sup>6</sup>

<sup>4</sup> Plato *Phaedrus* 266e–267c.

<sup>5</sup> On the bibliography concerning classical rhetoric, see the article by R. Weil in *Association Guillaume Budé*, Actes du XIe Congrès (Pont-à-Mousson, 29 août–2 septembre 1983), I: Rapports, Paris, Les Belles Lettres, 1985, pp. 13–61.

<sup>6</sup> *Breaths* and *The Art* were edited and translated by É. Littré, *Œuvres complètes d'Hippocrate*, t. VI (Paris, 1849), pp. 2–26 (*The Art*) and pp. 90–115 (*Breaths*). However, this edition is now outdated because Littré was not aware of all the ancient manuscripts. A more recent critical edition, based on the ancient manuscripts, is that of I.L. Heiberg, *Hippocratis opera*, CMG I, 1 (Berlin, 1927), pp. 9–19 (*The Art*) and pp. 91–101 (*Breaths*). It was preceded by two separate editions and commentaries based on the ancient manuscripts: Th. Gomperz, *Die*

*The Art* and *Breaths* are not the only works in the Hippocratic Corpus likely to have been spoken out loud before an audience. They form part of a larger group of oral works, i.e. works that were composed to be read aloud, even if they subsequently circulated in written form. Since *The Art* and *Breaths* both display features common to the oral works of the Corpus, we must first highlight these common traits, i.e. those features that allow us to define this group of oral works, before demonstrating the original place both *The Art* and *Breaths* occupy within this group thanks to their rhetorical quality.

The author of *Ancient Medicine* clearly attests that there exist within the medical literature, alongside written treatises, some treatises that were read out loud before an audience; he begins his treatise with the following words: “All those who have undertaken to speak (λέγειν) or write (γράφειν) about medicine.”<sup>7</sup> The contrast between λέγειν, ‘to speak’, and γράφειν, ‘to write’, proves without any doubt the existence of two distinct categories of medical works. Specialists of the Hippocratic Corpus are convinced that it has preserved works meant for oral delivery. For example, Festugière, in his introduction to *Ancient Medicine*, acknowledges four treatises that he calls ‘programmatically speeches’: *Ancient Medicine*, *The Art*, *Breaths* and *Nature of Man*.<sup>8</sup> However, this selection of works remains somewhat impressionistic. It is now possible to adopt a more scientific approach to the problem by using the complete index of the Hippocratic Corpus.<sup>9</sup> The distinction between the two categories of written and oral works can be made within the Hippocratic Corpus by means of the criterion of what I call ‘internal references’. Within the works included in the Hippocratic Corpus—I pass over the numerous works in the form of notes or aphorisms—the authors

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*Apologie der Heilkunst: eine griechische Sophistenrede des 5. vorchristlichen Jahrhunderts*, 2nd ed. (Leipzig, 1910) (Introduction, text and commentary, German translation and extensive commentary); A. Nelson, *Die hippokratische Schrift Περὶ φύσων. Text und Studien* (Uppsala, 1909) (Introduction, text and commentary. Latin translation and critical commentary). [Postscript: The most recent critical edition of *Breaths* and *The Art* is now: J. Jouanna, *Hippocrate. Des vents. De l'art* (Paris, 1988).]

<sup>7</sup> *Ancient Medicine*, ch. 1, 1.570 L. (= Heiberg 3, 1).

<sup>8</sup> A.-J. Festugière, *Hippocrate. L'ancienne médecine (Introduction, traduction et commentaire)* (Études et commentaires, 4) (Paris, 1948), pp. viii–xiii (II. L' Ancienne Médecine discours programme).

<sup>9</sup> This is the index created by the Laboratoire de recherches hippocratiques in the Université Laval, Quebec: *Concordantia in Corpus Hippocraticum. Concordance des Oeuvres Hippocratiques*. Editée par Gilles Maloney et Winnie Frohn. Avec la collaboration de Paul Potter. 5 Vols. and one Supplement (Hildesheim 1986–1989). \* [Postscript: In addition, there now is the *Index Hippocraticus*, ed. by K. Alpers, A. Anastassiou, D. Irmer and V. Schmid, 4 Vols. and one supplement (Göttingen 1989–2007) and of course the electronic Thesaurus Linguae Graecae.]

frequently make internal references, either to what they have already discussed or to what they are going to discuss. For these internal references, apart from neutral verbs whose meaning can convey either written or oral activity (such as φράζειν, 'to explain', or δηλοῦν, 'to show'), we find terms related to λέγειν or γράφειν. It is clear that all the treatises in which the author references his own work by using terms related to γράφειν are written treatises. Thus, we are assured of the presence in the Hippocratic Corpus of more than twenty treatises, often very extensive, which were composed directly for written publication.<sup>10</sup> To determine the group of oral works (which concerns us here), we would like to be able to apply a similarly reliable criterion as for the written works and say that all the works in which the author uses, to refer to his own work, systematically and exclusively words relating to λέγειν or its synonyms, were composed to be read aloud. Unfortunately, the criterion is not absolutely decisive because, even in the internal references to written works, terms related to λέγειν can be used alongside those related to γράφειν. For example, in the surgical treatise *On Fractures*, which is a written work, an internal reference uses both γράφειν and λέγειν: "this has already been said in what was previously written" (εἴρηται μὲν οὖν καὶ ἐν τοῖσι πρόσθεν γεγραμμένοισιν).<sup>11</sup> These uses of λέγειν in written prose, without doubt a heritage from oral prose, lend ambiguity to its meaning. Given this ambiguity, we cannot be absolutely certain that the works which systematically and exclusively use terms related to λέγειν or its synonyms were composed to be read aloud before an audience. Nevertheless, only these works were likely to have been read orally, and these are the works that we will call oral works. A precise inventory adds five other works to the four treatises that Festugière considered as speeches: two of the best known fifth-century treatises of the Hippocratic Corpus, *Airs, Waters, Places* and *The Sacred Disease*, the treatise *Nature of the Child*, a treatise on illnesses (= *Diseases 4*) and a treatise *Diseases of Women*, partially preserved in the gynaecological treatises.<sup>12</sup> What strengthens the impression

<sup>10</sup> Here is the list. The texts are quoted according to the order of Littré's edition. Vol. 2: *Prognostic, Regimen in Acute Diseases, Epidemics 1*. Vol. 3: *Epidemics 3, Wounds in the Head, Fractures*. Vol. 4: *Joints, Mochlicon*. Vol. 5: *Epidemics 2, 5, 6, 7*. Vol. 6: *Affections, Places in Man, Wounds, Regimen*. Vol. 7: *Internal Affections, Nature of Women, Seven Month's Child*, part of *Eight Month's Child* (though this is uncertain because the only passage where we find the verb γράφω is thought by some to be interpolated). Vol. 8: *Diseases of Women 1 and 2* (with the reservation that this is a heterogeneous collection; see below, p. 43, n. 12), *Glands*. Vol. 9: *Prorrhetic 2, Physician, Crisis, Critical Days*.

<sup>11</sup> *On Fractures*, ch. 25, 3.498,7 f. L. (= Kuehlewein 82,11 f.).

<sup>12</sup> The title *Nature of the Child during Birth* is given by the author himself in two internal

that the treatises of this group were first pronounced in the form of an oral presentation or speech is the importance of the first person, which serves to reinforce the presence of the speaker before his audience. In all the treatises of this group, without exception, we frequently find the use of verbs in the first person, if necessary supported by the presence of ἐγώ or ἔγωγε. Although the use of the first person is present in certain written treatises of the Hippocratic Corpus, the predominance of the use of the first person in the oral works is obvious when we make an inventory of the verb φημί, 'I say'. This form is more significant for our purpose since it adds nothing to the meaning of the phrase, but has the unique role of emphasising the affirmations of the author. In the 49 instances of φημί in the first person attested in the Hippocratic Corpus, 39 are found in the group of oral works, a ratio of 80%. This is all the more remarkable since this group represents only a small part of the Hippocratic Corpus; what is more remarkable still is that each treatise from the group of oral works delineated by the criterion of internal references uses φημί in the first person.<sup>13</sup>

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references (*Diseases of Women* 1, ch. 1, 8.10,7f. L. ἐν τῇ φύσει τοῦ παιδίου τοῦ ἐν τόκῳ and ch. 73 *ibid.* 152,22–154,1; cf. also ch. 44, *ibid.*, 102,5f. with a variant reading). This work, which should be read as one whole, was divided in the manuscript tradition into two treatises (*Generation and Nature of the Child*). The treatise *Diseases* (= the current *Diseases* 4 of our manuscripts) forms a separate whole. Littré had reason to adopt a continuous numeration of *Generation / Nature of the Child*; but he was wrong to continue this numeration for *Diseases* 4; since the author himself quotes his work *Nature of the Child during Birth* as a whole, there is no reason to go against what he says; see the comparable position, but with different arguments, of I.M. Lonie, *The Hippocratic Treatises 'On Generation', 'On the Nature of the Child', 'Diseases IV'* (Ars Medica/Abteilung 2, Griechisch-lateinische Medizin 7) (Berlin, 1981), p. 43ff. R. Joly (*Hippocrate, De la génération, De la nature de l'enfant, Des Maladies IV, Du Fœtus de huit mois* [Collection des universités de France] [Paris, 1970], p. 11f.) highlighted the oral character of these texts; according to him, *Generation / Nature of the Child* and *Diseases* 4 form two ἀκρόασεις that were subsequently reunited in their publication; but then why did the author preserve, in this case, the title *Nature of the Child during Birth* as an internal reference in the written version? The title of the third ἀκρόασις of the author, *Diseases of Women*, is also known to us by internal references (*Generation / Nature of the Child*, ch. 4, 7.476,15f. L. = Joly 47,28f.; ch. 15, *ibid.* 496,9f. L. = Joly 58,22; *Diseases* 4, ch. 57 (ch. 26), 7.612 L. = Joly 124,1f.) H. Grensemann (*Knidische Medizin I*, [Ars Medica/Abteilung 2, Griechisch-lateinische Medizin 4] [Berlin, 1975]) has correctly and clearly determined the preserved fragments in the gynaecological treatises (what he calls layer C); he published these fragments in *Hippokratische Gynaekologie* (Wiesbaden, 1982).

<sup>13</sup> Here is a list of the thirty-nine uses of φημί in the oral works: *Ancient Medicine* 4; *Nature of Man* 4; *The Sacred Disease* 3; *Airs, Waters, Places* 2; *The Art* 2; *Breaths* 1; in the three other oral works composed by the same author, the form φημί is more frequent again: *Nature of the Child during Birth* (= *Gen./Nat. Child*) 6; *Diseases* 4.12; *Diseases of Women* (layer C of *Diseases of Women* and *Sterile women*) 5. The use of φημί in the written treatises is far less frequent: *Eight Month's Child* 2 (but this could be an oral work, see *supra* p. 42, n. 10); *Regimen in Acute Diseases* 1.2; *Regimen* 1; *The Heart*, with three instances of its use, is an exception, but it is

Thus, these are some of the formal characteristics that assure the unity of the group.

Despite this unity, there is unquestionably diversity. We can distinguish two categories within the oral works of the Hippocratic Corpus: a didactic oral speech, or ‘course’, and an epidictic oral speech, or ‘discourse’. The best representatives of the first category (‘courses’) are the treatises *Airs, Waters, Places* and *The Sacred Disease*, and two texts written by the same author, *Generation/Nature of the Child* and *Diseases 4*. The only true representatives of the second category (epidictic speeches) are, as I said at the start, *The Art* and *Breaths*.<sup>14</sup>

An initial difference is the length of the oral speech. The ‘discourses’ contrast with the ‘courses’ on account of their brevity. The ‘courses’ preserved in the Hippocratic Corpus require between one hour and ten minutes and one and a half hours to be read out loud. These are lectures where the author enters into great detail, aiming at clarity and not effect. There is a significant phrase by the author of *Nature of the Child*, ch. 18: “But I am going to repeat it for more clarity” (μέλλω δὲ δεύτερον νῦν ὀνομάζειν σαφηνίης εἴνεκα).<sup>15</sup> This phrase seems to imply the oral speech of a teacher who was not, unlike the orator, under pressure from the water clock. Conversely, the two epidictic discourses, *The Art* and *Breaths*, last no longer than twenty-eight and thirty minutes respectively. They are short communications that aim to win over the audience by their brevity and brilliance.

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a late treatise. The use of the first person future of ἐρέω also appears almost exclusively in oral works: twenty-five instances of use in a total of twenty-seven in the entire Hippocratic Corpus; but the usage is split differently within oral works: twenty cases in the three treatises of the same author and two in the *Airs, Waters, Places*. As for the use of the first person present of λέγω, it is used twelve times in the oral works: *Ancient Medicine* 5; *Diseases* 4.4; *Nature of Man* 2; *The Art* 1. However, it is also found in the written works, particularly in *Prorrhetic* 2 (four or five times!), where the first person forms λέγω and γράφω are found side by side in the same sentence (ch. 4, 9.20,10f. L.). If we look at the total use of φημί, ἐρέω and λέγω, leaving to one side the ambiguous case of *Eight Month's Child*, we find seventy-six instances in oral works, compared to twenty-three in the rest of the Hippocratic Corpus. This represents a total of 84.45%.

<sup>14</sup> We can associate two other treatises with the category of discourses, but they do not present all of the characteristics. *Nature of Man* begins like a polemical discourse addressed to a large audience (ch. 1, 6.32,1–3 L. = Jouanna p. 164,3–5), but then turns into a technical speech. *Ancient Medicine* also begins with a long polemical introduction (ch. 1 and 2, 1.570,1–572,15f. L. = Heiberg 36,2–37, 6) which precedes the announcement of the subject (ch. 2, 1.572,15f. L. = Heiberg 37,7f.); because of this start, it is allied with the category of discourses, but it does not finish with a *peroratio*, unlike the discourses of *Breaths* and *The Art*.

<sup>15</sup> *Nat. Child*, ch. 18, 7.504,2f. L. (= Joly 63,1f.).

A second, more fundamental, difference concerns the beginning and end of the oral speech. In order to begin his lesson, the author of a 'course' does not concern himself with rhetoric. A single phrase will suffice. For example, the start of the treatise *Airs, Waters, Places*: "For anyone who wishes to undertake the correct study of medicine, here is what he must do" (Ἰητρικὴν ὅστις βούλεται ὀρθῶς ζητεῖν, τάδε χρὴ ποιεῖν).<sup>16</sup> There follows the discussion of the subject, i.e. the listing of factors that the itinerant doctor, who arrives in an unknown city, should take into account to carry out correctly his profession. The beginning of the 'course' *Nature of the Child* (= *Gen./Nat. Child*) is also laconic, but more to the point. The speech begins with an elegant formula, which is a variant of the famous maxim, Νόμος μὲν πάντα κρατύνει, 'law governs everything'. Then the author, eager to start his topic, continues, without slowing pace: "The seed of man comes from every humour in the body; it is the strongest part, which is separated from the rest."<sup>17</sup> If we now examine the start of the two epidictic speeches of *The Art* and *Breaths*, the contrast is obvious. Both begin with a long introduction (thirteen lines of the Littré edition of *The Art*; thirty lines of *Breaths*). The introduction in both discourses is concerned with general ideas, which prepare and precede the declaration of the subject. In *The Art*, we find wise reflections that still apply today, on competence, incompetence and jealousy in the discipline. Here is an extract:

In my opinion, to discover something that was unknown before and, once discovered, makes things better than if it had not been discovered, is the ambition and work of intelligence, as is to bring to fruition something that was half completed. Conversely, to strive, thanks to the art of speeches, which has nothing honourable about it, to discredit that which was discovered by others, without adding anything better, but slandering discoveries to those who do not know better, is not, in my opinion, the ambition and work of intelligence; on the contrary, it is a detrimental sign of nature, or an ignorance of the art.<sup>18</sup>

In the introduction to *Breaths*, we find reflections on the art of medicine and the difficult, yet rewarding, job of a doctor. A passage of this introduction delighted both Christians and pagans in Late Antiquity, from Plutarch to Eustathius, including Dio Chrysostom, Lucian, Origen, Eusebius of Caesarea, Gregory of Nazianzus, Isidore of Pelusium, Simplicius, to name some of the best known. Here is the passage: "The doctor sees terrible things,

<sup>16</sup> *Airs, Waters, Places*, ch. 1, 2.12,1 L. (= Diller p. 24,1).

<sup>17</sup> *Gen/Nat. Child*, ch. 1, 7.470,1 L. (= Joly p. 44,1).

<sup>18</sup> *The Art*, ch. 1, 6.2,3–10 L. (= Heiberg p. 9,4–11).

touches horrible things and the misfortunes of others bring a harvest of sorrows that are peculiarly his" (‘Ο μὲν γὰρ ἰητρὸς ὀρεῖ τε δεινά, θιγγάνει τε ἀηδέων, ἐπ’ ἄλλοτρίησιν τε συμφορήσιν ἰδίας καρπούται λύπας).<sup>19</sup> We can compare these two introductions not only for their length or for the presence of general reflections, but also for the way in which they begin. Both start with Εἰσι τινες, followed by a relative clause (*Breaths*: Εἰσι τινες τῶν τεχνέων αἵ, “there are some arts which”; *The Art*: Εἰσι τινες οἱ, “there are people who”). The relative clause in the speech of *The Art* straightaway describes its opponents in a striking phrase: “There are some people who make an art out of discrediting arts” (Εἰσι τινες οἱ τέχνην πεποιήνται τὸ τὰς τέχνας αἰσχροπεεῖν). Hearing this beginning of a polemical introduction, specialists in rhetoric are quick to compare the two speeches of Isocrates, that of the *Encomium of Helen*: Εἰσι τινες οἱ μέγα φρονοῦσι ‘there are some men who are immensely proud’, and that of *Nicocles*: Εἰσι τινες οἱ δυσκόλως ἔχουσι ‘there are some men who become annoyed’. The similarity between how these four speeches begin is probably not due to chance; it very likely attests the existence of a rhetorical procedure practised in the fifth century.

The contrast between ‘courses’ and ‘discourses’ is just as clear at the end of the speech as it is at the start. ‘Courses’ end just as abruptly as they started, with a short concluding phrase, often too general to be appropriated to the subject. Here is the end of *Airs, Waters, Places*: “From these observations, you may judge the rest without error” (ἀπὸ δὲ τούτων τεκμαιρόμενος τὰ λοιπὰ ἐνθυμείσθαι καὶ οὐχ ἁμαρτήσῃ).<sup>20</sup> The end of the ‘course’ *Nature of the Child* is even less rhetorical; the last sentence signals quite simply that the speech is finished: “This speech, spoken in full, is ended” (Οὗτος ὁ λόγος ᾧδε εἰρημένος ἅπας τέλος ἔχει).<sup>21</sup> By contrast, the two ‘discourses’ of *The Art* and *Breaths* have long conclusions (seven lines in the Littré edition of *The Art* and eight lines of *Breaths*). This conclusion obeys the rules of rhetoric. All the theories of rhetoric of the fifth century, as Plato clarifies in *Phaedrus*, 267 d, agree in saying that the conclusion of a speech should remind the audience of the points of the subject that was discussed. In both *The Art* and *Breaths*, the conclusion effectively recalls the points demonstrated. For example, the start of the conclusion of *Breaths*: “Thus, it is clear that breaths are the most

<sup>19</sup> *Breaths*, ch. 1, 6.90,4–6 L. (= Heiberg 91,5–7). For the testimonia relating to this passage, see J. Frings in *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften* 43 (1959), 1–12, with the further comments of K. Schubring, “Übersehene Zitate,” *Hermes* 88 (1960), 451–455.

<sup>20</sup> *Airs, Waters, Places*, ch. 24, 2.92,11–13 L. (= Diller 24,3).

<sup>21</sup> *Generation/Nature of the Child*, ch. 32, 7.542,1–2 L. (= Joly 83,26f.).

active agents in all diseases. Everything else is a concomitant and secondary cause. I have demonstrated that this is where the cause of diseases lies. I had promised to demonstrate the cause of diseases. I have shown that air exercises its sovereignty over the universe and over living beings.”<sup>22</sup> The conclusion of the *The Art* begins similarly: “Thus, that medicine contains within it plentiful reason to bring help and that it rightly does not treat diseases that it cannot heal, or treat patients it does treat without error, is shown by the words pronounced here.”<sup>23</sup> It is not only the reminder to the audience of the points talked about that these two epilogues have in common; it is also the desire to convince. The two authors are intent on highlighting that they have demonstrated the thesis that they announced at the start. In the two conclusions, terms of demonstration are piled up. The verb ἐπιδείκνυμι is used twice in the conclusion of *Breaths* and once in *The Art*,<sup>24</sup> which also uses δηλώω, ‘to show’, and ἐπίδειξις, ‘demonstration’. Thus, they can be counted as two epidictic speeches.

These two epidictic speeches are distinguished from the ‘courses’ not only by their length and methods of composition, but also by their style. If we take the distinction made by Aristotle in his *Rhetoric* between the two categories of style, we can say that the ‘courses’ are more characterised by λέξις εἰρομένη, and the ‘discourses’ by λέξις κατεστραμμένη.<sup>25</sup> As an example of λέξις εἰρομένη (i.e. a style that is free-running, unless there is no more to say on the subject), Aristotle quotes the start of Herodotus’ *Histories*: Ἡροδότου Θουρίου ἧδ’ ἱστορίας ἀπόδεξις. We could also quote the start of a Hippocratic ‘course’, *The Sacred Disease*: Περὶ τῆς ἱερῆς νόσου καλεομένης ᾧδε ἔχει, “Concerning the disease called sacred, here is what there is to say.”<sup>26</sup> The use of λέξις κατεστραμμένη (i.e. the periodic style) is present in some ‘courses’, notably the *The Sacred Disease* and, to a lesser extent, *Airs, Waters, Places*.<sup>27</sup> However, the speeches of *Breaths* and *The Art* are different from all the other treatises of the Hippocratic Corpus for their systematic use of λέξις κατεστραμμένη. The principal characteristic of the periodic style is the use of antithesis, which contrasts two parts of a sentence of the same length

<sup>22</sup> *Breaths*, ch. 15, 6.114,13–17 L. (= Heiberg 101,16–20).

<sup>23</sup> *The Art*, ch. 13, 6.26,6–9 L. (= Heiberg 19,3–6).

<sup>24</sup> *Breaths*, ch. 15, 6.114,15 and 16 L. (= Heiberg 101,18 and 19); *The Art*, ch. 13, 6.26,10 L. (= Heiberg 19,7).

<sup>25</sup> Aristotle *Rhetoric* 1409a28 ff.

<sup>26</sup> *The Sacred Disease*, ch. 1, 6.352,1 L. (= Grensemann 60,1).

<sup>27</sup> See, for example, in *The Sacred Disease*, the antithesis of ch. 1, 6.352,5–8 L. (= Grensemann 60,6f.).

(*pariosis*) that end with the same sound (*paromoiosis*). The introduction of *Breaths* alone presents six examples of this; one of the most representative is the famous definition that it gives of medicine: “For medicine is subtraction and addition: subtraction of what is in excess, addition of what is lacking” (ἰητρικὴ γὰρ ἐστὶν ἀφαίρεσις καὶ πρόσθεσις, ἀφαίρεσις μὲν τῶν πλεοναζόντων, πρόσθεσις δὲ τῶν ἐλλειπόντων).<sup>28</sup> The antithetic parts introduced by μὲν and δὲ are of comparable length (eleven and nine syllables), and they end with the same sounds (πλεοναζόντων / ἐλλειπόντων); and each part comprises two cola which are opposed in meaning and correspond in sound: ἀφαίρεσις μὲν—πρόσθεσις δὲ, and τῶν πλεοναζόντων—τῶν ἐλλειπόντων. A concerted use of *pariosis* and *paromoiosis* also characterises *The Art*. For example, here is a discussion ironically showing the theory of opponents who, in the case of the patient’s death, place responsibility on the doctor and excuse the patient: “In this way, for doctors it is possible to prescribe something that is not appropriate; but for patients it is not possible to contravene what is prescribed” (ὡς τοῖσι μὲν ἰητροῖσιν ἔνεστι τὰ μὴ δέοντα ἐπιτάξαι, τοῖσι δὲ νοσέουσιν οὐκ ἔστι τὰ προσταχθέντα παραβῆναι).<sup>29</sup> The antithetic parts introduced by μὲν and δὲ are exactly the same length (nineteen syllables) and end in homoeoteleuton (ἐπιτάξαι—παραβῆναι). Each part is divided into four cola which correspond in pairs by perfectly respecting the laws of *pariosis* and *paromoiosis*: first group of cola, seven syllables τοῖσι μὲν ἰητροῖσιν—τοῖσι δὲ νοσέουσιν; second group of cola, three syllables ἔνεστι—οὐκ ἔστι; third group, five syllables τὰ μὴ δέοντα—τὰ προσταχθέντα; fourth group of cola, four syllables ἐπιτάξαι—παραβῆναι.

To confirm the rhetorical character of these two speeches, we should compare them to two other epideictic speeches from the fifth century that have been preserved, particularly Gorgias’ *Encomium of Helen*. A comparison between *Breaths* and the *Encomium of Helen* was actually undertaken at the end of the last century in two studies published in 1887, an article by E. Maass in the journal *Hermes*, and a chapter in the *Attische Beredsamkeit* by F. Blass.<sup>30</sup> Having been revived at the start of the twentieth century by E. Norden in his work on ancient artistic prose,<sup>31</sup> this comparison was very quickly forgotten. Wolf Aly, in his *Formprobleme der frühen griechischen*

<sup>28</sup> *Breaths*, ch. 1, 6.92,11–13 L. (= Heiberg 92,8–10).

<sup>29</sup> *The Art*, ch. 7, 6.10,19–21 L. (= Heiberg 13,10–12).

<sup>30</sup> E. Maass, “Untersuchungen zur Geschichte der Griechischen Prosa,” *Hermes* 22 (1887), 566–572; F. Blass, *Die attische Beredsamkeit*, 2nd ed. (Leipzig, 1887), pp. 89–91.

<sup>31</sup> E. Norden, *Die antike Kunstprosa I*, 3rd ed. (Leipzig, 1915), p. 44f.

*Prosa* in 1929, studies *Airs, Waters, Places*, but does not quote *Breaths*. Modern works on rhetoric, for example that of V. Buchheit on epideictic speech, or that of G. Kennedy on the art of persuasion, do not mention the Hippocratic Corpus.<sup>32</sup> However, the comparison between the *Encomium of Helen* and *Breaths* merits further investigation, as well as extension to *The Art*. It reveals some common traits amongst these three speeches that correspond to Aristotle's definition of epideictic speech. All three speeches concern praise and criticism. The author of *Breaths* praises the power of the air in the universe, which is comparable to the praise of the power of speeches in the *Encomium of Helen*. The same metaphor of the 'sovereign' is applied to the principle that is praised. In the *Encomium of Helen*, the speech is a δυνάστης μέγας; in the treatise *Breaths*, ch. 3, the air is a μέγιστος δυνάστης.<sup>33</sup> The author of *The Art* writes an apology for an art attacked by its detractors, just like Gorgias writes an apology for a woman decried by her accusers.<sup>34</sup> The composition technique is also similar in the three speeches: introduction, announcement of the subject, retrospective and prospective transitions, epilogue. However, a study of the artistic prose shows that, of the two discourses in the Hippocratic Corpus, the one that is closest to the *Encomium of Helen* is *Breaths*. In *The Art*, parallel or antithetic parts of the periodic phrase can be very long or, if they are brief, can be inserted in a much longer sentence whose architecture is guided less by formal symmetry than by a dense and nuanced thought. Conversely, in *Breaths*, as in the Gorgias' *Encomium of Helen*, parallel or antithetic clauses of the periodic phrase are short and constitute the essential structure of a short sentence, lending it a rapid and regular rhythm. A comparison between the three conclusions will serve as an example. Whilst in *The Art*, the conclusion is formed of a single, extremely long, sentence, which comprises two long subordinate propositions which outline the principal proposition, in *Breaths* and in Gorgias, there is a series of short phrases or parts of short phrases alongside each other, which begin with a verb in the first person (in *Breaths* Ὑπεσχόμεην—ἐπέδειξα—ἤγαγον; in Gorgias Ἀφείλον—ἐνένειμα—ἐπειράθην—ἐβουλήθην).<sup>35</sup> We can make other

<sup>32</sup> V. Buchheit, *Untersuchungen zur Theorie des Genos Epideiktikon von Gorgias bis Aristoteles* (Munich, 1960); G. Kennedy, *The Art of Persuasion in Greece*, (Princeton, 1963).

<sup>33</sup> Gorgias, *Encomium of Helen*, DK 82 B 11 (8) = Radermacher 39 (8); *Breaths*, ch. 3, 6.94.3 L. = Heiberg 92,21 f.

<sup>34</sup> Compare in particular Gorgias, *Encomium of Helen* DK 82 B 11 (2) = Radermacher 39 (2) and *The Art*, ch. 1, 6.2,15–18 L. (= Heiberg 9,15–18).

<sup>35</sup> Compare *The Art*, ch. 13, 6.26,6–12 L. (= Heiberg 19,3–9), *Breaths*, ch. 15, 6.114,13–20 L. (= Heiberg 101,16–23) and Gorgias, *Encomium of Helen*, DK 82 B 11 (21) = Radermacher 39 (8).

connections between the style of Gorgias and *Breaths*; I will only cite one. A particular case of pariosis and of paromoiosis is the use of two similar terms linked with *καί*, comparable not only for their length and for their sounds, but also for their meaning. There are fourteen examples of this forced redoubling of the expression in Gorgias' *Encomium of Helen*, of the type *ἀμαρτία καὶ ἀμαθία*. In *Breaths* the list is longer again (twenty-one examples) and the rhetorical ability of its author equals that of Gorgias. Indeed, *Breaths* offers the couplets *ῥεῦμα καὶ χεῦμα* and *πληθεῖσαι καὶ πρησθεῖσαι*, which are also found in Gorgias' couplet *προβήσομαι καὶ προθήσομαι*, since all three are formed by the simple changing of a letter.<sup>36</sup> In short, of all the epidictic discourses preserved from the fifth and fourth century, the closest to Gorgias' *Encomium of Helen* is the Hippocratic treatise *Breaths*. It is testimony to a fashion whose excesses appear tempered and overshadowed in *The Art*.

Since the two speeches of *Breaths* and *The Art* are distinguished from all the other treatises of the Hippocratic Corpus by their rhetorical character, we might ask a question concerning their origin: were they composed by doctors, or are they works by orators or sophists, mislaid in a collection of medical writings? The *opinio communis* of specialists on Hippocrates is that their authors were sophists. Certain critics have even ventured to propose names. *The Art* was attributed to a pupil of Protagoras by Th. Gomperz and to Hippias by Dupréel.<sup>37</sup> More useful, but also not very convincing, is the solution that attributes them to the iatrosophists, new centaurs (half-doctor, half-sophist) who owe their existence to the imagination of philologists applying to the fifth century BC a much later term from the fifth century AD; moreover, they distort its true meaning.<sup>38</sup> However, if we re-read these two speeches without prejudice (and also possibly without misinterpretation), it appears that their content agrees with the basic ideas of Hippocratic medicine, and also with its spirit. For example, *Breaths*, in spite of the law of sophistic

<sup>36</sup> *Breaths*, ch. 3, 6.94,4 L. (= Heiberg 93,1) and ch. 8, 6.102,22 f. L. (= Heiberg 96,23); Gorgias *Encomium of Helen* DK 82 B 11 (5) = Radermacher 39 (5).

<sup>37</sup> Th. Gomperz, *Die Apologie der Heilkunst: eine griechische Sophistenrede des 5. vorchristlichen Jahrhunderts*, 2nd ed. (Leipzig, 1910), p. 27. E. Dupréel, *Les sophistes*, (Bibliothèque scientifique. Philosophie et histoire, 14.) (Neuchâtel, 1948), p. 242 ff. However, see L. Edelstein (ΠΕΡΙ ΑΕΡΩΝ *und die Sammlung der hippokratischen Schriften*, [Problemata 4] [Berlin, 1931], p. 105 f.) who departs from the *opinio communis* and believes that it is the work of a doctor, and not a sophist.

<sup>38</sup> The term *ιατροσοφιστής* is not attested until Damascus in the *Souda*, s.v. Γέσιος, LSJ translates it as 'professor of medicine'.

eulogy, remains faithful to the rational spirit of Hippocratic medicine. The deification of the principle that is praised, which appears to be a rule in sophistic eulogies, is absent from *Breaths*. In Gorgias, speech (λόγος), the object of the eulogy, carries out divine works (DK 82 B 8 θειότατα ἔργα); likewise, in the speech Plato gives the doctor Eryximachus in his *Symposium*, love, which is the universal principle, like the air in *Breaths*, is a 'god' (θεός), which extends its power over everything, both divine and human matters (καὶ κατ' ἀνθρώπινα καὶ κατὰ θεῖα πράγματα 186b1–3). In *Breaths*, air also exercises a universal power, but all reference to the divine has been carefully avoided. The traditional antithesis between the divine and the human (ἀνθρώπινα—θεῖα) is replaced by the opposition τοῖσι ὅλοισι—τοῖσι θνητοῖσι, 'the universe—mortal beings', and the notion of immortal is rendered by ἀέναον and not ἀθάνατον, abolishing any reference to gods or immortals.<sup>39</sup> This filtering of vocabulary constitutes the most remarkable unity of the Hippocratic Corpus, despite the diversity of doctrines, methods and styles, and is the discreet yet sure sign that *Breaths* is not the work of a sophist mislaid in the library of a medical centre, but of a Hippocratic doctor in the wider meaning of the term.

That a doctor from the fifth century needed to combine the art of persuasion and the art of healing is better understood if we account for the situation of a doctor in this period. In the absence of any regulation of the medical profession, the doctor had to compete constantly with his rivals both for his medical competence and his art of persuasion, whether this was before an audience limited to the entourage of patients during home visits, or before the larger public in a doctor's surgery or, finally, before the peoples' assembly. The usefulness of the art of persuasion in a medical career is attested indirectly by a passage of Plato's *Gorgias*: "Often," Gorgias says to Socrates (456 b), "when I have accompanied my brother or some other doctor to see one of his patients who refused to drink a medicine or trust the doctor to operate on him with a knife or fire, whilst the doctor was not able to persuade him, I have succeeded in persuading him solely by the use of rhetoric. I say that if a rhetorician and a doctor were to go to any city, and had there to argue before the peoples' assembly or any other assembly as to which of them should be elected as doctor, the doctor would not appeal; but the specialist of the word would be chosen if he wished." From these almost paradoxical examples, Gorgias wishes to show the superiority of rhetoric over medicine. However, the passage also indirectly attests that knowledge

<sup>39</sup> *Breaths*, ch. 4, 6.96,1f. L. (= Heiberg 93,18f.); ch. 3, 6.94,16 L. (= Heiberg 93,12).

of rhetoric was indispensable to succeed in a medical career, above all as a public doctor, since appointment depended on a speech that a doctor had to give before the peoples' assembly in a democratic city.<sup>40</sup> Moreover, the doctor did not necessarily remain in one city, but could move around, either to enrich his experience,<sup>41</sup> or to win a more prestigious and richer city; we remember the example of Democedes of Croton, reported by Herodotus,<sup>42</sup> who was the public doctor of Aegina before being public doctor of Athens; thus, over the course of his career a doctor could have cause to make several speeches before the peoples' assembly to prevail over his rivals. No speech of this type has been preserved,<sup>43</sup> yet this short reminder of the working conditions of a doctor is enough to confirm that genuine doctors could be the authors of rhetorical speeches.<sup>44</sup> However, if a doctor is capable of being an orator, he is careful to distance himself from the oratorical specialist and to denounce a negative τέχνη of speeches, as a study of *The Art* shows.<sup>45</sup>

Although I have not been able to discuss the matter in more detail, which is relatively secondary to the specialist in Greek rhetoric, I hope to have shown that the traditional corpus of classical Greek rhetoric should be enriched by the two speeches preserved in the Hippocratic Corpus, *The Art* and *Breaths*. These two speeches are written in Ionian Greek, like Gorgias' *Encomium*

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<sup>40</sup> On the speech of public doctors to the peoples' assembly of Athens, see also Xenophon, *Memorabilia*, 4.2.5. On the public doctor in Greece, see L. Cohn-Haft, *The Public Physicians of Ancient Greece*, (Smith College studies in history 42) (Northampton, Mass., 1956), 91 p.

<sup>41</sup> One of the best known treatises of the Hippocratic Corpus, *Airs, Waters, Places*, is addressed to an itinerant doctor who arrives in a city unknown to him; see above, p. 45.

<sup>42</sup> Herodotus 3.131.

<sup>43</sup> We cannot agree with H. Diels ("Hippokratische Forschungen II. III," *Hermes* 46, [1911], 273–274), who considers *The Art* and *Breaths* to be speeches made with a view to appointment ('Habilitationreden').

<sup>44</sup> We must move away from the prejudice that tends to contrast medical competence with rhetorical knowledge; for a clear formulation of this prejudice, see B.A. van Groningen, *La composition littéraire archaïque grecque: procédés et réalisations* (Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, Afd. Letterkunde, Nieuwe reeks 65,2) (Amsterdam, 1958), p. 254: "The only difference that matters here between medicine and rhetoric is that the first remains the prerogative of a limited circle of specialists, while every free citizen could be called overnight to speak to the assembly or before the tribunal. He therefore had an interest to teach himself this art. Thus, rhetorical theory, which is intentional comprehension, had a thousand reasons to be formed, whilst scientific prose was content with expressing itself, without any theory, in the manner that appeared to be the most efficient." Against this prejudice, see L. Edelstein, ΠΕΡΙ ΑΕΡΩΝ *und die Sammlung der hippokratischen Schriften* (see above, n. 37), pp. 102–109.

<sup>45</sup> *The Art*, ch. 1, 6.2.6 L. (= Heiberg 9,7). The author denounces, with the detractors of the arts, an 'art of bad speech'.

of *Helen*, which is not surprising since the initial development of Greek rhetoric in the fifth century did not have Athens as its centre. To conclude, I would like to propose a new connection, aimed not so much at the specialist, but humanists. The author of *Breaths* begins his eulogy on air in the following way: “Air is a very powerful sovereign that rules everywhere and over everything. Wind is a flow and a stream of air (ἡέρος ρεῦμα καὶ χεῦμα). When the air, in large quantity, provokes a powerful flow, trees are uprooted due to the violence of the wind, the sea swells with waves, huge ships (ὀλκάδες ἀπείρατοι μεγέθει) are thrown around. This is the power that it has in these things. However, it is invisible (ἀφανής) to the eye, but visible (φανερὸς) to reason.”<sup>46</sup> François Rabelais, in his eulogy on Pantagrueion (hemp), shows that, thanks to this plant, the power of the air is brought under control: “By means of this plant, invisible substances are visibly arrested, caught, detained, as though imprisoned ... through it, by retention of waves of the air, stout cargo ships, ample cabined barges, mighty galleons, ships holding a thousand or ten thousand men, are launched out of their stations and driven forward at the will of their commanders.”<sup>47</sup> The combination of the opposites ‘invisible/visibly’ in Rabelais about the winds recalls the antithesis ἀφανής / φανερός in the Hippocratic treatise about the air; the “winds of the air” of Rabelais appear to be a translation of ἡέρος ρεῦμα; and above all the ‘stout cargo ships’ correspond to the ὀλκάδες ἀπείρατοι μεγέθει. Rabelais, a doctor and humanist, knew the Hippocratic Corpus very well, because he edited certain treatises, and the eulogy to the air in *Breaths* is probably recalled here. Rabelais also competes with Hippocrates and operates, through comparison with him, a reversal: whereas *Breaths* showed the superiority of the air over human skill, Rabelais celebrates a *technē* that masters the power of the air. Thus, he transforms the ancient eulogy of a natural force into a modern eulogy of human genius.<sup>48</sup>

<sup>46</sup> *Breaths*, ch. 3, 6.94,2–9 L. (= Heiberg 92,21–93,5).

<sup>47</sup> Rabelais, *Tiers Livre*, ch. LI (ed. Pleiade, p. 508).

<sup>48</sup> This article is the text of a paper presented at the *Congrès de l'Association Guillaume Budé sur la Rhétorique* (Nancy/Pont-à-Mousson, 1983).



## CHAPTER FOUR

### HIPPOCRATIC MEDICINE AND GREEK TRAGEDY

It is well-known that the 'Age of Pericles' was also the Golden Age of Greek tragedy, whose evolution we can follow from Aeschylus' *Persians* in 471 BC to Sophocles' *Oedipus at Colonus*, staged in 401. It is less well-known that this is also the Golden Age of Greek medicine. The Greek doctor Hippocrates, who was born in 460 BC and died around 370 BC, originated from the island of Cos and came from a family of Asclepiads. If we may believe Plato, his younger contemporary, by the end of the fifth century his fame as a doctor was already similar to that of Polycetes of Argos or Phidias of Athens as sculptors.<sup>1</sup> Under his name, we possess a large collection of medical writings of great value. It contains some sixty treatises, which occupy nine volumes in the monumental edition by Emile Littré.<sup>2</sup> These writings, although not all by the hand of Hippocrates or of his school, are of great importance, since they tackle the problem of disease by means of rational thought. The oldest part of this collection is contemporary with Greek tragedy. Although inevitably there are differences between the genres of technical and poetic writing, a comparison between medicine and tragedy is justified because of the natural affinity between the outlook of the tragedians and that of the medical writers. According to a famous phrase of a Hippocratic author (*Breaths*, ch. 1, 6.90,4–6 L.), "the doctor sees terrible sights." The tragic author, on his part, displays terrible sights, and indeed Aristotle affirms in his *Poetics* (1449b27) that fear is one of the two most fundamental emotions evoked by tragedy. Thus, it is the spectacle of human suffering that unites medical writers and tragedians.

This paper will compare the way in which tragic authors and medical writers described or explained a particular type of this human suffering, disease. First, we will highlight the distance that separates the rational

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<sup>1</sup> Plato, *Protagoras* 311b–c.

<sup>2</sup> E. Littré, *Œuvres complètes d'Hippocrate*, 10 vols., Paris, 1839–1861. References will be taken from this edition because it has not yet been replaced in its entirety. More recent critical editions of individual treatises are listed in J.H. Kühn and U. Fleischer, *Index Hippocraticus*, I, Göttingen, 1986, pp. XVI–XXIV. \*[See also G. Fichtner, *Corpus Hippocraticum*, Tübingen 2011].

conception of disease as found in the Hippocratic doctors from the archaic conception of disease in the tragic authors; then we will show in what respects the description and representation of diseases in Greek drama is similar to the medical descriptions; this will finally allow us to investigate the conditions in which tragedy may be said to have been influenced by Hippocratic medicine.

Antiquity distinguished two principal categories of diseases: those that affect a group and those that are particular to an individual. This distinction is clearly made in several treatises of the Hippocratic Corpus, particularly in the first part of *Airs, Waters, Places*, where the itinerant doctor is advised, on arrival in an unknown city, to examine a whole series of factors (seasons, winds and orientation of places, nature of the water, nature of the soil, lifestyle of the inhabitants) in order to practise his art correctly. "As the season or the year advances," declares the author of *Airs, Waters, Places* in chapter two, "the doctor will predict which general diseases will afflict the city in summer or winter, as well as diseases particular to each individual."

The Greek term used to designate the category of general diseases is *loimos*, which we find both in tragedy and in the Hippocratic Corpus. We also find it in epic, in Homer (*Iliad* I, 61) and Hesiod (*Works*, 243). It is traditionally translated by 'plague', but historians of modern medicine prefer the term 'pestilence', since plague in the strict sense of the term, that which is caused by *Yersinia pestis*, was unknown in Greece in the archaic and classical period.<sup>3</sup> Pestilence is mentioned several times in Greek tragedy. Aeschylus mentions it in two tragedies, although only in passing. In the *Persians* (line 415), Darius returns from the underworld and learns from his wife that the Persians' power is in ruins. He enquires about the causes of this ruin, and the first hypothesis that comes to his mind is that of a pestilence that has descended on the city (715 "How? Is it a pestilence, or civil war that has descended on the city?"). These scourges which ravaged the cities were terrifying, since they were as destructive as wars. In the *Suppliants*, the fifty daughters of Danaos, fleeing Egypt and chased by the fifty sons of Aegyptos, found refuge in the city of Argos; to express their thanks, they made vows to the city; the first of these vows was that 'pestilence' (659) would never come to empty the city of its men. While the term *loimos* is absent from the plays of Euripides, pestilence plays an important role in

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<sup>3</sup> M. Grmek, *Les maladies à l'aube de la civilisation occidentale*, Paris, 1983, p. 33.

Sophocles' *Oedipus Rex*. Using this example, we will compare pestilence in tragedy and in Hippocrates, from the point of view firstly of symptoms, then the cause, and finally the treatment.

In *Oedipus Rex*, pestilence has descended upon Thebes, the location of the play. Indeed, the tragedy begins with the evocation of the scourge to which the city is prey; the priest of Zeus recounts the situation to the leader of the city in the prologue, lines 22–30:

For Thebes, as you yourself see, is now sorely vexed, and can no longer lift her head from beneath the angry waves of death. A blight has fallen on the fruitful blossoms of the land, the herds among the pastures, the barren pangs of women. And the flaming god, the malign pestilence (*loimos*),<sup>4</sup> has swooped upon us, ravaging the town: he lays waste to the house of Cadmus, but enriches Hades with groans and tears. (Trans. R. Jebb)

This picture of desolation is picked up again by the chorus of old men in the *parodos*, lines 168 ff.:

Alas, countless are the sorrows I bear. A scourge (or perhaps 'disease': *νοσεί*, 169) is on all our people, and thought can find no weapon for defence. The fruits of the glorious earth do not grow; by no birth of offspring do women surmount the pangs in which they shriek. You can see life after life speed away, like a bird on the wing, swifter than irresistible fire, to the shore of the western god. With such deaths, past numbering, the city perishes. Unpitied, her children lie on the ground, spreading pestilence, with no one to mourn them. (Trans. R. Jebb)

These two pictures correspond and supplement each other. The scourge descends upon the whole of the city, not only on the men who die or the women who no longer give birth, but also on the plants which no longer grow and on the cattle which waste away. The term *loimos*, used in line 28, probably refers to pestilence which kills humans, but is accompanied by a sterility that afflicts all living things at the same time—plants, cattle and women (25–27)—and the chorus includes sterility in the disease that strikes the city (169–174).

The traditional character of this scourge that we see in this description does not find an equivalent in Hippocrates. In the treatises of the Hippocratic Corpus, there is no example of a disease that afflicts all living things at the same time (vegetable, animal, human). The Hippocratic author of

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<sup>4</sup> On the use of *loimos* in *Oedipus Rex*, see G. Daux, "Œdipe et le fléau (Sophocle, *Œdipe-Roi*, 1–275)," *Revue des Etudes Grecques*, 53, 1940, pp. 97–122 and J.C. Kamerbeek, *The Plays of Sophocles IV, The Œdipus Tyrannus*, Leiden, 1967, p. 38 (footnote to line 27).

*Breaths*, when he discusses pestilence (ch. 6, 6.96,20–98,13 L.), uses the principle that these common diseases do not attack men and animals indifferently, but they affect sometimes men in general, and sometimes this or that species of animal.

By contrast, the plague that afflicts the Achaeans at the start of Homer's *Iliad* (I. 50–52) strikes first the animals, mules and dogs, and then men. In Hesiod's *Works and Days*, 238ff., the city of the unjust king is the victim of famine (λιμός) and pestilence (λοιμός). In the city afflicted by this scourge, the men waste away, the women stop giving birth and estates wither away. It is clear that this decline comes from the loss of harvests and cattle, as the contrast with the city of the just king shows (255f.), which is prosperous in its harvests, cattle and children. Thus, in Sophocles this conception of a generalised scourge that afflicts the city in three principal areas of life (vegetable, animal and human) is the remnant of an archaic conception previously found in epic, an archaic conception that the doctors of the Hippocratic Corpus abandoned.<sup>5</sup>

The contrast between Sophocles and Hippocrates is clearer concerning the cause of pestilence than regarding its manifestations. While the Hippocratic doctor and the tragic author use one and the same word for the cause of pestilence, the Greek noun *miasma* (*Breaths*, ch. 6, twice; *Oedipus Rex*, lines 97, 241, 313, 1012), the contexts of its use are very different and highlight the distance that separates the two conceptions of cause. In *Oedipus Rex*, *miasma* means, as in Greek tragedy more generally, a religious 'stain', particularly that which results from spilt blood. Indeed, the oracle at Delphi, consulted by Creon on the order of Oedipus, responded that in order to end the pestilence he needed to dispel from the territory the *miasma* that caused it (97): the stain of the blood spilt in the murder of Laios (100–107). The entire tragedy consists in discovering that it was Oedipus, the king of the city charged with finding the murderer, who was responsible for this stain. Thus, pestilence is caused by an offence, albeit an involuntary one, against religion and morality.

By contrast, in the Hippocratic Corpus the term *miasma*, when used with reference to the cause of the pestilence, is detached from all moral and religious connotations. The Hippocratic author of *Breaths*, when discussing the distinction between particular diseases, which are due to an individual's

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<sup>5</sup> Compare in Herodotus 7.171, the famine (*limos*) and pestilence (*loimos*) which afflict the Cretans and their flocks after returning from the Trojan War.

unhealthy diet, and general diseases or ‘pestilences’, which have a common cause, explains the cause of these common diseases as follows (ch. 6, 6.98,2f. L.): “Common fever is common because everybody breathes the same air; the same air is mixed with the body in the same way, and so the fevers are identical.” The author then clarifies why the air is the cause of pestilence, and here he uses the word *miasma*: “When the air is infected by *miasmas* (μιάσματα), which are harmful to human nature, then men are sick.” What does he mean by ‘*miasmas*’? They are a type of emanations that come either from the earth, marshes or even from dead bodies, as the commentators tell us. Thus, *miasma* in the Hippocratic author is a physical and natural cause. It is contrasted with the *miasma* mentioned by the tragic author, which is a stain resulting from the breaching of a moral and religious prohibition. Any notion of individual culpability and collective responsibility has disappeared in the use of the word *miasma* by the Hippocratic doctor. It is no longer the relationship of individual behaviour with moral and religious values which is the cause, but the relationship of human nature with the surrounding environment. For the medical writer, pestilence is caused by a morbid element carried in the air, and it selectively afflicts humans or different species of animals according to the laws of compatibility or incompatibility between the morbid element and the nature of each species, whilst in the tragic author, pestilence is the punishment that descends indifferently upon all types of life in the community of the guilty person.<sup>6</sup> The conception of the cause of pestilence in the tragic author differs from that of the Hippocratic author because it belongs to an epic tradition. In Hesiod, the pestilence that descends upon the city of the unjust king is caused by the punishment of Zeus, who strikes the entire city in order to punish the moral and religious crime of a single man (line 240). In the *Iliad*, pestilence is caused by a god, Apollo, whose arrows descend indiscriminately on the community in order to punish the crime of a single leader, Agamemnon, who insulted the priest of Apollo, Chryses, by refusing to return his daughter to him.

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<sup>6</sup> There is a difference in the way in which *loimos* spreads. Whilst the tragic author refers to the dangers of contagion (cf. line 181 with the note ad loc. of R.D. Dawe, *Œdipus Rex*, Cambridge, 1982, p. 110f.; comp. also Thucydides 2.51.4), the Hippocratic doctor, following his rational conception of inhaled *miasmas*, does not believe the spread of an epidemic to occur through simple contact. Thus, on this precise point, the archaic thought of the tragic author appears closer to the understanding of modern medicine than the rational thought of Hippocratic medicine. Comp. R.P. Parker, *Miasma: Pollution and Purification in Early Greek Religion*, Oxford, 1983.

Thus, we can get a sense of the distance that separates the conception of the cause of pestilence in this tragic author, which is descended from the epic tradition, from the views of rational medicine. The same applies to the methods used to combat the pestilence. In the Hippocratic Corpus, allusions to the treatment of pestilence are rare, but they do not leave any doubt as to its nature. The only treatise that speaks about it is *Nature of Man* (ch. 9, Jouanna pp. 190,15–192,7):

(In the case of an ‘epidemic’ disease), here is the advice that should be given to the people: do not change the diet, since this is not the cause of the disease, but thin and weaken the body as much as possible, progressively deducting food and drink from the habitual regimen ... By contrast, concerning the air, here are the precautions to take: breathe in as little air as possible, and as little contaminated air as possible; in order to do this, abandon as far as possible the places affected by the disease, and then carry out the weakening cure, since this is the best way to avoid the need to breathe strongly and frequently.

The rationale of the treatment is clear in its smallest detail: it aims to reduce as far as possible the patient’s inhalation of the *miasmas* contained in the air by reducing the amount of air inhaled and removing the patient from the places filled with *miasmas*. We might mock this treatment, which is more preventative than curative. However, it is clear that the doctor seeks to avoid the spread of the pestilence through strictly natural and rational procedures.

By contrast, in Sophocles’ *Oedipus-Rex*, no one considers appealing to a doctor in order to bring the pestilence to an end; rather, people seek the gods, oracles and seers. In the *parodos*, the anxious chorus of elders, representing the people, invokes no less than seven divinities to end the scourge. However, this religious conception reflects not just popular mentality. Oedipus, the leader of the city, who was able to solve the riddle of the Sphinx using only the resources of his own intelligence, has no other resource to tackle the calamity than to send Creon to consult the oracle at Delphi and to send for the seer of Thebes, Tiresias. This religious treatment is no different to that proposed by Achilles during the pestilence in the *Illiad* (I, 61–62): “Let us go and ask a seer or priest, see an interpreter of dreams: the priest is also a messenger of Zeus.” The memory of Homer is as present in the start of *Oedipus Rex*, concerned with the pestilence, as in the scene where the predictions of Tiresias, the seer of Thebes, anger the Theban leader, Oedipus, which is inspired by the Homeric scene where the revelations of the seer of the Achaeans, Calchas, anger the leader of the Achaeans, Agamemnon. Such marked influence of the Homeric model on Sophocles is all the more surprising because, when he wrote *Oedipus Rex*, he had probably witnessed

the famous 'plague' of Athens that had decimated the Athenian population during the first years of the Peloponnesian War. The 'plague' of Athens was rife in the year 429 and *Oedipus Rex* dates probably from 425.<sup>7</sup>

Some scholars have wanted to see a connection between the historic pestilence and its appearance in drama, even to the point that they thought it was possible to detect, in a passage of the *parodos* (164–166), an allusion not to the great attack of 'plague' in 429, but to its reoccurrence in 427–426. However, we only have to compare the description of the pestilence in Sophocles and the famous description of the 'plague' of Athens in book 2 of Thucydides to observe the difference between the general and traditional description in the tragic author and the precise and modern one in the historian, where medical technical terms are abundant and the pathological analysis is entirely rational, as in the Hippocratic writings.<sup>8</sup> Just as the Homeric model lends its description to tragedy, it is the Hippocratic model that lends the description of the 'plague' to the historian. The question of the cause of the pestilence allows us to make a clear distinction between the tragic author, Hippocratic medicine and the historian. The natural and rational cause of Hippocratic medicine contrasts with the religious and moral cause of the playwright, whilst the historian, although implicitly challenging a religious cause, remains sceptical towards the rational explanations of the doctors, since they were no more capable of stopping the epidemic than religion. Sophocles represents the traditional cultural heritage; Hippocrates represents triumphant rationalism; Thucydides represents the sceptic positivism that describes facts and refuses to declare causes.

Similarly, we can get a sense of the distance that separates tragedy from Hippocratic medicine through the study of individual cases of patients. The fundamental example that will serve here to illustrate the comparison

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<sup>7</sup> On the date of *Oedipus Rex* and possible connections between the plague of Athens and the description in the tragedy, see in particular B.M.W. Knox, "The Date of the *Oedipus Tyrannus*," *American Journal of Philology*, 1956, pp. 133–147, along with the comments of J.C. Kamerbeek, *The Plays of Sophocles IV ...*, p. 28 f.

<sup>8</sup> There is an enormous bibliography concerning Thucydides' description of the plague at Athens; see in particular D.L. Page, "Thucydides' Description of the Great Plague at Athens," *Classical Quarterly*, NS 2, 1953, pp. 97–119 and J.C.F. Poole and A.J. Holladay, *Classical Quarterly*, 29, 1979, pp. 282–300 and 34, 1984, pp. 483–485. On the connections between pestilence in Thucydides and Hippocrates, see also Ch. Lichtenthaler, *Thucydide et Hippocrate vus par un historien-médecin*, Geneva, 1965, p. 31 ff. and P. Demont, "Notes sur le récit de la peste athénienne chez Thucydide et sur ses rapports avec la médecine grecque de l'époque classique," in F. Lasserre and Ph. Mudry, *Formes de pensée dans la Collection hippocratique*, Geneva, 1983, pp. 341–352. P. Demont quite rightly distinguishes between the epic model and the medical model of the pestilence and correctly situates Thucydides' description by comparison to the medical model.

will be taken from Euripides' tragedy *Hippolytus*, performed in 428, slightly earlier than Sophocles' *Oedipus Rex* and just after the plague of Athens which had killed Pericles, the plague to which the final verses of *Hippolytus* seem to allude. Although Eurypides' *Hippolytus* and Sophocles' *Oedipus Rex* are concerned with different myths, there is a similarity between the two tragedies: both open with the evocation of a disease. However, whilst *Oedipus Rex* begins with a general disease that has descended upon the entire city, Euripides' *Hippolytus* begins with a particular disease, that of Phaedra, "afflicted by a disease that she refuses to reveal," as Racine says. The pestilence that descends upon the city in *Oedipus Rex* was evoked only indirectly by speech; Phaedra's illness is represented on stage. However, before the patient appears, the choir, formed of fifteen women from Trezene who had just learned of the disease of their mistress Phaedra, asks itself in the *parodos* about the cause of the disease. The first hypothesis that comes to their minds is that the patient is "possessed by a god" (line 141). To develop this hypothesis of a divine cause of the disease, they evoke, in a series of questions, the divinities suspected of having taken possession of Phaedra and of causing her sickness and delirium (141–147):

Has some god, Pan or Hecate, possessed you? Do your wits wander under the spell of the august Corybantes or the Mother of the mountains? Are you being consumed for some fault against Dictynna (= Artemis), having failed to offer her victims in sacrifice?

This list of divinities suspected of being the origin of an individual disease finds a surprising parallel in a testimonium preserved by an author of the Hippocratic Corpus. We know that in antiquity, epilepsy was given the name the 'sacred disease'; a famous monograph is dedicated to this sickness, the Hippocratic treatise *The Sacred Disease*. We learn that certain alleged doctors, supporters of the religious origin of this illness, attribute it to a series of particular divinities, according to the different symptoms presented by the patients: (ch. 1, 6.360,13–362,6 L.):

These people recall these ideas not once, but a hundred times. If the patient imitates a goat, grinds their teeth, or has convulsions on his right side, they say that the Mother of the gods is responsible; if he speaks in a sharper and more intense tone, they compare this state to a horse and say that Poseidon is responsible; if any faeces are involuntarily passed, which is often the case owing to the violence of the disease, the name of the goddess Enodia is blamed; if the faeces are smaller, like a bird's, and passed more frequently, it is said to be from Apollo Nomius; and if the patient foams from the mouth and kicks with his feet, Ares is responsible; for those who panic during the night, have terrors and delirium, jump out of bed and escape from the house, they say that they are assaulted by Hecate or the heroes.

There are strong similarities between this testimonium and the *parodos* of Euripides' *Hippolytus*, both in the form and in the particular details.<sup>9</sup> In both cases, the illness is caused by a particular divinity, and the diagnosis consists in identifying the divinity who is the cause of this disease. The two lists of divinities, whilst different, share gods in common, namely Hecate and Cybele, called in Euripides 'Mother of the mountains', and in the Hippocratic author, 'Mother of the gods'. Finally, the method in which the divinity takes hold of the patient is similar. We saw in Euripides' *Hippolytus* that the divinity takes possession of the patient. In the report given by the Hippocratic author, the Greek nouns ἐπιβολάς, 'assaults', or ἐφόδους, 'attacks', referring to the divinities that possess the patient, testify to a demonic conception of the disease that is fundamentally analogous.

However, all these resemblances, which testify to a persistence of the belief in the divine origin of the disease in the era of Pericles, not only amongst the common people but also amongst a certain category of doctors, highlight at the same time the distance that separates this common belief, reflected in the tragedy of Euripides, from the rational conception of Hippocratic medicine; for the author of *The Sacred Disease* reports this belief on the origin of the disease only to criticise it at length. Here is the start of this criticism (ch. 1, 6.354,12–18 L.):

Those who first made the disease into something sacred were, in my opinion, such persons as the sorcerers, purificators, mountebanks, and charlatans now are, who pretend to be pious and to know more than other people. Using the divine as a veil and defence to hide their own inability to give any useful prescription, these people expressed the idea that this disease was sacred in order to avoid that their total ignorance be obvious.

The criticism, as we can see from this extract, is virulent. This belief in the sacred origin of the disease is explained, according to the Hippocratic author, by the ignorance and incompetence of alleged doctors who are nothing more than charlatans.

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<sup>9</sup> In his excellent commentary on *Hippolytus*, W.S. Barrett (*Euripides, Hippolytos*, Oxford, 1964, notes to 141–144, p. 189) highlights the connection, but does not explore it further. E.R. Dodds, in *The Greeks and the Irrational* (1951, p. 77) compares the two lists of divinities that cause mental distress, but from another perspective (the absence of Dionysus in the two lists). On the demonic conception of disease, compare Aristophanes' comedy, *Wasps*, 1038f. On religious medicine in the era of Hippocrates and tragedy, see G. Lanata, *Medicina magica e religione popolare in Grecia fino all'età di Ippocrate*, Rome, 1967, 86 f.

Against this divine conception of the disease, the Hippocratic author poses a rational conception. Far from being caused by a particular divinity, epilepsy is explained by the nature of the patient (inheritance, temperament), and originates in a particular part of the body, the brain, and the crisis is produced above all by changes in the winds. To prove the natural origin of the disease, the Hippocratic author reveals his own 'experiment' with animals (ch. 11, 6.382,8–11 L.):

Open the head (of animals affected by this disease, and particularly goats) and you will find the brain moist, full of water, oedema, and bad smelling. And in this way truly you may see that it is not a god that injures the body, but disease.

This 'experiment' of the Hippocratic doctor recalls the famous 'experiment' of the pre-Socratic philosopher Anaxagoras, reported by Plutarch in his *Life of Pericles* (ch. 6, 154f–155a):

It is said that one day, Pericles had brought to him from a country farm a ram's head with one horn. Lampon the seer, upon seeing the horn grow strong and solid out of the forehead, declared that the power of the two parties which divided the state, that of Thucydides and Pericles, would become that of one man, of the man in whose ground or estate this omen had been found. But Anaxagoras, splitting the skull in two, showed that the brain had not filled up its natural place and that it, pointed like an egg, had collected from all parts of the vessel which contained it in a point to that place from whence the root of the horn took its rise.

Anaxagoras, like the Hippocratic doctor, contrasts a religious interpretation of a pathological fact with a natural and rational explanation.

Thus, there is a clear contrast between the conception of an individual disease in Hippocrates and in the women of the chorus in Euripides' *Hippolytus*. Yet we should probably not over-emphasise the contrast between the tragedy and the medical treatise. The author of *The Sacred Disease* does not negate the divine, to which he attributes a very particular role in associating it with a natural cause (ch. 2, 6.364,11f. L.); conversely, the chorus of the *Hippolytus* envisages, to explain Phaedra's disease, two other causes that are similar to the rational spirit of Hippocratic medicine. Indeed, after the hypothesis of a divine cause, the chorus envisages a cause of psychological or physical origin. The disease could be explained by Phaedra's distress (λύπη 159), or by 'the weak constitution of women' (161f.). These are two rational explanations, and they correspond to Hippocratic medicine. Indeed, Hippocratic doctors do not neglect psychological causes. For example, the author of the third book of *Epidemics* describes, in the list of individual cases that ends his work, the illnesses of two women from Thasos caused

by their 'distress'; the Greek term used (λύπη) is exactly the same as that in the *parodos* of Euripides' *Hippolytus*. Here is the start of the description of these two cases:

First case (= 3.134,1ff. L.: eleventh patient): "On the island of Thasos, a woman of sad character had a distressful episode that made her sleepless and lose her appetite; without taking to her bed, she became thirsty and nauseous."

This is followed by the description of the illness, which lasted three days with moments of delirium and finished in a favourable crisis.

Second case (= 3.142,5ff. L.: fifteenth sick patient): "On the island of Thasos, the wife of Dealces, who lived on the Plain, was gripped, following a bout of distress, by an acute and trembling fever. From the start, she wrapped herself up in her bedclothes, which she did throughout the disease; she was silent, palpated, became thin, scratched and picked scabs; crying was replaced with bouts of laughter." The disease is then described until the twenty-first day, when the woman died.

Thus here we find two illnesses described by a Hippocratic doctor which correspond exactly to the second type of cause envisaged by the chorus of the *Hippolytus*: psychological causes. The third possible cause, the nature of women, also attracted Hippocratic doctors' attention. An important part of the Hippocratic Corpus is dedicated to the diseases of women: the treatise *Nature of Women*, and the two books of *Diseases of Women*, extended by *Sterile Women*, form a group that occupies the whole of volume 8 of Littré's edition.

Although these connections qualify the contrast between the mentality of the chorus of Euripides' *Hippolytus* and that of the Hippocratic doctor, they should not mask the fundamental differences that remain between tragedy and Hippocratic medicine. Out of the three possible causes of Phaedra's illness evoked by the chorus (divine, psychological, physical), the one that ultimately proves to be the real cause is the divine. The audience knows from the start of the play that it is Aphrodite, the goddess of love, appearing on stage in the prologue, who is the cause of Phaedra's illness because it is part of a plan put in place by Aphrodite to take revenge on Hippolytus, who spurns her.<sup>10</sup>

Phaedra's illness is representative of diseases found in tragedy. As a general rule, tragic heroes or heroines are struck by a disease or madness

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<sup>10</sup> It is not possible to deduce Euripides' personal opinion on the cause of disease from this staging of the myth. A fragment of *Bellerophon* (Fr. 292 Nauck) distinguishes two categories of diseases, those that are 'spontaneous' and those that 'come from gods'; on this fragment, see W. Nestle, "Hippocratica," *Hermes*, LXXIII, 1938, p. 27 f.

because of the will of the gods, whether this is Io in Aeschylus because of the jealousy of Hera (*Prometheus Bound*), or Orestes pursued by the Erinyes, avenging his mother (*Choephoroi*); in Sophocles, Ajax goes mad because of Athena (*Ajax*), and in Euripides, Heracles is sent mad by the goddess Lyssa on the orders of Hera and Iris (*Hercules furens*). Provoked by goddesses, the bout of madness of tragic heroes can also be healed by a divinity. Thus, in Euripides the murderous madness of Heracles, who kills his own children, is ended by Athena, who throws a stone against the chest of the hero and sends him to sleep (*Hercules furens*).

More generally, the great figures of medicine in tragedy are the gods. The healing divinity who dominates tragedy, apart from Zeus, is Apollo of Delphi. Having absorbed the attributes of Paeon, the ancient doctor of the gods from the *Iliad*, Apollo became the great healer god of the classical period, above all thanks to the fortune of his oracle at Delphi. The name that Aeschylus gives him in the *Oresteia* (*Eumenides*, 62), ἰατρόμαντις, 'doctor-seer', proves the indissoluble link between medicine and divination. This concept of divinatory medicine contrasts with the conception of Hippocratic medicine, which clearly distinguishes its field of action from that of the seer. Thus, in *Regimen* the Hippocratic doctor makes a distinction between divine dreams (ch. 87), which announce fortuitous or unlucky events to cities or individuals, and dreams that reveal afflictions of the body. Whilst the first category of dreams belongs to the domain of dream interpretation, only the second type belongs to the art of medicine. Furthermore, the author of *Regimen in Acute Diseases* denounces the contradictions of the divinatory art (ch. 3):

Seers hold that the same bird is a good omen if seen on the left hand side, but bad if on the right: and in divination by the inspection of entrails they interpret signs differently from one case to another; but certain diviners hold radically opposite views on the same subjects.

Thus, the art of medicine and the art of divination, closely united in tragedy, are clearly distinguished in the Hippocratic Corpus. Here, again, we should probably be wary of focusing too much on the contrast. There is no hostility on the part of the Hippocratic doctor towards Apollo's oracle at Delphi. An inscription from Delphi proves that the aristocratic family of Asclepiads, to which Hippocrates belonged, enjoyed privileges at the sanctuary at Delphi, i.e. 'consultation of the oracle before others';<sup>11</sup> and the literary biographies

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<sup>11</sup> Inscription from Delphi Inv. 6687 A and B (discovered in 1939) which dates from the first half of the fourth century; first published in J. Bousquet, "Inscriptions de Delphes (7.

of Hippocrates suggest that these privileges are ancient (they date from the First Sacred War in the sixth century) and were renewed and inscribed on a stele at Delphi during a trip of Hippocrates with his son Thessalus.<sup>12</sup> All this proves the close relationship of Hippocrates and his family with the oracle of Apollo at Delphi. However, this does not prevent medical writers from separating the medical and divinatory art in their writings.

Another healing divinity gives us a further idea of the distance that separates Hippocratic medicine from tragedy: Asclepius, the son of Apollo.<sup>13</sup> One of the most extraordinary religious phenomena from the end of the fifth century was the sudden expansion of the healing cult of Asclepius, which remained prosperous until the end of paganism. Asclepius was already known in the *Iliad* (II, 731) for his medical competence; but he was a human being, a Thessalonian from Trikka who sent his two sons, the 'Asclepiads', in the expedition to Troy, "both good doctors." By the era of choral poetry, as Pindar attests (3rd *Pythian Ode*), he had become a healing demi-god, the son of Apollo and a mortal (Coronis), and by the end of the classical period he was a full god, above all in his sanctuary at Epidaurus, that 'rock of Asclepius', to use an expression of Euripides in his *Hippolytus* (1029). Although the mention of Asclepius in tragedy is less frequent than that of Apollo, Sophocles' *Philoctetes*, a tragedy from the end of the fifth century, ends with a remarkable reference to the healing god. Heracles, appearing at the end of the play, promises to Philoctetes to send Asclepius in order to heal the wound from the serpent bite that struck him ten years ago: "I will send my Asclepius," says Heracles in lines 1437–1438, "to put an end to this disease before Ilion." This mention of Asclepius might be surprising, since it is an innovation compared to epic myth. In the *Little Iliad*, Philoctetes was healed, not by Asclepius himself, but by a son of Asclepius, Machaon.<sup>14</sup> Indeed, it was unthinkable at the time of the epic that Asclepius could treat Philoctetes, because he had not himself taken part in the expedition to Troy. Moreover, we find this traditional fact in Sophocles' play, because

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Delphes et les Asclépiades," *BCH*, LXXX, 1956, pp. 579–591; re-published with a new fragment by G. Rougemont, *Corpus des inscriptions de Delphes I. Lois sacrées et règlements religieux*, Paris, 1977, pp. 122–124.

<sup>12</sup> See notably *Presbeutikos*, 9.414,3–9 L.

<sup>13</sup> On the testimonies relating to Asclepius, see E.J. and L. Edelstein, *Asclepius: a collection and interpretation of the testimonies*, Baltimore, 1945.

<sup>14</sup> See the summary of the *Little Iliad* by Proclus: "Following which, Diomedes brings back Philoctetes from Lemnos. Healed by Machaon, Philoctetes kills Alexander in single combat" (for the Greek text, see A. Severyns, *Recherches sur la Chrestomathie de Proclus IV. La Vita Homeri et les Sommaires du cycle. Texte et traduction in Bull. Fac. Philos. et Lett. de l'Université de Liège*, 170, Paris, 1963, p. 89).

Neoptolemus, in order to persuade Philoctetes to return to Troy, promised him that he would be healed by the Asclepiads, i.e. by the sons of Asclepius (lines 919 and 1326–1334). Thus, the substitution of Asclepius for his sons at the end of the tragedy is remarkable. Sophocles' innovation from tradition reflects current events: it is a testimonium of the growing importance acquired by the cult of the healer god Asclepius at the end of the fifth century. This allusion to contemporary events acquires greater significance when we contextualise it within Sophocles' life. Sophocles participated in the introduction of the cult of Asclepius to Athens from Epidaurus in 420, for which he was honoured as a hero after his death under the name of Dexion, "he who welcomes."<sup>15</sup> He also composed a paean in honour of Asclepius, parts of which survive on stone, which were discovered in the Asclepieion of Athens.<sup>16</sup> Thus, Sophocles' life and work witness the privileged relationship of the poet with the healing god Asclepius.<sup>17</sup>

What can we say about the relationship between Hippocrates and Asclepius? Hippocrates belonged to the Coan branch of the Asclepiad family, i.e. an aristocratic family that claimed to descend from Asclepius through one of his children and that was known above all for its medical knowledge transmitted from father to son.<sup>18</sup> We also know that in the famous Hippocratic *Oath*, Asclepius is cited in second position after Apollo in the list of divinities that guaranteed it.<sup>19</sup> However, there is nothing to suggest that Hippocrates participated in the spread of the healing cult of Asclepius, as was the case of Sophocles. Asclepius is not mentioned in any part of his medical work, and Hippocrates' rational medicine has no connection with the miraculous medicine of the stelae preserved in the sanctuary of Asclepius at Epidaurus, where the patient only had to sleep in the incubation area to find himself miraculously healed, following the god's intervention through a dream.<sup>20</sup> Although there is no evidence of rivalry between Hippocrates and the religious medicine of the sanctuaries of Asclepius, it is difficult to believe

<sup>15</sup> See *Etymologicum magnum* (p. 256, 6).

<sup>16</sup> IG II 2 4510 = Page, *P.M.G.*, fr. 737.

<sup>17</sup> See also a fragment of Phineus (ed. Radt, fr. 710 = line 636 of Aristophanes' *Wealth*). On the expansion of the cult of Asclepius the healer in the last part of the fifth century, see also Aristophanes *Wasps*, line 123 (date: 422).

<sup>18</sup> The oldest testimony to the affiliation of Hippocrates to the family of Asclepiads is Plato, *Protagoras*, 311b.

<sup>19</sup> *Oath*, 4.628,1 L.: "I swear by Apollo the doctor, by Asclepius, by Hygieia, by Panacea, and by all the gods and goddesses etc ...."

<sup>20</sup> The practice of incubation is described by Aristophanes in *Wealth*, 668ff. The text of miraculous healings preserved on the stele of Epidaurus is found in the work of Edelstein, cited in footnote 13.

that Hippocrates the Asclepiad was able to give his support to the miraculous medicine of the priests of Asclepius.

Despite the distance that separates the conceptions on the aetiology and treatment of general or particular diseases held by the tragedians and by Hippocrates, tragedians did not remain unaffected by the development of rational medicine and the blossoming of medical literature, of which the Hippocratic Corpus remains a striking example. Ever since antiquity, connections have been made between the lines of tragedians and passages of the Hippocratic Corpus. For example, Clement of Alexandria (*Stromata* 6) declares: "The doctor Hippocrates having written: 'It is necessary to examine the season, region, age and diseases', Euripides says in an observation written in hexameters: 'All those who wish to treat a patient correctly should take into consideration the regime of the inhabitants of the city and the territory when they examine the diseases'" (Fr. 917 Nauck). In making such a connection between Hippocrates' *Aphorisms* (1.2 = 4.458 L.) and a passage from a lost tragedy of Euripides, Clement of Alexandria shows that the tragic author knew the rational conception of Hippocratic pathology, which connects diseases with the physical environment and the diet of the inhabitants, which was one of the most remarkable intellectual innovations of his time. It was not only authors, but also ancient commentators, who were able to make connections between precise passages of tragedies and Hippocrates. Thus, the scholiast, in the margin of *Prometheus Bound* (lines 377–380), attributed to Aeschylus, makes a connection with Hippocrates. In this passage, Ocean, proposing to Prometheus to intercede on his behalf to Zeus to calm his anger, uses a medical metaphor: "Do you not know, Prometheus, that words are the doctors of the angry soul?" To which Prometheus responds, continuing the medical metaphor: "Yes, if with skill the heart is softened and if violence is not used to reduce the swelling of anger." In the margin of this text, the scholiast notes: "Hippocrates also says this," and he cites a passage of the Hippocratic treatise entitled *Use of Liquids* (ch. 6): "It is necessary to evacuate matter when it is ripe, and not when it is raw." These two connections made in antiquity both illustrate two possible modes of influence of medicine on tragedy: whether it is a direct use of medical knowledge, as is the case in Euripides, or an indirect use in a metaphoric form, as is the case in the passage of Aeschylus. This brings us to the end of our study of the first mode of influence.<sup>21</sup>

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<sup>21</sup> On the indirect use of medicine, i.e. medical metaphors, see concerning Aeschylus, J. Dumortier, *Les images dans la poésie d'Eschyle*, Paris, 1935 and E. Petrounias, *Funktion und*

Tragic authors may make direct use of medical knowledge either in terminology or in the description or representation on stage of pathological cases, or also in allusions to medical theories. I will quickly pass over the problem of terminology, which is a little technical, and for which two examples will suffice.<sup>22</sup> Tragic authors sometimes use names of diseases that are not attested elsewhere in the classical period, other than in the medical writings of the Hippocratic Corpus. This is the case of Philoctetes' disease, who suffered for ten years from a wound caused by a snake-bite. We know that each of the three tragedians wrote a play about Philoctetes. The latest, and the only one preserved, is that of Sophocles. However, we possess some fragments of Aeschylus' and Euripides' *Philoctetes*. Two of these fragments have preserved the name given to this disease (Aeschylus fr. 253 Radt; Euripides fr. 792 Nauck). It is the Greek term φαγέδαινα, which literally means 'the devouring disease', and which survives in English medical vocabulary in the form of the noun 'phagedena' and, above all, the adjective 'phagedenic', principally in the expression 'phagedenic ulcer'. The name of this disease is attested in the fifth century outside these two fragments only in the Hippocratic treatise *Airs, Waters, Places*, where we read that wounds, in unfavourable climatic conditions, are turned into 'phagedenic ulcers' (ch. 10, 2.48,9 L.). The second example also concerns a term for disease that is found in modern French. In a famous passage of the *Oresteia* (*Choephoroi* 281), Aeschylus enumerates the terrible diseases which Apollo had inflicted upon Orestes because he had not taken revenge for the death of his father: "These dreadful diseases which attack the flesh, savage biting ulcers which devour the old tissue, whilst white hairs grow on the wound." Outside Aeschylus, the name of the disease λειχήν, which means literally 'disease that licks', and which has given the French word 'lichen' (an outbreak of subcutaneous papules), is found in the fifth century in the

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*Thematik der Bilder bei Aischylos*, in *Hypomnemata* 48, Göttingen, 1976; on the use of the metaphor of disease in Euripides' *Orestes*, see W.D. Smith, "Disease in Euripides' *Orestes*," *Hermes*, XCV, 1967, pp. 291–307.

<sup>22</sup> On the problem of medical terminology in Greek tragedy, see J. Dumortier, *Le vocabulaire médical d'Eschyle et les écrits hippocratiques*, Paris, 1935 (2nd ed. 1975 with concluding remarks), 91 p.; H.W. Miller, "Some Medical Terms in Aeschylus," *Classical Weekly*, 25, 1941/42, pp. 278–279 and "Medical Terminology in Tragedy," *TaPha*, LXXV, 1944, pp. 156–167; N.E. Collinge, "Medical Terms and Clinical Attitudes in the Tragedians," *BICS*, 9, 1962, pp. 43–55. On the medical vocabulary of madness, see M.G. Ciani, "Lessico e funzione della follia nella tragedia greca," *Bolletino dell'Istituto di Filologia greca*, Università di Padova I, 1974, pp. 111–127. On the hypothesis advanced by some scholars of a possible reverse influence of the poetic vocabulary of tragedy on the technical vocabulary of medical writers, see *infra*. n. 34.

Hippocratic Corpus, where the disease, attested eight times, appears in the form of dermatoses. However, there remains a difference: whilst the ulcer in Aeschylus is a grave disease that devours the flesh, in the Hippocratic Corpus is a benign papuleuse dermatosis.<sup>23</sup>

Apart from technical terminology, tragic authors were inspired by medical descriptions in their narrative or representation of pathological cases on stage. Above all, the tragic authors favour diseases that inspire empathy, are tragic and spectacular. Thus, they choose moments of crisis where the hero suffers intolerable pains and, above all, those where the 'possessed' hero is seized by madness; this madness can be passive (the hero is pursued by hallucinations which he seeks to flee) or active (the hero, in a moment of aggressive madness, commits an irreparable tragic act).<sup>24</sup> As an example of a first type of crisis, which is accompanied by intolerable pain, we could cite the crises caused by poisoned clothes: there is the case of Heracles in Sophocles' *Trachinians*, who wears the poisoned tunic sent by his wife Deianara;<sup>25</sup> there is also the case, in Euripides' *Medea*, of Jason's new wife, who dies in awful pain while wearing a dress poisoned by Medea. To these examples we can add the crisis of Philoctetes, whose initial cause is the snake bite, since the crisis of Heracles is compared to that caused by a viper bite (*Trach.*, 770 f.). For a second type of crisis, the crisis of passive madness, we can cite two examples: in *Prometheus Bound*, attributed to Aeschylus, Io, transformed into a heifer, was pursued by a horsefly,<sup>26</sup> and most notably Orestes who, at the end of Aeschylus' *Choephoroi*, having killed his mother, is gripped by hallucinations and hounded by the Furies. A third type is that of aggressive madness, where the hero commits a murder in his crisis. This is the case of Ajax in Sophocles, who massacres the flocks of the Achaeans, believing he was killing the Atrides and Odysseus;<sup>27</sup> in Euripides' *Hercules furens*, Heracles massacres his own children in the belief that he was killing

<sup>23</sup> I leave to one side the problem of knowing if the ulcer of Aeschylus corresponds to white leprosy or not. On this problem, see M. Grmek, *Les maladies ...*, p. 244.

<sup>24</sup> On fits of madness in Greek tragedy, outside the study of M.G. Ciani quoted in footnote 22, see in particular J. Mattes, *Der Wahnsinn im griechischen Mythos und in der Dichtung bis zum Drama des fünften Jahrhunderts*, Heidelberg, 1970, 116 p.

<sup>25</sup> On the disease of Heracles, see P. Biggs, "The Disease theme in Sophocles' Ajax, Philoctetes and Trachiniae," *Classical Philology*, 61, 1966, pp. 227–231.

<sup>26</sup> On the madness of Io, see D. and M. Gourevitch, "Histoire d' Io," *L'évolution psychiatrique*, 44, 1979, pp. 263–279 and S. Saïd, *Sophiste et tyran ou le problème du Prométhée enchaîné*, Paris, 1985, p. 169 ff.

<sup>27</sup> On the madness of Ajax, see M. Simpson, "Sophocles' Ajax: His Madness and Transformation," *Arethusa* II, 1969, pp. 88–103.

the children of Eurystheus; finally, the case of Agave in the *Bacchae*: ‘possessed’ by Dionysus, she participates in the ‘sparagmos’ (i.e. tearing apart) of her son Pentheus, and proudly places his head on a spike, believing she was carrying the head of a lion.<sup>28</sup> Exceptionally, we find some descriptions which mix the last two types of crises: the case of Orestes in Euripides’ *Iphigenia in Tauris*, which combines the passive phase inherited from the tradition (the flight of Orestes in prey of the hallucinations of the Furies) and an aggressive phase where Orestes massacres the flocks thinking he was fighting the Furies (line 299).

In all these crises, whether they are recounted by the story of a messenger or whether they are represented on stage, the description of the symptoms tries to be realistic in order to inspire the imagination or the view of the audience as well as possible. Thus, we can observe some similarities between the description of the tragedians and that of the doctors in the Hippocratic Corpus. One of the most spectacular crises which the Greeks witnessed was the crisis of epilepsy, called the ‘sacred disease’. There is a clear description of this crisis given by the Hippocratic doctor mentioned above, the author of *The Sacred Disease*. Here are, according to him, the symptoms of epilepsy (ch. 7, 6.372,5 ff. L.):

“The patient loses his speech and chokes, foam issues from the mouth, he grinds his teeth fixed, the hands are contracted, the eyes roll, he loses consciousness, sometimes the bowels are evacuated”; later he adds that “the patient kicks his feet.”

We can complete this picture with the description of the same disease offered by the treatise *Breaths* (ch. 14):

The whole body is shaken from side to side; parts of the body tremble; all types of distortions occur; during the crisis, patients are insensible to everything, deaf to what is said, blind to what happens, insensible to their suffering; and they froth at the mouth.

Similarities have long been pointed out between the medical description of the epileptic fit and the descriptions of fits in Greek tragedy.<sup>29</sup> In particular, two of the symptoms highlighted by the author of *The Sacred Disease* often

<sup>28</sup> On medicine in the *Bacchae*, see S. Musitelli, “Riflessi di teorie mediche nelle Baccanti di Euripide,” *Dioniso*, 42, 1968, pp. 93–114.

<sup>29</sup> The most precise recent study is that of F. Ferrini, “Tragedia e patologia. Lessico ippocratico in Euripide,” *QUCC*, 29, 1978, pp. 49–62: the author, taking each of the symptoms of the fit described in *The Sacred Disease*, demonstrates correspondences with the plays of Euripides.

reoccur in tragedy: rolling eyes and frothing from the mouth. In *Prometheus*, Io runs away and leaves the stage taken by a fit of delirium, describing what is happening to her and notably declaring: “My eyes are convulsively rolling” (882). The heroes of Sophocles, prey to crises of aggressive madness, Ajax (*Ajax* 447) and Heracles (*Trachinians* 794) have eyes “which roll in every direction,” and the adjective used (*diastrophos*) is comparable to the verb *diastrephomai* used by the Hippocratic author. Euripides likes to combine the two symptoms (rolling of the eyes and frothing from the mouth) in describing Jason’s wife in *Medea* (1173–1175) and Agave in the *Bacchae* (1122–1123). These two symptoms are generally accompanied by the loss of reasoning in both tragedy and the Hippocratic author, as is the case in the examples mentioned, with the exception of Jason’s new wife. Other symptoms noted by Hippocratic doctors during an epileptic fit appear more sporadically in tragedy: agitations and shaking. For example, Orestes’ crisis in Euripides’ *Iphigenia in Tauris* begins with these symptoms. Here is the description given by the ox-herd (281–283): “One of the strangers leaves the cave, gets up, and, shaking his head, groans whilst his hands shake.” The symptom of shaking hands noted by Euripides recalls the “hands that shake” in the description of epilepsy by the author of *The Sacred Disease*.

We should be careful not to overemphasise these parallels. We cannot say that the epileptic fit was the only model used by tragic authors to describe and represent a fit in their heroes. However, there is an important difference between the fit of epilepsy as it is described in ch. 9 of *The Sacred Disease* and ch. 15 of *Breaths* and the fits in Greek tragedy: whilst the epileptics lose their voice—it is the first symptom listed by the author of *The Sacred Disease*—the tragic heroes, gripped by madness, cry out. To take an example of Orestes’ fit of madness in *Iphigenia at Tauris*, Euripides, after having mentioned the shaking of his hands, adds (284): “wandering in the fit of madness, he cries out like a hunter.” Although it is true that another passage from *The Sacred Disease* suggests that epileptics can cry out, this passage does not correspond to the Hippocratic author’s description. Conversely, the author of *The Sacred Disease*, in ch. 1 (6.354,4–11 L.) alludes to fits of delirium as spectacular as the epileptic, where the patient, gripped by delirium, cries out:

I see men become mad and delirious from no manifest cause and do many things out of place; I have known many people who groan and cry out in their sleep, some in a state of suffocation who jump up, flee outside, and are delirious until they are wakened; then they become sane and rational as before, although they are pale and weak; and this will happen not once, but many times.

The spectacle of such crises inspired both tragic authors and the medical description of epileptic fits. In addition, when a tragic author describes or represents the fit of a sick hero or one gripped by madness, the medical model is only a secondary model, the principal model being a tragic one, i.e. that of a precursor with which the tragic author competes. For example, when Euripides uses the technical medical term φαγέδαινα to designate the devouring disease of Philoctetes (fr. 792 Nauck), we might believe, in the absence of other witnesses, that he took this term directly from a medical piece of writing; in fact, as we know from Aristotle (*Poetics* 1458b22), he owes this term to the *Philoctetes* of his precursor, Aeschylus. Elsewhere, when Euripides describes Orestes' madness in his *Iphigenia at Tauris*, he adds, as we have said, an aggressive phase where Orestes massacres the flocks, believing he was fighting the Furies, to the passive phase inherited from the tradition; here, Euripides clearly innovates on Ajax's madness in Sophocles, who massacres the flocks whilst believing he was killing his enemies.

Nevertheless, these connections between Hippocratic medicine and Greek tragedy, both in the technical terminology of the disease and the description of fits, pose the problem of the influence of Hippocratic medicine on tragedy. How can we interpret these connections? Can we speak of an influence of Hippocratic medicine on Greek drama? This is a delicate issue, and our response should be nuanced. We should refrain from supposing a timeless relationship. Greek tragedy extends over more than half a century (476 to 401), and the Hippocratic Corpus, although it contains the highlights of ancient treatises which date from the second half of the fifth century, also includes treatises that post-date tragedy.<sup>30</sup> Thus, the chronological range of both the Greek tragedies and the treatises from the Hippocratic corpus prohibits any general answer.

It is certain that the Hippocratic Corpus did not directly influence the plays of Aeschylus, because Aeschylus died around the same time that Hippocrates was born.<sup>31</sup> We may exclude, for reasons of methodology, the case of *Prometheus Bound*, which has numerous references to medicine but whose Aeschylean authorship is uncertain.<sup>32</sup> However, the fact that

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<sup>30</sup> The Hippocratic Corpus contains, apart from an ancient core dating from the second half of the fifth century, some treatises dating from the first half of the fourth century. With the exception of some rare, later, treatises, the main part of the Corpus pre-dates Aristotle.

<sup>31</sup> Aeschylus died in Sicily in 456–455; Hippocrates was born in Cos in 460.

<sup>32</sup> We find in *Prometheus* the first use of the neuter noun νόσημα, which is used alongside the traditional νόσος, a parallel that is found in some later texts of the Hippocratic Corpus. See G. Preiser, *Allgemeine Krankheitsbezeichnungen im Corpus Hippocraticum. Gebrauch von*

Aeschylus lived before Hippocrates does not mean that we cannot compare Aeschylus' medical vocabulary with that of the Hippocratic Corpus, for the Hippocratic Corpus, which marks the peak of medical writing after the death of Aeschylus, is not the first medical literature. Within the Hippocratic Corpus we find numerous parallel redactions, which can only be explained as deriving from common models that are no longer extant.<sup>33</sup> Thus it is plausible that Aeschylus read some nosologic treatises which have not been preserved. The presence, in his plays, of technical medical terms that are not subsequently attested apart from in the Hippocratic Corpus, such as *φαγέδαινα* or *λειχίην*, can hardly be explained in any other way. The reverse hypothesis, of an influence of dramatic literature on medical texts, although it currently enjoys a certain popularity, is unlikely. What might appear to some as a poetic term borrowed by doctors is in fact an Ionian word that was preserved, albeit independently, in poetry and in technical medical literature.<sup>34</sup>

Any parallels we find between Aeschylus and the Hippocratic Corpus are very difficult to interpret, especially when we depart from strict medical terminology and enter the domain of physiology. We must resist the urge to find in the texts of Aeschylus, thanks to some good parallels, the same precise notions as in the later technical texts, which do not necessarily represent the same level of intellectual development. Electra's "flux of bile that fixes in the heart," during an emotional scene (*Choephoroi* 183f.), does not mean that Aeschylus was familiar with an elaborated theory of the humoral aetiology of diseases, such as that in *Diseases II* (first part), ch. 5

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*Nousos und Nosema*, Berlin, 1976. On medicine in *Prometheus*, see. S. Saïd, *Sophiste et tyran ...*, (above, n. 26) pp. 168–185.

<sup>33</sup> See in particular J. Jouanna, *Pour un archéologie de l'école de Cnide*, Paris, 1974 [re-issued with revisions in 2009], *passim*.

<sup>34</sup> On this tendency to want to explain similarities between Aeschylus and Hippocrates by the influence of poetic terms on medical vocabulary, see S. Saïd, *Sophiste et tyran ...*, p. 169, and footnotes 99 and 101. On the problem of the relationship between poetic and technical language, see G. Lanata, "Linguaggio scientifico e linguaggio poetico. Note al lessico del *De morbo sacro*," *QUCC*, 5, 1968, pp. 22–36. The rare examples that she uses (pp. 35–36) to formulate the hypothesis of a possible influence of Euripides' tragedy on the language of the Hippocratic doctor of *The Sacred Disease* are not convincing. It would be particularly easy to show that the adjective *ἀτρεμαίος* belongs in fact to a lexical family formed from *ἀτρεμα*, which is typically Ionian. Although well represented in Herodotus and Hippocrates, it is absent from Thucydides, where it is replaced by the family of *ἤσυχος*. On the problem concerning poetic and technical terms originating from the same Ionian source, see J. Jouanna and P. Demont, "Le sens d'ἰχώρ chez Homère (*Illiade* V, v. 340 et 416) et Eschyle (*Agamemnon*, v. 1480) en relation avec les emplois du mot dans la Collection hippocratique," *Revue des Etudes Anciennes*, 83, 1981, pp. 197–209.

(ed. Jouanna, p. 136,14–15), where it is said that the patient “faints when phlegm or black bile fixes itself in the heart.” In addition, the similarities between Aeschylus and Hippocrates do not necessarily mean that Aeschylus took his knowledge from a lost medical treatise. For example, the idea proclaimed by the choir of *Agamemnon* (1001 ff.) that excessively good health is almost like a disease is not necessarily taken from a medical theory, as is generally thought<sup>35</sup> on the strength of the fact that we find the same idea in Hippocrates’ *Aphorisms* (1.3, 4.458,11 f. L.) concerning the health of athletes. In Aeschylus, it could concern a simple example of the dangers of excess—too much good health, like too much wealth, risks attracting the jealousy of the gods—a popular idea that found a more rational and technical expression in the Hippocratic Corpus thanks to its study of the diet of athletes.

By contrast, the most ancient treatises of the Hippocratic Corpus probably had a direct influence on the end of Euripides’ career, and also on the last years of Sophocles’ activity, notably in his *Philoctetes* of 409.<sup>36</sup> The development of Hippocratic medicine, with its admirable clinical descriptions, probably had a growing influence on the realism of pathological descriptions in the theatre. Scholars agree in highlighting a progression in theatrical realism; we need only compare Orestes’ madness in Aeschylus (in 458) with Euripides, forty or fifty years later, in *Iphigenia in Tauris* or *Orestes*, to be convinced of this. Concern for realism meant that it was proper to show patients confined to bed.

The oldest example is that of Phaedra in Euripides’ *Hippolytus*; the directions contained in the text, at the moment when Phaedra appears, are clear: Phaedra appears to the audience lying in a bed, probably rolled or carried outside the palace by servants, and asks the nurse to sit her up (lines 179 and 198). Racine, when he makes his Phaedra enter, follows the text of Euripides; thus, the verse of Euripides (199): “I feel that the joints of my poor members are broken,” becomes in Racine (156): “and my shaking knees give way from under me.” However, the acting of the scene is totally different. The verse in Euripides shows the impossibility of Phaedra of sitting

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<sup>35</sup> See, for example, W. Rösler, *Reflexe vorsokratischen Denkens bei Aischylos*, in *Beiträge zur klassischen Philologie* 37, Meisenheim am Glan, 1970, p. 98 f. On the comparison between Aeschylus and Hippocrates, outside the studies cited in footnote 22, see G. Maloney, “Contributions hippocratiques à l’étude de l’*Orestie* d’Eschyle,” in F. Lasserre and Ph. Mudry, *Formes de pensée dans la Collection hippocratique*, Geneva, 1983, pp. 71–76.

<sup>36</sup> On the relationship between *Philoctetes* and the Hippocratic Corpus, see an old, yet still useful, work, J. Psichari, “Sophocle et Hippocrate à propos de Philoctète à Lemnos,” *Revue de Philologie*, 1908, pp. 83–128.

up alone in the bed; Racine justifies the impossibility of Phaedra remaining standing and, in an instruction outside the text, signals that Phaedra is sat at the moment she says these words. The clinical aspect of the Euripidean scene was eliminated by Racine. The opposition of the two staged scenes brings out the realism of Euripidean drama, which did not hesitate to show a bedridden sick person.

Euripides' *Orestes* displays this scene in 408 and he gives it unequalled scope and realism.<sup>37</sup> The play begins with the scene of Orestes asleep, whilst Electra watches over the patient. The audience witnesses Orestes waking up, and then his fit of madness, and finally his return to calm. The different movements of the patients are indicated in the text with surprising meticulousness. We see Orestes firstly sitting on the bed, then lying down, before sitting up again, this time with his feet on the floor. At that moment a fit of madness makes him leap from the couch, escaping from Electra's hold, who is trying to restrain him, mimicking an archer who is firing at the Furies, then stopping abruptly, breathless, to discover to his surprise that, having regained consciousness, he had jumped from his bed and his sister was crying at the sight of the horror of the spectacle. The scene recalls that described by the author of *The Sacred Disease*, less so for the fit of epilepsy itself than for other frightening fits where sleeping people throw themselves off the bed and hallucinate before becoming lucid and reasonable as before, nevertheless remaining pale and weak after the fit (ch. 1, 6.354,7–10 L.). This scene from Euripides' *Orestes* is the most extreme case where the representations of the tragic author and the Hippocratic doctor match each other in accuracy.

In these two important 'clinical' scenes of *Hippolytus* and *Orestes*, Euripides not only competes with the Hippocratic doctors in the accuracy of his description; he also echoes the problems tackled in medical texts by putting them into the mouth of his characters. For example, Phaedra's nurse, complaining about her role as caretaker of the patient, declares not without paradox: "It is better to be sick than having to cure" (line 186). In a passage of the Hippocratic treatise *Breaths* (ch. 1, 6.90 L.), which was famous throughout late antiquity, the author highlights the difficulty of the condition of the doctor who "sees terrible things, touches disagreeable things and, regarding the misfortunes of others, reaps the despondencies of others, whilst the

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<sup>37</sup> On Orestes' madness, see F. Donadi, "In margine alla follia di Oreste," *Boll. dell'Istituto di Filologia greca* 1, 1974, pp. 111–127; on the success of this scene in antiquity, see C.W. Willink, *Euripides, Orestes*, Oxford, 1986, p. 120 (comm. on pp. 211–315).

patients escape from the greatest harm thanks to his art.” This little known comparison was made by a fine scholar of tragedy and medical literature.<sup>38</sup>

Elsewhere, Euripides’ characters expound theories which are found in the Hippocratic Corpus. Thus, in fragment 917, which we saw was already connected to Hippocrates in antiquity, the obligations of a good doctor are formulated in terms very close to those of the preamble of the treatise *Airs, Waters, Places*: “All those who wish to heal properly,” declares the character of Euripides, “should take into consideration the diet of the inhabitants of the city as well as its terrain to study diseases.” The Hippocratic author begins his treatise with the following formula: “Those who wish to carry out correct investigations on medicine should proceed thus,” and amongst the advice given to a doctor, in particular an itinerant doctor who arrives in an unknown city, is the examination of the terrain and the diet of the inhabitants of the city. The similarity is so close that some have concluded Euripides’ direct use of the Hippocratic treatise. To reinforce this conclusion, some have invoked another fragment (fr. 981 Nauck) where Euripides, through the intermediary of an unknown person, praises the temperate climate of his homeland and compares Greece with Asia, which “makes the most beautiful things grow” (ἐκτρέφει κάλλιστα). In the second part of the treatise *Airs, Waters, Places*, where Europe and Asia are compared, the part of Asia where the climate is temperate is praised, “which makes the most beautiful things grow” (ἐκτρέφει κάλλιστα). The reoccurrence of the same expression is remarkable and the twisting of the model to patriotic ends would not be surprising in Euripides. Does this mean that Euripides knew the treatise *Airs, Waters, Places* directly? It is quite possible, but not certain, and we cannot use this comparison, as Nestle does, to prove the unity of the two parts of the Hippocratic treatise.<sup>39</sup>

What remains remarkable is that it is possible to find in the mouth of the characters of Euripides some general advice addressed to doctors exactly like that in the Hippocratic Corpus, clearly aimed at a specialist, rather than lay, audience. The case made for fragment 917 is not unique. We need to cite also the fragment of Euripides’ *Bellerophon* (fr. 292 Nauck), where the main character speaks not only on the cause of diseases, but also on the modes of treatment that a doctor should use, or the fragment of an unknown tragedy (fr. 1072 Nauck) on the problem of precipitation or temporisation

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<sup>38</sup> U. von Wilamowitz-Moellendorff, *Euripides, Hippolytos*, Berlin, 1891, p. 197. The connection remains little known, since it was not relayed in the edition commented by Barrett.

<sup>39</sup> W. Nestle, “Hippocratica,” *Hermes*, 73 (1938), 25.

in treatment. Discussions of doctors on their art penetrate directly into the theatre. It is proof of Euripides' excellent knowledge of medical literature, but also and above all of a real interest from at least some of his public for the newest perspectives on science.<sup>40</sup> It is true—and something we forget too often—that the public of citizens of the theatre of Dionysus at Athens were themselves those who, at the assembly of the people, voted for the doctors who made a public technical speech to apply for the position of public doctor.<sup>41</sup>

Within this wide-ranging movement of the fifth century BC, “when man freed himself from mythical thought in favour of rationalism,”<sup>42</sup> tragic poetry and the works of Hippocratic doctors are not at the same stage of development. The works of doctors are totally free from mythical thought, as is the work of the historian Thucydides, whilst the works of tragedians, since they take their material from myth, still remain indebted to archaic thought. This inherited thought is re-elaborated in tragedy according to the preoccupations and knowledge of the period. This explains the influence of Hippocratic medicine on some tragedies. Although Hippocratic medicine is more rational than Greek tragedy, we can say in contrast that Greek tragedy is more representative of the spirit of its time, since the age of Pericles is not only the age of the triumph of rationalism. The end of the fifth century is a paradoxical era, as it was not only the rational medicine of Hippocrates the Asclepiad that was flourishing, but also the miraculous medicine of the priests of the healing god Asclepius. Tragedy reminds us of this ambiguity of classical Greek thought, which risks being hidden by only reading rationalist writers such as the historian Thucydides or the doctor Hippocrates.

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<sup>40</sup> Euripides' interest in the latest development in medical science fits in well with Euripides' 'modernity', well highlighted by J. de Romilly in her recent study on Euripides, *La modernité d'Euripide*, Paris, 1986; see in particular the chapter on 'Un théâtre d'idées' (pp. 117–154).

<sup>41</sup> On the oratorical battles of the doctors who applied for the position of public doctor before the public assembly of Athens, see Plato, *Gorgias*, 456b. This testimonium is fundamental for understanding the importance that doctors should accord to rhetoric (see my “Rhetoric and medicine in the Hippocratic Corpus,” in this volume, ch. 3), and is also useful to understand that the public of the theatre were not detached from the technical allusions to medicine.

<sup>42</sup> J. de Romilly, “*Patience mon cœur.*” *L'essor de la psychologie dans la littérature grecque classique*, Paris, 1984, p. 10.



## CHAPTER FIVE

### DISEASE AS AGGRESSION IN THE HIPPOCRATIC CORPUS AND GREEK TRAGEDY: WILD AND DEVOURING DISEASE

It is well known that the rational understanding of disease that we find in the Hippocratic Corpus contrasts with a much older conception that is represented in Greek tragedy. Since the subjects of Greek tragedy are mythical, the belief in the divine origin of disease is widespread, and the important healing figures are gods. By contrast, Hippocratic doctors explain disease by natural causes and reject any intervention of an anthropomorphic divinity; and their therapeutic action combats the cause of the disease through rational means.

Although the understandings of disease in medical literature and in tragedy are clearly far apart, a more detailed investigation reveals similarities as well as differences. To show these similarities, two methods of investigation present themselves. The first is to demonstrate how the rational understanding of doctors managed to influence the tragic authors.<sup>1</sup> The second has been much less explored and will form the basis of this paper. It consists in showing that in spite of its prevailing rationalism, the Hippocratic Corpus' vocabulary of pathology preserves, in what is usually called its metaphorical expression, traces of an older representation of disease, similar to that used in tragedy. It is the understanding of disease as an aggressive force that attacks the individual from the outside, penetrates him, takes possession of him and, like a wild animal, can feed on his flesh. The philologist that adopts this approach must list and semantically analyse the entire metaphoric vocabulary of disease, both in the Hippocratic Corpus and in tragedy, in order to reconstruct its force and coherence and to clarify the image of disease it contains. Since a full comparison is not possible within the constraints of this paper, I will limit myself to the specific theme of the vocabulary of wildness and devouring. The first part of the paper will study

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<sup>1</sup> I adopted this approach in "Médecine hippocratique et tragédie grecque," in P. Ghiron Bistagne and B. Schouler, *Anthropologie et théâtre antique: actes du Colloque international de Montpellier 6–8 mars 1986* (Cahiers du Gita III) (Montpellier 1987), pp. 109–131, also included in the present volume (see ch. 4).

wild disease in general; the second part, a particular aspect of this wild disease, namely the devouring disease. Each part will begin with tragedy before moving on to the Hippocratic Corpus.

In Greek tragedy, disease is often associated with savagery. Indeed, the adjective ἄγριος, ‘wild’, to describe pathological phenomena appears in the work of the three tragedians. In Aeschylus’ *Choephoroi*, Orestes, recalling the dreadful diseases that Apollo’s oracle promised in punishment if he does not avenge the death of his father, speaks of “ulcers with a wild bite” (280 ff.: ἀγρίας γνάθοις / λειχήνας). In Sophocles, the expression ἀγρία νόσος, ‘wild disease’, is found in two tragedies: concerning Heracles, in the *Trachiniae*, beset by a new bout of pain caused by the poisoned tunic given to him by Deianeira, we find: “there leaps again ... the wild disease” (v. 1026 and 1030: θρώσκει δ’ αὖ ... ἀγρία / νόσος); and in *Philoctetes*, the hero complains bitterly to Neoptolemus for having been abandoned whilst he was consumed by the effect of a wild disease (265 ff.: ἀγρία / νόσῳ). Finally, in Euripides’ *Orestes*, performed the year after Sophocles’ *Philoctetes*, the same expression ἀγρία νόσος, ‘wild disease’, is used by Electra in the prologue to describe the illness that has taken hold of Orestes after the death of his mother. She says in lines 34 ff.: “After this, poor Orestes fell ill, consumed by a wild disease” (ἀγρία ... νόσῳ). Thus, we find the theme of wild disease in four tragedies, written by three separate tragedians, that were staged within half a century of each other, from 458 (the date of Aeschylus’ *Choephoroi*) to 408 (the date of Euripides’ *Orestes*). It is remarkable that the influence of rational medicine, which is most perceptible in the tragedies towards the end of the century, does not lead to a decline in the conception of wild disease. On the contrary, it is in the two more recent tragedies, Sophocles’ *Philoctetes* of 409 and Euripides’ *Orestes* of 408, that the theme of wild disease is most extensive and recurring. In these two tragedies, not only is disease wild, but the patient has a wild aspect as well. The same vocabulary is applied to both the patient and the disease; it is the verb ἀγρίω, from ἄγριος, that is used in the passive perfect to describe the wild aspect of the hero, either in its simple form ἠγγρίωσαι in *Orestes* (lines 226, 387), or in its composite form ἀπηγγριωμένος in *Philoctetes* (line 226).<sup>2</sup>

<sup>2</sup> However, we should add that in Sophocles’ *Philoctetes*, the hero’s feralisation is explained not only by his disease, but also because he lives in the company of wild beasts (cf. lines 184 ff.). In Euripides’ *Orestes*, the relationship between the wild character of the disease and the wild state of the patient is more direct, but is expressed in a rational form: the patient’s wild aspect arises from the fact that the disease has prevented him from washing (cf. 226). The similarity of the use of the vocabulary of the wild in Euripides’ *Orestes* and

The representation of wild disease is less widespread in the Hippocratic Corpus than in tragedy, but its presence is stronger than we might think. Of course, we must distinguish within the Hippocratic Corpus between the technical writings and the *Letters*. Let us begin with a passage from the *Letters*, which combines the two adjectives that we find in the Hippocratic Corpus to mean 'wild disease'. In *Letter 2*, the apocryphal author describes the diseases treated by Hippocrates as 'beastly and wild' (9.314,16 ff. L. = Putzger 2, 4 ff. θηριωδῶν δὲ νοσημάτων καὶ ἀγρίων). The use of these two adjectives is justified by the context: Hippocrates the doctor, who rids the earth and sea of beastly and wild diseases, is compared to Heracles, who rid the world of wild beasts. This comparison refers to a reality of the Roman era: Pliny the Elder tells us that the deified Hippocrates received the same honours as Heracles,<sup>3</sup> and this is confirmed by a coin from Cos, preserved in the numismatic collection of the National Library of Paris (no. 1246), which bears an image on its front of Heracles with his club, and on the reverse side a portrait of Hippocrates. This conception of the doctor purging beastly and wild diseases, although current in the Roman period, comes from a much older conception of the doctor that is found in Greek tragedy: we know that the doctor Apis, in Aeschylus' *Suppliants*, purged the land of Argos of man-eating monsters (line 264).

In the technical writings of the Hippocratic Corpus, we do not find the same notion, although the two adjectives ἀγριος and θηριώδης are used to describe pathological phenomena. The adjective ἀγριος appears twice: in *Epidemics 7*, ch. 20 (5.392,8 L.), it describes an inflammation: Ctesiphon, suffering from dropsy following severe causus, developed a swelling on his right thigh with a sublivid redness, ὡς πυρὸς ἀγρίου, "like the result of a wild inflammation." According to Galen's *Hippocratic Glossary* (19.134,2 K.), this wild inflammation was erysipelas. Elsewhere, in the *Diseases of Women 1*, ch. 8 (8. 38,3–4 L.), it describes certain ulcers: ἔλκεα ... ἀγριώτερα. We may add to this the use of the verb ἀγριώω that we find in *Airs, Waters, Places*, ch. 4, also regarding ulcers that do not become wild (2.20,17 L. = Diller

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Sophocles' *Philoctetes* suggests that Euripides had Philoctetes' disease in mind and wanted to compete with Sophocles in representing the scene of the disease's crisis (cf. M.L. West, *Euripides, Orestes* (Warminster, 1987), beginning at lines 34–35 and 226, and Introduction, p. 32). On the wild in the *Orestes*, see P.N. Boutler, "The theme of AGRΙΑ in Euripides 'Orestes'," *Phoenix* 16 (1962), 102–106.

<sup>3</sup> Pliny the Elder, *Hist. nat.* 7, ch. 37, (123): "Hippocratis medicina, qui venientem ab Illyriis pestilentiam praedixit discipulosque ad auxiliandum circa urbes dimisit quod ob meritum honores illi quos Herculi deconvit Graecia."

p. 30,19 οὐδὲ ἀγριοῦσθαι). This last passage is particularly important because it shows that, although in a rational context, the original sense of ‘wild’ is still carefully chosen. It concerns a rational context, since this mention of ulcers is situated in the nosologic outline of cities that are orientated towards the northern winds. Nevertheless, the author deliberately brings out the original meaning of ἀγριοῦσθαι, since he compares and contrasts in two adjoining phrases the ulcers (ἐλκεα), which do not become wild (οὐδὲ ἀγριοῦσθαι), and the characters of men (ἦθεα), which are rather wild (ἀγριώτερα). Thus, terms related to ἄγριος can apply equally well to both diseases and men in the Hippocratic Corpus.<sup>4</sup>

Like terms related to ἄγριος, ‘wild’, terms related to θηριώδης, ‘savage’, are attested in the Hippocratic Corpus to describe pathological phenomena. Θηριώδης is actually more frequent than ἄγριος and occurs eleven times.<sup>5</sup> The adjective can describe a pathological state where either the patient or the disease, or both at the same time, fly into a rage, literally like a wild beast. In French, the Greek θηριώδης is best translated by an adjective such as ‘férin’, since this technical medical term (meaning ‘agitated, troubled’), derived from Latin *ferinus*, ‘wild’, and ultimately from *fera*, ‘wild beast’, can be traced back to the same Indo-European root (\**ghwer-*) as the adjective θηριώδης. For example, in *Prorrhetic* 1, ch. 26 (5.516, 9 L.= Polack 77, 16 ff.), we read that some “short-lived and bold madness comes from a ‘ferine’ state (θηριώδεις).” Galen, in his commentary on this passage, clearly explains what is meant. It is an acute form of delirium, where “the patients thrash their feet, attack, bite, are crazy, believe that anyone who approaches them wishes to harm them.”<sup>6</sup> The neuter noun θηρίον, from which the adjective

<sup>4</sup> Terms related to ἄγριος continue to be used in medical technical vocabulary to refer to both patients and diseases. For example, Aretaeus uses the verb ἀγριαίνω either to refer to phrenetics who display wild behaviour and are delirious (*Treatment of Acute Diseases* 1, ch. 1, 3, ed. Hude<sup>2</sup> 92,4), or to refer to grazing ulcers that become enflamed and wild (*The Causes and Signs of Chronic Diseases* 2, ch. 11, 4 and 7, ed. Hude<sup>2</sup> CMG II, p. 80,23 and 81,16 ff.).

<sup>5</sup> The adjective θηριώδης is used eleven times in a pathological context. The uses are grouped in *Epidemics* 2–4–6 (*Epid.* 2.1, ch. 3; 5.72,12 L.; *Epid.* 4, ch. 16, 5.154,12 L.; *Epid.* 6.1, ch. 11, 5.272,1 L.; 6.2, ch. 6, 5.280,5 L.; 6.2, ch. 11, 5.282,16 L.), in *Prorrhetic* 1 (ch. 26, 5.516,9 L.; ch. 123, 5.552,6 L. ff.) and in *Coan Prenotions* (ch. 84, 5.602,5 L.; ch. 151, 5.616,6 L.; ch. 241, 5.636,14 L.; ch. 613, 5.726,17 L.). In these eleven occurrences, there are a number of parallel passages. All the passages in the *Prorrhetic* 1 and *Coan Prenotions*, with the exception of *Prenotion* 613, are comparable, since they concern the same case of delirium. The passages from *Epidemics* 2–4–6 are divided into two groups: 1.) the relationship between θηριώδης and the autumn (*Epid.* 2.1, ch. 3; *Epid.* 4, ch. 16; *Epid.* 6.1, ch. 11); 2.) the use of θηριώδης in relation to a cough (*Epid.* 6.2, ch. 6 and 11).

<sup>6</sup> Galen, *On Hippocrates’ Prorrhetic* 1.25, ed. Diels CMG V 9, 2, p. 39.

θηριώδης derives, describes a “ferine ulcer” in *Places in Man*, ch. 29 (6.322,8 L.= July 64,24). Galen, in his *Hippocratic Glossary* (19.103,12 K.) glosses θηρίον with τὸ ἄγριον ἔλκος, literally ‘the wild ulcer’, which confirms, if it is necessary at all, the proximity of usage of these two families of words to describe a disease’s wild behaviour.<sup>7</sup>

Unlike ἄγριος, the fundamental meaning of θηριώδης in the Hippocratic Corpus has been obscured by a particular meaning suggested by commentators in antiquity who, as the glosses of Erotian and Galen clearly show,<sup>8</sup> understood θηριώδης to mean a complaint “caused by worms,” since θηρίον can also mean ‘worm’.<sup>9</sup> This interpretation has had considerable success in modern scholarship. In eleven instances of the term θηριώδης where the meaning is debatable, Littré chose six times the meaning ‘caused by worms’, and only five times the fundamental meaning of ‘savage’.<sup>10</sup> Since modern editors tend to follow in Littré’s footsteps, this division risks becoming canonical. Thus, in two parallel passages of *Epidemics* 6, where a dry cough is said to be neither θηριώδης (1, ch. 6, 5.280,5 L.) nor to be caused by τῷ θηριώδει (1, ch. 11, 5.282,16 L.), the modern editors of this treatise, Daniella Manetti and Amneris Roselli, understand, as Littré did, a cough that is “not caused

<sup>7</sup> On θηρίον, “ferine ulcer,” compare also Hesychius s.v. θηρίον: πάθος τι σώματος, ὃ καὶ καρκίνος καλεῖται. On the use of θηρίον in the sense of a ferine ulcer in the Hippocratic Corpus, see H. Dönt, *Die Terminologie von Geschwür, Geschwulst und Anschwellung im Corpus Hippocraticum* (Vienna, 1968), p. 81. In later medical writings, the noun θηρίωμα replaced θηρίον to mean a “ferine ulcer”; on uses of θηρίωμα, see L.S.J. s.v.; compare also Theophrastus *Characters* 19.3 (“the loathsome”): ἔλκη ... ἐᾶσαι θηριωθῆναι; Dioscorides 3.9: τεθηριωμένον ἔλκος.

<sup>8</sup> Erotian, *Hippocratic Glossary* T 4 τὸ θηριώδες (ed. Nachmanson 84, 7–11), commentary on *Epidemics* 2.1.3 (5.72,12 L.): “Some have said that the expression describes malign ulcers (κακοηθῶν ἔλκων), called ferine ulcers (θηρίωμα), which normally appear in autumn due to changes in the air; others have thought that it also means ‘little worms’, since they also appear in this period; others thought it referred to consumption.” Compare Galen, *Hippocratic Glossary*, s.v. θηρίον (19.103,12–104, 5 K.).

<sup>9</sup> This meaning of θηρίον is cited by Galen in his *Hippocratic Glossary* (19.103,12 K.): θηρίον τὴν τε ἔλμινθα καὶ τὸ ἄγριον ἔλκος (“θηρίον: the worm and the wild ulcer”). The division of the meaning of θηρίον into “worm” or “ulcer” is as problematic as that of θηριώδης. Modern editors follow Littré (cf. the division between the meanings in J.-H. Kühn and U. Fleischer, *Index hippocraticum* (Gottingae, 1986), s.v. θηρίον 1, 2 spec. *vermes intestini* six uses and II, n. path. one use) in giving the meaning of ulcer in the passage of *Places in Man* c. 29; some scholars before Littré interpreted the use of θηρίον in *Coan Prenotions* 458 and 459 (lientery with θηρία) as “worms,” and others as “ferine ulcers”; cf. note ad loc. by Littré 5.686. On the possible relationship between lientery and intestinal ulcers, see Aretaeus, *The Causes and Signs of Chronic Diseases*, 2.10, ed. Hude<sup>2</sup> 79,15–30.

<sup>10</sup> He adopted the meaning of “caused by worms” in all the passages of *Epidemics* 2–4–6 and in a passage of *Coan Prenotions* (c. 613), and the meaning of “wild” in the other passages of *Coan Prenotions* and in *Prorrhetic* 1.

by worms,” and refer to a study by Op de Hipt, *Adjektive auf -ώδης im Corpus Hippocraticum* (Hamburg, 1972), pp. 71–74, which interprets these two passages of *Epidemics* 6.1, ch. 6 and 11, in the same way as Littré. Thus, Littré is at the centre of a type of vulgate of the modern interpretation of θηριώδης in the Hippocratic Corpus. However, once we remove Littré from the equation, its origin is far from clear. In the sixteenth century, Cornarius attributed to θηριώδης the meaning *ferinus* in all the eleven passages of the Corpus where it is used. Going back even further to Erotian’s and Galen’s explanations of this term preserved from Antiquity, we are struck by the contrast between the unanimity of modern interpretations compared with the richness and diversity of the surviving interpretations of this word, which was judged to be obscure. The interpretation adopted by modern translators is precisely that which was criticised by the ancients. Thus, Galen, in his *Commentary on Hippocrates’ Epidemics* 6, does not adopt the interpretation chosen by modern commentators concerning the cough, but instead strongly criticises it. Here is what he says:<sup>11</sup> “Some say that when the worms (ἔλμινθες) settle at the mouth of the stomach, this causes a cough, but they cannot demonstrate this, neither by reason nor by experience.” Galen prefers to give θηριώδης the meaning of κακοήθης; thus, for him it refers to a ‘bad cough’. Galen’s interpretation, adopted by Cornarius, seems preferable to modern interpretations, not only because it appears more coherent to the semantic field of θηριώδης

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<sup>11</sup> Galen, *Commentary on Hippocrates’ Epidemics* 6, ed. Wenkebach/Pfaff CMG V, 10, 2, p. 89. In his interesting commentary on this passage of *Epidemics* 6, Galen presents all the interpretations proposed for the meaning of θηριώδης: 1.) general meaning: κακοήθης; 2.) particular meanings: a) consumption, when the nails are curved like those of wild beasts; b) ferine ulcer (θηριώμα) in the lung; c) worms that collect in the mouth of the stomach. This passage sheds light on the explanations that he gives in his *Hippocratic Glossary*, s.v. θηρίον (19.103,12 ff. K.). Conversely, when he comments on the passage in *Epidemics* 2.1, ch. 3, where it is said that above all in autumn the θηριώδης appears along with cardialgia (see Galen, *On Hippocrates’ Epidemics* 2, ed. Wenkebach-Pfaff, CMG V 10, 1, p. 160), he chooses, amongst the interpretations already proposed (leprosy, so-called from the name of the elephant which is a threatening and vicious animal; melancholy, which renders the character of sick people resembling that of wild animals; cancer, which owes its name to a vicious creature; intestinal worms), that of intestinal worms. This is because Galen believes cardialgia to be a pain of the mouth of the stomach, which is caused by the increase of intestinal worms; compare Erotian’s gloss of this passage quoted in footnote 8. It is surprising that Galen does not mention the general meaning of κακοήθης in this passage. When he returns in his commentary on *Epidemics* 6 to this relationship between autumn and θηριώδης, in a passage parallel to *Epidemics* 6.1, ch. 11, he not only highlights the general meaning of κακοήθης, but he does not choose between the various interpretations (worms, elephantiasis, cancer, phthisis), all of which he judges to be possible. Is this a sign of a development in Galen’s interpretation, which becomes less analytical from one commentary to another? The interpretation of the general meaning of κακοήθης appears to be that of Aretaeus: see *infra*, no. 14.

and in the meanings that are attached to it, but also because it works better in certain passages of the Corpus. I would just like to add a clarification to Galen's interpretation. The connection between θηριώδης and κακότης is sound, but the two terms are not synonymous, since there is a difference of degree between them: θηριώδης indicates a more intense degree of disease than κακότης; it is the degree where the illness rages.<sup>12</sup> Such an interpretation allows us better to account for the *Coan Prenotions* 613 (5.726,13–17 L.). Here is the translation:

If, when the stomach is wet, painful swellings occur, the case is bad (κακόν); but if, whilst the stomach is narrowed, without anything new happening, these swellings quickly rupture, the affliction is worse (καὶ κακοθέστερον); and if on top of that vomiting occurs, the case is even worse and wild (πονηρὰ καὶ θηριώδεια).

We can distinguish three degrees of diseases here (κακόν, κακοθέστερον and θηριώδεια), of which the most intense is θηριώδεια. Littré's interpretation, who understands the vomiting to be caused by worms, does not seem to capture the sense of an ascending scale that underlies this passage in *Coan Prenotions*.<sup>13</sup> Thus, the problem of the different meanings of θηριώδης in the Hippocratic Corpus is far from being definitively resolved. Even if we give the adjective θηριώδης in certain passages a particular meaning such as 'caused by worms', this still does not exclude the possibility that the connotation of 'wild', 'feral' remains present. In any case, we cannot accept Littré's choice without a critical re-examination that incorporates both the history of the various interpretations<sup>14</sup> and the history of the language.

<sup>12</sup> Galen is not the only commentator to have made this connection; one may compare Erotian's gloss quoted in footnote 8. Κακότης is frequently used in the Hippocratic Corpus; see J.-H. Kühn and U. Fleischer, *Index Hippocraticus*, Fasc. II (Göttingen, 1987), s.v., p. 411ff. This adjective, which is usually applied to living beings, bears witness, like θηριώδης, to a representation of disease known as a dangerous living being with malicious intent towards the patient.

<sup>13</sup> The adjectives πονηρὰ καὶ θηριώδεια are to be understood as neuters giving an indication of the gravity of the case; compare *Coan Prenotions* 241 (5.636,14 L.): πονηρὸν καὶ θηριώδες. Fuchs (*Hippokrates. Sämtliche Werke*, vol. II (Munich, 1897), p. 95) interprets the syntax correctly when he translates: "Wenn Erbrechen hinzukommt, ist das schlimm und deutet auf Tobsuchtanfälle," which renders the sense of progression well; however, his translation of θηριώδεια with "fit of mad fury" is too narrow. The concept of θηριώδης is semantically wider than this.

<sup>14</sup> In the debate on the meaning of θηριώδης in the Hippocratic Corpus, we should take into account the testimony of a first-century AD doctor, Aretaeus of Cappadocia, who was an attentive reader of Hippocrates. The neuter noun τὸ θηριώδες means in Aretaeus the extreme degree obtained by a disease that becomes wild. Thus, in *The Causes and Signs of Acute*

It is not my intention to end the debate on the different interpretations of the adjective *θηριώδης* in the Hippocratic Corpus, but rather to reopen it by highlighting that this ambiguous use of *θηριώδης* in the Hippocratic Corpus finds a parallel in tragedy with the use of an adjective belonging to the same family, *ἔνθηρος*—something which to my knowledge has not been observed before. This adjective, which describes Philoctetes' diseased foot, has given rise to a similar variety of interpretations. In the first stasimon of Sophocles' *Philoctetes* in verses 677–699, the choir, full of compassion but also admiration for the hero who managed to survive his infliction for so long without the help of a doctor, exclaims: “there was no one to lessen with soothing herbs the seething blood when it seized him, which oozed from the ulcers of his *ἐνθήρους* foot.” Mazon translated this as “with his foot swarming with vermin,” whilst Kamerbeek understands “his foot inhabited by the wild beast,” i.e. “by disease.”<sup>15</sup> Mazon's interpretation, which appears the most rational and realistic, finds support in Aeschylus' *Agamemnon*, line 562, where the messenger, recalling on his return to his homeland the difficult life of the expeditionary force to Troy, says that the dew left the hairs of their blankets *ἔνθηρον*, ‘full of vermin’.<sup>16</sup> However, Kamerbeek's interpretation, apart from

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*Diseases* 2.8, 7 (ed. Hude<sup>2</sup>, 29,24), Aretaeus, discussing acute disease of the vena cava, notes that it resembles a form of *causus* because, like *causus*, “in autumn it takes on a wild form” (*ἐν φθινοπώρῳ γίνεται ἐπὶ τὸ θηριώδες*). It is not by chance that this disease takes on its wild form in the autumn, since we read elsewhere in Aretaeus, in *The Causes and Signs of Chronic Diseases* 1.14.5 (ed. Hude<sup>2</sup> 57,3), concerning the influence of the seasons on disease of the spleen: *ὥρων τὸ θηριώδες, μετόπωρον*, “amongst the seasons, the one that is wild is autumn.” This relationship established by Aretaeus between the wild character of a disease and the autumn, which is a wild season, inevitably recalls the two parallel passages of *Epidemics* 2 and 6, where autumn is the season in which *τὸ θηριώδες* is produced (*Epid.* 2.1, ch. 3, *φθινοπώρου μάλιστα τὸ θηριώδες; Epid.* 6.1, ch. 11 *τὸ θηριώδες φθινοπώρου*). Aretaeus follows Hippocrates here and it is clear that in the Hippocratic model, he understands *τὸ θηριώδες* in the general meaning of the “wild character” of the disease, and not in the particular meaning of “intestinal worms,” as Littré and modern commentators understood it. Aretaeus also says, in his discussion of epilepsy, that the disease takes on a wild character during crises (*The Causes and Signs of Chronic Diseases* 1.4.1, ed. Hude<sup>2</sup>, 38,13 *θηριώδες μὲν ἐν παροξυσμοῖσι*), which recalls *Epidemics* 4, ch. 16, where it is said that diseases are *θηριώδες ἐν τῆσι κρίσεισι*. Should we understand in this last passage, along with Littré, that the patients “have worms” in crises (compare *Pronostic ch.* 11, 2.136,7–9 L. = Alexanderson 206,13 ff.), or that the disease acquires, during the crisis, a wild character that is demonstrated by the ‘savage’ behaviour of the patients?

<sup>15</sup> A. Dain and P. Mazon, *Sophocle III*, (C.U.F.) (Paris, 1960), p. 35; J.-C. Kamerbeek, *The Plays of Sophocles VI (The Philoctetes)* (Leiden, 1980), p. 107, who refers to his very illuminating study on devouring disease in the *Philoctetes* entitled “Sophoclea II,” which appeared in *Mnemosyne*, Fourth Series, Vol. 1 (1948), 198–204.

<sup>16</sup> The translation is taken from P. Mazon, *Eschyle II*, (C.U.F.) (Paris, 1949), p. 30. On the meaning of *ἔνθηρος* in this passage, see E. Fraenkel, *Aeschylus, Agamemnon, vol. II. Commem-*

being coherent with the representation of disease compared to a wild beast that we find throughout *Philoctetes*, accurately accounts for the metaphors in this passage. Indeed, the verb used for the treatment, *κατευνάω* (697), recalls the image of a wild animal which is put to sleep by making him sleep in his den (*εὐνή*).<sup>17</sup> Yet it seems to me that Kamerbeek's interpretation has to be enriched by a comparison with the Hippocratic Corpus: once we realise that also in the technical medical writings, ulcers can become wild and that a wild ulcer can be called *θηρίον*, and once we note that the adjective *ζυθηρός* in *Philoctetes* is used next to the word *έλκείων*, ulcers, it becomes clear that the poetic vocabulary of Sophocles can describe, beyond the metaphor of a wild beast, a clear medical reality, that of the wild ulcer devouring the foot on which it is found.<sup>18</sup>

Since disease is or can become wild like an animal, it acts like a wild animal that tears apart and then devours its victim. Disease devours and the diseased patient is devoured. We find this representation of the action of the disease not only in tragedy, but also in the Hippocratic Corpus.

In tragedy, the themes of devouring and wild disease are closely related. In Aeschylus and Sophocles, this connection is constant: in every case where disease is described as wild, its action is expressed in terms of devouring. In Aeschylus' *Choephoroi*, the connection is immediate and the metaphor is evident: the "ulcers with a wild bite," with which Apollo threatened Orestes, devour (281, *ἐξέσθοντα*). Likewise in Sophocles, the two diseases that are called wild are also described as devouring; the same adjective *διαβόρος*, related to *βιβρώσκω*, 'to devour', is used to describe Heracles' disease in *Trachiniae* (1084) and Philoctetes' disease in the eponymous tragedy (7). Euripides also recognises the devouring character of disease: in his *Medea*, written in 431, the poisoned robe that Medea gives to her rival, Jason's new wife, devours the flesh of its victim (1189, *ἔδαπτον σάρκα*), just like the poisoned tunic given to Heracles by Deianeira in Sophocles ate his flesh (1054 *βέβρωκε σάρκας*); and the metaphor of the jaw that we find in Aeschylus' *Oresteia* concerning the ulcers reappears in the same passage of Euripides' *Medea* concerning the poison's action on the flesh (1200 ff.:

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*tary on 1–1055* (Oxford, 1950), p. 283; see also J.-C. Kamerbeek, "Sophoclea II," quoted in the footnote above, p. 199 ff.

<sup>17</sup> The metaphor of the wild beast in *Philoctetes* was noticed by scholiasts in antiquity; see the scholion at verse 758 (ed. Papageorgios 374,1 ff.): *ὡς ἐπὶ θηρὸς δὲ ποιεῖται τὸν λόγον*.

<sup>18</sup> This interpretation is confirmed by the fact that the technical term to describe "the devouring ulcer," *φαγέδαινα*, is used by Aeschylus and Euripides in their *Philoctetes*; see *infra*, p. 90.

“and the flesh detached itself from the bones under the invisible bite of the poison” γναθμοῖς ἀδήλοις φαρμάκων). These few examples allow us to glimpse the richness of the vocabulary of devouring applied to disease in the extant tragedies.<sup>19</sup> To complete the picture, we must consider the fragments, two of which are particularly important. We know that Aeschylus and Euripides had written about the myth of Philoctetes before Sophocles, and we can be sure that Sophocles wrote nothing novel compared with his predecessors on the theme of devouring disease, since both describe Philoctetes’ disease with the term φαγέδαινα, which means etymologically “the devouring disease.”<sup>20</sup> Since this term is also attested in the Hippocratic Corpus,<sup>21</sup> we turn now to examine how the vocabulary and the theme of devouring disease are presented in these medical writings.

It goes without saying that technical literature does not use the highest registers of a poetic style, i.e. composite adjectives or bold metaphors. We find nothing like the composite adjective διαβόρος, or metaphors such as ‘wild bite’. Despite this difference, the vocabulary of devouring remains well attested in the Corpus and is comparable to tragedy. We may compare, for example, two passages where we find the term that describes devouring disease par excellence, φαγέδαινα: a fragment of Aeschylus’ *Philoctetes* φαγέδαινα ἢ μου σάρκας ἐσθίει, “the devouring disease that eats my flesh,” and ch. 10 of the treatise *Ulcers* (6.410,2–3 L.) ὅπη ἂν φαγέδαινα ἐνέη ἰσχυρότατά τε νέμηται καὶ ἐσθίη, “where the devouring disease sets in, grazes and eats with great force.” For the tragic author as well as the doctor, φαγέδαινα refers to the same nosologic reality: a phagadenic ulcer, or one that devours deeply.<sup>22</sup>

<sup>19</sup> All the major sets of related terms meaning “to eat” or “to devour” can be found here: the two roots that serve to form the suppletive paradigm of the verb meaning “to eat” in Ionian-Attic, i.e. \*ed- (cf. Aeschylus, *Choephoroi*, 281 ἐξέσθω) and \*φαγ- (cf. Sophocles, *Philoctetes*, 313 τὴν ἀδηφάγον νόσον), as well as terms related to βιβρώσκω (Sophocles, *Trachiniae*, 1054, βέβρωκε; *Philoctetes*, 695 βαρυβρώτ(α); *Trachiniae*, 1084 διαβόρος and *Philoctetes*, 7 διαβόρω), the verb δαίνυμι (Sophocles, *Trachiniae*, 1088 δαίνυται; cf. Euripides *Medea*, 1189 ἔδαπτον), the verb βρώκω (Sophocles, *Trachiniae*, 987 βρώκει; cf. *Philoctetes*, 745 βρώκομαι), and the verb θοινάομαι (Euripides, *Philoctetes*, frag. 792 Nauck). See also terms related to δάκνω.

<sup>20</sup> These two fragments were preserved by Aristotle in his *Poetics* 1458b22–25 (Frag. Aeschylus 253 Radt, and Euripides 792 Nauck).

<sup>21</sup> The affliction called φαγέδαινα is attested four times in the Hippocratic Corpus: *Airs, Waters, Places*, ch. 10, 2.48,9 L. (= Diller 50,11), *Epidemics* 6.3, ch. 23, 5.304,3 L. (= Manetti-Roselli 74,2–4); *Humours*, ch. 20, 5.500,8 ff. L.; *Ulcers*, ch. 10, 6.410,2–3 L. The derived verb φαγέδαινόμαι is attested twice: *Epidemics* 4, ch. 19, 5.156,4 L. and *Epidemics* 5, ch. 44, 5.234,1 L.

<sup>22</sup> In his treatise *On Tumours contrary to Nature* (7.727,7–9 K.), Galen contrasts the phagadenic ulcer (ἡ φαγέδαινα), which attacks both the skin and the parts inside, with

It is remarkable that both the author of this technical work and the tragedian recognise the etymological meaning of the term, since both use the verb ἐσθίειν, ‘to eat’, to describe the action of this disease. It highlights a certain paradox: in the example of the Hippocratic Corpus, the vocabulary of devouring applied to disease is richer than that of tragedy, since the doctor uses the verb νέμεσθαι, ‘to graze’, as well as the verb ἐσθίειν.<sup>23</sup> Thus, although

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herpes that grazes only on the surface. On ancient uses of φαγέδαινα outside Aeschylus and Hippocrates in the fifth century, see Democritus D.K. 68 B 281 (the φαγέδαινα is the most formidable form of ulcer) and Euripides frag. 792 Nauck, and in the fourth century the *iamata* of Epidaurus no. 66 (ed. Herzog, 32 C 134) and Demosthenes, *Against Aristogiton* 1, ch. 95 (ed. G. Mathieu, *Plaidoyers politiques IV*, (C.U.F.) (Paris, 1947), p. 169). This technical term continued to be used in Greek medicine during the Roman period; see, for example, outside Galen, Aretaeus, *The Causes and Signs of Chronic Diseases* 2, ch. 11 (ed. Hude<sup>2</sup>, 81,14). It was the object of definitions or glosses; see [Galen] *Medical Definitions*, 19.443,3 ff. K. (*phagedaina* is an ulcer that devours adjacent and nearby parts of the body); Pollux, *Onomasticon* 4 (*Phagedaina*: ulceration that extends to the bone, which devours rapidly with inflammation, emits foul smelling *ichors* and which ends in death); compare Hesychius s.v., φαγέδαινα. We note that the term later took on the meaning of bulimia; see [Galen] *Medical Definitions*, 19.419,3–7 K.; compare Caelius Aurelianus, *Chronic Diseases* 3,3, ed. Drabkin, pp. 738–740. I owe this last reference to Mirko Grmek.

<sup>23</sup> For the vocabulary of devouring in Hippocratic pathology, see first the terms formed from the two roots \*ed and \*φαγ-: ἐσθίω and its composites διεσθίω and καθεσθίω in the active (*Ancient Medicine*, ch. 19, 1.616, 6 and 7 L. = Heiberg 49, 23 and 25: flow that grazes; *Ulcers*, ch. 10, 6.410,3 L.: phagedaena: *Diseases of Women* 1, ch. 2, 8.20,7 L.: pus; 2, ch. 122, *ibid.*, 264, 22: flux; *Glands*, ch. 12, 8.566,3 L.: flux; ch. 14, *ibid.*, 570,1: pus); ἐσθίω and ἀνεσθίω in the middle voice (*Aphorisms* 5.22, 4.540,3 L.: gnawing herpes; *Epidemics* 4, ch. 1, 5.144,1 L.: corrosive afflictions; ch. 20, *ibid.*, 160,6: corrosive excrements; *Use of Liquids*, ch. 6, 6.134,14 L. = July 170,18: gnawing herpes; *Ulcers*, ch. 3, 6.404,14 L.: devouring and serpiginous ulcers, and ch. 10, *ibid.*, 410,2: gnawing ulcers); ἐσθίω and its composite διεσθίω in the passive voice (*Epidemics* 4, ch. 19, 5.156,12 L.: eroded tooth; *Affections*, ch. 4, 6.212,22 L. = Jouanna *Archéologie*, 268,17: eroded teeth; *The Sacred Disease*, ch. 11, 6.382,13 L. = Grensemann 78,23: eroded brain); φαγέδαινα and φαγεδαινόμοι (references are given in footnote 21); see further the terms related to βιβρώσχω (βιβρώσχω in the passive voice: *Epidemics* 4, ch. 19, 5.156,14 L.; eroded tooth; ch. 25, *ibid.*, 168,18: teeth; ch. 52, *ibid.*, 192,8 and 9: teeth; *Affections*, ch. 4, 6.212,18 and 19 L. = Jouanna *Archéologie*, 268,13 and 14: teeth; διαβιβρώσχω; *Epidemics* 7, ch. 117, 5.462,24 L.: eroded intestine and fistula; *Fistulas*, ch. 3, 6.450, 2 L.: part of the eroded rectum; ch. 4, *ibid.*, 450,26; ch. 5, *ibid.*, 452,16; *Diseases* 2, ch. 23, 7.38,14 and 16 L. = Jouanna 158,5 and 7: eroded bone); see finally the terms formed from the root \*nem- (νέμομαι; ἐπιλέμομαι; νομή) which are studied below. As in tragedy (see footnote 19), we should add terms related to δάκνω. On the connection between δάκνω and ἐσθίω, see for example *Diseases of Women* 2, ch. 122, 8.264,22 L.: flux that bites (δάκνει) and devours (ἐσθίει). The vocabulary of devouring applied to pathology continued to be used in medical writing of the Roman period, and is enriched with the use of nouns unknown in the Hippocratic Corpus, such as διάβρωσις “the action of devouring” (see in particular Aretaeus, *The Causes and Signs of Chronic Diseases* 2.11, quoted in footnote 4, ed. Hude<sup>2</sup>, 80,23, where the expression ἦν ἀργιάνη ἢ διάβρωσις combines the two notions of wild and devouring) and νέμησις, “action of grazing” (Aretaeus, *The Treatment of Acute Diseases*, 1.9.1, ed. Hude<sup>2</sup>, 113,9).

the Hippocratic doctor envisages the affliction called φαγέδαινα from a rational point of view, his vocabulary preserves here an archaic conception of disease considered to be a wild beast that eats (cf. ἐσθίη) and grazes (cf. νέμῃται).

A more in-depth study of these two verbs, which characterise the action of devouring ulcers in the Hippocratic Corpus, shows that the vocabulary of devouring preserves a force and coherence in the technical language of doctors that modern scholars tend to overlook, as was the case for the vocabulary associated with the wild. I will not discuss here the problem of the existence of the middle participle of ἐσθίω, ignored by LSJ and certain modern editors, but well attested in the Hippocratic Corpus regarding devouring ulcers, since I discussed this topic in a paper at the VII Congreso Español de Estudios Clásicos in Madrid.<sup>24</sup> Instead, I will turn to the use of νέμομαι and related words.

Along with νέμομαι, used to refer to the action of ulcers, as we saw in ch. 10 of *Ulcers*, there is a further name of disease belonging to the same family, the noun νομή, which is found in the plural in four passages of the Hippocratic Corpus (*Prorrhetic* 2, ch. 12 and 13, *Ulcers* ch. 18 and *Dentition* ch. 20). In the same way that the disease called φαγέδαινα is the disease that eats (φαγέειν), the disease called νομή is essentially the disease that is defined by the action of νέμεσθαι.<sup>25</sup> But what does νέμομαι mean? LSJ translates this word, used concerning ulcers, as ‘to spread’, and translates the noun νομαί as ‘spreading ulcers’; thus, any meaning of “to graze” or “to feed on” has disappeared from this modern interpretation.<sup>26</sup> However, if we look at earlier interpretations, we observe that Littré, whilst being less consistent, translates two of the four occurrences of νομαί as “gnawing ulcers,” thus trying to preserve the etymological sense. If we go back even further to the sixteenth century, Foës, in his *Oeconomia Hippocratis* s.v.,

<sup>24</sup> J. Jouanna, “La maladie dévorante: existe-t-il un présent moyen de ‘èsthio’?”, in Universidad Complutense (ed.), *Actas del VII Congreso Español de Estudios Clásicos, Vol. I* (Madrid, 1989), pp. 199–208.

<sup>25</sup> The connection of the name of the disease νομή with the middle voice νέμεσθαι is found as early as in Galen: see *De simplicium medicamentorum temperamentis ac facultatibus* 8, ch. 4 (12.179,6 K. νομάς ἀπό τοῦ νέμεσθαι).

<sup>26</sup> I will not tackle here the problem of determining how the etymological meaning of “to graze” developed into “to feed on.” On the verb νέμω/νέμομαι in general, see E. Laroche, *Histoire de la racine \*nem- en grec ancien* (Études et commentaires 6) (Paris, 1949) and F. Heinimann, *Nomos und Physis. Herkunft und Bedeutung einer Antithese im griechischen Denken des 5. Jahrhunderts*, (Schweizerische Beiträge zur Altertumswissenschaft 1) (Basel, 1945), p. 59 ff.

defines νομαί as “*ulcera ... proserpendo depascentia*,” “ulcers that feed whilst spreading.” This definition seems excellent, because it subordinates the secondary sense of “to spread” to the etymological sense of “to graze.” Indeed, we would be wrong to remove the original meaning of νέμομαι from its technical uses when it concerns ulcers, or an affliction more generally. It is clear, for example, that in chapter 10 of *Ulcers*, which has served as the basis for our discussion, the verb νέμομαι means “to graze,” and not the secondary sense of “to spread,” not only because of the vocabulary of devouring that accompanies it, but above all because it is modified by the intensifying adverb ισχυρότατα. The doctor fears the destructive character of the ulcer that grazes. Thus, the author of *Prorrhetic 2*, ch. 13 (9.36,6 ff. L.) says that within the category of ulcers which he calls νομαί, or rather ἔλκεα ὅσα νέμεται, the most dangerous are those in which the principles of corruption (αἱ σηπεδόνες) are situated most deeply.<sup>27</sup>

Of course, the meaning of “to graze” does not exclude the secondary sense of “to spread”; since the action of grazing implies that the animal spreads and that the eaten surface is extended, we can understand how the secondary sense of “to spread” was able to develop and even erase, in certain contexts, the original meaning. Even within the Hippocratic Corpus, we find an example where the original meaning of νέμομαι is erased, concerning the anatomy of the route of the blood vessels.<sup>28</sup> However, there are two principal uses of the word in which the first meaning was retained throughout the history of Greek, and these concern the two most formidable destructive forces: fire and disease. In book XXIII of Homer’s *Iliad*, line 177, the verb νέμομαι is used alongside the verb ἐσθίω (181) to describe the fire of the funeral pyre

<sup>27</sup> H. Dönt, *Die Terminologie von Geschwür, Geschwulst und Anschwellung im Corpus Hippocraticum* (see above, n. 7), p. 86, correctly notes that νέμομαι and νομή in the Hippocratic Corpus preserve their meaning of “to graze, devour”; cf. also F. Heinimann, *Nomos und Physis*. (see above, n. 26), p. 60. For other uses of νέμομαι in the Hippocratic Corpus regarding devouring ulcers, see *Diseases of Women 1*, ch. 66, 8.140,11 L., νέμεται (sc. ἔλκεα); *Dentition*, ch. 30, 8.548,14 ff. L.: ἔλκεα ... νέμεται; ch. 31, *ibid.*, 548,16: τὰ νεμόμενα ἔλκεα; ch. 32, *ibid.*, 548,18: τὰ ... νεμόμενα ἔλκεα; *Use of Liquids*, ch. 3, 6.126,14 L.: τὰ νεμόμενα (sc. ἔλκεα). The expression νεμόμενα ἔλκεα can be compared with ἐσθιόμενα ἔλκεα (the middle voice of ἐσθίω; see footnote 23).

<sup>28</sup> On the uses of νέμομαι in anatomy, see *Nature of Bones*, ch. 13 (9.184,14 L.): ἡ δ’ ἀρχαίη φλέψ ἢ νεμομένη παρὰ τὴν ἄκανθαν, “the primitive vessel, which extends along the spine”; cf. also *ibid.*, ch. 16, ch. 17 and ch. 18. cf. also ὑπονεμομένη in ch. 12, *ibid.*, 184,9. It is difficult to determine the fundamental meaning that explains this derived use: does it refer to distribution or to grazing? It is possible that the vessel was known primitively as a living being that takes its nourishment from the place where it finds itself; compare the use of νέμομαι with regard to glands in the treatise *Glands*, ch. 5, 8.560,9 L.

that devours Patroclus' body. This representation of devouring fire is still very much alive in the fifth century. For example, in Aeschylus' *Choephoroi*, the metaphor of biting is used not only concerning diseases, as we have seen, but also concerning the ritual fire that devours the corpse.<sup>29</sup> The first meaning of νέμομαι is also well attested in the fifth century: it is no accident that Herodotus uses the verb νέμομαι both for a fire (5.101) and the devouring ulcer of Atossa (3.133).<sup>30</sup>

The disease's action may even be compared to that of a fire, to the extent that it manifests itself in the form of an inflammation. We should not forget that the term πῦρ can mean both fever and fire. This representation of disease allows us to understand a passage from *Epidemics* 3, where ἐπινέμομαι is used. In the second annual constitution which it describes (*Epidemics* 3.2, 4, 3.72,3–5 L.), the author says that erysipelas occurred: μεγάλαι φλεγμοναὶ ἐγίνοντο καὶ τὸ ἐρυσίπελας πολὺ ταχὺ πάντοθεν ἐπενέμετο, "great inflammations followed and erysipelas very quickly ἐπενέμετο all over."

How should we translate this verb? Following LSJ, the *Index Hippocraticus* translated it as "procedo," 'to proceed'.<sup>31</sup> This translation obscures the deeper meaning of the passage. Erysipelas, which is already a disease that is etymologically inflammatory (literally, 'a disease that makes the skin red-den'), and which, moreover, is accompanied here by large inflammations, is a disease that devours everything, like a violent fire, and progresses quickly. Littré translated this more accurately than modern editions, when he said: "rapidly the erysipelas extends its ravages all over." Indeed, to understand

<sup>29</sup> *Choe.* 325 πυρὸς μαλερὰ γνάθος, "the raging, gnawing fire"; compare also the same metaphor in *Prometheus*, 368: πυρὸς ... ἀγρίαις γνάθοις.

<sup>30</sup> The relationship between the two passages of Herodotus was noted by H. Stein, *Herodotos*, I (Berlin, 1883), p. 142 ad 3.133: "ἐνέμετο πρόσω 'frass weiter um sich'; öfters vom Freuer (V, 101, 9)." However, the translation of E. Legrand (*Hérodote* III, (C.U.F) (Paris, 2003), p. 167) "(l'abcès) gagna de proche en proche" is too weak. First of all, Atossa's abscess, once burst, passes into the category of devouring ulcers. The verb νέμομαι in Herodotus has the same meaning as in *Prorrhetic* 2, ch. 13, where it describes a category of ulcers. Even in Thucydides, the composite ἐπινέμομαι is used with reference to the Athenian 'plague' (2.54.5 ἐπενείματο δὲ Ἀθήνας μὲν μάλιστα, ἔπειτα δὲ καὶ τῶν ἄλλων χωρίων τὰ πολυανθρωπότατα), and although it has a less technical meaning than in Herodotus, it preserves the idea that the plague attacks everything in its path; compare the use of κατανέμομαι with regards to the 'plague' of Athens that "devours the flower of youth" (translation from Flacelière) in Plutarch, *Life of Pericles*, 171 a. The verb νέμομαι (or its composites) and the noun νομή continued to be used after the Classical period for fire and disease. For example, in Diodorus of Sicily, the verb ἐπινέμομαι is used five times regarding fire (5.6.3; 14.51.3; 14.54.3; 17.26.5; 20.96.7) and twice regarding disease (3.29.6; 12.12.3).

<sup>31</sup> J.-H. Kühn / U. Fleischer, *Index Hippocraticus*, Fasc. II (see above, n. 12), s.v. ἐπινέμομαι.

the force of the term ἐπινέμομαι, we need only look to the description of the ravages left by the disease: “flesh, sinews and bones fell away in whole sections” (ibid., 72,6 ff.: σαρκῶν καὶ νεύρων καὶ ὀστέων ἐκπτώσεις μεγάλα). Despite the restraint of technical prose, the vocabulary still forcefully describes the effects of the disease. This analysis also allows us to understand better why Galen interprets “the wild inflammation,” the πῦρ ἄγριον of *Epidemics* 7, ch. 20, as erysipelas. Erysipelas is a wild affection that devours like fire or a wild beast. Returning to the comparison with tragedy, this description of erysipelas by the Hippocratic doctor in *Epidemics* 3 may remind us of Euripides’ descriptions, in the *Medea*, of the effects of the poisoned gifts on the body of the married youth. It refers to devouring fire (1187 παμφάγου πυρός) and flesh that breaks loose from the bone under the effect of the invisible jaws of the poison (1200 ff. σάρκες δ’ ἀπ’ ὀστέων ... γναθμοῖς ἀδήλοισι ... ἀπέρρεον). The distance between the playwright’s description, who uses pathos for amplification, and that of the scientist, who is describing a single disease amongst others, may appear large; but the image of the disease is fundamentally the same: this is a disease that, in the same way as a fire, devours the flesh, which detaches from the bone.

This comparative examination has shown that doctors in the Hippocratic Corpus preserved in their pathology a vocabulary associated with wildness and devouring, just like tragic authors. Of course, this vocabulary is not exactly the same in both genres, and its use is more limited in medicine than in tragedy. However, these are differences of degree, not of kind. What we gain from this comparison is that it shows that what can appear in tragedy as a simple poetic metaphor corresponds, in fact, to a technical usage, and that conversely the technical language of doctors preserved a metaphoric vocabulary whose original meaning risks being obscured if we have a too fragmented view of the language and a too rationalist view of the ideas.

Finally, the comparison allows us to make a contribution to the history of ideas by reconstructing the coherent intellectual representations that link the Hippocratic Corpus with Greek tragedy. Disease can, in its acute form, appear as an eruption of something wild, which threatens to devour a man’s flesh like a ferocious beast, or a fire compared to a ferocious beast, and it can eventually lead to the patient’s behaviour becoming like a wild beast. This representation of disease, which is exploited by the tragic authors to create fear, is also present in the Hippocratic Corpus, where fear is brought under control, because the technical language used by doctors to describe and characterise certain afflictions is inherited from a vocabulary with roots to a period before civilisation, which the Greeks of the classical period

themselves characterised by the fear of wild animals and those described as “wild.”<sup>32</sup> Medicine is one of the arts that put an end to this ‘wild’ period, as the author of *Ancient Medicine* brilliantly shows. However, disease remains, in the Greek imagination, present as a threat of wild forces in the civilised world, forces that are both formidable and difficult to combat since they are no longer outside of man, but within man.<sup>33</sup>

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<sup>32</sup> See, for example, Euripides, *Suppliants*, 201 ff.: ἐκ πεφυρμένου / καὶ θηριώδους (s.c. βιότου) and Plato, *Protagoras*, 322 b: ἀπώλλυντο οὖν ὑπὸ τῶν θηρίων.

<sup>33</sup> The idea that disease risks being an outbreak of the wild in the civilised world is clearly presented in Euripides’ *Orestes*: the death of the mother which brought about in her son a wild disease (34) is, according to Tyndareus, a wild act (524 τὸ θηριώδες) that endangers the law (523 τῷ νόμῳ). Moreover, disease, considered as a wild outbreak, served as a model to show the outbreak of wild behaviour in people; see the passage in Polybius, *Histories* 1.81, 5–10, where he makes a comparison between bodies that are preyed on by ulcers, which “become wild” (81, 5 ἀποθηριουόσθαι), and souls that are affected by disease, such that men end up “becoming wild” (81, 9 ἀποθηριωθέντες) and behave at the limits of human nature.

## CHAPTER SIX

### HIPPOCRATES AND THE SACRED\*

The term 'Hippocrates' can have two meanings: in a narrow sense, it refers to the classical Greek doctor, a contemporary of Socrates, who originally came from the island of Cos and belonged to a family of Asclepiads. His fame in his own lifetime is attested by two references in Plato's *Protagoras* and *Phaedrus*. In a wider sense, 'Hippocrates' refers to the collection of some sixty medical writings transmitted under his name in medieval manuscripts. Although we might reasonably attribute some of these writings to Hippocrates' hand (without having absolute criteria with which to identify them), it is clear that not all of them could have been written by the same person. Some are works by his students. For example, one of the most famous treatises of the Hippocratic Corpus, the *Nature of Man*, known above all for its theory of the four humours which constitute human beings (blood, phlegm, yellow bile and black bile), was written by Polybus, Hippocrates' student and son-in-law. However, alongside the group of writings originating from the Hippocratic School, or the School of Cos, there is a group of nosological treatises that originate from another medical centre, the Asclepiads of Cnidus. Finally, there are other treatises, philosophical in nature, which form a third group and are of unknown origin. Thus, the Corpus is composed of writings of various kinds. Moreover, the treatises that comprise it were not written at the same time. The majority belong to the second half of the fifth century or the start of the fourth century; thus, they are contemporary with Hippocrates. However, other treatises date from the period of Aristotle or later. Nevertheless, despite these differences in origin or date, the Hippocratic Corpus presents an undeniable unity.

This unity stems primarily from the fact that all the authors practice a rational medicine. At first sight, the attitude of these doctors towards the sacred, when they talk about it, is fairly homogeneous. In adherence with the rationalism of the century of Pericles, they criticise (sometimes vigorously, as we will see below) those doctors who believe that a disease may be

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caused by the intervention of a particular deity, and they contrast a divine cause with a rational one. They even criticise those seers or interpreters of dreams who cross into the domain of medicine. However, we should not infer, as is often done, that the rationalism of the Hippocratic doctors is opposed to the notion of the divine, or is incompatible with traditional religion. Indeed, we will see below that the situation is more blurred: one doctor's position on the problem of the sacred is not necessarily the same as another's, and in the treatise in which attacks against magico-religious medicine are most impassioned, traditional sanctuary religion is not called into question. In order to obtain a better understanding of this two-sided attitude of the writers of the Hippocratic Corpus, we will in the third part of this paper examine not only the written works, as philologists do, but attempt to place these ideas on the sacred and the divine in the historical context of the life of Hippocrates of Cos, a member of the Asclepiad family, and examine, using literary and epigraphic evidence, the relationship of the Asclepiads with the important healing sanctuaries of Asclepius or Apollo at Delphi.

The Hippocratic doctors' rationalist attitude towards the sacred is particularly apparent regarding what the ancients called the 'sacred disease', and what we call epilepsy.<sup>1</sup> Contrary to what we might believe, the term 'sacred disease' is not a fifth-century lay equivalent of a technical term for a disease. We find the term in the medical texts of the Hippocratic Corpus. For example, the author of the gynaecological treatise *Diseases of Women 2*, when describing the symptoms of an affliction of women who suddenly lose their ability to speak, says that they exhibit "the same symptoms as someone afflicted by the sacred disease."<sup>2</sup> Since the 'sacred disease' is used here as a reference, in a technical treatise, to describe another disease, it clearly described an affliction that was well known by doctors, and the term 'sacred disease', whose symptoms were codified, was clearly accepted by specialists. We could draw the same conclusion from the first attestation of the 'sacred disease' outside the technical writings of the Hippocratic Corpus, in Herodotus: Cambyses, having sacrilegiously struck the ox Apis, becomes mad and murders his brother and his wife (who was also his sister). Thus,

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<sup>1</sup> On the 'sacred disease' in antiquity, cfr. O. Temkin, *The Falling Sickness*, Baltimore 1971<sup>2</sup>, pp. 2–27 and M. Grmek, *Les maladies à l'aube de la civilisation occidentale*, Paris 1983, pp. 69–71.

<sup>2</sup> Hippocr. *mulier. morb.* 2.151 = 8.326,17 L. καὶ τὰλλα ὅσα οἱ ὑπὸ ἱερῆς νόσου ἐπίληπτοι πάσχουσι.

his acts of madness against his relatives appear to be the result of a direct infraction against the sacred. However, Herodotus, without taking a position on the cause of this madness, reports another possible explanation:

It is said that Cambyses was afflicted from birth by a grave disease, which some call the sacred disease. It is likely that since his body suffered from a grave disease, he did not have a healthy mind either.<sup>3</sup>

From this passage, it is clear that the expression ‘sacred disease’ was already known in Herodotus’ time to describe a specific and particularly grave disease that could afflict the individual from birth. However, the expression does not seem to have been in popular usage, since Herodotus clarifies that it concerns a disease “that some call sacred.”<sup>4</sup> Thus, only a category of people would have called it by this name. The indefinite pronoun *τινες* does not allow us to be more precise about whom it refers. However, since this second hypothesis on Cambyses’ madness aims to substitute a medical explanation for a purely religious one, and since the term ‘sacred disease’ serves, in this context, to describe the nature of the grave disease that Cambyses had since birth, this method of designating the disease was probably a technical expression, as it is in the Hippocratic treatise *Diseases of Women* mentioned above. Moreover, it is paradoxical to claim that the ‘sacred disease’ in Herodotus presents a rational explanation of hereditary madness, in contrast with a religious explanation based on the direct intervention of a divinity. Even after the Hippocratic Corpus, the ‘sacred disease’ remained the technical name of the affliction, at least in certain authors. Indeed, Aristotle’s student, Theophrastus, in his *History of Plants*, speaks of the plant called Heracleon, whose root, mixed with seal’s milk, is effective against the ‘sacred disease’;<sup>5</sup> Theophrastus does not add anything to specify the disease further, which indicates that the term was still current in the fourth century.

However, most of the passages of the Hippocratic Corpus that discuss the ‘sacred disease’,<sup>6</sup> such as *Breaths*<sup>7</sup> or *The Sacred Disease*,<sup>8</sup> include the participle *καλεομένη*, so we would better translate it as the ‘disease called

<sup>3</sup> Herodotus, 3.33.

<sup>4</sup> Ibid. *νοῦσον μεγάλην ... τὴν ἱρὴν ὀνομάζουσι τινες.*

<sup>5</sup> Theophr. *Hist. plant.* 9.11.3 τῆς ἱεράς νόσου.

<sup>6</sup> The expression is found in six different treatises of different origin: some are thought to come from the School of Cos, such as *Airs, Waters, Places* and *The Sacred Disease*; others come from the School of Cnidus, such as *Diseases of Women 2* or *Diseases of Girls*; others are of debated origin, such as the treatise *Breaths* or *Prorrhetic 2*.

<sup>7</sup> Hipp. *Flat.* 14 = 6.110,14 L. = p. 121,6 Jouanna τὴν ἱρὴν καλεομένην νοῦσον.

<sup>8</sup> Id. *Morb. sacr.* 1 = 6.352,1 L. = p. 60,1 Grensemann τῆς ἱερῆς νοῦσου καλεομένης.

sacred'. This phrase is basically a way of underlining that this expression—if I may say so—is established in the technical use of medical prose; the term epilepsy (ἐπιληψία) was still not used in the fifth century to describe this illness. However, most doctors of the Hippocratic Corpus also feel the need to clarify the disease 'called' sacred to distance it from a traditional meaning that did not correspond to their understanding of this disease. In fact, none of the Hippocratic authors attribute a sacred character to it. The explanations that they propose can be very different: according to some, it is a perturbation of the movement of the blood, according to others a perturbation of the movement of the air; according to some, the affected part of the body is the brain, according to others the heart or the diaphragm.<sup>9</sup> However, despite these differences, the rationalist spirit that overarches these explanations is fundamentally the same: disturbances stemming from natural causes.

Some of the Hippocratic doctors limit themselves to expounding their rational theories about this disease, as they would do for every other affliction, and do not pay attention to its name and the religious substrate of the presumably divine origin behind it. For example, the author of *Breaths*, who proposes to show in his epideictic discourse that all diseases have a single origin, the air, takes the case of the 'disease called sacred' as a single example amongst others (ch. 14), and explains it by a perturbation of the movements of the blood, the source of intelligence, caused by an excessive quantity of air in the body. However, other Hippocratic doctors criticise those who believe in the divine origin of the 'sacred disease'. There is a very significant, but little known, example. Discussing the 'disease called sacred' that affects girls of marrying age when they remain unmarried, the author of the work *Diseases of Girls* describes their delirium during the crisis and gives it a rational explanation, blaming a flow of blood that is carried to the heart and diaphragm, instead of being evacuated through the uterus. He adds:

When the girl becomes calm again, the women dedicate many general offerings to Artemis, and in particular the most beautiful female clothes, following recommendations from the seers (τῶν μάγιστρων); but they are completely misled. Liberation from this disease occurs when the flow of blood is not blocked. I recommend to girls who are afflicted by such a complaint that they get married as soon as possible because, once pregnant, they are cured.<sup>10</sup>

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<sup>9</sup> On the perturbation of the blood's movements, cf. *Flat.* 14; on the perturbation of the air's movements, cfr. *Morb. sacr.* 7; for a discussion on the affected part of the body, cfr. *Morb. sacr.* 17.

<sup>10</sup> Hippocr. *Virg. morb.* 1 (8.468,17 ff. L.).

There is radical contrast between the doctor and the seers. The seers believe in the divine origin of the disease in these women and attribute it to the virgin Artemis. Thus, after the crisis they recommend making offerings to the goddess to thank and placate her, in this way preventing the return of another crisis. The Hippocratic author counters the recommendations of the seers with his own recommendation: not to be concerned about moral or religious taboo and to encourage the woman to get married as soon as possible, so that the obstacle that impedes the flow of blood will disappear. The doctor's short, yet vigorous, attack against the seers, whom he accuses of deceiving the patient and those nearby, suggests in reality a harsh rivalry between doctors and seers at the patient's bedside.

Such a forceful attack against seers is rare in the Hippocratic Corpus, but it is not unique. The author of *Regimen in Acute Diseases* warns his colleagues against inconsistencies in the treatment of acute diseases, contradictions that, like those of the seers, risk discrediting the entire medical art:

Since if, in the most acute diseases, practitioners differ so much among themselves that those prescriptions judged best by one are held to be bad by another, laymen might say that the art (of medicine) resembles augury, since augurs (οἱ μάντιες) hold that the same bird, if seen on the left hand, is good but, if on the right, bad; whilst some think the opposite.<sup>11</sup>

He adds that such contradictions are also observed in haruspicy. This passage is exceptional for its content, since there is no other Greek text which indicates that the left side was judged favourable by some Greek seers; conversely, in its spirit it adheres to the rationalism of the century of Pericles and is a forerunner of Cicero's criticism who, in his *De divinatione*, compares Greek divination, in which the right side is favourable, to Roman divination, where the left side is favourable.<sup>12</sup> These are the only two passages of the Hippocratic Corpus in which seers are attacked.

Returning to the 'sacred disease', seers are not the only people who, according to the Hippocratic Corpus, believe in the divine origin of this disease and deceive patients. There was also a certain category of healers criticised with unusual vigour and breadth by the author of *The Sacred Disease*, who does not believe in a particularly sacred character of this

<sup>11</sup> Id. *morb. acut.* 3 = 2.240,10–244,1 L. = p. 39,12–20 Joly.

<sup>12</sup> Cfr. F. Guillaumont, "Laeva prospera: remarques sur la droite et la gauche dans la divination romaine," in R. Bloch, *D'Héraclès à Poséidon. Mythologie et protohistoire*, Geneva-Paris 1985, p. 160, note 5.

disease.<sup>13</sup> The Hippocratic author refrains from giving his adversaries the title of ‘doctor’; he speaks instead of “those who first attributed a sacred character to this disease.”<sup>14</sup> We find here again the theme of ‘first inventor’ (πρώτος εὑρετής), so dear to fifth-century enlightenment; we can compare this passage in particular to the tragedy of the Sophist Critias, *Sisyphus*, about a man who “invented the belief in the gods.”<sup>15</sup> Whilst the mention of the first inventor is usually accompanied by a eulogy of his discovery (Critias in particular praises the salutary fear inspired in men by belief in the gods), in the Hippocratic treatise it leads to an unusually forceful condemnation. To reconstruct the state of mind of those past men who sacralised the disease, the Hippocratic author compares these first inventors of the disease to those who are, in his time, “magicians, seers and charlatans.”<sup>16</sup>

To understand the forcefulness of this attack, we might compare it to a scene in Sophocles’ *Oedipus Rex* when Oedipus, angered by his argument with Tiresias, who has just revealed a truth which he does not want to believe, accuses the soothsayer of being a ‘deceiver’ (line 387 μάγον) and ‘mountebank’ (388 ἀγύρτην). Not only are these two terms analogous, but the accusations are also similar. Before Oedipus accused Tiresias of being a deceiver and mountebank, he firstly accused him of being blind to his art (388f.). These two accusations are found in *The Sacred Disease*. It is “due to their lack of means”<sup>17</sup> that some healers attributed the cause of each variety of the ‘disease called sacred’ to a god. However, in the Hippocratic treatise this accusation is secondary, whilst the second, incompetence in the art, is fundamental; according to the Hippocratic author, this is the origin of the belief in the sacred nature of the disease. This is how he unravels the behaviour of those who sacralised the disease and denounces their position: “These people,” he declares, “using the divine as a veil and defence to hide their own inability to give any useful prescription, suggested that this disease was sacred in order to avoid that their total ignorance be obvious.”<sup>18</sup> The criticism is very outspoken, no less than that of Oedipus against Tiresias.

<sup>13</sup> Cfr. Giuliana Lanata, *Medicina magica e religione popolare in Grecia fino all'età di Ippocrate*, Rome 1967, pp. 13 ff.

<sup>14</sup> Hipp., *Morb. sacr.* 1 = 6.354,12 L. = p. 60,21 Grens. οἱ πρώτοι τοῦτο τὸ νόσημα ἀφιερῶσαντες.

<sup>15</sup> Crit., DK 88 B25.

<sup>16</sup> Hippocr., *Morb. sacr.* 1 = 6.354,13–14 L. = p. 60,22–23 Grens. οἶοι καὶ νῦν εἰσι μάγοι τε καὶ καθάρται καὶ ἀγύρται καὶ ἀλαζόνες. The author follows here the same method used by Thucydides in his *Archaeology*, when he reconstructs Greece’s past through comparison with the present state that preserves archaisms.

<sup>17</sup> Hippocr., *morb. sacr.* 1 = 6.360,10 L. = p. 64,18 Grens. βίου δεόμενοι.

<sup>18</sup> *Ibid.* = 6.354,15–17 L. = p. 60,23–25 Grens.

Just like, according to Oedipus, the seer is blind to the art of divination, so, according to Hippocratic medicine, healers that sacralised the disease are totally ignorant of the art of medicine. Just as Oedipus wishes to uncover the deception of the seer that acts with hidden cunning to deceive him, the Hippocratic author denounces the imposture of healers that use the divine to deceive patients.

The connection between a speech delivered by a character in a theatrical play, who speaks in a fit of anger (as the chorus lets us know (line 405)), and the speech of a scientist who defends a rational conception of medicine, casts new light on the passionate polemic that the rationalist doctors mounted against supporters of magico-religious medicine. The author of *The Sacred Disease* is so forceful in his criticism because his adversaries were more significant than we might think. In a period in which the medical profession was not guaranteed by titles, and the community of citizens, concerned about traditional religion and accustomed to hearing about the healing gods in the theatre, recruited public doctors in a democratic city such as Athens in the people's assembly, the competition between enlightened doctors, sensitive to the interests of the patient and those of the charlatans, who profited from peoples' superstition and ignorance, could be as lively as the rivalry between seers and doctors.

Moreover, while denouncing his adversaries' total ignorance of the art, the author of *The Sacred Disease* recognises that they have a certain ability both to hide their ignorance and to appear knowledgeable. To hide their ignorance, they blame the gods when a patient dies, but take full credit when the patient is cured. In order to appear to possess a superior knowledge, they draw on numerous and different skills. The author uses a specific vocabulary to qualify this cunning behaviour of his adversaries: 'contriving' (μηχανάομαι), 'trickery' (τεχνάομαι, τέχνημα), 'embellishment' (ποικίλλω) and 'forgery' (προσποιέομαι). Such skills are used both in the diagnosis and in the treatment, although the best known concern the treatment: these treatments simultaneously combine magico-religious practice (such as purifications and incantations), which rational medicine condemns, with dietary prohibitions, recognised as fundamental by rational medicine. Less known, but perhaps more revealing of their ability, are the subtle distinctions that they make in the diagnosis, as testified by a further very interesting passage from *The Sacred Disease*:

If the patient imitates a goat, grinds his teeth, or has convulsions on his right side, they say that the Mother of the gods is responsible; if he speaks in a sharper and more intense tone, they compare this state to a horse and say that Poseidon is responsible; if any faeces are involuntarily passed, which is often

the case owing to the violence of the disease, the name of the goddess Enodia is blamed; if the faeces are thin, like a bird's, and passed more frequently, it is said to be from Apollo Nomius; and if the patient foams from the mouth and kicks with his feet, Ares is responsible; for those who panic during the night, have terrors and delirium, jump out of bed and escape from the house, they say that they are assaulted by Hecate or the heroes.<sup>19</sup>

We should be thankful for the Hippocratic author for having preserved such a clear testimonium about the manner in which his adversaries, advocates of divine medicine, make refined use of differences between the symptoms of crises in order to distinguish the considerable variety displayed by the 'sacred disease', and to attribute its cause to different divinities. The belief that the patient may be possessed by different divinities is probably very old; in particular, we note that Poseidon appears here mounted on a horse, which corresponds to the most archaic aspect of the god.<sup>20</sup> This belief certainly corresponded to popular credence, even in the age of Pericles, as a comparison with the parodos of Euripides' *Hippolytus* suggests, where the chorus of women from Troezen, having just learned of Phaedra's disease, asks about the different divinities who might be its cause:

Oh young girl, has some god, Pan or Hecate, possessed you? Do your wits wander under the spell of the august Corybantes or the Mother who rules over the mountains? Are you being consumed for some fault against Dictynna the great huntress, having failed to offer her victims in sacrifice?<sup>21</sup>

The two lists of divinities are comparable. We find Hecate and also a divinity called Mother (the mother of the gods in Hippocrates, the Mother ruling over the mountains in Euripides). However, neither this evidence for popular belief, nor the oversimplified criticism of the Hippocratic author should hide the fact that religious medicine was able to rival rational medicine. The diagnostic principle of the practitioners of magico-religious medicine consists in making subtle distinctions between symptoms and then to make them correspond to the varieties of diseases. This is the same principle that we find in the Cnidian nosologic treatises of the Hippocratic Corpus, where the subtle variation of some symptoms allowed doctors to distinguish varieties of diseases. Of course there were fundamental differences, since the former attribute these variations of a disease to divine powers, the latter to natural phenomena. However, the magico-religious medicine as it

<sup>19</sup> *Ibid.* = 6.360,13–362,6 L. = pp. 64,22–66,6 Grensemann; [cf. pp. 62–63 above].

<sup>20</sup> Cfr. Bloch, "Quelques remarques sur Poséidon, Neptune et Nethuns," in *D'Héraclès à Poseidon*, cit., pp. 126–127.

<sup>21</sup> Eur. *Hippol.* 141–148.

appears from the Hippocratic author's perspective, however distorted, does not show the miraculous and incredible character of the tales of healers that are preserved on the stelae at Epidaurus. It is possible that magico-religious medicine was able to reach a certain level of sophistication at the same time in which rational medicine developed. This explains a certain paradoxical aspect of the Hippocratic author's criticism, which on the one hand relegates his adversaries to common charlatans, yet on the other hand also recognises their sophisticated ability and some positive knowledge of the diet that can harm the patient.

The 'disease called sacred' is not the only affliction in the Hippocratic Corpus that provokes criticism of the belief in its divine origin. Chapter 22 of *Airs, Waters, Places*, an ethnographic section in which Europe and Asia are compared, is dedicated to refuting the belief that the impotence of some Scythians is caused by a divinity. The author tells us about the fate of these Scythians, called Anarieis, who become similar to eunuchs:

When they approach a woman but cannot have intercourse, at first they take no notice and think no more about it. But when two, three or even more attempts are made with no better success, they think that they have sinned against a god (τῷ θεῷ), to whom they attribute the cause, and they put on women's clothes, holding that they have lost their manhood, speak like a woman and do the same work as women do.<sup>22</sup>

The author adds that other people bowed down before them, because they believed that these men were sacred, and they were afraid of being struck by the same disease. The author contrasts his rational explanation with this religious one. Far from attributing it to the guilt committed by a man in the eyes of a particular divinity, the affliction is explained by the Scythians' way of life, since they are always riding horses, which alters the seminal vessels, and by a treatment that does more harm than good: at the onset of the disease, they cut the vessels behind the ear; according to the author, this operation subsequently alters the vessels of the seminal liquid.

This rejection of religious belief has a less-marked controversial tone than in *The Sacred Disease*. The reason is that the author is not dealing with potential competitors. Indeed, this is not an opinion sustained by doctors or pretend doctors, but a belief shared by a populace outside the territory where Hippocratic doctors practised medicine, i.e. the Greek islands of Cos and Thasos, and also northern Greece, Thessaly, Macedonia and the Greek cities of the Thracian coast.

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<sup>22</sup> Hippocr. *Aer.* 22 = 2.78,15–19 L. = p. 74,7–11 Diller; transl. W.H.S. Jones, LCL, modified.

However, the Hippocratic author's position stands out better if we contrast it with that of Herodotus. The historian twice discusses the Scythians mentioned above in his *Histories* (1.105 and 4.67); he calls them Enareis, not Anarieis. His testimony clarifies that of the Hippocratic author about the identity of the divinity who causes the disease. It is the goddess Aphrodite, who inflicts this female disease<sup>23</sup> on the descendants of some Scythians responsible for having sacked her temple in Ascalon. However, whilst the Hippocratic author persists largely in refuting such a religious explanation to substitute it with a rational one, Herodotus presents only the religious explanation, and it does not occur to him to doubt it. Thus, the permanent character of this disease that affects part of the Scythian population finds in the historian and the doctor two decisively different explanations. In the historian, the perennial nature of the religious offence is transmitted from generation to generation in the families whose ancestors committed it; in the doctor, it is the persistence of a way of life, horse riding, in the well-off classes of Scythian society. The historian adheres to the kind of causality that runs through the myth of cursed families, which is so widespread in Athenian tragic theatre, whilst the doctor proposes a natural explanation for this disease, as for others: "Every disease," proclaims ch. 22, "is produced by a natural cause."<sup>24</sup>

However, even when Hippocratic doctors use rational arguments to criticise the personal intervention of a divinity in the pathological sphere, they are careful not to contrast science with religion.

Significantly, both in *Airs, Waters, Places* and in *The Sacred Disease* a divine conception of disease is criticised, but the notion of the divine, far from being rejected, is preserved in the Hippocratic author, and given a new explanation instead. Thus, the author of *Airs, Waters, Places* does not oppose head on the explanation that the Scythian disease is divine. Indeed, having noted that the Scythians attribute the Anarieis' impotence to a divinity, the author continues: "I too (ἐμοὶ δὲ καὶ ἀντὶ) think that these diseases are divine."<sup>25</sup> Translators do not generally translate καὶ ἀντὶ because they are subconsciously embarrassed by the rationalist doctor's concession to a religious explanation.<sup>26</sup> However, in the immediate sequel to this statement,

<sup>23</sup> Herodot., 1.105 θήλεαν νοῦσον.

<sup>24</sup> Hippocr., *Aer.* 22 = 2.78,1 L. = p. 72,16 f. Diller.

<sup>25</sup> *Ibid.* = 2.76,16 f. L. = p. 72,14 f. Diller.

<sup>26</sup> Cfr. for example, Littré ad loc., "Pour moi, je pense que cette maladie vient de la divinité"; Diller ad loc. "Mir für meine Person scheinen diese Leiden ... göttlich zu sein." On

apparently agreeing with popular belief, the author actually distances himself from it by giving a different explanation for the notion of divine: “these diseases are divine (θεῖα), and so are all others, none of them being more divine or more human than any other; all are alike and all are divine” (θεῖα). Thus, instead of a more or less obscure divine justice, which punishes the guilty with a disease, the Hippocratic doctor proclaims a universal order that is both divine and natural, which accounts for all diseases and frees the patient from all guilt. We find the same concept of the divine in *The Sacred Disease*, in terms that are so similar that we can conclude that the two treatises are by the same author.<sup>27</sup> In particular, it is said in ch. 18 of *The Sacred Disease*: “There is no need to believe that this disease (called sacred) is more divine than any other, since all are divine (θεῖα) and all are human, and each disease has its natural cause (φύσιν) and its particular character.”<sup>28</sup> This phrase is very similar to that found in *Airs, Waters, Places*. Here, too, the concept of the divine is defined in natural terms and deprived of all traditional anthropomorphic representation. Thanks to *The Sacred Disease*, we can give concrete examples of what the Hippocratic author considered as divine. In ch. 18 he says: “The ‘disease called sacred’ comes from the same causes as the other diseases, from what enters and exits the body, from the cold, from the sun and from the continuous and ever changing winds, which are all divine things.”<sup>29</sup> Thus, what is considered divine (θεῖα) are the elements of the universe that have an effect on health or disease: the air that man inhales or exhales, the winds whose changes determine changes in the body, the sun and the cold. Thus, cosmological phenomena can cause or favour pathological processes in a man’s body. This is a far cry from the attribution of a disease to a particular divinity. Although of little formal importance, the use of the adjective θεῖος, ‘divine’, instead of the noun θεός, ‘god’, allows the change from a traditional concept of the gods to a rational concept of the divine.<sup>30</sup>

Thus, should we conclude that if everything is divine, nothing is divine, and that the Hippocratic doctor pushes traditional religion to one side with

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the other hand, M. Vegetti ad loc. correctly translates: “Quanto a me, anch’io penso che questo male sia divino.”

<sup>27</sup> On the relationship between *Airs, Waters, Places* and *The Sacred Disease*, cfr. H. Grensemann, *Die hippokratische Schrift “Über die heilige Krankheit”*, Berlin 1968, pp. 7–18.

<sup>28</sup> Hippocr. *Morb. sacr.* 18 = 6.394,12–15 L. = p. 88,12–14 Grens.

<sup>29</sup> *Ibid.* = 6.394,9–12 L. = p. 88,9–11 Grens.

<sup>30</sup> On the relationship between the divine and nature in *The Sacred Disease* (and also in *Airs, waters, places*), cfr. H.-W. Nöremberg, *Das Göttliche und die Natur in der Schrift über die heilige Krankheit*, Bonn 1968.

such affirmations? The issue is more complex, since both treatises, which affirm this rational concept of the divine in identical terms, also discuss traditional religion. In *Airs, Waters, Places* (ch. 22), traditional religion, with its gods who are placated by receiving offers and sacrifices from men and who give them benefits in return, is used as a basis for arguing that the disease that afflicts the Scythians could not be attributed to a god because the impotence tends to afflict the rich, precisely those who have the means to honour the gods with offers and sacrifices. Thus, the traditional belief in the gods, far from being criticised, serves to denounce the falseness of the belief in the divine origin of a particular disease. In *The Sacred Disease*, the position of the doctor regarding traditional religion is even clearer. He defends traditional religion, accusing his adversaries of impiety and atheism: "It seems to me that their discourse is not pious, as they suppose, but rather impious and atheist; what for them is pious and divine, in reality is impious and unholy."<sup>31</sup> In particular, he highlights the impure and impious character of their treatment through purifications and incantations. Here is what he says:

When they use purifications and incantations, they commit the most impure and impious acts, it seems to me, because they purify those who are possessed by a disease with blood and other similar things, as though they were polluted by some crime ... whilst they should do the opposite, sacrifice, pray, and take the patients to the sanctuary to supplicate the gods; but in reality they do nothing of the sort, but they purify; and the objects that are used in the purification are sometimes buried, sometimes thrown into the sea, sometimes carried far into the mountains, where no one will touch them or tread on them, whilst they should take them to the sanctuaries to offer them to the gods, if indeed a god is the cause.<sup>32</sup>

The criticism of ritual practices of purification with blood recalls that of the philosopher Heraclitus, who said: "they try in vain to purify themselves with blood when they are not stained."<sup>33</sup> As in Heraclitus, this criticism of ritual is made with an elevated concept of divinity in mind: "They do not truly understand what the gods are," says Heraclitus in the same passage. The Hippocratic doctor likewise contrasts his own purified concept of divinity with that of his adversaries, but he does so with a eulogy of the divine that is of exceptional depth, profundity and fervour:

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<sup>31</sup> Hippocr., *morb. sacr.* 1 = 6.358,16–19 L. = p. 64,5–8 Grens.

<sup>32</sup> *Ibid.* = 6.362,6–16 L. = p. 66,6–15 Grens.

<sup>33</sup> Heraclit., fr. 5 DK.

I do not believe that a man's body can be polluted by a god, something which is more perishable by something which is purer; by contrast, if the body is polluted or affected by something else, the god can purify it and sanctify it, rather than polluting it. In any case, it belongs to the god to purify, sanctify and purge us from the greatest and most impious offences; we mark out the boundaries of the sanctuaries of the gods and their holy enclosures, so that no one may cross them unless he is pure and, when we enter them we are sprinkled with water, and we do this not because we think we are polluted, but to cancel any previously held impurity.<sup>34</sup>

The Hippocratic author does not draw radical conclusions from this purified conception of divinity, as Heraclitus does: whilst Heraclitus seems to question religious rites in general in the name of reason, both purifications and offerings to statues,<sup>35</sup> the Hippocratic doctor establishes a clear distinction between some cathartic practices and the rites of the religion of the sanctuaries. In the name of a purified conception of divinity, the author criticises some cathartic rites practiced by some individuals, but he justifies the rites of the religion of the sanctuaries, ablutions, sacrifices and offerings. Thus, two seemingly very different conceptions of the divine co-exist in the same doctor, but they do not appear contradictory to him: as a doctor, he believes in one single order of causality for all diseases, whatever they are, an order that is both divine and natural; as a citizen, he participates in the traditional cult of the sanctuaries, even though he questions some ritual practices that do not correspond to the pure idea he has of divinity.

Although *θεῖον* can describe for a Hippocratic doctor both divinity in the context of traditional polytheism and atmospheric phenomena that cause diseases, the meaning of the word *θεῖον* can sometimes be ambiguous. Thus, at the start of *Prognostic*, the Hippocratic author, having indicated that a doctor should know how to recognise, so as not to be biased, diseases whose strength is superior to that of the patient, declares: "He must know to what extent the nature of such afflictions exceeds the power of the body, and at the same time, if there is anything divine about the disease, the doctor should know how to prognosticate this, too."<sup>36</sup> From antiquity to the present day, translators have been divided on the use of *θεῖον* in this passage.<sup>37</sup> Should we understand from this that some diseases escape

<sup>34</sup> Hippocr., *morb. sacr.* 1 = 6.362,16–364, 8 = p. 66,15–22.

<sup>35</sup> On Heraclitus' position on the divine, cfr. D. Babut, *La religion des philosophes grecs*, Paris 1974, p. 28.

<sup>36</sup> Hippocr., *Progn.* 1 = 2.112,3–6 L. = p. 194,3–5 Alexanderson.

<sup>37</sup> For debates on the meaning of *θεῖον* in the *Prognosis*, cfr. W. Nestle, "Hippocratica I. Der Begriff des *θεῖον* und *δαϊμόνιον*," in *Hermes* 73 (1938), pp. 1–8, and A. Thivel, "Le 'divin' dans la

treatment from the doctor because they are caused by the gods? Or should we rather understand that θεῖον refers to the atmospheric factors that cause disease? The diversity of answers is explained in part by the fact that in the rest of the treatise, θεῖον is not used again. As a result, scholars are often led to justify an answer chosen with reference to other Hippocratic works.

In support of the first answer, that there can exist (albeit exceptionally) diseases caused by the gods and, consequently, not curable by medicine,<sup>38</sup> we may quote the similar attitude of the Hippocratic author of *Regimen* regarding dreams. In ch. 87,<sup>39</sup> the doctor distinguishes between ‘divine’ (θεῖα) dreams, sent from the gods to cities or individuals to announce to them a propitious or unpropitious event, pertinent to the art of interpreting dreams, and dreams arising from the soul and announcing the various states of the body, pertinent to medicine. According to the author of *Prognostic*, we could also infer that there is a category of diseases sent by the gods that are not pertinent to medicine.<sup>40</sup> Nevertheless, it is difficult to rely on *Regimen* to explain *Prognostic*, since *Regimen* occupies a relatively exceptional place in the Hippocratic Corpus for its position regarding the sacred. Indeed, this treatise is the only one to recommend a combination of rational treatment and prayers to the gods; it goes so far as to indicate the names of the gods whom one should offer prayers to in cases where it is appropriate. Thus, the author says in ch. 89: “It is necessary to follow a regimen and pray to the gods, in the case of favourable signs to the Sun, Zeus of the Heavens, Zeus, protector of the hearth, Athena, protectress of the hearth, Hermes, Apollo; in the case of unfavourable signs, to the gods that protect against harm, the Earth and the heroes.”<sup>41</sup>

Therefore, in order to explain the meaning of θεῖον in *Prognostic*, another group of translators work with the most representative treatises of the school of Hippocrates, above all the two treatises *The Sacred Disease* and *Airs, Waters, Places*, in which we find a ‘scientific’ conception of θεῖον. On

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Collection hippocratique,” in L. Bourgey—J. Jouanna, *La Collection hippocratique et son rôle dans l’histoire de la médecine* (Colloque hippocratique de Strasbourg, Leiden 1975, pp. 57–76. Cf. also the paper by J. Ducatillon, ‘Le facteur divin dans les maladies d’après le traité hippocratique du Prognostic’, in P. Potter, G. Maloney, J. Desautels (eds.), *La maladie et les maladies dans la Collection hippocratique*, Quebec 1990, 61–73.

<sup>38</sup> For example, this was the position of E. Littré, *Œuvres complètes d’Hippocrate*, II, Paris 1840, pp. 99 f.; cfr. also Thivel, “Le ‘divin’ dans la Collection hippocratique,” cit., p. 60.

<sup>39</sup> Hippocr., *Vict.* 87 = 6.640,15 ff. L. = p. 218,14 ff. Joly.

<sup>40</sup> The distinction between two types of disease, one caused by the gods, the other spontaneous, is also made in a fragment of Euripides (fr. 292 Nauck).

<sup>41</sup> Hippocr., *Vict.* 89 = 6.652,19–22 L. = p. 224,25–28 Joly.

this view, far from referring to divine intervention against which the doctor would find himself helpless, θεῖον in *Prognostic* would mean all the external factors, in particular climatic ones, that influence the disease. Galen, a fervent supporter of such an interpretation, rightly noted that at the end of the treatise (ch. 25), the author of *Prognostic* also urged the reader to take into account the constitution of the season when making a prognosis (ἐνθυμέεσθαι τήν τε τῆς ὥρης κατάστασιν).<sup>42</sup> It is possible that the author of *Prognostic*, in an attempt at ring composition, connected the θεῖον at the start with the constitution of the seasons quoted at the end.<sup>43</sup>

Whatever solution we might adopt to account for the divine in *Prognostic*, two conclusions arise from examining the collection of texts that discuss the sacred and the divine in the Hippocratic Corpus. The first is that, despite a common element of rationalism that unites the treatises, it would be futile to suggest that all the Hippocratic doctors held a unified position on the sacred. The second is that their rationalism, even in those cases where they oppose superstition and magic, is not atheistic. The fifth-century doctors' rationalism is softer and more complex and malleable than the rationalism of the nineteenth and twentieth century translators, who sometimes had a tendency to force the opposition between the rational and the divine, between reason and religion, whether it be in the text's interpretation, constitution or translation. With regard to the interpretation, the case of *Regimen* appeared embarrassing, for this treatise, as well as founding medicine on a rational cosmology whose principal bases are fire and water, at the same time recommends prayers to the gods. Thus, a translator tried to belittle what he thought to be a disagreement by attributing the mention of prayers to a source that the author thought agreeable.<sup>44</sup> Regarding the constitution of the text, the most obvious example is that of the editor of Hippocrates in the Teubner series, H. Kühlewein, who was unable to bear the idea that the author of *Prognostic* allowed for divine interference in the causation of disease, and suppressed in his edition the phrase containing the word θεῖον.<sup>45</sup> Other less visible alterations in the translation are just as revealing. We saw how in ch. 22 of *Airs, Waters, Places*, καὶ ἀντὶ was often left out of the translation in order to contrast the doctor's rationalism with Scythian

<sup>42</sup> Galen, *In Hippocr. Progn.* 1.4 = pp. 205–209 Heeg. This interpretation of θεῖον in *Prognostic* has been taken by modern scholars from Nestle, "Hippocratica I," cit., p. 5.

<sup>43</sup> In any case, it can only refer, in the mind of the author of *Prognostic*, to a secondary element, which is not present in *Airs, waters, places* or *The Sacred Disease*.

<sup>44</sup> Cfr. R. Joly, *Hippocrate. Du Régime* (CUF), Paris 1967, p. 99, note 3.

<sup>45</sup> H. Kühlewein, *Hippocratis opera*, I, Lipsiae 1894, pp. 79f.

superstition.<sup>46</sup> Here is another example: a famous phrase from *Regimen*,<sup>47</sup> καὶ τὸ μὲν εὐχέσθαι ἀγαθόν· δεῖ δὲ καὶ αὐτὸν συλλαμβάνοντα τοὺς θεοὺς ἐπικαλεῖσθαι, appeared agreeable to two minds as different as A.-J. Festugière and Robert Joly, because they translate, along with Littré: “It is undoubtedly a good thing to pray; but, whilst invoking the gods, they must help themselves.”<sup>48</sup> Unfortunately, this translation does not correspond exactly to the Greek; to arrive at the idea of “to help oneself,” it would be necessary to use not αὐτὸν but the dative reflexive ἑωυτῷ. The meaning is more like: “It is undoubtedly a good thing to pray; but, whilst invoking the gods, they must also play their own part.” The difference is not insignificant. What one should do is not help oneself, but help the gods who are being invoked. The doctor recommends collaboration between men and gods, and knows well that man cannot be successful without the gods. He concludes his treatise by saying: “I have discovered a regimen, to the extent that this can be discovered by someone being only a man, with the help of the gods.”<sup>49</sup> Conversely, man should make his own contributions, no matter how small, to facilitate the success of the divine action. The author of *Regimen* certainly occupies an exceptional place in the Hippocratic Corpus for his religious spirit, which is evident in his practice of the art; but for the author of *The Sacred Disease*, too, a ‘scientific’ concept of θεῖον does not exclude a ‘religious’ concept of θεῖον.

In short, the rationalism of Hippocratic doctors can conflict with some seers or charlatans, who practiced their art alongside the doctors; but it is never in conflict with the religion of the great sanctuaries.

In order to understand the Hippocratic doctors’ attitude better, we should compare their works with what we know about Hippocrates of Cos’ relationship with the traditional religion of the great sanctuaries.

Philologists who study the divine in the Hippocratic Corpus neglect this topic for two reasons. The first concerns the Hippocratic question: since it is impossible to identify with any certainty the works written by Hippocrates himself, they prefer to study the medical works without reference to their author. The second concerns the suspicions of philologists regarding information on Hippocrates’ life that is found in the biographical writings of the Hippocratic Corpus or in the different *Lives* of Hippocrates.

<sup>46</sup> Cfr. *supra*, note 27.

<sup>47</sup> Hippocr., *Vict.* 87 = 6.642,8–10 L. = p. 218,21–22 Joly.

<sup>48</sup> A.-J. Festugière, *Hippocrate. L’Ancienne médecine*, Paris 1948, p. VIII speaks of a “remarque savoureuse”; Joly, *Hippocrate. Du Régime* cit., p. 98, note 2 comments “Réflexion savoureuse.”

<sup>49</sup> Hippocr., *Vict.* 93 = 6.662,8–9 L. = p. 230,12 Joly.

It is true that certain paths of research are similar to dead ends, in particular the relationship of Hippocrates the Asclepiad with the sanctuaries of Asclepius. In my opinion, it is certain that Hippocrates was of male descent from an important aristocratic family of Asclepiads, who claimed to descend from Asclepius through his son Podalirius, whose branch became established on the island of Cos, in the classical city of Astypalea in the west of the island, whilst another branch of the family established itself at Cnidus. However, it is very difficult to determine what kind of connections might have existed between the Asclepiad doctors and the priests of the healing sanctuaries of Asclepius. A later tradition saw Hippocrates inspired to write his works by votive tablets in Asclepius' sanctuary. Indeed, Strabo says: "It is said that Hippocrates derived his dietetic prescriptions mostly from the cures recorded on the votive tablets there."<sup>50</sup> We know nothing of votive texts from Hippocrates' time in Cos, but the stelae preserved in the sanctuary of Asclepius at Epidaurus, where miraculous medicine occurred, do not encourage us to make any connection between the rational medicine of the Asclepiads of Cos and the religious medicine of the priests of Asclepius. It is no longer believed that the aphoristic literature of the Hippocratic Corpus, and in particular *Prorrhetic 1*, derived from the religious medicine of the *Asclepieia*. The rational medicine of the Asclepiads did not originate from the temples of Asclepius.

However, we should not interpret this as a sign of impiety or irreligiosity. The Asclepiads' rational medicine and the cult of their prestigious ancestor are not incompatible: in the famous medical *Oath* preserved in the Hippocratic Corpus,<sup>51</sup> Asclepius appears in second place, after Apollo, in the list of divinities invoked as guarantors of the oath. It is reasonable to think that doctors who came from the family of the Asclepiads, tied to Asclepius not only through their art, but also through their blood, would observe, as other members of the family, a cult in honour of their prestigious ancestor. This is all the more likely if we take into account the example of the doctor Nicias of Miletus, a friend of Theocritus who, being connected to Asclepius only through his art and not through blood, venerated Asclepius.<sup>52</sup> It is also reasonable to think that members of the *genos* of the Asclepiads of Cos, descended from Asclepius through Podalirius, worshipped their heroicised ancestor. In any case, evidence for a cult of Podalirius of Cos in the Hellenistic period comes from the existence of an altar with the unpublished

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<sup>50</sup> Strab., 14.2.19.

<sup>51</sup> Hippocr., *Jusjur.* = 4.628,1 L.

<sup>52</sup> *Anthologia Palatina* 6.337 [Theocr.].

inscription Ποδα[λ]ειρίου.<sup>53</sup> We could also ask whether the Asclepiad *genos* possessed, due to their heritage with the god, a respected position in the cult of Asclepius that was present in the city. The eleventh Hippocratic letter, although apocryphal, contains a noteworthy observation on the rite of the celebration of Asclepius in Cos: “It happened that this day was the ceremony of the renewal of the rod, an annual festival, as you know, in which all are united in a sumptuous procession towards the cypress grove, which is by custom led by those who belong to the god.”<sup>54</sup> Now, “those who belong to the god” are the Asclepiads. Thus, this testimonium suggests that the Asclepiads held a traditionally respected position in the annual procession towards the sacred cypress groves that united the entire city at the feast of Asclepius. Although this witness refers to events in the Hellenistic or Roman period, it is possible, given the traditional character of this privilege, that it could date back to an older period.<sup>55</sup>

Hippocrates’ relationship with the sanctuaries of Asclepius remains a grey area. However, the situation is clearer concerning Hippocrates’ relationship, and that of the family of Asclepiads, with the sanctuary at Delphi. Some philologists have shown some interest in the topic, and have spent some time on the problem. They read in a work called *Presbeutikos* (or the *Ambassadorial Oration of Thessalus*, the son of Hippocrates), which already formed part of the Hippocratic Corpus in Nero’s time, that the Asclepiads of Cos had obtained religious privileges for services they had rendered in Delphi at the time of the First Sacred War and that, when Hippocrates travelled to Delphi with his son Thessalus, the Amphictyonic League renewed the religious privileges that they had inherited and displayed them on a stele placed in the sanctuary.<sup>56</sup> However, following Littré, philologists considered that “these texts are not to be trusted, they are apocryphal and the work of fraudsters.”<sup>57</sup> By contrast, archaeologists and epigraphers of Delphi paid more attention to this text than philologists, because they followed the opposite path: they used the inscriptions and testimonia on the statues to

<sup>53</sup> Cfr. G. Pugliese Carratelli, “Il damo Coo dell’Isthmos,” in *Sc. Archeol. Atene* n.s. XXV–XXVI (1963–1964), p. 152.

<sup>54</sup> Hippocr., *Letter 11* = 9.324,24–326,3 L.

<sup>55</sup> On the significance of the rite of *analepsis*, cfr. Susan M. Sherwin-White, *Ancient Cos* (“Hypomnemata,” 51), Göttingen 1978, p. 356. Despite her suspicion towards the biographical writings of the Hippocratic Corpus, Sherwin-White gives credit to the witness of *Letter 11* and thinks that the Asclepiads were able to benefit from a traditional role in the cult of Asclepius already by the time of Hippocrates (pp. 339 ff.).

<sup>56</sup> Hippocr., *Presb.* = 9.414,3–9 L.

<sup>57</sup> Littré, *Œuvres complètes d’Hippocrate* cit., 9.308.

confirm the *Presbeutikos*. They knew, thanks to Pausanias,<sup>58</sup> that the statue of a patient affected by consumption, said by the Delphians to have been offered by Hippocrates, was still there in the year 350 in the enclosure of the sanctuary of Delphi. They knew of an inscription that bore the name of Hippocrates (Inv. n. 2255 of Delphi), published in 1918 by H. Pomtow in his study on Hippocrates and the Asclepiads at Delphi,<sup>59</sup> which despite its fragmentary state can be said to have been dedicated by a doctor, as shown by τὰ νοσοῦν[τα in line 3, “the diseases.” This doctor can only be the great Hippocrates, as suggested by the term [Θεσσ]αλός, that precedes the name of Hippocrates in the inscription, even if there are two possible interpretations. It could mean “Thessalus Hippocrates,” as in Hippocrates’ funerary epigram that we find in the *Anthologia Palatina*, or “Thessalus, son of Hippocrates,” or even “Thessalus and Hippocrates.”<sup>60</sup> If it were Hippocrates and his son, it would be better adapted to the plural [τοῖς]δε μόνοις of the fourth line, which could indicate two dedicants. Thus, in this fragment, we probably have the remains of a dedicatory inscription of Hippocrates and his son Thessalus at the time of their journey to Delphi, discussed in the *Presbeutikos*. In any case, this inscription at least attests to connections between Hippocrates and the sanctuary of Delphi. The religious privileges which, according to the *Presbeutikos*, the members of the family of Hippocrates (i.e. the Asclepiads of Cos) enjoyed at Delphi, are confirmed by an inscription, perhaps contemporary to the final period of the life of Hippocrates, that Jean Bousquet found in the *Via sacra* in 1939. He published it along with an erudite and sensitive commentary in 1956, and it can also be found, alongside a new fragment 8131, identified by the same scholar, in the *Corpus* of sacred inscriptions of Delphi published by G. Rougemont in 1977.<sup>61</sup> Here is the text of this inscription:

Decree of the *koinon* of the Asclepiads of Cos and Cnidus: if the Asclepiad, having arrived at Delphi, wishes to consult the oracle or sacrifice, he must first swear that he is an Asclepiad by male descent (κατὰ ἀνδρογένειαν) ... He who

<sup>58</sup> Pausan., 10.2.6.

<sup>59</sup> H. Pomtow, “Delphische Neufunde III. Hippokrates und die Asklepiaden in Delphi,” in *Klio* XV (1918), p. 308.

<sup>60</sup> The last interpretation is that of R. Herzog, “Die Grabschrift des Thessalos von Kos,” in *Quell. Stud. Gesch. Naturwiss. Mediz.* III 4 (1933), p. 56 (264).

<sup>61</sup> Cfr. J. Bousquet, “Inscriptions de Delphes. 7. Delphes et les Asclépiades,” in *Bull. Corr. Hell.* 30 (1956), pp. 579–591; cfr. also Id., “Asclepios et les Asclépiades à Delphes,” in *Hippocrate et son héritage* (“Coll. Fondation Marcel Mérieux.” Colloque de Lyon 1985), Lyon s.d.; G. Rougemont, *Coprus des Inscriptions de Delphes. I. Lois sacrées et règlements religieux*, Paris 1977, pp. 122–124.

breaks these rules will not have access to the oracle as an Asclepiad and all further privileges awarded to the Asclepiads by the Delphians will be stripped from him, if he does not behave in a way following the previous prescriptions.

Thus, we know from this inscription that the Asclepiads of Cos and Cnidus, having arrived in Delphi, had to swear to be Asclepiads by male descent, in order to benefit from some religious privileges, although the nature of these privileges is debatable. The inscription supports the testimonium of the *Presbeutikos* to the extent that it presents, as Jean Bousquet has already noted, the same very rare expression *κατ' ἀνδρογένειαν*, “through male descent,” to describe the authenticity of belonging to the Asclepiad *genos*.<sup>62</sup> However, it also offers new information compared to the *Presbeutikos*: whilst the *Presbeutikos* speaks only of the privileges accorded to the Asclepiads of Cos at Delphi, the inscription reveals that these privileges also belonged to the Asclepiads of Cnidus and that there existed, at least in the fourth century, a *koinon* of the Asclepiads of Cos and Cnidus.

Here, then, is an epigraphic testimonium, which confirms that the rationalism of the Hippocratic doctors was not incompatible with acknowledgement of the traditional gods and participation in the cult of the great sanctuaries. In fact, the religious privileges from which those doctors could benefit who, like Hippocrates, belonged to the aristocratic family of Asclepiads through male descent, could only reinforce their social prestige and be useful to them in their medical career, since scientific titles did not yet exist.

The oath that the Asclepiads swore at Delphi undeniably evokes the famous *Oath* preserved in the Hippocratic Corpus in which, as we have seen, all the gods were called to witness, but in particular the gods of health: first Apollo the doctor, who was also the great god of Delphi, and then his son Asclepius, and finally the goddesses Hygeia and Panacea. However, we should not confuse these two oaths, despite these comparisons. They clearly do not have the same function. The oath at Delphi is designed to preserve the religious privileges within a great family descended from Asclepius, whether it be the branch at Cos or Cnidus, whilst the medical *Oath* aims to preserve the transmission of medical knowledge within a medical school, from the moment in which it was opened to students from outside the family of Asclepiads. Thus, it was not the same people who took the two oaths. The one sworn at Delphi was reserved for authentic members of the *genos* of the Asclepiads of Cos and Cnidus, i.e. a group of people both

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<sup>62</sup> Hippocr., *Presb.* = 9.416,17 L.

larger and more restricted than that of the medical schools; larger in the sense that not all authentic Asclepiads were doctors, and more restricted in the sense that the doctors belonging to the schools of Cos or Cnidus were not all authentic Asclepiads. On the other hand, the medical *Oath*, which accompanied a kind of contract of adoption, was meant to be sworn by those who, although not belonging to the family of the Asclepiads, wished to become students of the medical school directed by an authentic member of the family of Asclepiads. We can take two concrete examples: Thessalus, the son of Hippocrates, was an Asclepiad through male descent. To benefit from his father's teaching he did not need to take the medical oath; however, in his journey to Delphi, he had to take the Delphic oath to benefit from the religious privileges reserved for his family. On the other hand, Polybus, student and son-in-law of Hippocrates, author of *Nature of Man*, was obliged to take the medical oath in order to be admitted into the school of Cos, since he was not an Asclepiad through male descent. However, he was unable, without being a perjurer, to benefit at Delphi from the religious privileges of the authentic Asclepiads, of whom he was not a part. Thanks to the growth of the number of students associated with the *genos*, some doctors from Cos and Cnidus were able to give themselves the title of Asclepiad and looked to profit from the associated religious privileges. Such abuses probably obligated the *koinon* of the Asclepiads of Cos and Cnidus to establish the preserved decree.<sup>63</sup>

In any case, we should not define the *koinon*, of which we possess no other testimonium, as an association of doctors. Yet it is this very definition that Susan M. Sherwin-White gives it in the most recent monograph on Cos, when she says: "The Coan *iatroi* were members of a *koinon*, or guild."<sup>64</sup> Modern scholarship confuses what the decree of the *koinon* rightly wanted to distinguish: the authentic Asclepiads through male descent, who were not all doctors, and those that were proud owners of the title of Asclepiad, i.e. doctors from the medical schools of Cos and Cnidus, who, although not authentic Asclepiads, proudly held the title, either because they supported authentic Asclepiads in the school, or because they were servants of an art of which Asclepius was a god. The *koinon* was certainly not a

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<sup>63</sup> For a comparison between these two 'oaths', cfr. J. Jouanna, "Le problème des écoles médicales en Grèce classique: réinterprétation de témoignages épigraphiques et littéraires," in *Actes du X<sup>e</sup> Congrès de l'Association Guillaume Budé* (Toulouse 1978), Paris 1980, pp. 312–314.

<sup>64</sup> Sherwin-White, *Ancient Cos* cit., p. 257.

professional association that united doctors of various origins; it was probably a noble organisation concerned with preserving the religious privileges of the family.

Thus, by placing Hippocrates in his time, we can undoubtedly better understand the position of Hippocratic doctors concerning the sacred, even though not all of the works of the Hippocratic Corpus could be by Hippocrates, and the doctors whose writings are collected in this Corpus do not necessarily share the same position. Although openly attacking the seers and charlatans, alongside whom they practiced an unregulated art, these doctors never oppose the traditional religion of the great sanctuaries. Their rationalism was not atheistic, and they could reconcile concepts of the divine, such that one founded medical science and the other a purified religion. The development of rational medicine in the fifth century was in part probably the work of members of an aristocratic family that claimed to descend from the god Asclepius, through his son Podalirius. Thus, it is not at all paradoxical that its most brilliant representative, Hippocrates, was heroised after his death and then deified in his native island at the end of the Hellenistic period. Hippocrates did nothing more than become part of the brilliant progeny of his ancestors.

PART TWO

ASPECTS OF HIPPOCRATIC MEDICINE AND THEIR  
RELATIONSHIP TO GREEK PHILOSOPHICAL THOUGHT



## CHAPTER SEVEN

### AIR, MIASMA AND CONTAGION IN THE TIME OF HIPPOCRATES AND THE SURVIVAL OF MIASMAS IN POST-HIPPOCRATIC MEDICINE (RUFUS OF EPHEBUS, GALEN AND PALLADIUS)

The Greek word *miasma*, which still survives in English, was described by Émile Littré, the editor of Hippocrates who is best known for his *Dictionnaire de la langue française* as a 'medical term'. He gives it the following meaning: "Fumes that originate from organic substances and which, spreading through the air and attaching themselves to certain bodies, exercise a pernicious influence on animals. In particular, unpleasant smells that originate from certain contagious diseases. Variolous and pestilential miasmas."

However, the Greek word *miasma* was not originally a medical term. Derived from the verb *miaino*, which means 'to stain' (for example with purple, and hence, by analogy, with blood), the noun *miasma* is first found in connection with the stain of blood spilt in a crime.<sup>1</sup> This is the meaning of its oldest uses, which appear in Greek tragedy.<sup>2</sup> Thus, *miasma* belonged firstly to a religious and legal, rather than medical, context. However, from the fifth century we begin to find the term *miasma* connected with disease in both tragic literature and in the first medical texts found in the Hippocratic Corpus, although its use is relatively rare.

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<sup>1</sup> On the notion of *miasma* in ancient Greece, see E.R. Dodds, *The Greeks and the Irrational*, (Sather Classical Lectures 25) (Berkeley, 1951), Index; L. Moulinier, *Le pur et l'impur dans la pensée des Grecs d'Homère à Aristote*, (Études et commentaires 12) (Paris, 1952), Index; J. Rudhardt, *Notions fondamentales de la pensée religieuse et actes constitutifs du culte dans la Grèce classique: étude préliminaire pour aider à la compréhension de la piété athénienne au IV<sup>e</sup> siècle* (Geneva, 1958), pp. 46–48; R. Parker, *Miasma, Pollution and Purification in Early Greek Religion* (Oxford, 1983), p. 12 f.

<sup>2</sup> Aeschylus, *Seven against Thebes*, 682; *Suppliants*, 265, 473, 319; *Agamemnon*, 1420, 1645; *Choephoroi*, 1017, 1028; *Eumenides*, 169. Sophocles, *Antigone*, 172, 776, 1042; *Oedipus Rex*, 97, 241, 313, 1012. Euripides, *Alcestis*, 22; *Medea*, 1268 f.; *Heracleidae*, 558; *Hippolytus*, 35, 317, 946; *Hercules Furens*, 1233, 1324; *Iphigenia in Tauris*, 946, 1047, 1178, 1226; *Phoenician Women*, 816; *Orestes*, 517, 598; cf. also Parker, *Miasma*, pp. 308–321.

My aim in this paper is firstly to draw on those passages from the classical period where the Greek noun *miasma* (and sometimes the verb *miaino*, from which the noun is derived) appears in connection with disease, in order to study the role played by *miasma* and its relationship with contagion and air.<sup>3</sup> We will see that there are two distinct models of use of *miasma* in connection with disease: one in religious medicine, where *miasma* is naturally connected with the notion of contagion, and the other in rational medicine, where *miasma* is connected with the air. My aim will then be to examine the survival, in rational medicine after Hippocrates, of the term *miasma*, rather than miasmatic theory as a whole.

*Miasma's* connection with disease, whether an individual or general disease, is quite easily explained within the context of religious medicine. We will use two examples here: first, epilepsy, an individual disease; then *loimos*, a general disease.

Since an epileptic fit is very sudden and striking, the condition was naturally attributed to the patient's violent possession by a god. From this perspective, the treatment recommended was of a magico-religious nature, comprising spells and purifications, as well as dietary prohibitions. The Hippocratic treatise *The Sacred Disease* is the most useful witness we possess on the treatment of epilepsy by magico-religious medicine, although it is presented in a polemical context, for the Hippocratic doctor contrasts the magico-religious conception with a rational one. Whilst criticising treatment by purifications, the Hippocratic medical writer denounces the connection that his adversaries, supporters of religious medicine, establish between the condition and *miasma* (ch. 1):

They make use of purifications (καθαρμοῖσι) and incantations and, it seems to me, carry out a very sacrilegious and impious action. Indeed, they purify those gripped by the disease with blood and other similar things like those used in the case of those people who bear a stain (μιασμα), or cursed criminals, or those who have been enchanted or have committed a sacrilegious act; they should do the opposite, sacrifice and pray, take the patients to the temples to supplicate the gods. In fact, they do none of these things, but perform purifications; and sometimes they conceal the purificatory objects in the earth, sometimes they throw them into the sea, sometimes they carry them

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<sup>3</sup> The corresponding Latin term to *miasma* is *infectio*. Extremely useful is M. Grmek, "Les vicissitudes des notions d'infection, de contagion et de germe dans la médecine antique," in G. Sabbah (ed.), *Textes médicaux latins antiques*, (Centre Jean Palerne, Mémoires 5) (Saint-Étienne, 1984), pp. 53–69.

away into the mountains where no one can touch or tread upon them. But these objects they should take to the sanctuaries and deposit them in offering to the god, if a god be the cause of the disease. However, I do not think that the body of man can be stained (μιαίνεσθαι) by a god, the most perishable thing there is by the most holy; for even if it happened that a human body, under the effect of some other thing, acquired a stain (μεμιασμένον) or were damaged, I think that it would be purified and sanctified rather than stained (μιαίνεσθαι) by a god. For it is the divinity which purifies and sanctifies the greatest and most impious offences, and which is the substance that cleanses us. We mark out the boundaries of the temples and the sacred spaces in the gods' interest, so that no one may pass them unless he is pure, and when we enter them we are sprinkled with holy water, not in the idea that we bear a stain (μιαινόμενοι), but with the intention of dismissing through this sanctification all impurity we previously had. This is my opinion on purifications (καθαρμῶν).<sup>4</sup>

We are not concerned here with the polemical skill with which the author attacks his adversaries on their own ground, religion, nor his own remarkably refined conception of divinity.<sup>5</sup> What interests us here is the relationship between the condition and *miasma* that is implied by the magico-religious treatment. The use of purifications implies that the condition is considered as a *miasma*. Indeed, the purification used to treat an epileptic is the same as that used to try and remove *miasma*. Should we understand *miasma* here as a stain in general, or more particularly the stain of spilt blood? We cannot be sure, but the act of purification by blood seems to correspond to a cathartic logic which removes like by like. Followers of magico-religious medicine use sacrificial spilt blood to purify a condition whose stain is comparable to spilt blood. Thus, whatever the exact meaning of *miasma* (in a wider or narrower sense), the first important conclusion to take from the text is the idea that, from the perspective of popular religious medicine, there is a similarity between disease and *miasma*. The second important conclusion is that it concerns a contagious disease, in so far as all *miasma*, from a religious perspective, is considered contagious. This is implied here not by the actual performance of purification, but rather by

<sup>4</sup> Hippocrates, *The Sacred Disease*, ch. 1, ed. Grensemann, p. 66,6–23 (= 6.362,6–364,8 L.).

<sup>5</sup> We may compare the idea, suggested by the medical writer, that man cannot be stained by a divinity, with the complementary idea, suggested in Greek tragedy, that a divinity cannot be stained by man. Creon, in Sophocles' *Antigone* (1043 f.), says: "I know that no man can stain (μιαίνειν) the gods." However, the argument is then undermined by Sophocles, since it is spoken by Creon when he loses his temper (clearly in the wrong) against the seer Teiresias who, drawing on the traditional concept of contagion of staining, had accused him of having stained the altars of the gods by banning the burial of Polynices and of being responsible for the city's disease (1015 νοσεῖ πόλις). \* [See also ch. 6 in this volume].

the means by which purification is brought about. Indeed, the instruments that served for the patient's purification, and that were supposed to have been taken by them to transfer the *miasma*, are then removed as far away as possible from the community of the living, to avoid any contact with them. Thus, this implicitly means that the condition, before purification, is as transmittable by contact as *miasma*.

There is another type of disease that popular religious medicine connects with *miasma*: the general disease that descends on a city, which in Greek is called *loimos*. This is generally translated as 'plague', but should be translated, at least for the classical period, as 'pestilence', since the plague caused by *Yersinia pestis* does not seem to be known in this period. It is tragedy, not rational medicine, which informs us about the link between pestilence and *miasma*. The most important witness is Sophocles' *Oedipus Rex*. At the start of the tragedy, we learn that the city of Thebes is suffering from a general disease that affects not only humans, but also plants and flocks. The disease is called *loimos* (lines 27–30):

A fever-bearing goddess, the most odious Pestilence (*loimos*), descends upon the city; due to her, the house of Cadmus is empty, whilst black Hades is filled with groans and tears.

The Delphic oracle, officially consulted by the city on how to bring an end to the pestilence, gives the order to dispel the *miasma* from the country (97). The *miasma* is undoubtedly spilt blood, since it is the blood spilt from the murder of the old king of the city that produced the city's torment (101). Thus, the pestilence is related to *miasma*, just like epilepsy in the preceding case, and it is not surprising that the treatment should be comparable: the *loimos*, like epilepsy, should disappear following purification. In fact, having heard the oracle's demand that the *miasma* be dispelled, Oedipus asks: "through what purification?" (99 Ποίῳ καθαρμοῦ;). Nevertheless, the relationship between *miasma* and *loimos* is slightly different because *miasma* and the disease are not one and the same, but rather *miasma* is its cause.

We find this conception of pestilence caused by *miasma* not only in religious medicine, but also in the rational medicine of the *Hippocratic Corpus*. For example, in ch. 6 of the Hippocratic treatise *Breaths*, we read that general fever, which is called *loimos*, is caused by *miasmata*.<sup>6</sup> Thus, we observe the same connection between the Greek terms *loimos* and *miasma* as in Sophocles' *Oedipus Rex*, and the nature of this relationship is identical. In both cases, the *loimos* is caused by *miasma*. However, there

<sup>6</sup> Hippocrates, *Breaths*, ch. 6, p. 109,6f., ed. Jouanna (λοιμός) and 110,7 (μιάσμασιν).

is a formal difference: the use of the noun in the plural by the medical writer (*miasmata*) and in the singular (*miasma*) in the religious context. This formal difference is due to a semantic difference, since the term no longer has anything to do with the stain of spilt blood, but rather refers to morbidic miasmas carried in the air. Here are the two passages of the treatise where we find the plural *miasmata*:

- ch. 5: The author of *Breaths* supposes that all diseases are caused by the air. He states:

Immediately after this, we can say that the source of diseases is, in all probability, nothing other than this principle (i.e. air) when there is too much or too little of it, or it has become too massive, or when it is *stained by morbidic miasmas* (μεμιασμένον νοσηροῖσι μιάσμασιν) that enter into the body.<sup>7</sup>

- ch. 6: “Thus, when the air is full of miasmas (χρωσθῆ μιάσμασιν), whose properties are hostile to human nature, this is when men are ill; but when the air is not suitable for another type of living beings, these beings are then ill.”<sup>8</sup>

What should we understand by these ‘miasmas’ that stain or fill the air? Commentators have supposed that they are either unpleasant smells descending from the stars, rising odours (from the earth or marshes), or fumes coming from decomposing cadavers.<sup>9</sup> Thus, *miasma* in the Hippocratic text is a physical and natural cause, whereas in tragedy, *miasma* is a stain resulting from breaking a moral or religious prohibition. In the Hippocratic text, *miasma* has shed all notion of individual or collective responsibility and the cause of a disease is no longer individual behaviour and its relationship with religious and moral values, but rather human nature and its relationship with the surrounding environment. Pestilence in the Hippocratic text, caused by a pathogenic element carried in the air, selectively affects humans or different species of animals according to the laws of compatibility or incompatibility between the pathogenic element and the nature of each species, whilst pestilence in tragedy, which is inherited from the epic tradition (Homer, Hesiod), is a punishment that is inflicted indiscriminately on all types of life in the community to which the guilty person belongs.

<sup>7</sup> Hippocrates, *Breaths*, ch. 5, p. 108,9–13, ed. Jouanna.

<sup>8</sup> Hippocrates, *Breaths*, ch. 5, p. 110,6–9, ed. Jouanna.

<sup>9</sup> See Ps.-Galen, *On the Cause of Affections* (ed. Helmreich 18f.). See also Galen, *On Differences between Fevers* 1, ch. 6, 7.289,4–290,11 K. and Palladius, *Commentary on Hippocrates' Epidemics* 6 (Dietz II 2,18–23); these two texts are quoted in the second part of this article; see also Galen, *Commentary on Hippocrates' Nature of Man* (ed. Mewaldt CMG V 9, 1, p. 63,18–20), where he discusses fumes originating from marshes, ponds, seas or swampy land.

The different understanding of *miasma* as a cause of *loimos* also leads to a different understanding of treatment. Hippocratic medicine no longer looks to purifications, but rather natural methods. The treatment is described not in *Breaths*, but in another Hippocratic treatise, *Nature of Man*. Like the author of *Breaths*, the author of *Nature of Man* attributes general diseases (which he calls *epidemic* diseases, not *loimos*) to the same cause, but uses the term *apokrisis*, not *miasma*, to refer to the emanations contained in the air. Here is the treatment he recommends:

(In the case of an 'epidemic' disease) this is the advice that should be given to people: do not change regimen, since this is not the cause of the disease, but rather see to it that the body is extremely thinned and weakened, by removing food and drink from the habitual regimen little by little ... By contrast, as far as the air is concerned, here are the precautions to take: breathe in as little air as possible and as little contaminated air as possible; for this, remove the patient from the areas contaminated with the disease, then follow a weight loss cure, since this is the best way of avoiding the need to breathe frequently.<sup>10</sup>

This treatment is perfectly logical: it aims to reduce, as far as possible, the patient's inhalation of miasmas contained in the air by reducing the amount of air inhaled and by removing the patient from places filled with miasmas. We might mock this treatment, which is more preventative than curative. However, it is clear that the doctor seeks to avoid the spread of the pestilence by strictly natural and rational procedures.

This conception of *miasma* also leads to a difference in the conception of the way in which diseases are transmitted. Since the miasmas enter man through respiration, the spread of a general disease does not occur through contact (either direct or indirect) between individuals, but rather through inhaled air that contains miasmas. Paradoxically, the medical, rational conception of *miasma* is further distanced from the modern understanding of infection than the magico-religious conception of *miasma* that is transmitted through contact.

We may add a final difference in the understanding of *miasma* between rational and magico-religious medicine. Whilst magico-religious medicine connected both individual and general diseases with *miasma*, rational medicine distinguishes between individual and general diseases. The cause of these two categories of disease is well differentiated: general diseases originate from miasmas contained in the air, and individual diseases originate from regimen. This distinction is made in two treatises, *Breaths* and *Nature*

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<sup>10</sup> Hippocrates, *Nature of Man*, ch. 9, pp. 190,15–192,7, ed. Jouanna.

*of Man*, which discuss pathogenic emanations carried in the air. Here is the passage from the treatise *Nature of Man*, where the contrast between the two categories of disease and the two types of causes is asserted with the greatest clarity:

Diseases come either from regimen or from the air that we breathe in to live. The diagnosis for each of these two categories is done like this: when a single disease affects a great number of individuals at the same time, we must attribute this to the most common cause, to that which we all use the most; and this is what we breathe. Indeed, it is clear that individual regimen cannot be the cause of the disease, since it attacks everyone, young and old, women and men and, without distinction, those who drink wine and those who drink water, those who eat barley bread and those who eat wheat bread, those who do a lot of exercise and those who do little. Thus, regimen cannot be the cause when, despite the great diversity in regimen, individuals are affected by the same disease. However, when there are different diseases that are produced at the same time, it is clear that the cause is, in each case, the individual's regimen; in treatment, we must combat the cause of the disease, as I have explained elsewhere, and continue with changes in the regimen ... but when it concerns a single disease established in the form of an epidemic, it is clear that the cause is not regimen; it is the air that we breathe which is the cause; and it is clear that the air is harmful because it contains a pathogenic emanation (νοσερῆν τὴν ἀπόκρισιν) (there follows the treatment quoted above).<sup>11</sup>

We find the same distinction in *Breaths* between individual fevers caused by an unhealthy regimen, and general fevers caused by miasmas contained in the air. However, since the author supposes that all diseases come from the air, he integrates the traditional distinction into his own theory by also attributing to the air individual diseases that are caused by an unhealthy regimen. However, it is not air stained by miasmas that is the cause, but rather air inhaled at the same time as eating.<sup>12</sup> Despite these different explanations of individual diseases, it is clear that in both treatises miasmas or emanations carried in the air are the causes of general diseases, which affect the entire community of a city, and not of individual diseases.

Thus, in classical Greece we find two contemporary, yet different, conceptions of *miasma* within two very different understandings of disease. The first, which we find above all in Greek tragedy or in the critical refutations by rationalist doctors, is a magico-religious medicine, which associates disease with a stain of spilt blood or sees the stain of spilt blood as

<sup>11</sup> Hippocrates, *Nature of Man*, ch. 9, pp. 188,10–190,15, ed. Jouanna.

<sup>12</sup> Hippocrates, *Breaths*, ch. 7, pp. 110,10–112,10, ed. Jouanna.

the cause of disease. This means that the disease is transmittable like the stain, and the treatment necessarily comprises purificatory procedures. We find the second in the rational medicine of the Hippocratic Corpus, particularly in the treatise *Breaths*. Here, miasmas are also seen as a cause of disease, but they have no connection with spilt blood, and are instead connected with the surrounding air and environment; they are fumes originating mainly from marshes or cadavers that are carried in the air and that enter men's bodies through respiration and cause general diseases or pestilences.

Despite these differences in the meaning of *miasma* and its place within both approaches to disease, its use nevertheless presents continuity between magico-religious and rational medicine. We should add that this continuity is also marked by the use of the opposing term to *miasma*, *katharmos*. *The Sacred Disease* used the term to refer to the process of purification in magico-religious medicine. However, we also find it in the rational medicine of the Hippocratic Corpus to refer to purgation.<sup>13</sup> Here, then, is a second example of continuity and change between religious and medical vocabulary.

These are the two principal understandings of the relationship between disease, miasma, air and contagion in classical medicine. However, in the rational medicine of the Hippocratic Corpus we find a further, third model, which explains general diseases by environmental factors and where miasmas play no role. The treatise *Airs, Waters, Places* distinguishes between individual diseases that are caused by an unhealthy regimen, and general diseases. However, general diseases are divided into two types: local diseases, which are explained by the orientation of the city to the winds and the sun and by the nature of the various kinds of water (which would later be called endemic diseases), and more general diseases, which correspond to epidemic diseases. The author expressly says that these more general diseases are caused by a change in seasons (what we would call climate), i.e. by variations in the elemental quality of the air (hot, cold, dry, wet).<sup>14</sup> Thus, air affects man not due to miasmas, but rather directly through the influence of its elemental qualities. At no time does the author of *Airs, Waters, Places*

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<sup>13</sup> On the religious meaning of καθαρισμός, see Hippocrates, *The Sacred Disease*, ch. 1, 6.352,9 L.; 354,3 and 7 L.; 362, 6 and 13 L.; 364,8 L.; ch. 18, 396,8 L. On the medical meaning of καθαρισμός, see Hippocrates, *Nature of Women*, ch. 18, 7.338, 17 L. and *Diseases of Women 2*, ch. 128, 8.276, 5 L.

<sup>14</sup> Hippocrates, *Airs, Waters, Places*, ch. 3, p. 192,7, ed. Jouanna ("if any general disease descends (on the city) following a change of season").

allude to miasmas or to pathogenic emanations originating from marshes. Although marshes are harmful to one's health, it is to the extent that one drinks their water.<sup>15</sup>

What became of the use of the word *miasma* in post-Hippocratic Greek medicine? Surprisingly, references to pathogenic emanations contained in the air by the term *miasma* in post-Hippocratic Greek medicine are rare. We can contrast the fortune of the word 'miasme', which became relatively frequent in French medical vocabulary ever since it was borrowed from the Greek in the sixteenth century, with the rarity of the term in post-Hippocratic Greek medicine in the sense of 'miasma' contained in the air. For example, we do not find the term in the Aristotelian corpus. Even the historian Diodorus, who uses the miasmatic theory to explain the 'plague' of Athens, does not use the word *miasma* to refer to the fumes rising from heated and putrefied stagnant waters, which pollute the air. He speaks of thick and foul-smelling 'vapours' (ἀτμίδης) which, once 'exhaled' (ἀναθυμωμένως), pollute (διαφθείρειν) the surrounding air.<sup>16</sup>

In the medical literature between Hippocrates and Galen, we find the word *miasma* (in its technical sense) in a single passage, a discussion of various kinds of water by Rufus of Ephesus preserved in Oribasius. It is concerned with 'miasmas' from the earth that are washed away by rain water.<sup>17</sup> The use of terms related to *miasma* to refer to causes of pestilence is no more frequent. In this regard, there is a significant gloss by Erotian on a passage from *Breaths*, the first text to formulate the miasmatic theory of pestilences. It shows the need to explain the participle *memiasmenon*, 'stained', describing the air, by 'having become pestilential'.<sup>18</sup> It is proof that,

<sup>15</sup> Hippocrates, *Airs, Waters, Places*, ch. 7, pp. 199,10–201,15, ed. Jouanna. According to the author of *Airs, Waters, Places*, stagnant waters are harmful in all uses.

<sup>16</sup> Diodorus of Sicily 12.58.3. Similarly, when he describes the pestilence that decimated the Carthaginians during their siege of Syracuse (396–395), Diodorus understands the prompting causes of the disease to be the bad smell originating from the dead bodies and the putrefaction originating from the marshes (τὴν ἀπὸ τῶν ἐλῶν σηπεδῶνα); but the word *miasma* is not used. Indeed, Diodorus never uses the word *miasma*.

<sup>17</sup> Rufus of Ephesus, quoted by Oribasius (*Coll. Med.* 5.3.9, p. 118,2 Raeder): μιάσματα Matthaei; μρμίσματα codd. Aretaeus of Cappadocia (first century AD) uses the word *miasma* once, but in the sense of 'stain of spilt blood', in his discussion of the treatment of epilepsy (7.7–8, Hude<sup>2</sup> p. 154,3–6): "I have seen people place a vial on a man's recently cut wound, and drink his blood. They exclaim, Oh power of the present need, treat one wrong by another wrong, this stain (μιάσματι)! Whether people were cured by this, no one can tell me exactly."

<sup>18</sup> Erotian (ed. Nachmanson M 8, p. 60, l. 1) s.v. μεμιασμένον λοιμῶδες γεγονός. = *Breaths*, ch. 5 (quoted above).

in the age of Nero, the technical use of terms related to *miasma* had become so rare that they needed an explanation. However, an important text by Galen, where the word *miasma* is used, is the most precise continuance we find of the connection between *miasma* and disease present in the Hippocratic Corpus. It is a passage from the treatise *On Differences between Fevers*, book 1, ch. 6, and it is, moreover, the only passage where Galen uses the noun *miasma*.<sup>19</sup> It is not surprising to note that in Galen, as in the Hippocratic treatise *Breaths*, this word refers to the ‘miasmas’ carried by the air in a pestilential fever. Here is a translation of the whole passage:

The constitutions of the air that surrounds us, when they are quite warm, like those that occur especially during the rising of the Dog Star, directly warm the heart itself through inhalation; moreover, since they surround the body, they make all of it warm, in particular the arteries, since these attract something from the substance of the air that surrounds us; through all these things the heart is necessarily affected, becoming excessively hot and first and foremost reaching a feverish state, which it transmits to the whole body.

In *pestilential* constitutions (λοιμώδεις), the inhalation (of air) is the most important cause. For, if the fever is sometimes caused by the humours in the body that are susceptible to causing putrefaction, when the living being receives a slight impetus from the ambient air for the beginning of the fever, most often it is following inhalation that the fever starts, inhalation of the surrounding air which is *polluted* (μιασθέντος) by putrefied odours (ὑπό σηπεδονώδους ἀναθυμιάσεως). The origin of putrefaction is either a mass of cadavers that have not been cremated, as normally happens during combat, or fumes from swamps or lakes during the summer.

There are times when the starting point of a fever is an excessive heat of the surrounding air, as was the case during the pestilence that struck the Athenians, as Thucydides says: “Since they lived in stifling huts during summer, destruction descended onto the bodies.” Due to the presence, following an unhealthy regimen, of humours in the body susceptible to causing putrefaction, the start of the pestilential fever occurred. It could also be, immediately after, a flux of putrefying *miasmas* (μιάσματα) coming from Ethiopia, miasmas known to cause fever in those whose body is susceptible to being damaged by them.

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<sup>19</sup> Thus, it is not totally correct to say that in Galen “the terminology has lost all ambiguity” and that the “miasmas were replaced by exhalations” (A. Debru, *Le corps respirant. La pensée physiologique chez Galien*, (Studies in Ancient Medicine 13) (Leiden, 1996), p. 234). Although the word ‘miasmas’ is as rare in Galen as it is in the *Hippocratic Corpus* to mean pathogenic emanations contained in the air (one passage in both corpora), it nevertheless exists. \* [See also my “Miasme, maladie et semence de la maladie: Galien lecteur d’Hippocrate,” in D. Manetti, *Studi su Galeno. Scienza, filosofia, retorica e filologia: Atti del seminario, Firenze 13 novembre 1998*, (Studi e testi 17) (Florence, 2000), pp. 59–92].

Indeed, we must remember throughout our discussion that none of the causes can act without the susceptibility of the patient; if not, those who spent their time in the summer sun would all have fever, as well as those who are particularly active, who drink a lot of wine or who have outbursts of anger or who are distressed. If not, I think, everyone would be ill and die of pestilence at the rising of the Dog Star. However, as we said, what constitutes a great part of the origin of diseases is the susceptibility of the body that suffers. Thus, let us assume by way of example that in the air that surrounds us, pestilential *seeds* (σπέρματα) are introduced and that amongst the bodies that are in contact with it, some are full of all types of residues ready to putrefy, and the others are without residues and pure. Moreover, let us assume that the former have obstructed passages, the state called plethora, an inactive life with an excess of nourishment, intoxication, excessive lovemaking and indigestions necessarily resulting from all the ways of life mentioned. On the other hand, for all the other bodies, which are pure and without residues, let us assume that they have both good respiration through the unobstructed and unrestricted passages, as well as proportioned exercises and a sensible regimen. Following these suppositions, you need to reflect on how each of these two categories will probably cope with this inhaled putrid air. Is it not likely that some will receive the start of the putrefaction from the first breath and will deteriorate quickly, whilst of all those who are without residues and pure, some will not suffer at all and some will suffer a little, since a return to a normal state is very easy for them? Likewise, when the mixture of the air differs excessively from its natural state towards wetness or heat, diseases are necessarily pestilential and those who suffer above all from these diseases are those who are filled beforehand with superfluous wetness, while those who practise moderate exercise and follow a well-ordered life style, will remain completely unaffected by any of these conditions. This discussion was based on a single example, but it proves true for all types of causes. Whoever wishes to acquire complete training in this matter, let him read the treatise *On Antecedent Causes*.<sup>20</sup>

This passage is important because it presents the different possible causes of pestilential fever according to Galen, taking as his example the famous 'plague' of Athens reported by Thucydides. Whilst Thucydides refused to hypothesise on the cause (2.48, 3), Galen presents three explanations for the Athenian 'plague', which correspond to the theoretical distinctions made in the first part of the passage.

In the theoretical part, Galen distinguishes between two fevers which have a general cause: those that originate from excessively hot air (first

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<sup>20</sup> Galen, *On Differences between Fevers* 1, ch. 6, 7.289,4–291,11 K., The treatise *On Antecedent Causes* is only preserved in Latin; see the edition by K. Bardong, CMG, Suppl. II, (Leipzig/Berlin, 1937), and by R.J. Hankinson (Cambridge, 1998).

paragraph) and those that are produced by the ‘pestilential constitution’ of the air. In the second paragraph we find stains and miasmas. When the constitution of the air is ‘pestilential’, the most frequent cause of pestilence is the inhalation of air which is stained by unpleasant fumes, i.e. miasmas as they were understood by the Hippocratic author of *Breaths*. However, Galen is more explicit than the Hippocratic author on what is understood by these miasmas, since he gives examples: emanations coming from cadavers that are not cremated, or given off from stagnant waters in summer. We find another new term in Galen to refer to these emanations: not ἀπόκρισις as in *Nature of Man*, but ἀναθυμίασις, which is an Aristotelian term.<sup>21</sup> Moreover, to this most frequent external cause we can add an internal one: the presence of humours susceptible to causing putrefaction, on the condition that there is a prompting factor (ἀφορμὴν τινα) originating from the heat of the surrounding air. Thus, the air, in the case of a pestilential constitution, can be not only the initial cause of pestilential fevers via the intermediary of miasmas, which are factors of putrefaction, but also a prompting cause, in certain cases, through the excess of elemental qualities (heat and wetness).

In the section on the Athenian ‘plague’, Galen very skilfully uses information from Thucydides’ description to uncover these three possible causes. First, the prompting factor is a stifling heat caused by the surrounding air; then, the internal cause is the presence of humours susceptible to causing putrefaction, which are caused by an unhealthy regimen. Finally, the presence of miasmas originating from Ethiopia was a cause itself for those whose body was susceptible to be attacked by these miasmas. We may recall that Thucydides reports the rumour that the disease came from Ethiopia (2.48, 1 ἐξ Αἰθιοπίας), although he never mentioned miasmas. Thus, Galen reinterprets Thucydides’ text in the light of the Hippocratic theory of miasmas formulated in *Breaths*. Moreover, he adopts the idea that miasmas act in a selective way. However, whilst in the Hippocratic treatise this selective action differed from one species of animal to another, in Galen it differs also from one category of individuals to another. Miasmas have a dangerous effect on bodies whose state is predisposed to them. According to Galen, the body’s predisposition plays a very large role in the origin of diseases. He discusses this idea, which he regards as fundamental, using the example of miasmas in the air, which he also calls ‘seeds of pestilence’ (λοιμοῦ

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<sup>21</sup> It is only from the Aristotelian corpus onwards that we find the term ἀναθυμίασις, which is particularly frequent.

σπέρματα).<sup>22</sup> He thus contrasts those bodies which are full of residues and which have obstructed passages, with those without residues and clear passages, and he connects this state of the body with regimen, too abundant in

<sup>22</sup> Galen, *On Differences between Fevers* 1, ch. 6, 7.291,3f. K. The metaphor of the 'seed' of disease applied to miasmas is a novelty of Galen and is not found in Hippocrates. For a detailed commentary on this passage, and on two other passages from Galen where 'seeds' of disease are mentioned, see K. Sudhoff, "Vom 'Pestsamen' des Galenos," *Mitteilungen zur Geschichte der Medizin und der Naturwissenschaften* 14 (1915), 227–229; V. Nutton, "The seeds of disease: An explanation of contagion and infection from the Greeks to the Renaissance," *Medical History* 27 (1983), 1–34 (taken from *From Democedes to Harvey: Studies in the History of Medicine*, (Variorum Reprints CS277) (London, 1988), XI, p. 5f.). However, V. Nutton does not mention, in connection with the passage from *On Differences between Fevers*, the relationship between miasmas (τινα σηπεδονώδη μιάσματα 7.290,10 K.; cf. also σηπεδονώδους ἀναθυμιάσεως μιανθέντος 7.289,18 K.) and seeds (τινα λοιμοῦ σπέρματα 7.291,3f. K.), because he begins his commentary on the passage after the expression of 'the seeds' appears (i.e. from 7.291,2f. K.). In *On Differences between Fevers*, the 'seeds of plague' refer to elements outside the body that spread through the air (note the clear distinction between seeds and bodies in κατὰ μὲν τὸ περιέχον ἐμφέπεσθαι τινα λοιμοῦ σπέρματα and δ' ὀμιλούντων σωμάτων τὰ μὲν ... τὰ δέ ...). This appears to be a metaphorical expression meaning the same thing as 'miasmas' or 'emanations that stain the air', since there was discussion at the start of the passage about the causes of pestilence. Matters contained in the air are the cause of putrefaction (σηπεδονώδη). They enter the body through being inhaled but do not cause putrefaction unless the 'land' is favourable. There does not seem to be a fundamental difference between these 'seeds' (σπέρματα) of pestilence in Galen's treatise and the seeds (*semina*) of disease in Lucretius which exist outside man, originating from the sky or the hot and parched earth, and which are carried in the air (*De rerum natura* 6, 1095–1101) and inhaled by man (Lucretius 6, 1129f.). In Galen, the 'seeds' of pestilence are "the origin of putrefaction" (ἀρχὴν τοῦ σήπεσθαι 7.291, 17f. K.) that man takes in or inhales through breathing. Of course, these pathogenic 'germs' do not refer to the same notion as modern infectious germs. This precise meaning of 'seeds', synonymous with miasmas in the case of pestilence, does not mean that the term refers to the same thing in the two other passages (*On Antecedent Causes* 108, ed. Bardong CMG Suppl. II, (Leipzig/Berlin 1937), p. 26; *Commentary on Hippocrates' Epidemics* 3.7 (Kühn 17 A 239 = CMG V, 10, 1, p. 119)). What they share in common is the metaphorical use: the 'germ' is the cause of a disease, just like a seed is the root of a plant. Nevertheless, in the *Commentary on Hippocrates' Epidemics* 1, *sperma* does not refer to an external pathogenic germ, the origin of the disease, as in *On Differences between Fevers*, but an internal residue of a disease in the process of coming to an end that can, like a seed, lead to the fever flaring up again in the case of a bad regimen. On the other hand, in the treatise *On Antecedent Causes*, to which Galen refers in the passage cited from *On Differences between Fevers*, the Latin term *semen* seems to mean, as *sperma* in the last treatise, an external pathological agent which settles or does not settle in man, according to whether or not the land is 'favourable' (compare *On Antecedent Causes* 108, *sed quidam eorum neque omnino habuerunt febrium semina* and *On Differences between Fevers* ch. 6 τὰ μὲν (σωμάτων) εὐθὺς ... ἀρχὴν τοῦ σήπεσθαι λαμβάνειν). Of course, Galen does not think it appropriate to explain what these 'seeds of fever' are (*quae autem sint febrium semina, nunc non preiacet dicere*). However, the context is clear: it concerns Galen's polemic against Erasistratus, who denies the existence of antecedent causes of fever, such as heat, cold, repletion or tiredness. The expression 'seeds of fevers' is used with respect to a fever caused not by a pestilential constitution, but by an excess of

some and abstemious in others. Some will fall ill at the first breath of polluted air and will be affected by a grave illness, whilst others will not be ill at all, or will be so only slightly and recover easily.

However, by incorporating bad regimen into the explanation of pestilence, Galen no longer accounts for the clear distinction established by the Hippocratic writers of *Breaths* and *Nature of Man* between an unhealthy regimen, the cause of individual diseases, and miasmas, the cause of pestilences. Finally, by adding that the heat of the surrounding air can have a direct influence on the body and be the prompting cause of fever, Galen seems to adopt the model of causation that we find in *Airs, Waters, Places*, but which did not appear in those treatises that attributed pestilences to miasmas or emanations contained in the air.<sup>23</sup>

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heat or cold in the air. Indeed, a little earlier Galen used the example of a crowd attending a show at the theatre under a hot sun where only certain spectators are seized by fever (*On Antecedent Causes* 100) and discusses here the example of cold that does not cause a fever in everyone. Thus, the 'seed of fevers' must mean in this treatise not the inhaled miasmas, but the cold or heat which penetrates man above all through inhalation, and also sweat (cf. *On Differences between Fevers* ch. 6, cited above: "The constitutions of the air that surrounds us, when they are quite warm ... directly warm the heart itself through their being breathed in; moreover, since they surround the body, they make all of it warm, in particular the arteries, since these attract something from the substance of the air that surrounds us"). What is certainly common to these three examples of the 'seed' of diseases in Galen is not only the metaphor of the seed that is at the root of disease, but also an inherent idea behind this metaphor, which is fundamental in Galen, i.e. that this seed, whether it comes from the outside or not, develops into disease only if it finds a favourable 'land' with which it is compatible (an unhealthy state of the body caused by an unhealthy regimen). On seeds of disease in Galen, compare M. Grmek, "Les vicissitudes des notions d'infection, de contagion et de germe dans la médecine antique" (see above, n. 3), p. 62f.

<sup>23</sup> The difference between Galen and Hippocratic medicine concerning the cause of general diseases can also be found in his *Commentary on Hippocrates' Nature of Man* (ed. Mewaldt CMG V 9, 1, p. 62f.). Whilst the Hippocratic doctor contrasts individual and general diseases and discusses the causes (passage cited *supra*, footnote 16), Galen, whilst agreeing with the text overall, liberally criticises it, since he did not believe this part to be authentic. He criticises the author for being incomplete on the cause of general diseases, which were caused not only by the air, but also by an unhealthy regimen shared by everyone, such as rotten cereals eaten in a famine (ergotism), or bad water drunk by all the soldiers in a camp. Galen also criticises the author for being incomplete on the causes and treatment of general diseases caused by air. The Hippocratic author highlights a single cause: emanations (cf. νοσερήν τήν ἀπόκρισιν) contained in the air. Galen recognises that this is the most general cause and he transposes the Hippocratic term ἀπόκρισιν into his own language, speaking in terms of ἀναθυμιάσεις, following a usage that has already been noted (see above, p. 23); he also approves of the double treatment proposed by the author in this case (to remove the patient as far away as possible or to inhale as little as possible). However, Galen adds that air can be the cause of a general disease without containing pathogenic emanations, but because

In short, Galen reads Thucydides and Hippocrates and reconstructs them. Whilst retaining the miasmatic conception of pestilences which goes back to the Hippocratic treatise *Breaths*, he adds more complex explanations than the Hippocratic ones, both removing fundamental distinctions and combining models of explanation that appeared to be exclusive of each other, or were at least separate, in the Hippocratic authors. Nevertheless, from the moment that Galen admits the transmission of miasmas through the inhalation of air, he no longer admits the phenomenon of contagion through contact (just like the Hippocratic doctors), despite the fact that Thucydides had implicitly observed it.<sup>24</sup> However, even here Galen creates an original synthesis between observation and Hippocratic theory, since he admits that it is dangerous to live with those affected by pestilence; but it is because the patients exhale polluted air, which healthy people risk inhaling.<sup>25</sup>

From Hippocrates to Galen, the theory of miasmas contained in the air and the causes of pestilence did not become more rational; it already was from the start. However, the details of its physiological or pathological processes were made more explicit<sup>26</sup> and its aetiology more complex with the combination and addition of external and internal causes.

In post-Galenic Greek medicine, the medical use of 'miasmas' concerning general diseases reappears at Alexandria in Palladius in the sixth century, in the introduction to his *Commentary on Hippocrates' Epidemics* 6. Discussing his classification of diseases, Palladius distinguishes sporadic diseases from general diseases. Within general diseases he distinguishes endemic diseases from epidemic diseases. Endemic diseases are those which are habitual to a place due either to the water drunk by the inhabitants or to the orientation

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of the proportion of its elemental qualities in relation to the seasons. This is what I called the explicative model of *Airs, Waters, Places*. Galen also completes the treatment of general diseases, when its cause is exclusively an excess of elemental qualities (heat and wetness), with a treatment or prophylactic based on the principle of contraries.

<sup>24</sup> Thucydides (2.47.4) notes that doctors were amongst the most numerous to die because they dealt most with the sick; cf. also 2.51.4: contagion through treating the sick. Thucydides provides the first testimonium for the transmission of a disease through contact. See M. Grmek, "Les vicissitudes des notions d'infection, de contagion et de germe dans la médecine antique" (see above, n. 3), p. 56f., with bibliography in footnote 19.

<sup>25</sup> Galen, *On Differences between Fevers* 1, ch. 3, 7.279,11–13 K. Compare Aristotle, *Problemata* 7.8, 887a30 and Alexander of Aphrodisias, *Problemata* 2.42, p. 64 Ideler.

<sup>26</sup> One of the new notions compared to the Hippocratic authors of *Breaths* and *Nature of Man* is that the miasmas or emanations are causes of putrefaction. As A. Debru, *Le corps respirant. La pensée physiologique chez Galien* (see above, n. 19) p. 238, remarks, "the vocabulary of pestilence and putrefaction are constantly entwined" in Galen.

of places. Epidemic diseases are due to changes in the quality of the air (hot, cold, dry, wet) when they do not correspond to the habitual nature of the seasons. However, ‘miasmas’ appear during a particular case of epidemic disease. Here is the passage:

It is not only the quality of the air that changes, but it also receives miasmas (μιάσματα), either coming from cadavers (or) from tombs, or coming from stagnant water, from which some diseases also come. And if many people die, the affection is called *loimos*.<sup>27</sup>

This passage by Palladius uses the term ‘miasmas’ in the same technical sense as Hippocrates or Galen: they are emanations contained in the air. In addition, the provenance of these miasmas, which was not clarified in Hippocrates, is explained here in exactly the same way as Galen does in the only passage where he uses the word ‘miasmas’. We can conclude from this that Palladius is directly influenced here by Galen’s treatise *On Differences between Fevers*. This influence is all the more probable because Palladius, like Galen, also explains pestilence by referring to those causes originating from the quality of the air (hot, cold, dry, wet), and those that come from the miasmas contained in the air, whilst these two explanations are attested independently in the Hippocratic medical writers. Thus, whilst Palladius comments directly on Hippocrates, his reading of Hippocratism on the matter of air, miasmas and pestilence, seems to be attributable to Galen.

It is certainly true that the Greek term *miasma*, in the technical sense of miasmas contained in the air (or in the earth), is relatively rare, although it is attested at different periods of Greek medicine, between Hippocrates and his commentator Palladius, in the Hippocratist doctors Rufus of Ephesus and Galen. It competes with terms completely devoid of religious connotation (such as ‘emanation’, ‘exhalation’, ‘corruption’). Thus, there is a contrast between the rarity of the Greek term *miasma* and the frequency of the expression “miasmatic theory” used in modern scholarship to refer to causes of pestilence, i.e. pathogenic materials contained in the air. This is probably a sign of the persistence of Hippocratic influence even amongst modern scholars, and in this case of the treatise *Breaths*, which was the first medical treatise to present both the technical term and the theory.

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<sup>27</sup> Palladius, *Commentary on Hippocrates’ Epidemics* 6 (Preamble, Dietz II, 2, 18–23).

## CHAPTER EIGHT

### DIETETICS IN HIPPOCRATIC MEDICINE: DEFINITION, MAIN PROBLEMS, DISCUSSION

In the classical Greek literature that pre-dates the philosophers Plato and Aristotle, descriptions of dietary practice are particularly numerous in comedy, because it is a reflection of daily life. It is perfectly appropriate that a paper in this colloquium be dedicated to it.<sup>1</sup> The historians Herodotus and Thucydides, and later Xenophon, also give passing descriptions of the regimen of men or peoples. However, medical texts are the most important witness we have for the regimen of the classical Greeks, whether in health or sickness. Indeed, it is in the corpus of the sixty or so medical treatises attributed to Hippocrates, an important core of which dates from the second half of the fifth century or the first half of the fourth, that the Greek term *diaita* appears most frequently. In fact, this noun, attested for the first time in the sixth century in the lyric poetry of Alcaeus (once), then in the fifth-century lyric poetry of Pindar (twice) and the tragic poetry of Aeschylus (once), appears only seven times in the plays of Aristophanes, despite numerous references to diet. The word is used more frequently by the historians Herodotus and Thucydides: ten times in Thucydides, nineteen times in Herodotus. However, even if we add the twenty or so uses in Xenophon, this is no comparison to the Hippocratic Corpus, where the word is found just over two hundred times.<sup>2</sup> Thus, the noun *diaita*, which appeared relatively late in the Greek language, underwent an unprecedented expansion thanks to the first medical texts to have been preserved. It is a sign that dietetics is at the centre of these doctors' thought, or at least some of them.<sup>3</sup>

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<sup>1</sup> J. Wilkins, "L'alimentation des élites sous le regard de la comédie grecque," Jean Leclant, André Vauchez & Maurice Sartre (ed.), *Pratiques et discours alimentaires en Méditerranée de l'Antiquité à la Renaissance. Actes du 18e colloque de la Villa Kérylos à Beaulieu-sur-Mer les 4, 5 & 6 octobre 2007*. Paris: Académie des Inscriptions et Belles-Lettres, 2008 pp. 157–170.

<sup>2</sup> See J.H. Kühn, Ulrich Fleischer, *Index hippocraticus*, fasc. I (1986), s.v. *διαίτα*; see also other related words (*διαίτᾳ, διαίτημα, διαίτησις, διαιτητικός*).

<sup>3</sup> Further details on the history of the family of *diaita* to its first appearance can be found in J. Jouanna, "Réflexions sur le régime des peuples dans la Grèce classique (Hérodote, I, 133; Hippocrate, *Ancienne médecine*, ch. 5; Thucydide, I, 6) et sur le sens des mots de la

The historian of food can find a wealth of information amongst these early medical writers. It is the first corpus in Greece to offer systematic catalogues of food with their different natural or artificial properties. The catalogue of the treatise appropriately called *Regimen* provides the most accomplished example.<sup>4</sup> It lists in a clear order the properties of cereals, meats and poultry, fish, vegetables and fruits. Amongst a mass of information about food products, their preparation or methods of conservation, we learn that the Greeks ate dog, fox and hedgehog.<sup>5</sup> However, the principal originality of these doctors lies not only in having laid out these catalogues of food, which pre-date the classifications that Aristotle was to develop, but above all in having discussed, for the first time in Greek thought, important problems relating to regimen. It is on these important problems that this paper on Hippocratic dietetics will focus.<sup>6</sup>

We must begin by clarifying what Greek doctors understood by the Greek word *diaita* (δίαίτα) (from which derive the English words ‘diet’ and ‘dietetics’), since the modern definition, which restricts diet to food, does not correspond exactly to the conceptual understanding of the ancient doctors.

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famille de δίαίτα,” *Revue des Études grecques*, 2008/1, pp. 17–42. Despite its importance, the concept of *diaita* has been little studied. See P. Laín Entralgo, “El sentido de la ‘diaita’ en la Grecia clásica,” in *Athlon. Saturata grammatica in honorem F.R. Adrados*, II, Madrid, Gredos, 1987, pp. 485–497, which has a contestable first section on the original meaning of *diaita*. The author reconstructs (without textual support) an archaic *diaita* connected with the concept of microcosm and *catharsis* (purge/purification), which precedes the development from the archaic *diaita* to a rationalised *diaita* thanks to pre-Socratic philosophers. See also A. Thivel, “L’ évolution du sens de ΔΙΑΙΤΑ,” in *La lengua científica griega I*, J.A. López Férez ed., Madrid, 2000, pp. 25–37. A. Thivel’s more philological study uses a hypothetical etymology to determine the fundamental meaning of *diaita* (whose meaning is flexible), rather than examining the meaning of related terms, which we can try to establish from the oldest attestations examined in the chronological order of appearance.

<sup>4</sup> *Regimen* 1, ch. 39 ff., Joly CMG I 2, 4, 162 ff. (= 6,534 ff. L. = Jones 4.306 ff.). See also the catalogue of foods at the end of the treatise *Affections*, ch. 47–60, Potter 5.70–86 (= 6,254–269 L.). On these catalogues and the development of dietetics, see R. Joly, *Recherches sur le traité pseudo-hippocratique Du Régime*, Paris, Les Belles Lettres, 1960, pp. 99–181; W.D. Smith, “The Development of Classical Dietetic Theory,” in *Hippocratica*, M.D. Grmek ed., Actes du colloque hippocratique de Paris, 4–9 septembre 1978, Paris, C.N.R.S., 1980, pp. 439–448; see also, on the place of the treatise *Regimen* in the history of dietetics, Id., “Regimen, κρήσις and the History of Dietetics,” in *Tratados hipocráticos*, J.A. Lopez Férez ed., VII<sup>e</sup> colloque international hippocratique, Madrid, 1992, pp. 263–271.

<sup>5</sup> *Regimen* 1, ch. 46, Joly CMG I 2, 4, 168, 22–27 (= Jones 4.318 = 6.546,14–20 L.).

<sup>6</sup> On the Hippocratic diet within the study of food in antiquity, see E. Craik, “Hippocratic Diaita,” in *Food in Antiquity*, J. Wilkins, D. Harvey and M. Dobson ed., Exeter, Univ. Exeter Press, 1995, pp. 343–350; see also Id., “Diet, Diaita and Dietetics,” in *The Greek World*, A. Powell ed., New York-London, 1995, pp. 387–402.

In certain Hippocratic treatises, such as *Ancient Medicine* (which we will discuss below),<sup>7</sup> *diaita* has a restricted meaning of alimentary diet, comprising food and drink. However, Hippocratic doctors also generally understand *diaita* to include exercise. For example, here is how the Hippocratic author of *Airs, Waters, Places* defines the regimen of inhabitants, which the itinerant doctor should observe when he arrives in a city that is unknown to him and where he is going to practise his art:

He should consider the regimen (*διαίτην*) of the inhabitants, what their preferences are, whether they enjoy drinking, taking lunch at midday (*ἀριστηταί*) and are inactive, or whether they enjoy exercise and exertion, eat a lot and drink little.<sup>8</sup>

Exercise forms part of regimen, for the doctor should examine if the inhabitants are inactive or if they enjoy exercise or exertion. This example also reminds us that the Greeks established a clear distinction between food and drink.<sup>9</sup> Thus, regimen is presented here as comprising three components: drink, food and exercise. This technical sense of *diaita* is a more specialised form of its usual meaning, which refers more widely to the ways of life or habitual behaviour of an individual or people, including their dwellings; food is not always the most important part of the notion of *diaita*.<sup>10</sup>

If we wish to be more precise about what Greek doctors understood by *diaita* over and above the principal triad of food, drink and exercise, we must add some secondary elements, in particular bathing and, sometimes, sexual relationships.<sup>11</sup>

<sup>7</sup> See *infra*, p. 145 and 147.

<sup>8</sup> *Airs, Waters, Places*, ch. 1, Jouanna CUF II, 2,188, 2–5 (= Diller CMG I 1, 2, 26,2–4 = Jones 1.70–72 = 2.12,18–21 L.), with a detailed commentary on the passage in Jouanna, n. 2 of page 188 (= p. 254f.). We should compare this passage with a fragment of Euripides (917 Kannicht), where it is said that good doctors should examine “the diets” of the inhabitants of the city. The Greek word is the same, but it is used in the plural (*διαίτησ*). On this connection between medicine and tragedy, see W. Nestle, “Hippocratica,” *Hermes* 73, 1938, p. 24 and n. 2; J. Jouanna, “Hippocratic medicine and Greek tragedy,” in the present volume, chapter 4; A. Guardasole, *Tragedia e Medicina nell’Atene del V secolo A.C.*, Naples, 2000, pp. 77–79, 84, 269.

<sup>9</sup> Moreover, the distinction is so clear in this treatise that the doctor considers that people cannot be both “big eaters and big drinkers”; see *Airs, Waters, Places*, ch. 4, Jouanna 194, 1f. (= Diller 30, 13f. = Jones 1.78; 2.20,10 f. L.).

<sup>10</sup> In the second part of the same treatise, which is more ethnographic than medical, the word *διαίτηα* is used in a wider sense of “way of life” (ch. 18 regarding to Scythians’ way of life), alongside *νόμοι*, “customs.” The way of life comprises not only food, drink and exercise, but also, amongst other things, the place where one spends one’s life (cf. the two uses of the corresponding verb *διαιτέομαι* in the same chapter).

<sup>11</sup> The Hippocratic treatise *Regimen in Acute Diseases* ends with a discussion of baths

Finally, *diaita* can refer to the regimen of people who are in good health and to that of people who are sick. When it concerns patients, regimen is distinguished from treatment by medicines. Although the parts of medicine are not yet clearly defined in this period, doctors do distinguish between medicines/drugs (φάρμακα) and food (σιτία) in the treatment of diseases.<sup>12</sup> One of the characteristics of Hippocratic medicine is having developed dietetics, in addition to a more traditional pharmacy.

These admittedly general remarks on what doctors in the classical period understood by *diaita* allow us to see that the French word ‘diète’ has a more restricted meaning than the Greek word *diaita* from which it derives, since it usually refers only to the diet of patients. Moreover, it shows that the title of the conference in which this paper was presented, ‘*Alimentary practices and discourses*’ only partially corresponds with ancient doctors’ understanding of diet. For ancient doctors, food was only one part of the lifestyle that had to be taken into consideration in order to maintain or re-establish good health.

It was necessary to clarify this difference during the paper’s ‘starter’, before tackling what constitutes this paper’s ‘main course’: the main questions that the ancients asked about regimen, and the answers they proposed.

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(ch. 18, 2.364–376 L. = ch. 65–68 Kühlewein 1.142–145 = Jones 2.120–124 = Joly CUF VI, 2, 65–67). There is also a discussion of the effect of baths in the catalogue of *Regimen*, ch. 57, Joly 180–182 (= Jones 4.342–344 = 6.570 L.). Sexual relationships are referred to by the terms λαγνείη and λαγνεύειν. See, for example, the catalogue of *Regimen*, ch. 58 (Joly 182,7–10 = Jones 4.344 = 6.572,1–4 L.), where it is said that the sexual act thins, moistens and warms people. The treatise also discusses other secondary elements, such as sleep and the quality of the bed.

<sup>12</sup> For example, *Diseases II*, ch. 72 (Jouanna CUF X 2, 212, 2–7 = Potter 5.326, 14–20 =, 7.110,5–10 L.), at the start of the treatment for the condition called ‘anxiety’ (*Phrontis*): “In this case, give them hellebore to drink; purge the head, and after purging the head, give them a medicine (φάρμακον) to drink that purges them from below, and then the patient will drink ass’ milk. He will eat food (σιττοισι) in as small a quantity as possible, unless he is weak; the food will be cold, laxative and will not be bitter, hot, oily or sweet.” On the distinction between medicines (φάρμακα) and diet in general (δίατα), see *Regimen in Acute Diseases*, ch. 1 Littré (= ch. 1–3 Kühlewein), which contains a criticism of the *Cnidian Sentences*, a work that is currently lost (apart from a few fragments). After having criticised in this ancient treatise the use of medicines based on purgatives (Joly 36,16 = Jones 2.62 φάρμακα ἐλατήρια), the author of *Regimen in Acute Diseases* continues, saying (Joly 37,2 f. = Jones 2.64): “even on diet (δίατα), the ancients wrote nothing valuable; this is a great lacuna.” We find an even more general statement in the treatise *Nature of Man*, ch. 9 (Jouanna CMG 190,9–12 = Jones 4.26 = 6.54,14–17 L.) where treatment (θεραπείη) is clearly divided into two branches, pharmacy (φαρμακείη) and diet (δίατα vel διατήματα).

To adhere to the conference topic, I will focus above all on problems relating to an alimentary diet and leave exercise to one side, without wishing to pass over it in complete silence, since the balance between what we call nutrition and physical activity was judged essential by one Hippocratic doctor in his definition of good health.<sup>13</sup> Yet even when restricting the subject in this way, I will have to be selective, due to the breadth of the Hippocratic Corpus, which is comprised of some sixty treatises which belong neither to a single author nor medical school. I have chosen three areas for discussion: diet and peoples; diet and human nature; diet and the environment.

Concerning the diet of peoples, modern readers will immediately think of the Mediterranean diet, which is highly praised by nutritionists and dieticians. However, were the Classical Greeks aware that there existed an alimentary diet proper to the Greeks and distinct from other peoples? This question is prompted by a comparison between two texts which have not, to my knowledge, been previously compared: the historian Herodotus and the Hippocratic author of *Ancient Medicine*.

Let us first consider the passage in Herodotus, who contrasts the alimentary practices of the Persians with those of the Greeks, during their festival meals (1.133):

The day which the Persians are accustomed to celebrating most is a person's own birthday. On this day they think it normal to serve a more abundant meal than on other days; on this day, the rich are served an ox, a horse, a camel or an ass, which are roasted whole in the ovens, whilst the poor are served lesser kinds of livestock. They eat fewer courses, but more desserts that are not all served together. This is why the Persians say that the Greeks eat meals only to stave off hunger,<sup>14</sup> because after the meal they do not have any substantial dessert, and if it were given to the Greeks, they would never stop eating.

<sup>13</sup> The author of the treatise *Regimen*; see ch. 69, Joly CMG 202, 1f. (= Jones 4.382,16 = 6.606,9 L.): "Good health comes from the balance between the two (i.e. food and exercise)."

<sup>14</sup> This interpretation differs from the translations of the twentieth century, which all take this phrase in the sense of: "stop eating whilst still hungry," without considering other interpretations. In fact, commentaries from the twentieth century do not question the meaning of this passage; see W.W. How, J. Wells, *A Commentary on Herodotus I*, Oxford, 1912 (with numerous reprints), ad loc., pp. 114–115, and more recently D. Asheri, A. Lloyd, A. Corcella, *A Commentary on Herodotus, Books I–IV*, Oxford, Oxford University Press, 2007, vol. I, p. 168 (commentary in English by D. Asheri, who largely reproduced his Italian commentary published in *Erodoto. Le storie, libro I La Lidia e la Persia*, Fondazione L. Valla, 1988, p. 344, with various additions). However, the present translation was previously adopted in the nineteenth century, notably by Pierre-Henri Larcher in his commentary and edition of Herodotus (1786; new edition by L. Humbert 1880). For a detailed justification of this interpretation, see J. Jouanna, quoted in n. 3.

The contrast between these two alimentary practices is seen from the Persians' perspective.<sup>15</sup> The comparison rests essentially on the difference in size between portions and desserts. The Persians eat fewer portions but more desserts, whilst the Greeks hardly eat desserts, but more portions. It seems to me that the implicit idea that leads the Persians to judge their diet to be superior to that of the Greeks is the notion of pleasure: the Persians are gourmets who appreciate desserts, whilst the Greeks, according to them, are content with a diet that staves off hunger.

This contrast between the alimentary practices of the Greeks and other peoples is also discussed in a passage from the Hippocratic treatise *Ancient Medicine*, but conversely, the point of view is this time Hellenocentric (ch. 5):

In my opinion, nobody would have even sought for medicine, if the same diets (διατήματα) had suited both the sick and those in health. What is certain is that even today, those who do not use medicine—barbarians and a small number of Greeks—maintain (when they are sick) the same diet as those in health, only following their pleasure, and would neither forego nor restrict the satisfaction of any of their desires, or even reduce the quantity.<sup>16</sup>

Like the previous passage, this one establishes a difference between the diet of the Greeks and that of another people or peoples. However, whilst in Herodotus, the Persians wish to show the superiority of their diet over the Greeks, the medical writer shows the superiority of the Greeks' diet because it is adapted to the state of the patient. This reversal is due to a change in values. According to the medical writer, the superiority of the Greeks is both scientific and ethical: scientifically superior because they discovered the art of medicine; ethically superior because they know to renounce pleasure to restore good health. This notion of pleasure, explained in the medical text to describe barbarians (and a minority of Greeks) seems to confirm that pleasure is, in Herodotus' text, the implicit notion that allows us to understand the judgement of the Persians. They judge their alimentary practices to be superior to those of the Greeks because they have a more refined diet whose aim is not (or not only) to stave off hunger, as the Greeks' diet, but also to satisfy their desires and pleasures.<sup>17</sup> Conversely, the Greeks

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<sup>15</sup> On the diet of the Persians, see H. Sancisi-Weerdenburg, "Persian Food. Stereotypes and Political Identity," in *Food in Antiquity*, *op. cit.* (n. 6), pp. 286–302 (with bibliography); see also P. Briant, *Histoire de l'empire perse*, Paris, Fayard, 1996, pp. 297–306 (the discussion concerns the royal table; a single sentence from Herodotus' text is quoted).

<sup>16</sup> J. Jouanna, *Hippocrate. L'ancienne médecine*, CUF, Paris, Les Belles Lettres, 1990, p. 124.

<sup>17</sup> Here appears a problem that was later to be developed in Plato's *Gorgias*, namely the

judge their alimentary practices superior to those of the barbarians in the case of sickness, because they know to renounce pleasure and desire in order to serve a higher interest: good health.

This does not mean that the Hippocratic doctor, by contrasting the Greeks' diet with that of the barbarians, had a simplified view that the Greeks' diet was uniform. Apart from understanding that a minority of Greeks, like barbarians, did not know medicine, he knows, like other doctors, that diet can vary amongst the Greeks.

First, Hippocratic doctors were aware that the Greek diet could vary from one city to another. Indeed, the author of *Airs, Waters, Places* (in the passage defining *diata* discussed above) recommends that the doctor, on his arrival in an unknown city, observe the diet of the city's inhabitants, implying that a city can be characterised by a general tendency of its inhabitants' diet. Herodotus' testimonium similarly speaks of the simplicity and frugality of Pausanias' Laconian mode of dining, which he contrasts with the luxury and sumptuousness of the Persians' way of dining prepared by the cooks of Mardonius.<sup>18</sup> The contrast between Persia and Greece is all the larger because the diet of the Lacedaemonians was notorious for its austerity, even amongst the Greeks.<sup>19</sup>

Moreover, doctors observed that within a single city, groups of inhabitants could differ in their diet. For example, the author of *Nature of Man*, when he distinguishes between individual illnesses caused by individual diet and general illnesses caused by the air that is inhaled by all, distinguishes categories of individuals according to the diet that they follow: adopting the tripartite division of *diata* (drink, food, exercise), he contrasts drinkers of wine with drinkers of water, eaters of wheat bread with eaters of barley biscuits, and those that do a lot of exercise with those that do little.<sup>20</sup>

One of the differences within the Greeks' diet that particularly attracted doctors' attention is the number of daily meals: some take a single meal in the evening (dinner, δεῖπνον), whilst others take two meals, one at midday

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contrast between the cook (watching over the body's pleasure) and the doctor (watching over the patient's wellbeing).

<sup>18</sup> Herodotus, *Histories* 9.82.

<sup>19</sup> Xenophon, *The Constitution of the Lacedaemonians*, ch. 2, 5 and 5, 3.

<sup>20</sup> *Nature of Man*, ch. 9, Jouanna 188, 18–20 (= Jones 4.24–26 = 6.54,1–4 L.). The passage on the different diets deserves to be quoted in its context: "It is clear that the diet (τὰ διατήματα) of each of us cannot be the cause of disease, since it attacks everyone in turn, young and old, women and men and, without distinction, those who drink wine and those who drink water, those who eat barley bread and those who eat wheat bread, those who do a lot of exercise and those who do little."

(lunch, ἄριστον), and the other in the evening. The technical medical vocabulary itself testifies to doctors' attention to this difference. Indeed, we find for the first time in the Hippocratic Corpus a compound Greek verb to mean taking only one meal a day: μονοσιτεῖν.<sup>21</sup> In the classical period, outside the medical literature where it appears thirteen times, we find this verb only twice, in one and the same passage, at the end of Xenophon's *Cyropaedia* (8.8.g). He describes the diet of the Persians:

In former times it was their custom (sc. the Persians) to eat only a single meal (μονοσιτεῖν), so that they might devote the day to activity and exercise. Of course, nowadays the single meal (τὸ μονοσιτεῖν) still prevails, but they begin to eat at the hour when those who have lunch earliest begin their meal, and they spend their time eating and drinking until the hour when those who go to bed latest have dinner.

Thus, this text informs us of another alimentary practice characteristic of the Persians, taking a single meal. In Cyrus' time, the single evening meal meant that time was not lost to eating, and that the whole day was dedicated to an active life and exercise before eating.<sup>22</sup> However, this ancient practice changed into the decadence of the Persian customs of his own time that Xenophon wishes to show. Although continuing to eat only one meal a day, the Persians spend most of the day eating.

There is a tendency to contrast the diet of the Persians, comprising a single meal, with the diet of the Greeks, who ate two meals a day. However,

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<sup>21</sup> The verb μονοσιτεῖν is used three times in *Ancient Medicine* (ch. 10 *bis*; ch. 11); three times in *Regimen in Acute Diseases* (ch. 4, ch. 9 *bis* Littré); cf. once in *Regimen in Acute Diseases* (App.), ch. 18 Littré; cf. also *Nature of Man*, ch. 19 (= *Regimen in Health*, ch. 4), ch. 22 (= *Regimen in Health*, ch. 7); *Regimen* 3, ch. 81. It is no coincidence that this word appears primarily in treatises where dietetics plays an important role; see also *Epidemics* 7, ch. 3; *Internal Affections*, ch. 20; *Diseases of Women* 1, ch. 11. We also find the noun μονοσιτή, both in treatises where we also find the verb (*Regimen in Acute Diseases*, ch. 9; *Regimen*, ch. 60 *bis* and ch. 68), or in other treatises (*Epidemics* 2, 2, ch. 1; *Affections*, ch. 43; *Diseases of Women* 2, ch. 110). There is no corresponding compound term to refer to taking two meals a day. The opposite of μονοσιτεῖν is δις σιτεῖσθαι (*Regimen in Acute Diseases*, ch. 4 and ch. 9 Littré), or else the verb ἀριστᾶν or the noun ἀριστητής are used to refer to the act of taking lunch, which equates to two meals a day; for example, see *Airs, Waters, Places*, ch. 1 (quoted *supra*, p. 139): the fact of asking if the inhabitants take lunch comes down to asking if they have two daily meals, since the evening meal is eaten by everyone. On μονοσιτεῖν, see the brief comments by C. Moussy, *Recherches sur τρέφω et les verbes significant "nourrir"* (Études et Commentaires 70), Paris, Klincksieck, 1969, p. 107.

<sup>22</sup> In fact, when Xenophon speaks of Cyrus himself, he says that he did not have dinner without having first sweated from exercise (*Cyropaedia* 8.1.38). The use of a single meal amongst Persians is confirmed by Herodotus (7.120), where he alludes to Xerxes' diet, who did not eat lunch.

as we saw from the references in the medical texts, the alimentary practices of the Greeks varied from one Greek city to the other, and within the same city between its inhabitants.

In short, the response to the question whether there was such a thing as a Greek diet as opposed to the diet of other peoples varied according to the point of view one adopted. A historian like Herodotus could record the point of view of the Persians, contrasting their alimentary customs with those of the Greeks.<sup>23</sup> A Greek doctor could affirm the specificity of the diet adopted by the Greeks for their patients and contrast the Greeks with the barbarians. However, the doctors' observations on the diversity of diets adopted by the Greeks from one city to another, or within the same city, particularly on the number of daily meals, prohibit a simplified view of the alimentary practices of the Greeks as being in contrast to those of the Persians in the frequency of meals.

We turn now to our second problem of the relationship between diet and the nature of man.

The Greeks' superiority over the barbarians comes, as we have just seen, from their discovery of medicine. How did the Greeks discover it? According to the author of *Ancient Medicine*, it was because they were forced to modify their diet in order to adapt it to the different states of the patient, and they were successful in doing this. This necessary adaptation of diet to the nature of man, whether he is ill or in good health, forms the basis of a long history of dietetics that this medical writer retraces, beginning with the first discovery of the diet of people in good health, before coming to successive

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<sup>23</sup> Herodotus presents more points of view on the dietary differences by varying the perspective within the peoples themselves that the Greeks considered to be barbarians. In the story about Cambyses' campaign against the 'long lived' Ethiopians (book 3, ch. 22 and 23), Herodotus contrasts the Ethiopian and Persian diet and the relationship between diet and length of life: the diet of the Persians, who live on average eighty years, who drink wine and eat bread made from cereals, is contrasted with that of the Ethiopians, who live up to one hundred and twenty years, and who drink milk and eat boiled meat. However, this time the perspective is that of the king of the Ethiopians, who discovers the diet of the Persians by interrogating the scouts that Cambyses had sent because they knew the language of the Ichthyophagi (Ethiopians). The king values the wine, one of the gifts offered by Cambyses and the drink of the Persians. Having interrogated the emissaries on the diet of the Persians, he declares not to be surprised that they do not live very long, since they eat "manure," alluding to the cereals that sprout from the ground, and he adds that their life would be shorter still if the harmful effect of their diet was not partially compensated for by the beneficial effect of their drink. I thank Paul Demont for drawing this passage to my attention.

discoveries of diets for patients. It is the first history of dietetics that is available to us in western thought.<sup>24</sup>

In the beginning, the first men had a diet that was similar to that of animals. This forceful and bestial diet caused suffering and death. The Hippocratic doctor continues in ch. 3 (4–5):

4. “Pressed by this need, these people seem to me to have sought a diet adapted to their nature (τρόφην ἀρμόζουσαν τῇ φύσει), and to have discovered the one which we use now. 5. So from wheat [...] they produced bread, and from barley they produced cake. And experimenting with several ways to prepare this food, they boiled or roasted, mixed and blended the strong and uncompounded substances with the help of weaker substances so as to adapt it all to the natural constitution and strength of man (πλασσόντες πάντα πρὸς τὴν τοῦ ἀνθρώπου φύσιν τε καὶ δύναμιν). They thought that, in the case of foods that were too strong, the nature (ἡ φύσις) of man would not be able to overcome them (χρατεῖν) if he ate them, and that pain, disease and death would come from these foods, whilst from foods that he can overcome (χρατεῖν) will come nourishment, growth and health.”<sup>25</sup>

The author presents the essential idea in the first sentence: that food, in order to be beneficial, should be adapted to human nature. The rest of the text clarifies that we should understand this adaptation in the context of a relationship of forces. Food is defined by more forceful or less forceful properties, and human nature must have the force to overcome the ingested food so that it might be profitable. What we call digestion and assimilation is seen by this medical writer as a struggle of human nature, which must overcome the food in order to appropriate it. Finally, to avoid the harmful effects of a diet that is too forceful, man discovered different types of food preparation designed to eliminate what was too forceful and to enable human nature to overcome it. These methods of preparation, the most important of which are cooking and mixing, appear to be simple cookery; but, according to the Hippocratic author, they are already a type of medicine, because the discovery of a diet adapted to human nature leads to good health, whilst the primitive diet, forceful and bestial, was the cause of suffering, illnesses and death.

The author then considers the discovery of actual medicine, which occurred over three stages. These are discussed in ch. 5 (3–5):

<sup>24</sup> On the history of medicine as seen by the first Greek doctors and thinkers, see J. Jouanna, “La naissance de l’histoire de la médecine en Grèce à l’époque classique,” *Histoire des Sciences médicales* (Centenaire de la Société française d’Histoire de la Médecine, 1902–2002, Paris 29 and 30 novembre 2002), t. 37, n. 3, 2003, pp. 319–329.

<sup>25</sup> J. Jouanna, *op. cit.* (n. 16), p. 122 f.; transl. Jones, modified.

3. Those who sought and discovered medicine [...] began, I think, to lessen the bulk of the foods (σιτία) themselves and reduce their quantity to very little.  
 4. But they found that this regimen, sometimes sufficient for certain patients and clearly beneficial for them, was not so in all cases, since some were *in such a condition that they could not overcome even small quantities of food*, and since such patients were thought to need a weaker diet, soups (ῥύφήματα) were invented by mixing a small quantity of substances with a lot of water, and by reducing the strength of these substances by mixing and cooking.  
 5. Finally, *the patients who could not even overcome soups* had to refrain from these and were put on a regimen of liquids (πόματα); these were regulated so that they were a fitting measure both in mixture and quantity, refraining from administering drinks that were too abundant, or mixed too little, or too insufficient.<sup>26</sup>

The discovery of medicine rests on the same logic as the previous discovery of a normal diet: the patient must have the ability to overcome the food he ingests; thus, the force of his diet should be reduced in proportion to his state. However, whilst the diet of people in good health had been the object of a single discovery, even if it was susceptible to further perfection, medicine comprises three successive discoveries: three categories of diet corresponding to three degrees of the patient's state of weakness. First, a diet based on solid food (σιτία), then an intermediary diet between solids and liquids (soups, ῥύφήματα); and finally a solely liquid (πόματα) diet.

However, the author warns against the simplistic view that it is necessary to diminish systematically, as a precaution, the force of the patient's diet so that he can easily triumph over it. He says that a diet that is too little or too weak is just as dangerous as a diet that is too abundant or rich, resulting in the fundamental difficulty, for medicine, of finding the best diet adapted to the patient's condition, which the author expresses in a famous passage (ch. 9, 3):

The tasks of the doctor vary greatly and require great exactitude. Indeed, it is necessary to aim at some measure (μέτρον). There is no measure—neither in number nor in weight—by reference to which we can know what is exact, apart from the feeling of the body (τοῦ σώματος τὴν αἴσθησιν). Also it is laborious to acquire knowledge so exact that only small mistakes are made here or there.<sup>27</sup>

It is the “feeling of the patient's body,” i.e. how the patient feels, which acts as the measure that guides the doctor in his dietary provision. The doctor

<sup>26</sup> *Ancient Medicine*, ch. 5, Jouanna 124,9–125,4 (= Jones 1.20–22 = 1.580,14–582,9 L.); transl. Jones, modified.

<sup>27</sup> *Ibid.*, ch. 9, Jouanna 128,9–15 (= Jones 1.26 = 1.588,13–590,1 L.).

should find the point of equilibrium in nutritional provision adapted to the patient's condition that is neither so insufficient as to weaken the patient, nor so abundant as to strengthen the illness.<sup>28</sup>

From this necessary relationship between food and the nature of the man who ingests it, the Hippocratic doctor draws the remarkable conclusion that medical research is the source of knowledge about human nature. "I believe," he says in ch. 20, "that in order to have any clear knowledge of (human) nature, medicine is the only source."<sup>29</sup> This knowledge is acquired through the study of the different effects produced by different diets on different individuals, which allows us to determine categories of individuals, for example those for whom cheese is a harmful food. In this way, the author of *Ancient Medicine* openly resists a philosophical medicine that claims, by contrast, that dietetics supposes prior knowledge of human nature, as is the position of the author of *Regimen*.<sup>30</sup>

However, human nature is not fixed absolutely. It is influenced by environmental parameters, which the doctor should take into account in dietary provision, whether to re-establish good health or to preserve it. We tackle here the third category of problems relating to regimen, namely its connections with the environment. I will deal with two different problems: habit, which concerns culture, and the cycle of the seasons, which concerns nature, although Hippocratic doctors quote them in the same context. Thus, in the *Aphorisms* (1.17), we read that it is necessary to pay attention to habit and the seasons, amongst other factors, in the administration of diet.<sup>31</sup>

Each individual nature is influenced by alimentary habits, which doctors must take into account. They warn against the errors of imposing on a

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<sup>28</sup> E. Craik, *art. cit.* (n. 6), pp. 346–347, stressed the notion of 'Hippocratic balance'. However, she does not quote this passage, which shows that Hippocratic doctors were aware of the difficulty of attaining this balance. The expression 'feeling of the body' is much debated, in so far as it is unclear whether it concerns the patient's feeling of his or her own body or the doctor's feeling of the patient's body; see J. Jouanna, *op. cit.* (n. 16), p. 128, n. 8 (= p. 174); M.J. Schiefsky, *Hippocrates, On Ancient Medicine, translated with Introduction and Commentary*, Leiden, Brill, 2005, pp. 196–199.

<sup>29</sup> *Ancient Medicine*, ch. 20, Jouanna 146,9–11 (= Jones 1.52 = 1.620,14–622,1 L.).

<sup>30</sup> The author of *Ancient Medicine* quotes Empedocles as an example of medicine with a philosophical tendency. However, we also find in the Hippocratic Corpus the statement that it is not possible to determine diet without prior knowledge of human nature; see the statement of the author of *Regimen* at the start of his work (1, ch. 2): "I maintain that anyone who wishes to write correctly on the diet of man should firstly have knowledge of human nature."

<sup>31</sup> *Aphorisms* 1.17 (Jones 4.106,9f. = 4.468,1f. L.): "Attention should also be paid to the season, the region, habit and age."

patient a change of diet that is too far removed from his habits. The most thorough reflection on the problem of habit and change is found in the treatise *Regimen in Acute Diseases* (ch. 9 and 10 Littré). Illness requires a change of diet. However, it is necessary to avoid too large a change because, even in a healthy patient, a change in diet is harmful. To illustrate the harm that change can cause to people in good health, the Hippocratic author takes the example of the routine of daily meals. We mentioned above that certain people are in the habit of taking a single daily meal, whilst others are in the habit of taking two. The doctor sets out in great detail the perturbations caused by a simple change of habitual diet over half a day, adding a meal in some, or taking one away in others. The conclusion is that in the dietary provision of patients, no addition or subtraction should be made that clashes with their habits, and that even in a healthy individual it is better to preserve an unhealthy diet than bring about a rapid change to a better one.<sup>32</sup> This discussion in *Regimen in Acute Diseases* of the importance of habit became famous and was lengthily quoted by Galen in his treatise *On Habits*.<sup>33</sup>

Our bodies are also influenced by the natural cycle of the seasons. To protect against these changes, diet should be changed accordingly to counteract the different bodily effects that the seasons produce.

The clearest theory of the seasons' influence on the nature of man can be found in the treatise *Nature of Man*. Each of the four seasons is defined by two elemental qualities that affect the body: winter is cold and wet, spring hot and wet; summer hot and dry, autumn cold and dry.<sup>34</sup> Thus, a diet should be followed whose qualities are opposite to those of the season. Here is the diet that the author recommends in winter:

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<sup>32</sup> *Regimen in Acute Diseases*, ch. 9–10 Littré (= ch. 28–37 Kühlewein), Joly 47–51 = Jones 2,84–92 = 2.298–328 L. On the problem of change in this treatise, see J. Jouanna, quoted *infra* n. 44 [and in this volume ch. 2]. The dangers of a change in diet contrary to habit are also denounced in *Ancient Medicine*, using the same example of the frequency of daily meals (ch. 10–11, Jouanna 129–132 = Jones 2,28–32 = 1.590–594 L.). However, unlike the author of *Regimen in Acute Diseases*, changing from a single meal to two, or conversely from two meals to a single one, is not damaging for everyone, but only for people who are weaker than others. The importance of habit is also noted in *Aphorisms* 2.29. On the vocabulary of change in the Hippocratic Corpus, see P. Demont, "Observations sur le champ sémantique du changement dans la *Collection hippocratique*," in *Tratados hipocráticos*, *op. cit.* (n. 4), pp. 305–317.

<sup>33</sup> Galen quotes (ch. 1, Mueller 12,15–16,4) *Regimen in acute diseases*, ch. 9, Littré. He also quotes *Aphorisms* 2.29 (ch. 1, Mueller 9,15–18). However, he does not quote the discussion in *Ancient Medicine*, because he did not consider this treatise to be written by Hippocrates.

<sup>34</sup> *Nature of Man*, ch. 7, Jouanna 182–186 (= Jones 4,18–22 = 6.46–50 L.).

People who lead a normal life should adopt the following diet: in winter eat as much as possible and drink as little as possible; drink should be wine as undiluted as possible, and food should be barley bread and roasted meats; vegetables should be taken as little as possible during this season; this is the best diet to make the body dry and hot.<sup>35</sup>

A clearer statement of the necessity to choose a diet that contrasts with the effects of the season can hardly be found. In winter, which is the cold and wet season, the diet should dry and heat the body. Conversely in summer, the diet should be cold and wet in order to provide a contrast with the hot and dry season, as the author says most clearly:

At the start of summer, man will use only soft foods, boiled meats, and raw or boiled vegetables and drinks that are as diluted and abundant as possible [...] it will be a diet of soft barley cake [...] Such a diet is necessary in summer to cool and soften the body. For the season is hot and dry, and makes bodies burnt and parched. Thus, one must protect oneself against this through one's way of living.<sup>36</sup>

Unlike these two opposing diets, the diets of spring and autumn are transitional, allowing the transition from one diet to another, contrasting, one, by avoiding changes that are too large or rapid.<sup>37</sup> Thus, the problem of change during good health remains the same as dietary change during ill health.

We find a similar discussion of change of diet according to the seasons in ch. 68 of another, probably later, Hippocratic treatise, *Regimen*.<sup>38</sup> The

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<sup>35</sup> *Nature of Man*, ch. 16 (*Regimen in Health* ch. 1), Jouanna 204, 22–206, 3 (= Jones 4.44,1–7; 6.72,1–5 L.); transl. Jones, modified. He returns full circle at the end of the chapter to winter, after having discussed the diet in the three other seasons. Here is what he says on diet in winter (ibid. ed. Jouanna 208,5–8 = Jones 4.46 = 6.74,9–13 L.): “A small quantity of very pure drinks, and food as abundant and dry as possible. Indeed, thanks to this diet the patient will sustain himself the best and will suffer least from the cold, for the season is cold and wet.” The two passages correspond and complement each other. The proposed diet is dry and hot, which contrasts with a cold and wet season.

<sup>36</sup> *Nature of Man* ch. 16 (= *Regimen in Health* ch. 1) Jouanna 206,8–16 = Jones 4.44, 14–46,26 = 6.72,10–74, 4 L.

<sup>37</sup> On the springtime diet, see *Nature of Man* ch. 16 (= *Regimen in Health* ch. 1) Jouanna 206, 3ff. (= Jones 4.44,7ff. = 6.72,5ff. L.); and on the autumn diet, ibid., Jouanna 206, 16–208, 5 (= Jones 4.46,30–34 = 6.74,4–8 L.). The springtime diet is transitional and should allow change from the hot and dry diet of winter to a cold and wet diet of summer; the autumn diet is also transitional and should conversely allow the change from the cold and wet summer diet to that of a hot and dry winter diet. The concern to avoid great change by these transitional diets is explicitly expressed regarding the springtime diet (“to avoid a sudden great change”).

<sup>38</sup> *Regimen*, ch. 68 Joly CMG 194–200 (= Jones 4,368–380 = 6,594–604 L.).

author of *Regimen* follows the same principle as that of the *Nature of Man*, i.e. that diet should be opposed to the qualities of the seasons.<sup>39</sup> However, whilst *Nature of Man* restricts itself to an alimentary diet, *Regimen* also adds recommendations about exercise. This addition is not due to chance, since the author of *Regimen* defines good health as the balance between food and exercise.<sup>40</sup> The main originality of the treatise comes from the fact that the author distinguishes between two audiences (ch. 68 and 69): on the one hand, the majority of people who, due to the needs of their profession, do not choose their food or drink, engage in the exercise or walks imposed on them, are exposed to the sun or cold more than is appropriate and have, moreover, a type of disorganised life (ch. 68); on the other hand, the minority of those who are able to refrain from other occupations so as to not neglect their health and are convinced that wealth serves no purpose without good health (ch. 69).<sup>41</sup> To each of these two groups, the author dedicates a separate discussion. The discussion of seasonal diet is addressed to the majority, whilst he reserves for the elite the discovery he claims to have made of maintaining or re-establishing an exact balance between food and exercise, a balance that, we have seen, he defines as good health.<sup>42</sup> Thus, according to the author of *Regimen*, alimentary practices are an aspect of a two-fold system comprising two contrasting and inseparable elements: food and physical activity. Modern doctors say the same.

In conclusion, the first writings of Greek doctors constitute an extremely important source for the study of alimentary practices and discourses in classical Greek antiquity. This source seems relatively little known outside a circle of specialists in Greek medicine, even though medicine made a remarkable entrance into studies of ancient dietetics in *Food in Antiquity*, a

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<sup>39</sup> There are close resemblances between the two discussions, although the reason why is debated. See J. Jouanna, *Hippocrate. La Nature de l'homme*, CMG I 1, 3, Berlin, 2002, pp. 52–54 and p. 335.

<sup>40</sup> This definition of good health is discussed at the start of the treatise in ch. 2, Joly 124,5–8 = Jones 4.226,19–228,25: “Man cannot be in good health if he eats without also undertaking exercise. For food and exercise, although they have contrasting properties, mutually combine for good health; for the nature of exercise is to use up what exists, and food and drink to replenish what is lost.”

<sup>41</sup> On these two diets and two groups of audiences, see R. Joly, *op. cit.* (n. 4), p. 125 ff.; J. Ducatillon, “*Collection hippocratique. Du régime*, Livre III, Les deux publics,” *Revue des Études grecques* 82, 1969, pp. 33–42.

<sup>42</sup> See *supra*, n. 40. The author reaffirms in ch. 69 (Joly CMG 202, 1f. = Jones 4.382,19f. = 6.606,9 L.) the understanding of good health as a balance between food and exercise (“good health comes from the mutual balance” of these two elements).

collection of papers published in 1995 in Exeter, one of the editors of which is John Wilkins, our colleague from Exeter, who is also present here.<sup>43</sup>

Due to lack of time, I cannot discuss how these important problems tackled by Hippocratic doctors were further developed in Greek medicine or philosophy. Unlike the Persians, I do not have the option of multiple desserts. I will simply offer here a small dessert, as in the Greeks' diet, but one which, I hope, is worthy of consideration. It is an outcome and expansion of the doctors' reflection on the diet of individuals in the contemporary political discussions on the diet of the city found in book 6 of Thucydides' *History of the Peloponnesian War*, in the debate between Nicias and Alcibiades before the people's assembly of Athens about the issue of whether or not to undertake the expedition to Sicily. The medical metaphor is evident at the end of their antithetic speeches, where the two strategies are opposed: Nicias proposes, for the good of the city, a radical change of its harmful politics of exterior alliance by giving up the expedition, whilst Alcibiades, a supporter of the expedition, warns against a radical change of the interventionist habit of the Athenians, despite being harmful, because it would lead to the city's downfall. We can recognise here the problem of change and habit that was clearly and precisely discussed by the Hippocratic author of *Regimen in Acute Diseases*.<sup>44</sup> Any dietetic or political programme advocates

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<sup>43</sup> Work quoted in n. 6. The fifth part of the work (pp. 336–379) is dedicated to food and medicine (Part Five: Food and Medicine).

<sup>44</sup> Thucydides 6.14 (Nicias) and 6.18.7 (Alcibiades). For a detailed comparison of the two passages, see J. Jouanna, "Politics and medicine. The problem of change in *Regimen in Acute Diseases* and in Thucydides (Book 6)," in this volume, chapter 2. Recently, G. Camassa, "L'idea del mutamento nel Corpus Hippocraticum," in *Medicina e società nel mondo antico*, A. Marcone ed. (Atti del convegno di Udine, 4–5 ottobre 2005), Florence, Le Monnier, 2006, pp. 16–25 (n. 30 and n. 38), whilst recognising the importance of my study, does not share my conclusion that the author of *Regimen in Acute Diseases* criticises traditional treatment. He opposes my position (n. 38, "Thus, I think the opposite to Jouanna"), by seeing a criticism instead against "a new trend, inspired by relativism" (p. 25), a new trend justifying change that is represented by *Places in Man*. However, this hypothesis does not refer at all to the polemic of *Regimen in Acute Diseases*, which criticises all doctors and not simply a new trend. I quote the passage from the *Regimen in Acute Diseases* ch. 8, Littré (ch. 26 Kühlewein) Joly 47,7–13 = Jones 2.82,4–84,11 = 2.278,8–280,1 L.: "I know that *doctors* do the opposite of what they should do. They *all* want, at the start of a disease, to firstly dry out the individual over two or three days, or even longer, before giving them soups and drinks. Perhaps it seems logical to them, at the moment that a great change is produced in the body, to contrast it with a great and strong change." The texts are more credible than hypotheses and we cannot ignore them. The author of *Regimen in Acute Diseases* wishes to affirm his originality against all other doctors. That he wishes to simplify reality in polemical exaggeration is another story. Besides, it is possible that the author of *Places of Man* who advocates change (cf. particularly ch. 45, Joly CUF XIII, 75,4–6 = Potter 8.90,10–12 = 6.340,5–7 L.: "all change outside the present state is

change. But how do we change whilst preserving the health of the individual or the social body? This is the difficulty. To recall the both sensible and subtle analyses of the first Greek doctors is useful, and could even be so today.

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useful to the patient, since if he does not change, the harm increases”), could represent the practice criticised by the author of *Regimen in Acute Diseases*; cf. ed. Joly (CUF VI, 2, 1972, p. 47, n. 2): “we cannot rule out that our author takes this directly from this treatise [*Places in Man*], which could pre-date it.” However, the general nature of the polemic in *Regimen in Acute Diseases* prevents us from establishing a particular link between the two treatises and deducing a relative chronology to the effect that *Places in Man* would be older than *Regimen in Acute Diseases*.



## CHAPTER NINE

### WATER, HEALTH AND DISEASE IN THE HIPPOCRATIC TREATISE *AIRS, WATERS, PLACES*

*Airs, Waters, Places* is the only treatise from the Hippocratic Corpus that devotes substantial discussion to the effects of the internal usage of water on health and disease.<sup>1</sup> Elsewhere, in some of the dietetic treatises, we find brief discussions of water. For example, the author of *Regimen in Acute Diseases* devotes a short passage to water as a drink, but this is only from the perspective of the treatment of acute diseases. More surprising is the fact that the treatise *Regimen*, which contains the most detailed catalogue of foods and drinks in the Hippocratic Corpus, dedicates only one pithy and succinct sentence to water: “water is cold and wet” (ch. 52, 6.554, 7 L. = Joly 50, 3). There is a great contrast between this laconic declaration and the rich discussions in *Airs, Waters, Places* on the different kinds of water that men habitually drink or use. We can say without any hesitation that it constitutes the most fundamental text for the study of the different categories of water and their relationship with health and disease in the history of western medicine.

Why is water such an important theme in the treatise, and how are the different aspects of water presented? This two-pronged question will be the object of the first section of this paper.

Let us first consider the aim of the work. *Airs, Waters, Places* belongs to the category of treatises written for doctors, although it is uniquely addressed to a well-defined category of specialists: practising doctors who travel from one city to another. When the itinerant doctor arrives in a city he does not know, he must consider the various factors that have the greatest effect on health and disease, so that he can impress the inhabitants by the accuracy of his prognoses and the efficacy of his treatment. At the start of his

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<sup>1</sup> There is also another Hippocratic work about water, suggested both by the title given to it by medieval manuscripts, *On the Use of Liquids* and, above all, by its more ancient title attested in Erotian, *On Waters*. However, this short treatise only concerns the external usage of liquids (fresh water, sea water, vinegar, wine) in the form of sprinkling, bathing, or vapour baths on various complaints.

treatise, the Hippocratic author lists the following five important factors: the seasons of the year, the winds, the qualities of the different kinds of water, the nature of the terrain, and finally, the diet of the inhabitants. The order of this list already shows the remarkable place the author accords to the observation of water, since he quotes this factor in third position, after the climate and the city's orientation to the winds, and before the influence of the terrain and the inhabitants' diet. What is all the more remarkable is that the author sets water apart from the inhabitants' diet; this is, it seems, the only example in the Hippocratic Corpus where this occurs. In *Airs, Waters, Places*, as in the other treatises, 'diet' comprises three elements: food, drink, and exercise. However, by drink, the author of *Airs, Waters, Places* means wine. Since the diet of the inhabitants of a city could vary, and people may or may not enjoy drinking wine, what remains as the liquid that is used by everyone in the city is the available water: it is drunk, either alone or mixed with wine, and it is used in cooking, not to mention its external usage. Thus, it forms part of the environmental factors.

The importance accorded to water and its separation from diet are even clearer in the main body of the work, since two of the five important factors announced in the introduction (the inhabitants' diet and the nature of the terrain) are not given a discussion of their own. Thus, the medical part of the treatise only includes three main sections. The discussion of water occupies a central position (ch. 7–9), following after the passage about the orientation of cities towards the winds (ch. 3–6), and before the discussion of climate (ch. 10–11).

The discussion of water is the longest of the three: it takes up one hundred and fifty six lines in H. Diller's edition, whilst the discussion of the orientation of places takes up only one hundred and thirteen, and the discussion of climate only eighty.<sup>2</sup> Thus, the discussion of water is nearly twice as long as that of climate. This is all the more surprising because the technical section on water is not, if I may say so, the most attractive for the reader who explores *Airs, Waters, Places* for the first time.

The importance attached to water in the medical section of the work is demonstrated by the fact that it is also discussed in the first section on the orientation of cities towards the winds. When the author presents the nosological outline of four cities corresponding to the four principal possible orientations towards the winds, he talks not only about the winds,

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<sup>2</sup> H. Diller, *Hippocratis De aere aquis locis*, CMG I 1, 2 (Berlin, 1970). \*[For a more recent critical edition of the treatise see J. Jouanna, *Hippocrate. Airs, Eaux, Lieux* (Paris, 1996)].

but also about the quality of the water. Moreover, in the third section on climate he also alludes to the quality of the cities' waters.

Thus, the theme of water has a strong presence throughout the first, medical part of the work; not only is the central and longest part of the text dedicated to water, but information about water can also be gleaned from the two other sections, on the orientation of places and the seasons, which precede and follow it.

Finally, *Airs, Waters, Places* is the first to extend the medical part with an ethnographic section, in which the peoples of Asia and Europe are compared, explaining the principal physical and moral differences between these two peoples by reference to a system based on the factors listed in the first, medical part of the treatise. Thus, it is not surprising that here, too, we find a discussion of the quality of water. This is confirmed by the presence of the word ὕδασι on the page of the newly discovered manuscript from Paris that provides us with the end of *Airs, Waters, Places*.<sup>3</sup> However, the passages dedicated to water in this second, ethnographic part are shorter, since climate emerges as the principal factor that explains the physical and moral differences between the two peoples, the second being a human factor, customs and laws.

Having seen how references to water are distributed throughout the treatise, let us now turn our attention to the way in which the principal section on waters is structured. The author (who is, above all, a doctor) wishes to demonstrate the influence of waters on health and disease. He says this very clearly in the sentence that introduces this section in ch. 7. He concludes his discussion of the orientation of cities towards the winds by saying: "This is what there is to say on the subject of winds, on those that are beneficial and those that are harmful"; and he introduces his discussion of water in the following way: "On the remaining subject (i.e. water), I wish to discuss those kinds of water that are unhealthy and those that are very healthy, the harmful effects or the benefits that normally result from water; since water contributes a very large part to good health" (*Airs, Waters, Places* 7, 2.26,8–11 L. = Diller 34,16–19). This transition, apart from underlining the parallelism between the two principal factors that explain local diseases peculiar to each city (winds and waters), shows both the aim of the discussion, which will be more nosological than therapeutic, and the importance the author accords to this factor. The statement that

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<sup>3</sup> \*[Par. gr. 2047 A; see ed. J. Jouanna (see above, n. 2), Notice, pp. 108–109 and Text p. 247,4].

waters contribute a very large part to good health (ch. 7: πλείστον γὰρ μέρος συμβάλλεται ἐς τὴν ὑγίειν) recalls a similar phrase that the author used previously about astronomy to show the importance of the climate on health: “astronomy does not play a small role in medicine, but a very large role” (ch. 2: οὐκ ἐλάχιστον μέρος συμβάλλεται ἀστρονομίῃ ἐς ἰητρικὴν, ἀλλὰ πάνυ πλείστον: *Airs, Waters, Places* 2, 2.14,16–18 L. = Diller 26,19–20).

This important influence of water on health is demonstrated in a well-structured section of the text, whose organisation rests on the distinction between several important categories of water, generally well delineated by introductory and concluding phrases, as is typical throughout the treatise.<sup>4</sup> The first subdivision concerns stagnant waters of marshes and lakes (ch. 7a: 29 lines of Diller’s edition); the second concerns spring waters (ch. 7b: 35 lines); the third subdivision (ch. 8) differs from the previous two because it includes two categories of water: rain water and snow water. The introductory and concluding phrases of this third subdivision are very clear. The concluding phrase corresponds to the opening phrase (“I will discuss rain waters and snow waters”): “This is what there is to say concerning rain waters and waters coming from snow and ice” (*Airs, Waters, Places* 8, 2.32,17 L. and 36,18–19 = Diller 40,7–8 and 44,3–4). Although these two categories are discussed in the same subdivision, they are clearly distinguished in the text: first, rain water (34 lines); then, water coming from snow and ice (only 12 lines). Finally, the fourth and last division (ch. 9) concerns a fifth category of very diverse kinds of water, originating either from large rivers into which flow other rivers, or from lakes into which flow numerous streams of water, or from water carried through pipes over great distances (40 lines).

We note that this division into five main categories, which here makes its first appearance in extant Greek literature, is given no justification; the author probably feels no need to do so because these distinctions had already been made before him. Hippocrates is our first witness only because the scholarly literature that preceded him or that he inherited has disappeared.

Having discussed the overall structure of the section devoted to different kinds of water, let us now turn to a comparison of the structure of each of the subsections on the principal categories of water. In contrast to the superficial impression of rigidity and monotony given by the stereotypical introductory and concluding phrases, we find that the organisation of their

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<sup>4</sup> Note that the traditional division into chapters does not respect the natural structure of the discussion: only three chapters for four subdivisions and five categories of waters.

contents displays great elegance. The author never loses sight of his essential aim to show the influence of the different categories of water on health and disease. For example, the discussion of mixed water is the longest (40 lines), because it comprises a kind of short monograph on one of the complaints caused by these mixed waters, lithiasis, which takes up more than half the discussion (26 lines). However, the structure of some passages indicates that the author's scientific horizon is much larger. This is particularly the case in the discussion of rain water, whose length is almost comparable to the passage on mixed water (34 lines). Since rain water is best for health, the diseases that can occur if it is not boiled are listed in one single line. Good health, like happiness, is uneventful. What, then, is the subject matter of almost the entire passage? It is a kind of physical treatise on the formation of rain water, which is longer than the medical monograph on lithiasis.

A comparison of the structure of these two subsections shows us that one of the original features of this treatise, which is a fundamental text on the connections between water and health, is that medical knowledge is coupled with the knowledge of the 'natural philosopher'. More precisely, that medical knowledge implicitly supposes a prior knowledge of the nature of the different waters and their origin, i.e. knowledge comparable to that of the pre-Socratic philosophers' inquiry *περι φύσεως* ('On nature'). It is to this prior knowledge that we now turn in the second section.

In the first passage of *Airs, Waters, Places*, the author declares that a doctor should know the *δύναμις* of a particular kind of water in order to judge if it is favourable to health or not, and he recommends that the doctor examine the various kinds of water:

Moreover, it is necessary to consider the *δυνάμεις* of the waters; just as they differ in flavour and weight, their *δύναμις* also differs greatly between one and the other.<sup>5</sup>

I have not translated the Greek word *δύναμις* because it is untranslatable. Traditional translations such as 'quality' or 'property' are a lesser evil, since they hide the dynamism of the Greek term. The *δύναμις* of a particular kind of water is not only the permanent quality that defines its nature, but also its power to act upon a human body. The term *δύναμις* has, at first sight, a meaning that is both physical and biological. It is the point of departure for

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<sup>5</sup> *Airs, Waters, Places* 1, 2.12,6–9 L. = Diller 24,8–10.

the natural philosopher, who defines the nature of water and who does his best to account retrospectively for a genetic explanation of its formation. It is also the point of departure for the doctor who, knowing the water's δύναμις, can determine its pathological action on man. These two steps constitute one of the Hippocratic treatise's original features.

Thus, the δύναμις of a particular kind of water is fundamental. Certain historians of science may wish to see in it proof, amongst others, of the predominance of qualitative thinking in Greek science. This is correct; but what is most remarkable about this first passage of *Airs, Waters, Places* is that the author does not speak of the δύναμις of one kind of water in the singular, but of the different δυνάμεις of waters in the plural. This approach to the problem is radically different from what we find in the two dietetic treatises of the Hippocratic Corpus mentioned at the start of this paper: *Regimen in Acute Diseases* and *Regimen*. These works speak uniquely of the properties of water in the singular. Whilst the author of *Regimen* recognises only two properties of water—it is cold and wet—the doctor of *Airs, Waters, Places* highlights first the diverse qualities of water and then, in the course of his discussion, distinguishes the numerous possible qualities that define its different types.

Although there is not enough space here to give an exhaustive account of all the qualities that can be attributed to water, a few examples will remind us of the richness of the range available to the author. Of course, water can be cold or hot; and some kinds of water are hot in summer and cold in winter, while others are cold in summer and hot in winter. Some qualities are expressed in opposites and mutually exclusive; for example, waters are clear or cloudy; they are odourless or have a bad odour; they are thin or thick; they are sweet or salty. The antithesis of soft and hard waters plays a major role in the treatise. Conversely, some qualities are also combined. Certain kinds of water can be thick, bad-smelling, discoloured and muddy at the same time; others can be sweet, white and light.

The list of these qualities gives an initial idea of the finesse of the author's analysis in his description of waters, and it poses the problem of how these qualitative measurements were carried out. The variety of qualities presupposes that the doctor has to use several senses: sight (for example, clear or muddy waters; white or discoloured waters); smell (waters can have a good or bad odour); taste (fresh or salted waters). The author also pays attention to culinary matters: waters can be more or less favourable to cooking; they can be drunk with more or less wine. For certain qualities, we do not know exactly what allowed them to be determined (for example, soft or hard waters).

In the particular case of light or heavy water, we may wonder if the author had recourse to quantitative means of investigation, i.e. if he weighed the water. It is certain that in later times, water was weighed with scales. For example, in Athenaeus' *Deipnosophists* (2.43 b), it is said: "having weighed the water from the Pirenian Spring at Corinth, I found it to be the lightest of all Greece." Another passage in Athenaeus, in the same context, confirms that we are talking about weighing with scales; "the waters neighbouring the mines which surround Pangaeum weigh 96 drachmas a cotyle in winter, and in summer 46" (2.42a–b). Of course, the testimony of Athenaeus does not necessarily prove that water was weighed in Hippocrates' time. Indeed, we could argue that the lightness or heaviness comes from the impression left by water's taste. In the same discussion of water, Athenaeus says (2.42 a): "Other waters are like a solid body and have a similar density, such as the water of Troezen, which when tasted, fills the mouth." We also find evidence in the Hippocratic Corpus that weight did not necessarily serve doctors in Hippocrates' time as a criterion for the lightness of water. In *Epidemics 2* and *Aphorisms*, the criterion for the lightness of water is the fact that it warms up and cools down rapidly.<sup>6</sup> However, it seems completely unambiguous in *Airs, Waters, Places* that its author distinguishes between flavour and weight from the very first sentence, where he advises the doctor to take waters into account: "Waters," he says, "differ by their taste in the mouth and by their weight" (στραθμῶ).<sup>7</sup> Since he speaks explicitly of weight, and talks about taste in the mouth and weight in the same sentence, we may conclude that he did not rely only on taste to appreciate the lightness or weight of the water, but that he weighed the water with a scale. Although there is no explicit mention in the rest of the treatise of weighing water with scales, we may suppose that the author carried out a quantitative measurement of the water. The procedure is worth quoting because it is one of the rare examples of quantitative experiments that we find in the Hippocratic Corpus. Through this experiment, the author wishes to show that water from snow and ice does not revert to its initial nature, but loses any clean, light and sweet aspect and preserves only the heaviest and weightiest part:

You can confirm this in the following manner, if you wish: in the winter, pour water into a vessel after having measured it and expose it to the open air until

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<sup>6</sup> *Epid.* 2.2, 11. (5.88,15–17 L.) and *Aphorisms* 5.26 (4.542,1–2 L.): "The water which heats up and cools rapidly is the lightest."

<sup>7</sup> *Airs, Waters, Places* 1, 2.12,7–8 L. = Diller 24,9.

it is all frozen, and then on the following day bring it inside where the ice will thaw; you will find, by measuring the water again when the ice is melted, that its quantity is much diminished. This is a proof that, under the influence of freezing, the lightest and thinnest part dissipated and dried, and not the heaviest and thickest, for that is impossible. For this reason I think these waters are the most harmful for all uses, i.e. those waters from snow and ice, and those similar to them. (*Airs, Waters, Places* 8, 2.36, 9–19 L. = Diller 42, 18–44, 2, Trans. C.D. Adams, modified)

This is a quantitative procedure, for the same water is measured before and after freezing and a reduction is observed in the water's quantity. This measurement is not made with scales, but with one of the measures of quantity known to the Greeks to measure liquids. It goes without saying that, if the procedure is described correctly, his interpretation is wrong, since the author immediately infers a qualitative change from a quantitative reduction. According to the author, if the water has lost volume, this means that it has not returned to its initial nature and has lost certain qualities. However, this quantitative procedure, although imperfect, remains one of the most remarkable testimonies to the author's scientific spirit.<sup>8</sup>

This procedure highlights a second characteristic of the scientist's discussion of water. He is not content with simply listing the different qualities of waters in order to identify subsequently their influence on health and disease, but he endeavours each time to explain these qualities by the water's origin or the way in which it has come about.

Concerning origin, we can take different kinds of spring water as an example, for their nature and qualities vary between them according to the nature and qualities of the terrain from which they spring. For example, spring water is hard when it comes from rocks or terrain that contains metals such as gold, silver or copper etc. Conversely, waters that come from hills of earth are sweet and white and can be drunk with less wine.

Concerning the way water comes about, we can take rain and snow water as an example, which present opposite cases. Rain is formed from the lightest (*κουφότατον*) and the thinnest (*λεπτότατον*) water, which has been separated from the rest, whilst ice is formed from the heaviest (*βαρύτατον*) and thickest (*παχύτατον*) water that remains after separation from the lightest (*κουφότατον*) and thinnest (*λεπτότατον*) parts.

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<sup>8</sup> On this quantitative experiment, see M.D. Grmek, *La première révolution biologique: réflexions sur la physiologie et la médecine du XVIIe siècle*, (Bibliothèque scientifique Payot) (Paris, 1990), p. 31f.

It is particularly in these comments that the Hippocratic doctor's discussion agrees with pre-Socratic naturalism. His long, specialised discussion of the formation of rain water is the most striking example, and its explanations are very similar to those of the sixth-century Ionian philosophers (Anaximander of Miletus, Xenophanes of Colophon) and of Diogenes of Apollonia, the fifth-century philosopher who continues and renews the Ionian tradition.<sup>9</sup> The lightest part of salted water, in salty bodies such as the sea, is lifted, pulled by the sun: it is softened by the boiling of the sun; then it condenses and falls again in the form of sweet rain water. It would be premature to infer the influence of Diogenes of Apollonia on Hippocratic medicine from these similarities, for it could also be a case of independent use of common knowledge. Indeed, by drawing on the observation of biological phenomena in order to confirm cosmological theories, the doctor's discussion goes beyond the philosophers' explanations (judging, at least, from the doxographies that have survived). In his specialised discussion of the formation of rain, the doctor confirms the physical law according to which the sun attracts all liquid by reminding his readers of a more properly medical observation, viz. that sweat evaporates or does not evaporate depending on whether the skin is protected from the sun or not. In any case, the passage from *Airs, Waters, Places* on the formation of rain is exceptionally important for the history of physics in antiquity, since it is the oldest passage to preserve a complete and authentic explanation, whilst the opinions of the pre-Socratic philosophers are known only indirectly through later, more or less simplified, summaries.

More generally, the collection of passages where the Hippocratic author of *Airs, Waters, Places* endeavours to explain the qualities of different waters by their origin or formation is an irreplaceable witness to causality in ancient physics. The systematic rigour of the author's explanation does not exclude complexity, or even flexibility. One of the signs of such rigour in causation is the author's very frequent use of the term ἀνάγκη ('it is necessary') to deduce the qualities of the different waters from the different conditions that explain them. Here is the passage on stagnant waters as an example:

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<sup>9</sup> \* [Anaximander: DK 12 A 27 (= Plutarch, *Epitom.* 3.16); Xenophanes: DK 21 A 46 (= Stobaeus, *Ecl.* 1.31); Diogenes of Apollonia: DK 64 A 17 (= Alexander of Aphrodisias, *Commentary on Aristotle's Meteorologica* 353a32, p. 67,12 CAG): "Diogenes says that the cause of the saltiness of the sea is as follows: as the sun causes the sweet part of the sea water to rise, the effect is that the part that is left behind and remains is salted." See J. Jouanna, *Hippocrates* (Baltimore and London, 1999), pp. 260–262.]

We come to stagnant and marshy waters and waters from lakes. In summer, these waters are necessarily hot, thick, and foul smelling, since they have no current; but being constantly supplied by rain-water, and the sun heating them, these waters are necessarily discoloured ...; conversely, in winter they (are necessarily) frozen, cold, and muddy with the snow and ice.

(*Airs, Waters, Places* 7, 2.26,12–17 L. = Diller 34,19–24, Transl. Adams, modified)

Throughout this passage, the qualities of stagnant waters in summer and winter are deduced both from their state as stagnant waters and from new supplies (rain water) and external influences (sun in summer, snow in winter).

This example of stagnant waters illustrates both the necessity and the complexity of the causation, since several factors are taken into consideration to explain the qualities of these waters and their cyclical evolution. The example of spring waters best illustrates the complexity of causation that the author accounts for in his physical considerations. The primary factor that explains the variety of spring water's qualities is, as we saw, their origin, i.e. the nature of the terrain from which they spring. However, there is a second factor that differentiates spring waters: their orientation to the sun and the winds. Here again, the author establishes a necessary connection between the orientation of springs and the quality of waters. For example, having said that spring waters that come from hills of earth are sweet and white, he adds: "most to be recommended are those that run towards the rising of the sun, and especially to the summer sun; for they are necessarily clearer, more fragrant and lighter" (*Airs, Waters, Places* 7, 2.30,9–11 L. = Diller 38,6–8). Thus, it is clear in the author's mind that the properties of spring waters depend principally on the nature of the terrain from which they spring and, secondarily, on their orientation, which can have a positive or negative effect on the qualities necessarily resulting from the terrain. Springs facing east are best; second are springs that face north; third, springs that face west; the most harmful are those that face south. However, the author introduces a third factor for the last category. Having stated that these springs are the most harmful, he adds: "those waters blown by the southern wind are harmful, whilst those blown by the northern are better" (*Airs, Waters, Places* 7, 2.30,20–21 L. = Diller 38,16–17). Thus, the predominance of opposing winds adds a variable that can change the qualities of the waters, which are determined primarily by the quality of the sun, and secondarily by their orientation.

In short, the causal chain, which draws on physical causes to explain the different qualities of waters, is both rigorous and complex. It constitutes a knowledge that is prior to that of the doctor, in so far as this knowledge

rationally establishes the elements that act upon the human body, and eventually it allows him to understand certain variables which can change these elements and their action on the human body.

In the third and final section of this paper, we will turn to the strictly medical aspect: the influence of the different qualities of waters on different states of the body.

We find that in order to define the different varieties of waters, the author uses both qualitative and normative vocabulary. His fundamental question is whether waters are good or bad for health. Different types of water are judged by their value and ordered hierarchically. The author begins by discussing stagnant waters, probably because they are most unhealthy. Indeed, he finishes this first section by saying: "Such waters are, in my opinion, harmful in all applications."<sup>10</sup> He continues: "Second to them are those which spring from rocks," clearly showing the emergence of a normative classification. However, the author's logic remains flexible. It is not this normative classification that organises the section on waters but, as we have seen, the principal categories that remained almost unchanged throughout Greek medicine: stagnant waters, spring waters, rain waters etc. Nevertheless, the author's normative classification continues to be used through scattered remarks in his discussion of these principal categories. Rain waters are the best (ch. 8, ἄριστα), as long as they are boiled. However, the author also says which waters are best within one and the same category. This is the case for spring water. We saw that the qualities of spring water depend on two principal factors (the nature of the terrain and their orientation), and the author identifies the best waters according to each of these two factors: concerning the nature of the terrain, the best waters (ch. 7, ἄριστα) are those that come from hills of earth; concerning their orientation, the best springs (ch. 7, ἄριστα) are those facing east. Moreover, the discussion of the orientation of springs presents us with a complete normative classification: springs facing east are the best (ch. 7, ἄριστα); second-best (ch. 7, δεύτερα) are springs that face north; third-best (ch. 7, τρίτα) are those facing west; finally, the most unhealthy (ch. 7, φαυλότατα) are those exposed to the *notos*, i.e. the southern wind.

Despite this rigorous detail, and despite this unprecedented level of synthesis, the hierarchy of the different types of water and their influence on health and disease established by the normative judgements of the author

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<sup>10</sup> *Airs, Waters, Places* 7, 2.28,21–22 L. = Diller 36,24.

remains ambiguous. For example, which are the worst kinds of water in the absolute sense? We saw that stagnant waters, which were harmful for all use (ch. 7: *μοχθηρά πρὸς ἅπαν χρῆμα*), are the worst of all. However, in his discussion of snow waters, the author uses a similar phrase and states that these are the worst waters for all uses (*πονηρότατα ... πρὸς ἅπαντα χρήματα*: ch. 8, 2.36,16–18 L. = Diller 42,24–44,2). How can we reconcile these two statements? This is probably one of those questions one is not supposed to ask, and which the author himself did not ask. His logic is both rigorous and flexible.

The author is not content with such normative judgements. For each category of water, he usually points out the diseases that result from its habitual usage. This is not the place to study in detail the content of these pathological discussions, whose length and structure varies in ways that we cannot always understand.<sup>11</sup> It is preferable instead to reflect on the nature of the causal link that exists between the qualities of water habitually ingested and the pathological effects that it produces in a human body.

Nosology appears as the final element in the causal chain, which begins with the origin and formation of water, moving onto the qualities of the waters and, subsequently, their influence on the constitution of human beings. Although nosology concerns living beings, the laws of causation are applied with the same rigour as they were to the cosmological domain.<sup>12</sup>

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<sup>11</sup> With regard to the length, the section on rain water (which is, according to the author, the best water) is naturally followed by only a short sentence on possible complaints if it is not boiled. Conversely, stagnant waters (which are harmful in all uses) are followed by a well-constructed nosological discussion. However, one would expect snow waters to be followed by a long nosological discussion as well, since they are also very harmful in all uses; but the author restricts himself to the observation that these are harmful, without mentioning any of the diseases they cause. These diseases are listed by Rufus of Ephesus in Oribasius, *Coll. Med.* V, 3 (Raeder I, 118,11–16): “Snow or ice water, indigestible, is harmful to the nerves, to the chest and to the side, it produces convulsions and leads to spitting blood.” With regard to the structure of these nosological sections, when discussing diseases caused by waters, the author usually mentions them by name only, since he is writing above all for specialists, who are familiar with the pathology. However, with regard to the diseases caused by water of diverse origins, he discusses at length, as we have seen, the formation of stones in the bladder, i.e. lithiasis, and the strangury that results from it.

<sup>12</sup> Expressions such as ‘it is necessary that’ and ‘it is normal that’ are found in the treatise in connection with the effects of water’s properties on the body or the functioning of the resulting pathological processes, and in connection with the origin and formation of the waters and their resulting properties. Here is an example where this relationship of cause and effect between the properties of the waters and the effects that they produce in the body is expressed with ‘it is normal that’ (ch. 7, 2.32,8–11 L. = Diller 38,24–40,2): “As for the waters that are best for cooking and the most emollient, it is normal that they loosen the stomach

Waters that are regularly drunk have a long-lasting effect on the human constitution. Stagnant waters provoke a sickly state in those who drink them, which the author describes with great clarity:

The spleen is large and obstructed all the time, the stomach is hard, emaciated and hot; and the shoulders, collar-bones, and face are very emaciated and thin (indeed, their flesh is melted down and taken up by the spleen, and hence they are thin); such people are starving and thirsty; their stomachs are very dry both above and below, so that they require the strongest purgative medicines. Their disease is congenital (νόσημα ... ξύντροφον) in both summer and winter.<sup>13</sup>

Apart from the keen sense of observation and the quality of the description, which are well-known characteristics of Hippocratic medicine and which allow a fairly reliable retrospective diagnosis of malaria, what is revealing here is the expression νόσημα ... ξύντροφον. Normally translated by 'habitual illness', it actually refers more strongly in Greek to a 'congenital pathological state'. Thus, man's natural constitution is itself changed by the habitual diet of water. Although the author does not formulate it in these terms, we could say that water creates a second nature.

This permanent connection established between water and man's constitution is presented, at least implicitly, in the form of an analogy. Man's physical constitution is a reflection of the water he drinks, i.e. he is defined by the same elementary qualities of the water. For example, to hard waters (ch. 4: σκληρά) correspond constitutions whose cavities are hard (ch. 4: σκληράς). However, this analogy, based on the belief that these qualities are the primary elements that define things and living beings, should not lead to a simplified view of the causal relationships that the author establishes between the quality of waters and the diseases which affect those who drink them. These causal relationships are made more complex by the nature of the waters that act upon the patient and by the nature of the patient himself.

First, there is the nature of the waters that act upon the patient. Some of the principal categories of water defined by the author see their nature change according to the seasons. For example, stagnant waters are hot in summer and cold in winter, meaning that seasons can qualitatively alter the waters. This cyclic modification of waters leads to a cyclic change in the

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and make it soften more than any other; whilst waters that are crude, hard and worst for cooking, tighten and dry the stomach more than any other."

<sup>13</sup> *Airs, Waters, Places* 7, 2.26,18–28,4 L. = Diller 34,25–36,7.

health of men. Those who drink stagnant waters are affected by seasonal disorders, as well as their permanent sickly state: in summer, dysentery, diarrhoea, long-lasting quartan fevers; in winter, other diseases. This single example shows the complexity of the causal chain of physical influences on human health. A single factor can affect someone either directly or indirectly. An important idea found in *Airs, Waters, Places* is that climate, i.e. the alternation of the seasons, affects man directly. In particular, major changes in the seasons are the most dangerous for him. This climatic factor can also affect man indirectly through the intermediary of the waters. In the case of stagnant waters, the seasons change the water's nature and this change determines a particular pathology.

However, the complexity of the effects produced by water on man results from the experiences of the patient rather than the nature of the waters, i.e. the diverse reactions of different individuals. The same water will not produce exactly the same diseases in the same population at the same time, and the doctor must take several variables into account. First and foremost, age and sex. In his discussion of winter diseases that afflict those who drink stagnant water, the author does not simply list a series of diseases as he does for the summer, but he differentiates diseases according to age and sex. Amongst the young, peripneumonia and delirium; amongst the old, causus; amongst women, oedema and leucophlegmatia.<sup>14</sup> In addition to age and sex, the author also accounts for the state of man and his constitution. For example, these two other variables are noticeable in his recommendations concerning spring waters. The author begins by distinguishing between the state of a healthy man and the state of a sick man, saying:

Whoever is in good health and strength need not mind, and may always drink whatever water is at hand. By contrast, someone who is suffering from a disease and wishes to drink the water that is most suitable for this, has the most chance of recovering good health by acting as follows.<sup>15</sup>

When discussing the choice of spring water in case of sickness, the author mentions the variable of the constitution. He continues:

People whose stomach is hard and prone to heating up, will benefit from water that is particularly sweet, light and clear; whilst those whose stomach is soft, wet and phlegmatic should choose the hardest, crudest and most lightly salted waters, for in this way the stomach will be best dried up.

(*Airs, Waters, Places* 7, 2.32,3–8 L. = Diller 38,20–24, transl. Adams, modified)

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<sup>14</sup> *Airs, Waters, Places* 7, 2.28,9–12 L. = Diller 36,12–13.

<sup>15</sup> *Airs, Waters, Places* 7, 2.32,1–3 L. = Diller 38,18–20, transl. Adams, modified.

Thus, the patient's natural constitution determines the choice of the water to be administered according to the principle of contraries, which is found throughout the Hippocratic Corpus: soft water should be given to a patient to drink who naturally has a hard stomach; conversely, a patient with a soft stomach should be given hard water.

Consideration of a patient's constitution is mentioned not only in therapeutic contexts, which occupy a relatively minor place in the treatise, but also in nosological contexts, which is the author's principal concern. The same waters may or may not lead to sickness, depending on a person's constitution. Thus, concerning the final category of mixed waters, after listing the diseases that these can cause (lithiasis, nephritis, strangury, sciatica, hernias), the author adds (ch. 9):

However, these illnesses do not affect all individuals indifferently, and this is what I will discuss.<sup>16</sup>

At the root of this discussion are two opposing constitutions: those individuals whose stomach is flowing and healthy, whose bladder is cool and whose bladder opening is not too narrow and does not feel any effect from the drinking of mixed waters; and those individuals who have a hot stomach, and because of this a hot bladder whose opening is inflamed, who suffer from lithiasis and strangury through drinking mixed waters.

These are the various physical and biological variables that the doctor should take into account in order to determine the influences of water on health and disease. They account both for the innate (i.e. the natural constitution) and the acquired (i.e. environmental influences) as explanatory factors of pathological phenomena. This is an interesting approach, reflected by modern medicine's growing understanding of disease as the result of a permanent dialectic between the innate (our genetic heritage, currently in the process of a complete inventory) and the acquired (environmental influences).

What influence did this ground-breaking text have on fourth-century philosophical literature, and on technical medical literature in Greece and Rome more generally? This is an enormous field of research that cannot be explored fully in this paper. I will simply offer some preliminary remarks by way of conclusion.

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<sup>16</sup> *Airs, Waters, Places* 9, 2.38,9–10 L. = Diller 44,17.

With regards to fourth-century philosophical literature, we should note a parallel between Hippocrates and Plato that was already noted in antiquity during Galen's time: in his *Laws* (5. 747 d), Plato recommends to the lawmaker, when deciding on the location of a new city, that he bear in mind certain factors comparable to those mentioned in *Airs, Waters, Places*, and in particular the quality of the waters. In his political philosophy, Aristotle also insists on the importance of a city's orientation and the quality of the waters for the health of its inhabitants (*Politics* 1330a39–b18). However, Aristotle is closer to *Airs, Waters, Places* than Plato because he also highlights the effect produced by water in a biological context: "Water," he says in *On the Generation of Animals* (767a32 f.), "is ingested in abundance, it is present in all foods, even in solid foods"; then he adds: "hard and cold waters in some cases lead to sterility and, in other cases, to the birth of females." The author of *Airs, Waters, Places* had previously highlighted that the quality of water influenced women's fertility<sup>17</sup> and had notably remarked, prior to Aristotle, that hard and cold waters cause sterility.<sup>18</sup> The Aristotelian tradition, as represented in the many *Problemata* inspired directly by *Airs, Waters, Places*, offers an explanation for the bad quality of snow and ice water which seems to come directly from the Hippocratic text; however, it did not retain the originality of its famous 'quantitative' experiment, i.e. the measuring of water that has been frozen and then unfrozen.<sup>19</sup>

This impoverishment of the Hippocratic text can also be found in the medical tradition more strictly defined. Ancient doctors adopted the classification of waters established by the author of *Airs, Waters, Places*, and Charles Daremberg notes that "we find it, with small modifications, in Celsus, Rufus, Galen [...] Oribasius, Aetius, Paul of Aegina, Actuarius," not to mention the Arab doctors such as Avicenna or doctors of the Renaissance such as Ambroise Paré. This Hippocratic treatise was read, commented upon, cited and used in the medical tradition. Galen, in the second century AD, wrote a commentary on *Airs, Waters, Places*, preserved only in Arabic, but certain passages on waters are cited in Greek by Oribasius at

<sup>17</sup> *Airs, Waters, Places* 7, 2.28,13 L. = Diller 36,15.

<sup>18</sup> *Airs, Waters, Places* 4, 2.22,6 L. = Diller 30,25. On this connection, see S. Byl, *Recherches sur les grands traités biologiques d'Aristote: sources écrites et préjugés*, (Mémoire de la Classe des Lettres / Académie Royale de Belgique: Collection in-octavo; sér. 2, t. 64, fasc. 3) (Bruxelles, 1980), p. 81.

<sup>19</sup> See Aulus Gellius, *Attic Nights*, 19.5; cf. Macrobius *Saturnalia* 7.12, 25f. The connection was previously made by F. Poschenrieder, *Die naturwissenschaftlichen Schriften des Aristoteles in ihrem Verhältnis zu den Büchern der hippokratischen Sammlung* (Programm der Königlichen Studienanstalt Bamberg) (Bamberg, 1887), pp. 41–43.

the beginning of book five of his *Medical Collection*. A little later, Athenaeus in his *Deipnosophists* 2.46 c, quotes a fairly long passage from *Airs, Waters, Places* on spring waters.<sup>20</sup> Of all the discussions of water found among ancient doctors, the one that is most comparable to Hippocrates' fundamental account is found in Rufus of Ephesus' *Regimen*, a Greek doctor from the first-century AD.<sup>21</sup>

However, many of the rich and original elements of the discussion in *Airs, Waters, Places* on waters disappeared, or were blurred or simplified by post-Hippocratic doctors. First of all, this is what happened to a central part of natural science that constituted knowledge of causes of the different qualities of waters; here, the successors of Hippocrates tend to affirm rather than demonstrate. Second, the range of qualities attributed to the different waters by Hippocrates is simplified by his successors, as witnessed by the impoverishment of vocabulary describing the qualities of water. Some doctors even abandoned qualitative thinking and solely adopted the criterion of weight in order to establish a scale of waters relating to health and disease. This theory and method are discussed by the Latin encyclopaedist Celsus (2.18.12), who presents the following scale:

The lightest water is rain water; second, spring water; then, river water; and then, well water. After this, water from snow or ice; heavier than these waters is that which comes from a lake; the heaviest is that which comes from a marsh. It is both easy and necessary to know the nature of water for those who look for it. Lightness is measured through weight.

However, the inadequacy of this method, which had been advocated at an earlier date, was exposed by Erasistratus, one of the two greatest doctors of the Hellenistic period: "Some test the waters with a scale without a full investigation. Indeed, compare the water from Amphiarus and Eretria; one is harmful to health and the other not, although both weigh the same."<sup>22</sup> Finally, after Hippocrates we no longer find equal consideration of the

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<sup>20</sup> "Hippocrates, in his work *On Places* (= *Airs, Waters, Places*) says that the best waters are those that spring from high elevations and hills of earth; for they are clear and fresh, and can be mixed with only a little wine; in winter they are warm, whilst in summer they are cool; he particularly recommends those whose streams spring towards the rising sun, above all towards where it rises in summer; these waters are necessarily clear, fragrant, and light."

<sup>21</sup> The text was preserved in Oribasius, *Coll. Med.* 5.3 = Raeder I, 117–120. Like Hippocrates, Rufus takes into account the orientation of springs and considers that those orientated towards the east are best, whilst those facing south are harmful. He also recognises the influence of the winds on the quality of waters: "Winds," he says, "those which come from the north or the south, will produce a considerable difference."

<sup>22</sup> Quotation preserved in Athenaeus *Deipnosophists* 2.46, b–c.

diverse categories of individuals to explain the diverse influence of the qualities of waters.

I do not wish to imply by this that Hippocrates' successors did not add any positive or new provisions. In particular, the therapeutic aspect, which is barely present in *Airs, Waters, Places*, was later developed. However, we would not be exaggerating in saying that this fundamental text remained unrivalled for its richness of information, its power of synthesis and, above all, its sensitivity to the complexity of the effects of the different waters on the diverse categories of individuals. I would like to conclude by apologising, in front of the audience, for having once more put so little wine in my water. But I will console myself by recalling that, according to the author of *Airs, Waters, Places*, the best water is that which can be drunk with as little wine possible.

## CHAPTER TEN

### WINE AND MEDICINE IN ANCIENT GREECE

In an attempt to dispel the grief caused by the death of loved ones, Helen pours into the crater that was used for drinking an ingenious remedy that came from Egypt, the land of the most knowledgeable doctors in the world, who descend from Paeon, the doctor of the gods. This passage from the *Odyssey* (4,219 ff.) is well known, and is the first attestation in Greek literature of a remedy against love sickness. However, what is less well known is the reading of this passage by a Greek doctor who lived between Hippocrates and Galen, Rufus of Ephesus (first century AD), in a discussion of wine preserved in Oribasius:<sup>1</sup>

Wine is more praiseworthy for health than any other thing; however, anyone who drinks it must be wise, if he does not wish to suffer some irreparable ill; for wine can encourage heat, fill the body with strength and digest food from all parts; and there is no wine that is not harmful so as not to produce these effects; but it has, as all other things, some inferior qualities and some superior qualities. Wine can also give pleasure to the soul in a certain state, since it is the remedy (*φάρμακον*) against grief and, in my opinion, it is what Helen poured into the crater.

This *interpretatio graeca* of the Egyptian remedy is most certainly incorrect, but it clearly shows the important place that wine occupied in the medical thought of ancient Greece.

Wine was believed to be relevant to medicine in several ways. Just as for modern doctors, wine was held to be a possible cause of problems and even diseases, particularly when drunk excessively; thus, ancient doctors laid out precautions necessary for its use. However, what is most unexpected is that wine was considered as a therapeutic agent not only for the mind, but also for the body; thus, doctors made extensive use of wine in their prescriptions, both for internal and external uses.

The two richest corpora of medical writings on the use of wine by Greek doctors are undoubtedly those attributed to Hippocrates and to Galen.<sup>2</sup>

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<sup>1</sup> Oribasius, *Coll. Med.* 5.7.1–2 (ed. Raeder, Vol. I, p. 126,26–33).

<sup>2</sup> To give some idea of scale, we find the term *οἶνος* 867 times in the Hippocratic Corpus. There is still no study on wine in Hippocrates; see the remarks by J.-H. Dierbach,

Other Greek doctors whose works are preserved are historically less important, although we should not ignore the work of Aretaeus of Cappadocia (first century AD), who mentions wine some sixty times,<sup>3</sup> of Rufus of Ephesus (first-second century AD),<sup>4</sup> of Soranus (first-second century AD) in his work on diseases of women,<sup>5</sup> or the pharmacology of Dioscorides, a military doctor under Claudius and Nero.<sup>6</sup> For many Greek doctors, their work is unfortunately known only through fragments.<sup>7</sup> For example, the work

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*Die Arzneimittel des Hippokrates*, Heidelberg, 1824 (medical use of wine: pp. 59–62); cf. J. Jouanna, *Hippocrate*, Paris, 1992, p. 237 f. The works of Laurence Villard have filled part of this gap by studying wine and women: “Le vin et les femmes: un texte méconnu de la *Collection hippocratique*” (*Revue des Etudes Grecques* 1997, pp. 362–380); “Tant de vin pour soigner les femmes” (Proceedings of the IXe Colloque international hippocratique, Pisa, 1996, pp. 219–234). The article by D. Micallella, “Vino e amore: Ippocrate,” *Antica medicina* 20, *Quaderni Urbinate* 24, 1977, pp. 151–155, is of little value, since the interpretation offered there rests on a word (ἀσθενέα) which is not found in the ancient manuscripts.

Similarly, there is no study on wine and medicine in Galen; see the paper by J.-M. Jacques, quoted in footnote 48; on diet in general in Galen, see V. Nutton, “Galen and the traveller’s fare,” in J. Wilkins, D. Harvey and Mike Dobson, *Food in Antiquity*, University of Exeter Press, 1995, pp. 359–370 (wine p. 363).

<sup>3</sup> For attestations of the word ‘wine’ (οἶνος) in Aretaeus of Cappadocia, see the index of the edition by C. Hude, *CMG* II, 2nd ed., Berlin, 1958, p. 247 f.

<sup>4</sup> On medicine in Rufus of Ephesus, see recently H. Thomssen and Ch. Probst, “Die Medizin des Rufus von Ephesos,” *ANRW* II. 37. 2 (1994), pp. 1254–1292. However, there is only a very brief mention of the use of wine in dietetics (p. 1285 and n. 215). Rufus spoke about the use of wine not only in his work on *Regimen* (from where the extract cited here by Oribasius is taken), but he had written a treatise *On wine*, mentioned in the *Suda* and confirmed by three independent Arabic witnesses; see M. Ullmann, “Die arabische Überlieferung der Schriften des Rufus von Ephesos,” *ANRW* II. 37. 2 (1994), pp. 1293–1349 (particularly p. 1318 f. VIII *Der Wein*); fragments of the treatise *On wine* were translated into German by M. Ullmann, “Neues zu den diätetischen Schriften des Rufus von Ephesos,” *Medizinhistorisches Journal* 9 (1974), pp. 30–37.

<sup>5</sup> The term is used some thirty times.

<sup>6</sup> Dioscorides, *Materia Medica* 5 (particularly 7–11). To Dioscorides’ comments on the therapeutic virtues of wine, we should compare, in Latin literature, the corresponding discussion of Pliny (*Hist. Nat.* 23.31–51; see also book 14 on vines and wine, with the notes in the edition by J. André) and Celsus, *De medicina* (2.11 to 13, with the notes in the edition by G. Serbat, 1995); cf. also Columella, *De agricultura* 12.19 ff. To Greek medical literature we may add the sparse comments found in literature on the symposium (Plutarch, *Quaestiones Convivales* and particularly Athenaeus, *Deipnosophists* 1–2, 25f–40f). On wine in Dioscorides, see J.M. Riddle, *Dioscorides. On Pharmacy and Medicine*, University of Texas Press, Austin, 1985 (wine in Dioscorides, pp. 142–146). Useful comparisons between these diverse sources on the different varieties of wine can be found in the dissertation by H. Bruns, quoted in footnote 8.

<sup>7</sup> On wine in the fragments of Greek doctors, see particularly Diocles of Carystus, a doctor from the fourth century BC (frag. 48, 69, 130, 131, 141 Wellmann \*[frag. 114, 120, 237, 238, 182 van der Eijk]); see also, in the same period, the Athenian doctor Mnesitheus (frag. 41, 45, and 47 Bertier), with the commentary by J. Bertier, *Mnésithée et Dieuchès*, Leiden, 1972, pp. 57–86

on wine by Asclepiades of Bithynia (first century BC), which earned him the surname of 'giver of wine' (οἰνοδότης)<sup>8</sup> and which, according to Pliny the Elder, had given rise to innumerable commentaries, has regrettably disappeared.<sup>9</sup> Asclepiades' enthusiasm for wine was such that he thought it rivalled, or very nearly rivalled, the power of the gods.<sup>10</sup> When medical knowledge became encyclopaedic, notably from Oribasius, the doctor of the Emperor Julian (fourth century AD), Galen became the fundamental source of reference to wine. Since Galen takes his great precursor Hippocrates as his basis, unknowingly adding decisive innovations, it is clear that the Hippocratic position on wine remains essential in the history of Greek medicine and should serve as a basis for a discussion of wine in the medical thought of ancient Greece.

"There is no topic more difficult to handle, or more full of detail, seeing that it is hard to say whether wine does good to people rather than harming them," declares Pliny the Elder in his discussion of the therapeutic properties of wine.<sup>11</sup> Despite the importance and abundance of material on the subject, it is surprising to see that no study has been published on wine in Greek medicine.<sup>12</sup> This paper does not pretend to fill this gap, but to

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("L'enseignement de Mnésithée sur le vin"); also Praxagoras of Cos (frag. 39 Steckerl). For the Hellenistic period, see Erasistratus (frag. 158, 164, 167, 283 Garofalo) and Herophilus (T 256 Von Staden).

<sup>8</sup> Anon. Lond. XXIV 31; cf. Pliny, *Hist. Nat.* 7.123 ("reperta ratione, qua vinum aegris mederetur"). On wine in Asclepiades, see H. Bruns, *Quaestiones Asclepiadeae De vinorum diversis generibus*, Diss. Rostock, 1884, 52 p. (for testimonia on wine found in Asclepiades, pp. 40–52). This aspect of Asclepiades' work is not discussed in J.T. Vallance, *The Lost Theory of Asclepiades of Bithynia*, Oxford, 1990.

<sup>9</sup> Pliny, *Hist. Nat.* 23.32.

<sup>10</sup> Pliny, *Hist. Nat.* 23.38.

<sup>11</sup> Pliny, *Hist. Nat.* 23.31.

<sup>12</sup> Although there are numerous studies on wine and the symposium in Greece (see in particular F. Lissarrague, *Un flot d'images. Une esthétique du banquet grec*, Paris, 1987; O. Murray, *Symptica. A symposium on the Symposium*, Oxford, 1990, with an excellent bibliography, pp. 321–344; P. Schmitt Pantel, *La cité au banquet. Histoire des repas publics dans les cités grecques*, Coll. de l'École française de Rome 157, Rome 1992, particularly pp. 342–348 for wine, with the bibliography quoted p. 342), and although there is a study on wine and the sacred (K. Kircher, *Die sakrale Bedeutung des Weines im Altertum*, Giessen, 1910), there is none on wine and health in Greece. The work by R. Billiard (*La vigne dans l'Antiquité*, Lyon, 1913) remains fundamental on vines, the varieties of wine and also the diseases of wine; but there is no discussion about wine and diseases. The only study on wine in antiquity (Ch. Seltman, *Wine in the Ancient World*, London, 1957) contains practically nothing on wine and medicine. On wine and intoxication in Greece, see the thesis of P. Villard, *L'ivresse dans le monde grec*, Aix-en-Provence, 1988; on wine and *euthymia* ('good humour'), see J. Pigeaud, *La maladie de l'âme*, Paris, 1981, pp. 477–521. F. Salviat in his excellent article, "Le vin de Thasos, amphores, vin et sources écrites," *Bulletin de Correspondence Hellénique*

outline the role of wine amongst Greek doctors in pathology and, above all, in treatment, distinguishing between internal and external use.<sup>13</sup>

Wine has a power (δύναμις),<sup>14</sup> an ardour (μένος),<sup>15</sup> which, when consumed in excess (πολλὸς ποθείς)<sup>16</sup> or drunk unmixed with water (ἄκρητος),<sup>17</sup> can cause physiological disorders. The first of these disorders is, of course, intoxication;<sup>18</sup> there are numerous expressions to refer to this first cause of trouble amongst patients in Hippocrates (ἐκ μέθης, ἐκ πόσιος, ἐκ πύτων, ἐκ κραιπάλης, ἐξ οἴνου, ἐκ θωρήξιος or ἀπὸ οἴνοφλυγίης).<sup>19</sup> The Hippocratic doctors are particularly interested in the physical effects of intoxication, although they do not ignore its effects on thinking. However, they preserve the attitude of an objective observer. It is striking to note that the medical writings of the Hippocratic Corpus never condemn intoxication. We must look to Plato's *Symposium* to find such condemnation from a doctor:

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Suppl. XIII, pp. 145–196, stresses the need for a history of Greek wine, comparable to that which exists for Rome (cf. A. Tchernia, *Le vin de l'Italie romaine*, Ecole française de Rome, 1986; cf. also M. Gras, "Vin et société à Rome et dans le Latium à l'époque archaïque," in *Modes de contact et Processus de transformation dans les Sociétés anciennes. Actes du Colloque de Cortone* [24–30 mai 1981], Coll. Ecole française de Rome 67, 1983, pp. 1067–1075). On wine in Rome, see also J. André, *L'alimentation à Rome*, Paris, 1981, pp. 162–174; and on wine and medicine in Rome, G. Dumézil, *Fêtes romaines d'été et d'automne*, Paris, 1975 (chap. 'Médication du vin et santé des hommes', pp. 98–107) and J.-M. André, 'Vertu thérapeutique du vin et pathologie de l'ivresse à Rome, de Lucien à Pline l'Ancien', *Actes du XII<sup>e</sup> congrès de l'Association Guillaume Budé*, Paris, 1989, pp. 450–452. In P. Scarpi (ed.) *Storie del vino. Homo edens II*, Milan, 1991, there is a no discussion about wine in medicine.—The present study was meant as a contribution to a Greek publication as part of a collaborative project on *Wine in Greece* led by F. Salviat but which, due to reasons beyond his control, will never come to light. I thank François Salviat for having requested my collaboration. He is the cause that prompted this study, its πρόφασις.

<sup>13</sup> Given the breadth of the subject, we will not discuss the therapeutic properties of the by-products of wine (for example, the verjus left by green olives and vinegar), nor of wines made from plants outside vine. On the by-products of wine and their use in medicine, see M.-C. Amouretti, "Les sous-produits de la fabrication de l'huile et du vin," in M.-C. Amouretti and J.P. Brun (eds.) *La production du vin et de l'huile en Méditerranée*, BCH Suppl. 26, 1993, pp. 463–476.

<sup>14</sup> Hippocrates, *Ancient Medicine*, ch. 20 (1.622,15 L. = CUF ed. Jouanna p. 147,7).

<sup>15</sup> Hippocrates, *Regimen in Acute Diseases* 17 (2.362,2 L. = CUF ed. Joly p. 64,16).

<sup>16</sup> Hippocrates, *Ancient Medicine*, ch. 20 (1.622,15 L. etc. = CUF ed. Jouanna p. 147,7).

<sup>17</sup> Hippocrates, *Epidemics* 5.86, (5.252,11 L.) etc.

<sup>18</sup> On intoxication amongst the Greeks in general, see the thesis of P. Villard, quoted in footnote 12. Compare, for drunkenness in Rome, J.M. André, quoted in footnote 12.

<sup>19</sup> For these references, see J.-H. Kühn/U. Fleischer, *Index Hippocraticus*, Göttingen, 1986–1989 s.v.

For me, said the doctor Eryximachus, whilst we are determining how many cups should be drunk at parties, medicine has shown me a very obvious fact, that drunkenness is harmful to man.<sup>20</sup>

Hippocratic doctors themselves seem to consider intoxication as just another cause of sickness. According to the Hippocratic writings, excessive consumption of wine can cause two types of effects, since wine affects above all two parts of the body. Its most frequent effect, most specifically associated with intoxication, is on the head; but wine can also act on the ‘cavities’ of the body, especially on the ‘lower cavity’. Whatever the affected part, the fundamental effect is that of warming, a general property of wine upon which all doctors agree. The clearest statement of this belief is found in the Hippocratic author of *Regimen*, who contrasts the properties of wine with those of water: “water is cold and wet; wine is hot and dry.”<sup>21</sup> Galen’s view is the same.<sup>22</sup> According to Rufus of Ephesus, wine “arouses heat” in the body;<sup>23</sup> he believes that, if the same diet were given to two men and one was made to drink water and the other wine, we would find a large difference between them regarding the quantity of heat in their body.<sup>24</sup>

Doctors sometimes seek to explain the evident fact that wine acts with predilection on the head. For example, the Hippocratic author of *Affections* declares that the head, when it is warm, attracts wine.<sup>25</sup> However, normally they content themselves with the observation as such. The excessive use of wine leads to heaviness of the head (*χαρηβαρία*)<sup>26</sup> and to pain in the head.<sup>27</sup> However, wine can also have far more serious effects on the head and can lead even to death. Three Hippocratic case histories record intense fevers following excessive drinking, the last case ending in death.<sup>28</sup> The first of these patients suffers a “shaking of the head and particularly of the lower lip”; all three are subject to hallucinations. Indeed, wine leads to disturbance

<sup>20</sup> Plato, *Symposium*, 176 c–d.

<sup>21</sup> *Regimen*, ch. 52 (6.554,7 L. = CMG ed. Joly p. 172,17).

<sup>22</sup> *On the Powers of Simple Drugs* 7.15,2 (12.88 K.).

<sup>23</sup> Rufus of Ephesus, quoted in Oribasius, *Coll. Med.* 5.7.

<sup>24</sup> Rufus of Ephesus, *On Wine*, frag. I § 2 (ed. Ullmann, quoted in footnote 4). If we can rely on the longer version of the fragment preserved at the end of a treatise on diet by Ishaq ibn Sulaiman al-Isra’ili (quoted by Ullmann, “Die arabische Überlieferung ...,” p. 1319), the heat given off by wine can be beneficial, particularly for digestion.

<sup>25</sup> Hippocrates, *Affections*, ch. 2 (6.210,6 f. L.).

<sup>26</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 10 (2.302,1 L. = CUF ed. Joly p. 51,18).

<sup>27</sup> Hippocrates, *Epidemics* 2, 6th sect., ch. 30 (5.138,9 f. L.).

<sup>28</sup> Hippocrates, *Epidemics* 3, 2nd sect. n. 5, 3.46–48 L.; *ibid.*, 3rd sect, n. 10, *ibid.*, 130–132 and n. 16, *ibid.*, 146–148.

of thinking, which is located in the head.<sup>29</sup> It causes delirium and madness<sup>30</sup> or an attack of aphasia.<sup>31</sup> We even find a most extraordinary case of death due to intoxication, but this time for completely accidental reasons:

A youth who had drunk much neat wine was sleeping on his back in a tent. A snake called *arges* slithered into his mouth. Not realising what he felt, he ground his teeth together and bit off part of the snake. He was seized by a great pain and brought up his hands as though choking, tossed himself about, and died in convulsions.<sup>32</sup>

We may suppose, from the mention of the tent, that this young man was undertaking military service. Drinking was probably common in these circumstances, if we refer to the *Against Conon*, where the litigant, according to the writer Demosthenes, complains about the humiliation at the hands of Conon's sons whilst they were doing their military service together:

They had encamped near us ... These men constantly used to spend the entire day after lunch drinking ... At whatever time the others might be having dinner, these men were already drunk ... they used to beat them and empty their chamber pots over us, or befool us with urine; there was no rudeness or outrage that they did not commit.<sup>33</sup>

Wine affects not only the head, but also the 'cavities' of the body. Although less noticeable than drunkenness itself, its effects are equally damaging. Wine is not only dry and hot, but "its dregs are also purgative."<sup>34</sup> Thus, doctors warn against accidents of diarrhoea which can be caused by an excess of wine.<sup>35</sup> This occurs particularly amongst heavy athletes subjected to a compulsory diet, in which they eat a lot of meat and drink a lot of wine.<sup>36</sup> Various pains in the 'lower cavity', i.e. in the stomach region, are attributed to wine.<sup>37</sup> An outbreak of hepatitis or jaundice is also attributed to an excess of wine.<sup>38</sup>

<sup>29</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 17, 2.362,2 f. L. (= CUF ed. Joly 64,16 f.).

<sup>30</sup> Hippocrates, *Epidemics* 4, ch. 15, 5.154,3 f. L.; *Epidemics* 5, ch. 2, 5.204,7 L.; cf. also *Regimen*, ch. 35, 6.520,20–522,1 L. (= CMG ed. Joly 156, 5 f.).

<sup>31</sup> Hippocrates, *Diseases* 2, ch. 22, 7.36,14 L. (= CUF ed. Jouanna 156, 10); *Diseases* 3, ch. 8, 7.126, 18 L. (= CMG ed. Potter 76, 11 f.).

<sup>32</sup> Hippocrates, *Epidemics* 5, ch. 86, 5.252,11–15 L., transl. Smith, modified.

<sup>33</sup> Demosthenes, *Against Conon* 3–4.

<sup>34</sup> Hippocrates, *Regimen*, ch. 52, 6.554,7 f. L. (= CMG ed. Joly 172,17 f.).

<sup>35</sup> Hippocrates, *Epidemics* 7, ch. 82, 5.436,22–438,1 L.; *Affections*, ch. 27, 6.238,10 L.

<sup>36</sup> The 'choleric' complaint of the pugilist Bias in Hippocrates, *Epidemics* 5, ch. 71, 5.244,20 f. L.

<sup>37</sup> Hippocrates, *Regimen in Acute Diseases App.*, ch. 17, 2.476,11–478,1 L. (= CUF ed. Joly 87,17 f.).

<sup>38</sup> Hippocrates, *Internal Affections*, ch. 28, 7.240,11 L.; ch. 37, *ibid.* 258,19.

According to Galen, wine, when it is soft and concentrated, is bad for the liver (especially in cases of ‘cirrhosis’) and for the spleen.<sup>39</sup> Most exceptionally, wine is considered to be an efficient cause of afflictions of the ‘upper cavity’: empyema of the chest,<sup>40</sup> erysipelas of the lung,<sup>41</sup> pleurisy and peripneumonia.<sup>42</sup> The diffusion of wine through the body, in the case of intoxication, leads to other unexpected consequences: according to Soranus, injuries received in an intoxicated state heal less easily, and the seed of a foetus is attached less easily; thus, a woman should not be intoxicated if she wishes to conceive.<sup>43</sup>

Although aware of the harmful effects of an excess of wine, doctors qualified their examinations by considering both the different varieties of wine and the different varieties of individuals. Not all wines are equally dangerous, and doctors were careful to differentiate their properties. The dietetic catalogues of Hippocratic medicine<sup>44</sup> distinguish between numerous varieties of wine according to their colour (white, dark, straw-coloured), their feeling on the palate or their consistency (thin/concentrated, light/full, hard/soft, smooth/sharp), their smell (odorous, with a honeyed smell, without smell), and their age (old, young). The author of *Regimen in Acute Diseases* clearly arranges his catalogue according to the harmfulness or usefulness of the diverse varieties of wine and proudly points out that he is teaching new things compared to his predecessors.<sup>45</sup> However, Galen, in his commentary on this treatise, complains that the catalogue of wines lacks order and is incomplete.<sup>46</sup> Thus he reorganises the catalogue of wines, distinguishing five categories of differentiation (colour, taste, consistency, odour and property), and enriches in each of the subdivisions the already subtle Hippocratic palate, taking into consideration, more so than Hippocrates,<sup>47</sup>

<sup>39</sup> Galen, *Commentary on Hippocrates' Regimen in Acute Diseases* 3, ch. 2, 15,633, 9 ff. K. (= *CMG* V 9, 1, ed. Helmreich 221,26 ff.).

<sup>40</sup> Hippocrates, *Diseases* 1, ch. 15, 6.166,15. L.

<sup>41</sup> Hippocrates, *Diseases* 2, ch. 55, 7.86,5 f. L. (= *CUF* ed. Jouanna 194,1 f.).

<sup>42</sup> Hippocrates, *Diseases* 1, ch. 26, 6.192,11 ff. L.; compare Aristotle, *Problemata* 3.1 and 3.6.

<sup>43</sup> Soranus, *Diseases of Women* 1.38 Ilberg (= *CUF* ed. Burguière, Gourevitch, Malinas, ch. 12,95–100).

<sup>44</sup> Hippocrates, *Regimen*, ch. 52, 6.554,8 ff. L. (*CMG* ed. Joly 172,18 ff.); *Regimen in acute diseases*, ch. 14, 2.332,3 ff. L. (= *CUF* ed. Joly 57, 19 ff.); *Affections*, ch. 48, 6.258,16–19 L.

<sup>45</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.334,12–14 L. (= *CUF* ed. Joly 58, 19–21): “These are the facts concerning the usefulness and damage of wine, all facts that were unknown by my predecessors.”

<sup>46</sup> Galen, *Commentary on Hippocrates' Regimen in Acute Diseases* 3.1, 15,626,4 f. K. (= *CMG* V 9, 1 ed. Helmreich 218,6 f.).

<sup>47</sup> Several vineyards are quoted in the *Hippocratic corpus*: the “old wine of Thasos” (*Diseases* 3, ch. 17, 7.160,5 L. = *CMG* ed. Potter 98, 26); the “strong wine of Crete” (*Regimen in*

the different vineyards, whether those of Asia Minor, from where the physician of Pergamon originated (Ariousia in Chios, Arsysis, Lesbos, Tibas, Tita-czenos, Tmolus, etc.) or those of Italy, the country where the majority of his medical activity took place (Caecubus, Mt. Falernus, Faustianum, wine of the Sabine hills, Sorrentum etc.). Galen is one of the ancient authors who quote the most varieties of wine, along with Athenaeus, Dioscorides and Pliny the Elder.<sup>48</sup> The interest for vineyards became such amongst doctors after Hippocrates that they seem to have sometimes contributed to the 'promotion' of a vintage. The Hellenistic doctor Erasistratus provided the origin of the celebrity of the vineyard of Lesbos.<sup>49</sup> We may add the catalogue of Dioscorides to those of Hippocrates and Galen.<sup>50</sup> According to all these catalogues of wines established by Greek doctors, certain wines affect the head more than others. According to Hippocrates, 'concentrated' wine leads to a heavier head and more troubles of thinking than soft wine.<sup>51</sup> According to Dioscorides, hard wine causes headache.<sup>52</sup> According to Galen, straw wine, which is the warmest wine after yellow wine, affects the head and thinking more so than dark wine, precisely because it is hotter.<sup>53</sup> What further emerges from these catalogues is that certain wines are more harmful than others for the digestive tracts. According to Hippocrates, soft wine inflames the spleen and liver and produces wind in the intestine.<sup>54</sup> According to Dioscorides, soft wines trouble the stomach and intestines.<sup>55</sup> According to Galen, soft and full wines travel through the body slowly and aggravate rather than diminish the obstruction of swollen organs.<sup>56</sup>

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*Acute Diseases App.*, ch. 14, 2.470,8 L. = CUF ed. Joly 86,8: uncertain text); the white wine from Mende (in Chalcis, and not Mendes in Egypt as the Bailly dictionary suggests!), frequently recommended by the author of *Internal Affections* (chs. 13, 16, 17, 18, 24 [7.200,20; 206,4; 208,20; 212,16; 228,12 L.]); the "hard and very dark wine from Cos" (*Internal Affections*, ch. 25, 7.232,3 L.); wine from Pramnós (*Diseases of Women* 1, ch. 52, 8.112,1 L.; *Diseases of Women* 2, ch. 90, *ibid.*, 216, 5; ch. 192, *ibid.*, 370,16; ch. 199, *ibid.*, 382,7 f.).

<sup>48</sup> Some sixty local varieties; see J.-M. Jacques, "La conservation du vin à Pergame au II<sup>e</sup> siècle après J.-C.," in *La vigne et le vin dans la littérature*, Actes du XII<sup>e</sup> Congrès de l'Association Guillaume Budé (Bordeaux 17–21 août 1988), Paris, 1989, p. 462.

<sup>49</sup> Pliny, *Hist. Nat.* 14.73.

<sup>50</sup> Dioscorides, *Mat. Med.* 5.6.

<sup>51</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.332,5–7 L. (= CUF ed. Joly 57,22 f.).

<sup>52</sup> Dioscorides, *Mat. Med.* 5.6.3.

<sup>53</sup> Galen, *Commentary on Hippocrates' Regimen in Acute Diseases* 3, ch. 7, 15.646,10 f. K. (CMG V 9, 1 ed. Helmreich, 228,17 f.).

<sup>54</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.332,8 ff. L. (= CUF ed. Joly 57,25 ff.).

<sup>55</sup> Dioscorides, *Mat. Med.* 5.6.2.

<sup>56</sup> Galen, *Commentary on Hippocrates' Regimen in Acute Diseases* 3, ch. 2, 15.633,14–17 K. (= CMG V, 9, 1, ed. Helmreich 222,2–4).

The harmful effect of wine also varies according to the age and temperament of individuals. As far as age is concerned, children should not be given unmixed wine, but wine mixed with much water so that "it heats and parches the stomach less."<sup>57</sup> Like the doctors, Plato varies consumption of wine according to age: he prohibits wine amongst young people under eighteen, recommends a moderated consumption until thirty, abstaining from excessive intoxication, but sees wine as a "remedy" (φάρμακον) for the elderly.<sup>58</sup> Likewise for Galen, "wine is unhelpful for children, but very useful to the elderly."<sup>59</sup> As far as temperament is concerned, Hippocratic doctors had noted that certain constitutions coped with wine better than others: "If the head copes well with wine, neat wine is fitting; if not, not," declares the author of *Epidemics* VI<sup>60</sup> in the case of heavy and frequent nose bleeds. Galen more systematically advises against wine in the case of people with a very hot nature, since it produces heat and dryness. It is better for them to drink water than wine, or a light and moderately hard wine.<sup>61</sup> For the same reasons, he advises against wine that is too warm in cases of bilious people, or those who live in a hot country or during a hot season. Conversely, according to the principle of contraries, such wine is favourable for cold and wet constitutions, i.e. for phlegmatics and those who live in a cold country or during a cold season.<sup>62</sup> Besides temperament, doctors took gender into account: since women have a wet and cold nature, it is advised, according to the principle of contraries, to drink undiluted wine instead.<sup>63</sup>

<sup>57</sup> Hippocrates, *Airs, Waters, Places*, ch. 9, 2.40,5–7 L. (= CUF ed. Jouanna 211,1–4); see also *Nature of Man*, ch. 21, CMG ed. Jouanna 214,14–18 (*Regimen in Health*, ch. 6, 6.80,18–82,2 L.).

<sup>58</sup> Plato, *Laws* 666, a-c. On wine in Plato, see P. Boyancé, "Platon et le vin," *Bulletin de l'Association Guillaume Budé*, Lettres d'humanités, X, 1951, pp. 149–227; and more recently E. Belfiore, "Wine and Catharsis of the Emotions in Plato's Laws," *Classical Quarterly* 36, 1986, pp. 421–437, and M. Tecusan, "Logos Symptomikos: Patterns of the Irrational in Philosophical Drinking: Plato Outside the Symposium," in O. Murray, *Symptomica ...*, pp. 238–260.

<sup>59</sup> Galen, *On the Preservation of Health* 2, ch. 5, 6.334,6 f. K.

<sup>60</sup> Hippocrates, *Epidemics* 6, 6th sect., ch. 7, 5.328,2 f. L.

<sup>61</sup> Galen, *On Good and Bad Juices*, ch. 11, 6.808,4–7 f. K.

<sup>62</sup> Galen, *On Good and Bad Juices*, ch. 11, 6.803,1 ff. K.

<sup>63</sup> Hippocrates, *Nature of Man*, ch. 21, CMG ed. Jouanna 216,2 f. = *Regimen in Health*, ch. 6, 6.82,5 f. L.; cf. also *Regimen*, ch. 27, 500,2 ff. (= CMG ed. Joly 142,27 ff.). However, not all doctors understood women to be cold and wet. In the gynaecological writings of the Hippocratic corpus, women are said to be warmer than men in *Diseases of Women* 1, ch. 1, 8.12,21 f. L. ("Women have warmer blood than men, and because of this are warmer than men"). This statement is by author C (according to Grensemann's denomination). This contrast was noted by H. King, "Food and blood in Hippocratic gynaecology," in J. Wilkins, D. Harvey and M. Dobson, *Food in Antiquity ...*, p. 353.

Doctors also took into account the difference between the state of good and ill health. There are some diseases where wine is totally out of the question. To refer to this prohibition of drinking wine, a Hippocratic doctor, the author of *Diseases 3*, even uses a verb that is not attested elsewhere in Greek literature: ἀοινεῖν, 'to abstain from wine'.<sup>64</sup> The diseases in which wine is prohibited are particularly those associated with the head, since wine tends to affect this part of the body, or those which are accompanied by fever and delirium: of the eight prohibitions of drinking wine prescribed by the author of *Diseases 3*, five concern sicknesses of the head or brain (ch. 1, 2, 3, 4 and 8); the others concern angina (ch. 10), a lung disease (ch. 7) and lethargy, which is an acute disease (ch. 5). During acute diseases in general (pleurisy, peripneumonia, phrenitis, lethargy), which are accompanied by heaviness of the head or an effect on thinking, one should abstain from straw or dark wine, according to the Hippocratic author of *Regimen in Acute Diseases*.<sup>65</sup> Wine is also prohibited by the Hippocratic author of *Affections* in cases of phrenitis,<sup>66</sup> and in all other cases where there is an effect on thinking. The prohibition of wine is sometimes accompanied by the prohibition of sexual relations: in a dorsal phthisis, these two prohibitions together should last a year.<sup>67</sup> In surgery, wine is prohibited during the first days following a fracture or luxation.<sup>68</sup>

To conclude, wine is considered, from a certain point of view, as a drink whose ingestion can be harmful, or as a pathogenic agent. It is primarily an excess of wine that is harmful. Elsewhere, excess of wine is often cited amongst other possible excesses, essentially those of good food and sex. This excess renders the power of wine (δύναμις, μένος) too forceful. However, the power of wine, even if taken in reasonable quantity, is harmful to certain individuals in good health or to certain patients, since they cannot overcome the power of the wine, or because the properties of the wine accentuate the tendencies of their temperament instead of combating them. However, this power of wine, if it is used soundly, can also contribute towards

<sup>64</sup> Hippocrates, *Diseases 3*, eight times: ch. 1, 7.118,17 L. (= CMG ed. Potter 70,18); ch. 2, *ibid.*, 120,7 (Potter 70,28); ch. 3, *ibid.*, 122,3 (Potter 72,19); ch. 4, *ibid.*, 122,14 (Potter 72,28); ch. 5, *ibid.*, 122,21 (Potter 74,4); ch. 7, *ibid.*, 126,15 (Potter 76,10); ch. 8, *ibid.*, 128,2 (Potter 76,18); ch. 10, *ibid.*, 130, 14 (Potter 78,18).

<sup>65</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.334,14–336,1 L. (= CUF ed. Joly 58,22–24); ch. 17, *ibid.*, 360,10f. (Joly 64, 11–13).

<sup>66</sup> Hippocrates, *Affections*, ch. 10, 6.218,3–5 L.: "wine is not beneficial, since the mind is afflicted with delirium, neither in this disease, nor in any others."

<sup>67</sup> Hippocrates, *Diseases 2*, ch. 51, 7.80,7 L. (= CUF ed. Jouanna 189,6).

<sup>68</sup> Hippocrates, *Fractures*, ch. 7, 3.440,16 L.; ch. 11, *ibid.*, 458,9.

the re-establishment of good health. This explains why all doctors in antiquity considered wine as a remedy (φάρμακον); what is more, it is the most pleasant of remedies.<sup>69</sup>

The idea that wine possesses some therapeutic properties may come as a surprise to us: the modern tendency is rather to view alcohol very negatively. However, some American doctors have recently highlighted statistics supporting the fact that moderate consumption of red wine at meals is an efficient prevention against cholesterol. Greek doctors did not know about cholesterol, but they did not doubt that the use of wine could have a beneficial effect on health.

It is well known that Hippocratic medicine accorded great importance to people's life-style, both in sickness and health. Several works carefully describe the properties of foods and catalogue their use, either according to disease or, in the context of prevention, according to places, seasons or temperaments. Thus, wine is examined alongside other food and drinks; moreover, it has the advantage of great flexibility in application, since it can be used undiluted or mixed with other ingredients that weaken or modify its effects. "Wine and honey are wonderfully suited to man," says the Hippocratic author of *Affections*, "if, in health and disease, you administer them appropriately and in accordance with individual constitutions."<sup>70</sup> The theme of appropriate quantity of usage of wine had previously been expressed by the poet Theognis in the sixth century BC.:

Wine drunk excessively is harmful; but if it is drunk wisely, it is not harmful, but useful.<sup>71</sup>

The aim of the principal catalogues of the varieties of wine mentioned above was not only to warn against the dangers of wine, but above all to outline its beneficial effect and its use in the diet of those in sickness and good health. Wine is firstly considered by doctors as a food: "Drinking undiluted wine dispels hunger," we read in the *Aphorisms*.<sup>72</sup> No Greek doctor doubts the nourishing ability of wine, even if not all of them use the word 'food'.<sup>73</sup>

<sup>69</sup> Plutarch, *Precepts of Healthcare*, 19, 132 b; *Questions discussed at Dinner* 3,1,647 a.

<sup>70</sup> Hippocrates, *Affections*, ch. 61, 6.270,15–17 L.

<sup>71</sup> Theognis, 211–212; cf. *Odyssey* 21,294; see also Panyassis, frag. 2.

<sup>72</sup> Hippocrates, *Aphorisms* 2.21, 4.476,5 L. Thus, we cannot agree with P. Villard ("Bonnes et mauvaises ivresses dans l'Antiquité," in *Le vin des historiens*, Suze-La-Rousse, 1990, p. 16) that the alimentary role of wine was unknown to Greek medicine before Mnesitheus (fourth century BC).

<sup>73</sup> Galen, *The Properties of Foodstuffs* 3, ch. 40, 6.743,1ff. K.

It is a tonic: the Hippocratic treatise *Sterile Women*<sup>74</sup> gives advice, aimed at a man, on procreation, and affirms that a man who is going to sleep with a woman should not be intoxicated, but that he should nevertheless have drunk wine: “not white wine,” the author clarifies, “but undiluted and very strong wine”; this is clearly a reference to dark wine, whose power will guarantee the strength of the foetus! Full and dark wines are particularly strengthening.<sup>75</sup> Ever since Hippocrates, doctors have implicitly assumed that there is a relationship between wine and blood, the first making up for the insufficiency of the latter. For example, the author of *Epidemics* 6<sup>76</sup> recommends, in cases of heavy and frequent nosebleeds, giving the patient undiluted wine to drink if he turns pale; on the other hand, he prohibits the use of wine immediately after a bleeding.<sup>77</sup> A woman who does not have her period at the expected time is being prescribed wine.<sup>78</sup> Another who suffers a red discharge from the uterus should drink little, but drink dark wine as undiluted as possible.<sup>79</sup> Galen explicitly mentions the hematopoietic function of wine (αίμᾶτωσις).<sup>80</sup> Red and thick wines, he argues, are the most useful for the formation of blood, since the change from wine into blood is, in this case, very easy.<sup>81</sup> We also read in Latin authors that “wine improves men’s strength, blood and complexion.”<sup>82</sup> Thus, it is not surprising to see doctors prescribe undiluted wine in certain illnesses. It is particularly recommended for ‘cardiac’ illnesses, where it is sometimes “the only means of health,” according to Aretaeus.<sup>83</sup> We also note a ‘homeopathic’ use of pure wine that treats like with like: “If, following intoxication, there is a headache, drink a cotyle (= 0,27 litres) of undiluted wine,” declares the Hippocratic author of *Epidemics* 2.<sup>84</sup>

The use of wine as a pick-me-up during the second phase of the diet in order to strengthen the patient after subjecting him to a specific diet, remained a prescription of doctors throughout the history of Greek

<sup>74</sup> Hippocrates, *Sterile Women*, ch. 218, 8.422,18–20 L.

<sup>75</sup> Hippocrates, *Affections*, ch. 40, 6.250,10 f. L.

<sup>76</sup> Hippocrates, *Epidemics* 6, 6th sect., ch. 7, 5.326,14–328,1 L.

<sup>77</sup> Hippocrates, *Regimen in Acute Diseases App.*, ch. 24, 2.508,7–9 L. (= *CUF* ed. July 93,15–17).

<sup>78</sup> Hippocrates, *Nature of Women*, ch. 59, 7.398,12 L.

<sup>79</sup> Hippocrates, *Diseases of Women* 2, ch. 110, 8.238 L.

<sup>80</sup> Galen, *Good and Bad Juices*, ch. 11, 6.803,1 K.

<sup>81</sup> Galen, *Properties of Foodstuffs* 3, ch. 40, 6.744,3–5 K.

<sup>82</sup> Pliny, *Hist. Nat.* 23.37.

<sup>83</sup> Aretaeus 6.3, 12, Hude<sup>2</sup> 128,23 f.; cf. Pliny, *Hist. Nat.* 23.50.

<sup>84</sup> Hippocrates, *Epidemics* 2, 5th sect., ch. 30, 5.138,9 f. L.

medicine. We can look, for example, to the remarks that the Byzantine commentator Stephanus (sixth-seventh century AD) wrote on Galen's prescription to give wine to those who have aches:

Since he (sc. Galen) wishes to restore those who have aches, since their dynamic constitution is weak, he thinks of wine which can be very rapidly transformed into a humour in the stomach and be very rapidly transformed into blood in the liver and nourish the whole body. For the dosage of wine, we must account for all the constitutional elements and most of all for the dynamic constitution; indeed, if he is weak, we give him less wine; if he is strong, we give him more wine, the quantity that he can digest; but we must also take into account age; if he is old, he needs more wine; if it concerns the constitution of a person with the strength of age, he needs less wine; we must also take into account habit; if it concerns someone who drinks wine when they are healthy, we will give him more wine; if not, we will give him less; and less in summer, more in winter, and even more in Scythia, less in Ethiopia and so on.<sup>85</sup>

Stephanus, like Galen, clearly affirms the hematopoietic function of wine. The dosage of wine prescribed depends on the state of the patient, their age, customs, the season and also the country.<sup>86</sup> Thus, the logic of prescription consists in maintaining a balance between the strength of the wine and that of the patient, and opposing the warm quality of the wine to the cold quality of the constitution (in the elderly) and the environment (season, country).

The twofold value of wine, which can be both a harmful or fortifying substance, leads doctors to subtly vary the diet. For example, we saw that Soranus condemns the use of wine amongst women who wish to conceive,<sup>87</sup> and although he also condemns its use in the first or second day after conception to avoid the violent diffusion of the wine in the body disturbing the seed, he does not wish the woman to continue abstaining from wine for too long, since her diet will be weakened.<sup>88</sup> Instead, a woman will change diet progressively so that, after the period of pica, she will drink wine according to her habit.<sup>89</sup> On the other hand, if she wishes to cause an abortion just after conception, she will drink some wine in order to facilitate

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<sup>85</sup> Stephanus' *Commentary*, a philosopher and doctor, on Galen's *Therapeutics to Glaucon*; ed. Dietz I, 262.

<sup>86</sup> Compare what is said, *supra*, p. 181, on the degrees of wine's harmfulness according to ages and temperaments.

<sup>87</sup> See *supra*, p. 179 and footnote 43.

<sup>88</sup> Soranus, *Diseases of Women* 1.46 Ilberg (= CUF ed. Burguière, Gourevitch, Malinas, ch. 16,38–47).

<sup>89</sup> Soranus, *Diseases of Women* 1.54 Ilberg (Burguière, Gourevitch, Malinas, ch. 18,10 f.).

the loosening of the seed.<sup>90</sup> In the same spirit, Soranus regulates the diet of the wet nurse who should not drink wine at the beginning but will be on a diet of water during the first forty days, since the virtues of wine that pass through the milk are too powerful for the newborn, who risks having epileptic fits; she will then progressively drink some clear white wine so that the power of the wine passes from the milk and fortifies the infant. In Soranus' own words:

To begin, she will drink wine once from time to time, then every three days, then every two days, and finally every day, and not only once, but twice; she will finish drinking to quench her thirst. It is through this way that the newborn will be nourished without damage from milk that is made with wine, since before this he does not have the nature to support it without damage.<sup>91</sup>

As we saw, wine is not just a fortifier, but also a purgative. The doctor seeks to bring about evacuations of stools or urine by soft wine,<sup>92</sup> even though soft wine is less diuretic than strong white wine.<sup>93</sup> It is this diuretic virtue of wine that explains the Hippocratic aphorism "undiluted wine removes strangury and dysuria."<sup>94</sup> Wine can equally facilitate evacuations from the upper part of the body. Soft wine is a more active expectorant than strong white wine.<sup>95</sup> Wine is also used as an emetic. If, for reasons of health, thin individuals wish to provoke vomits intended to purge moisture during winter months, they

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<sup>90</sup> Soranus, *Diseases of Women* 1.64, Ilberg (Burguière, Gourevitch, Malinas ch. 20,112). This prescription was not included by the recent editors of Soranus, who state (p. 62, n. 308): "This prescription of wine might surprise us, since Soranus advises wine during pregnancy (cf. Ilb. 1.46, our chapter 16, p. 44)." In reality, as we saw, the diet of wine varies with the development of the pregnancy. Immediately after conception, when the seed is not yet well fixed, Soranus advises against wine if the foetus is to be preserved, since wine, spreading violently through the body, risks contributing to loosening the seed; conversely, Soranus advises wine after conception when the woman wishes to abort. Soranus' position is perfectly coherent. It is clear in Soranus that wine contributes to the detachment of the seed during the first days after conception. The conclusions on the abortive properties of wine drawn by M. Durry ("Les femmes et le vin," *REL*, 33, 1955, pp. 108–113) from Soranus and his translator, Caelius Aurelianus, are correct. The criticism of Durry by E. Nardi, *Procurato aborto nel mondo greco romano*, Milan, 1971, p. 19 and p. 340, n. 66, is not convincing, since she ignores the two passages where Soranus expressly says that wine (and not only bad wine) risks hindering or thwarting the fixing of the seed at the moment of conception or immediately after (1.38 Ilberg = *CUF* ed. Burguière, Gourevitch, Malinas ch. 12,95–100; 1.46 Ilberg = Burguière, Gourevitch, Malinas 16,38–44).

<sup>91</sup> Soranus, *Diseases of Women* 2.26 Ilberg *in fine* (= *CUF* ed. Burguière, Gourevitch, Malinas ch. 10,94–100).

<sup>92</sup> Hippocrates, *Affections*, ch. 40, 6.250 L.

<sup>93</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.332,13–334,3 L. = *CUF* ed. Joly 58,6–7.

<sup>94</sup> Hippocrates, *Aphorisms* 7, 48, 4.590,10 f. L.

<sup>95</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.334,2 L. (= *CUF* ed. Joly 58,7f.).

should ingest a complicated mix formed of wine: first a cotyle of undiluted wine after a warm bath; then, after ingesting various foods, a mix of three wines (full, soft and sharp), taken at first rather undiluted, and then rather mixed.<sup>96</sup> However, the properties of wine are so varied that they can have an opposite effect. Instead of being loosening, wine can be tightening. This effect is obtained by a hard light white wine, mixed with water,<sup>97</sup> or by a hard dark or straw wine.<sup>98</sup>

Thus, the different varieties of wine are not prescribed indifferently. This subtle art of the doctor, who must choose by weighing up advantages and disadvantages, was unknown to the uninitiated,<sup>99</sup> who did not fail to emphasize that in their prescriptions, doctors were not always in agreement.<sup>100</sup> Furthermore, their prescriptions vary according to diseases and patients, their constitution and their dietary habits. One Hippocratic author details most clearly the harmful effects of changes in the habitual diet of wine:

How different are the effects produced in a body which drinks wine or water, when either custom is suddenly exchanged for the other; or when, contrary to usage, diluted wine or undiluted wine is drunk (since one causes wetness in the upper cavity and wind in the lower, while the other causes throbbing of the arteries and heaviness of the head); and white and dark wine, although both strong wines, if exchanged contrary to usage, even if they are both strong, will produce numerous changes in the body; thus, if one is soft and the other strong, we find it no surprise that they do not produce the same effect when they are suddenly changed.<sup>101</sup>

However, sometimes pragmatism could lead to flexible prescriptions: "Let him drink hard dark wine, if it benefits the patient; if not, a hard white wine, mixed with water," declares the Hippocratic author of *Internal Affections* in a case of 'typhus',<sup>102</sup> with regard to another 'typhus', he reverses the prescription according to the same principle: "Let the patient drink white wine, if it benefits him; if not, dark wine."<sup>103</sup>

<sup>96</sup> Hippocrates, *Nature of Man*, ch. 20, CMG ed. Jouanna 212,19 ff. = *Regimen in Health*, ch. 5, 6.80,2 ff. L.

<sup>97</sup> Hippocrates, *Affections*, ch. 40, 6.250, 9 f. L.

<sup>98</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 14, 2.334,14–336, 5 L. (= CUF ed. Joly 58,22–59,4).

<sup>99</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 2, 2.238,3–7 L. (= CUF ed. Joly 38,14–18).

<sup>100</sup> Pliny, *Hist. Nat.* 23,32.

<sup>101</sup> Hippocrates, *Regimen in Acute Diseases*, ch. 10, 2.300,9–302,5 L. (= CUF ed. Joly 51,13–22), transl. C.D. Adams.

<sup>102</sup> Hippocrates, *Internal Affections*, ch. 39, 7.262,16–18 L.

<sup>103</sup> Hippocrates, *Internal Affections*, ch. 41, 7.268,20 L.

Of all the varieties of wine, the best is, according to Galen, watery wine (οἶνος ὑδατώδης), i.e. wine that has the same appearance as water:

This wine is suitable to expel phlegm from the lung, since it strengthens and exercises a moderately dampening and incisive action on the humours. Administered to feverish patients, it is less dangerous than any other; for it is the only one that has the privilege of being exempt from both the inconveniences of water and wine. Since it never damages the head, this wine is often also advantageous because it stops small pains pertaining to the humours in the stomach ... and it is precisely this drawback and harmful effect of these humours that watery wine alleviates in patients, firstly through its immediate moderating action, and a little later because the stomach, being strengthened, reacts against that which has affected it.<sup>104</sup>

What allows the doctor to adjust the effects of wine is, above all, its mixture. Mixing with water was normal in Greek civilisation, and in daily life it was typical to mix wine with water during the *symposium*.<sup>105</sup> However, Greek medicine was the first to prescribe infinite varieties of mixtures, alongside undiluted wine. In their advice on diet during good health, doctors vary the dosage of the mixture according to the seasons. The Hippocratic treatise *Nature of Man*<sup>106</sup> states that in winter wine must be drunk as undiluted as possible (to counter the effect of the wet and cold season); in summer, it should be mixed with water; and in spring and autumn it should be moderately mixed with water. In the same manner, the Hippocratic author of *Regimen*<sup>107</sup> explains that a dry, hard and warming diet is necessary in winter; consequently undiluted, dark wine should be drunk in small quantities; conversely in spring, drinks should be more watery and clearer; in summer they will be watery and clear, and dark and undiluted wine is to be avoided; in autumn, darker drinks will be returned to. In prescriptions relating to diseases, the dosage is not normally specified, and the doctor simply indicates the degree of mixture with the aid of comparatives or superlatives. However, sometimes the dosage is stated in terms of quantitative proportions, notably an 'equal' dosage (ἴσον ἴσῳ). We may quote as an example one of Hippocrates' rare aphorisms on wine: "Distress, yawning and

<sup>104</sup> Galen in Oribasius, *Coll. med.* 5.6,5–7 (ed. Raeder 1.122,5–19). These are extracts from two of Galen's treatises (*Commentary on Hippocrates' Regimen in Acute Diseases* and *Good and Bad Juices*).

<sup>105</sup> See the bibliography quoted in footnote 12.

<sup>106</sup> Hippocrates, *Nature of Man*, ch. 16, *CMG*, ed. Jouanna 206,3–208,8 = *Regimen in Health*, ch. 1, 6.72,5–74,13 L.

<sup>107</sup> Hippocrates, *Regimen*, ch. 68, 6.594,21 L.; 600,13f.; 602,5; 604,14 (= *CMG* ed. Joly 196,7; 198,18; 198,29; 200,19).

shivering are removed by drinking wine mixed with an equal part of water."<sup>108</sup> This is a strong proportion, since the usual mixture is one part wine and three<sup>109</sup> or two parts water.<sup>110</sup> More rarely, the mixture is indicated by a fraction, as in *Diseases* 3, which proposes, amongst other 'cooling' recipes: "Old Thasian wine; give twenty-five parts water and one part wine."<sup>111</sup> It recalls the method in which Maroneus, a wine from Thrace famous from Homer onwards, should be drunk in a mix with twenty times its quantity of water.<sup>112</sup> This weak mixture is a sign of the strong power of the wine. Of course, when doctors dilute the wine they seek to weaken its properties or to help the appropriate effects to dampen or to purge.

Wine can also be prescribed mixed with honey<sup>113</sup> or milk.<sup>114</sup> It is also mixed with some semi-solid elements to form a sort of mushy liquid, the famous *kykeon*, similar to that which the goddess and sorceress Circe offered to Odysseus' companions (cheese, flour and honey with wine from Pramnos); although she added to it some φάρμακα λυγρά.<sup>115</sup> Amongst doctors, *kykeon* is based on flour mixed with wine or water, to which are added other ingredients. We can compare Circe's *kykeon* to that of a Hippocratic doctor, whose recipe also comprises flour and cheese mixed with some wine:

Take a black grape, the inside of a sweet pomegranate, crush, and mix in dark wine, scrape in some goat's cheese, sprinkle with some flour from roasted wheat and, well mixed, give it to drink.

Through this remedy, the Hippocratic author of *Diseases of Women* 1 intends to treat postpartum diarrhoea.<sup>116</sup>

Finally, it is possible to prepare infusions of plants in wine; for example, a rue in some dark wine to remove the lochia;<sup>117</sup> adiantum crushed into dark wine in a case of leucorrhoea following a course of treatment with milk.<sup>118</sup> There are innumerable preparations of this type.

<sup>108</sup> Hippocrates, *Aphorisms* 7.56, 4.594,7 L. (= *Epidemics* 2, 6th sect., ch. 23, 5.136,18 f. L.).

<sup>109</sup> Hesiod, *Works and Days*, 596.

<sup>110</sup> Pliny, *Hist. Nat.* 23.51.

<sup>111</sup> Hippocrates, *Diseases* 3, ch. 17, 7.160,5 f. L. (= *CMG* ed. Potter 98,26 f.). On wine from Thasos, see the study by F. Salviat quoted in footnote 12.

<sup>112</sup> Homer, *Odyssey* 9.208.

<sup>113</sup> Hippocrates, *Internal affections*, ch. 6, 7.182,6 L.

<sup>114</sup> Hippocrates, *Epidemics* 7, ch. 101, 5.454,8 L. However, the mixture of wine and milk can provoke diarrhoea (Hippocrates, *Epidemics* 7, ch. 82, 5.438,5 L.).

<sup>115</sup> Homer, *Odyssey* 10.234–236.

<sup>116</sup> Hippocrates, *Diseases of Women* 1, ch. 42, 8.100,17–19 L.

<sup>117</sup> Hippocrates, *Diseases of Women* 1, ch. 45, 8.104,8 L.

<sup>118</sup> Hippocrates, *Diseases of Women* 2, ch. 118, 8.256,13 L.

In addition, from the moment when medicine (in the Hellenistic period) becomes interested in antidotes (remedies for internal use against poisons or the venom of wild animals), wine is used for the preparation of such remedies. For example, Galen discusses at length the best wine to be used in the most famous and elaborated of these remedies, the theriac of the doctor Andromachus. The wine should be particularly stable, such as Falernian wine.<sup>119</sup> Undiluted wine was itself considered as an antidote against hemlock or against stings or bites that kill through sudden cooling.<sup>120</sup>

To finish this section on the internal usage of wine, we should point out that from Hippocrates, doctors used wines which were “a product of art and not of nature,” to use the expression of Pliny the Elder.<sup>121</sup> This is the case for wine made from grape marc, which has a dampening and purgative property, but also causes flatulency,<sup>122</sup> or that which is made from must which is reduced by roasting, the equivalent of Latin *sapa* and *defrutum*: it is the ἔψημα which has the property of warming, dampening and also being a laxative,<sup>123</sup> or the σίρατος οἶνος.<sup>124</sup> However, this last wine is mentioned by Hippocrates for its external use through injections into the uterus.

Wine is, of course, not only used as a drink. It also plays a large role in the doctor’s pharmacy, particularly in surgery and gynaecology. Pliny the Elder makes a clear distinction between the properties of wine in internal and external usage: “Wine has the property of heating the parts of the body inside when it is drunk and of cooling them when poured on the outside.”<sup>125</sup>

The Hippocratic treatise *Use of Liquids* devotes a whole chapter to discussing external uses of wine to treat wounds; the author uses soft or hard wine, white or dark: wine can exercise a cooling or hard action on a wound.<sup>126</sup> In fact, Hippocratic doctors frequently prescribe wine to wash a wound or lesion. The author of *Fractures* recommends bandages soaked in hard

<sup>119</sup> Galen, *Antidotes* 1.3, 14.14–20 K.

<sup>120</sup> Dioscorides, *Mat. Med.* 5.6.10; cf. Pliny *Hist. Nat.* 14.58 (with the comment ad loc. by J. André), 23.43. From Plato, wine is considered as an antidote against hemlock (*Lysis* 219e).

<sup>121</sup> Pliny, *Hist. Nat.* 14.80.

<sup>122</sup> Hippocrates, *Regimen*, ch. 52, 6.556,10 f. L. (= CMG, ed. Joly 174,8f.).

<sup>123</sup> Hippocrates, *Regimen*, ch. 52, 6.556,8 L. (= CMG, ed. Joly 174,6 f.).

<sup>124</sup> Hippocrates, *Diseases of Women* 1, ch. 66, 8.140,8 L.; *Diseases of Women* 2, ch. 181, *ibid.*, 364,1. Pliny *Hist. Nat.* 14.80, establishes equivalence between *hepsema* and *siraecum*; see the note by J. André ad loc.

<sup>125</sup> Pliny, *Hist. Nat.* 14.58.

<sup>126</sup> Hippocrates, *Use of Liquids*, ch. 5, 6.128,8 ff. L.

dark wine to be put on an open fracture;<sup>127</sup> the same doctor makes a similar recommendation for an open dislocation of the jaw.<sup>128</sup> However, head wounds are an exception: "A lesion in the head should not be moistened with anything, not even wine."<sup>129</sup> All uses of wine in cases of diseases of the head meet with such suspicion. Wine is also used following surgical procedures: the cauterisation of a tumour of the palate is cleaned with nitrate and lukewarm water, then with wine;<sup>130</sup> after the removal of genital warts, the wound is washed with a hard wine in which some gall nuts have been soaked.<sup>131</sup> The Hippocratic author of *Diseases 2* goes so far as to recommend, following an intercostal incision allowing pus to escape which has formed in the chest cavity, to inject a cannula of wine and lukewarm oil to avoid the lung suddenly drying out.<sup>132</sup> This external use of wine on wounds continued after Hippocrates: "Old and soft wines are good for wounds and inflammations, applied with greasy wool," says Dioscorides.<sup>133</sup> The efficacy of wine in wounds was due to its antiseptic properties, which have been confirmed by modern science.<sup>134</sup>

The external usage of wine is frequent not only in surgery, but also in gynaecology. A prolapsed womb should be cleaned with dark wine, in which a pomegranate has been boiled, before being put back in place.<sup>135</sup> There are also numerous injections into the diseased uterus (ulcerations, discharges) where wine is used: in a list of thirty-five recipes for injections into the uterus, thirteen include wine.<sup>136</sup> Apart from injections, certain wine-based fumigations can be carried out. Thus, to put back into place a 'lifted' womb, vapour from wine-based fumigations is administered from below; moreover, if the uterus is deviated, some wild figs are placed in the wine. The vessel in which the wine is heated is covered with half a colocynth whose frayed end has been cut: "the odour, passing through the narrow gap, will arrive at the womb." Clearly, we have to assume that the woman sat down

<sup>127</sup> Hippocrates, *Fractures*, ch. 29, 3.516,4f. L.; cf. *ibid.* 514,12.

<sup>128</sup> Hippocrates, *Articulations*, ch. 63, 4.270,14f. L.; cf. *ibid.*, 272,2 and 5 and 10.

<sup>129</sup> Hippocrates, *Wounds in the Head*, ch. 13, 3.228,19f. L.

<sup>130</sup> Hippocrates, *Diseases 2*, ch. 32, 7.48,23 L. (= *CUF* ed. Jouanna 166,13).

<sup>131</sup> Hippocrates, *Haemorrhoids*, ch. 4, 6.440,13 L.

<sup>132</sup> Hippocrates, *Diseases 2*, ch. 47, 7.70,17 L. and ch. 60, *ibid.* 94,4 (= *CUF* ed. Jouanna 182,11 and 199,20).

<sup>133</sup> Dioscorides, *Mat. Med.* 5.6.11.

<sup>134</sup> G. Majno, *The Healing Hand. Man and Wound in the Ancient World*, Cambridge (Mass.), 1975, pp. 186–188.

<sup>135</sup> Hippocrates, *Nature of Women*, ch. 5, 7.318,4f. L.

<sup>136</sup> Hippocrates, *Nature of Women*, ch. 33, 7.366,8–370,12 L.

on a seat pierced just above the orifice in question, and understand that the sweet vapours of wine and figs should attract the womb, understood implicitly as a living being, and put it back in its place.<sup>137</sup>

Wine is also used for clysters. For example, *Internal Affections* prescribes, to purge phlegm, a clyster that he considers the most gentle for man, composed of nitrate mixed in a *cotyle* of soft wine, a half *cotyle* of oil and a half *cotyle* of honey;<sup>138</sup> the same author prescribes, in the case of dropsy, a clyster containing two *cotylai* of white wine with honey, oil and Egyptian nitrate and leaf sap from wild cucumber.<sup>139</sup>

Wine is also used to make a poultice in surgery, as in gynaecology: if the necessary plants to apply to a wound are missing, the Hippocratic author of *Affections*<sup>140</sup> advises kneading together flour with water or wine and applying it. The author of *Wounds*<sup>141</sup> suggests the use of a poultice of watercress mixed with wine and the grain of crushed flax, with a view to reconnecting the edges of the wound. In the case of ‘hysterical attacks’, a poultice composed of recently fermented dark wine, or one third herbs and spices and two thirds flour soaked in odorous white wine, should be placed on the stomach.<sup>142</sup>

Finally, wine is used in the composition of ointments for diverse medical uses: for the eyes, of honey and soft old wine cooked together;<sup>143</sup> for the inflammation of the rectum, the following ointment is recommended: “boil eggs in fragrant dark wine and apply to the anus”;<sup>144</sup> for tetanus, rub the affected wound with a warm preparation made with leaves soaked in white wine and oil.<sup>145</sup> Such ointments also have a cosmetic function: a depilatory cream is made with a base of wine.<sup>146</sup>

Bathing is sometimes replaced with ointments and affusions of wine: “persons whom it does not benefit to wash, anoint with oil and warm wine,” declares the Hippocratic author of *Affections*.<sup>147</sup>

<sup>137</sup> Hippocrates, *Places in Man*, ch. 47 (6.346,7 and 11 L.).

<sup>138</sup> Hippocrates, *Internal Affections*, ch. 20 (7.216,20–23 L.).

<sup>139</sup> Hippocrates, *Internal Affections*, ch. 26 (7.236,3–7 L.).

<sup>140</sup> Hippocrates, *Affections*, ch. 38 (6.248,8 L.).

<sup>141</sup> Hippocrates, *Wounds*, ch. 11 (6.410,23 L.).

<sup>142</sup> Hippocrates, *Epidemics* 7, ch. 64, 5.428,20 ff. L. To describe wine that has been recently fermented, the author uses the *hapax* ἐκγεγελευκισμένος, which literally means “out of a state of must”; cf. Galen, *Hippocratic Glossary*, s.v. 19.95,2 K.

<sup>143</sup> Hippocrates, *Diseases of Women* 1, ch. 105, 8.228,11 f. L.

<sup>144</sup> Hippocrates, *Fistulas*, ch. 7, 6.454,16 L.

<sup>145</sup> Hippocrates, *Internal Affections*, ch. 52, 7.298,20 L.

<sup>146</sup> Hippocrates, *Diseases of Women* 1, ch. 106, 8.230,3 L.

<sup>147</sup> Hippocrates, *Affections*, ch. 42, 6.252,1 L.

By way of conclusion, I will quote the eulogy to wine attributed to the fourth-century BC Athenian doctor, Mnesitheus, preserved by Athenaeus in his *Deipnosophists* (2.36a–b). This text, slightly later than the majority of Hippocratic writings, contrasts, through the eulogy of Dionysus the doctor, with the rationalism of the Hippocratic doctor, which passes over in silence the relationship between wine and god. However, this eulogy has the merit of gathering together the principal themes of Greek thought on wine. In recalling the fundamental ambiguity of wine, the best or the worst of things according to the usage made of it, he highlights the usefulness of wine in the diet of people in good health, good for both the body and the soul, and its therapeutic virtues, either through drinking it, or through its external use:

Mnesitheus said that the gods revealed wine to mortals to be the greatest blessing for those who use it correctly, and, for those who use it unregulated, the opposite. For it gives nourishment to those who use it well, and strengthens the soul and the body. In medicine, it is a very useful thing. Indeed, it can be mixed with medicines in a potion, and it is beneficial for those who have wounds. In daily gatherings, for those who drink a moderated and mixed amount, it adds to their wellbeing. However, if it is drunk in excess, it leads to violence. If it is drunk in equal measure, it provokes madness; and if it is taken undiluted, it leads to paralysis of the body. This is why Dionysus is everywhere called doctor.<sup>148</sup>

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<sup>148</sup> Fragment 41 Bertier.



## CHAPTER ELEVEN

### THE THEORY OF SENSATION, THOUGHT AND THE SOUL IN THE HIPPOCRATIC TREATISE *REGIMEN*: ITS CONNECTIONS WITH EMPEDOCLES AND PLATO'S *TIMAEUS*

Among the sixty or so medical treatises preserved under the name of Hippocrates, the treatise *Regimen*, despite its title, is not entirely dedicated to what ancient doctors meant by regimen. Whilst in book 2 (chs. 37–66) we find the most developed and systematic catalogue in the Hippocratic Corpus on the natural and artificial properties of the various ingredients of regimen (which, according to the ancients, comprised not only food and drink, but also exercise), the work's content is much richer and more diverse. The author of *Regimen* dedicates his entire first book (chs. 1–36) to a discussion of anthropology, because he is convinced that it is not possible to study regimen correctly without prior, and profound knowledge of the nature of man in his environment. Thus, the treatise belongs to a group of 'philosophical' Hippocratic works, i.e. treatises that establish a connection between the nature of man and the nature of the universe, between anthropology and cosmology. We find in *Regimen*, as Robert Joly, its most recent editor and commentator highlighted, the "clearest and most accurate formula articulating the doctrine of macrocosmos-microcosmos":<sup>1</sup> man was made 'in imitation of the whole' (ch. 10 ἀπομίμησιν τοῦ ὅλου).

It is essentially for this cosmological anthropology and for its connections with pre-Socratic philosophy that the treatise has attracted scholarly attention from the end of the nineteenth century onwards. Rather than giving a detailed account of the history of scholarship on this work, I would like to highlight the more important stages of this interpretative history and to situate the present study in this history because, to an extent, it was part of it. The first important monograph on *Regimen* was published in 1899 by C. Fredrich in his *Hippokratische Untersuchungen*;<sup>2</sup> the second was by a

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<sup>1</sup> R. Joly (with S. Byl), *Hippocrate. Du régime*, in *Corpus medicorum graecorum (CMG)*, I, 2, 4, (Berlin, 1984), p. 241 (2nd ed. revised and corrected by S. Byl, 2003).

<sup>2</sup> C. Fredrich, *Hippokratische Untersuchungen*, (Philologische Untersuchungen 15) (Berlin, 1899), pp. 81–230.

Belgian philosopher, Robert Joly, who published, more than half a century later in 1960, his *Recherches sur le traité pseudo-hippocratique Du Régime*.<sup>3</sup> Between these two dates, Hippocratic studies made great progress, above all in Germany (with the works of Ilberg, Wellmann, Diels, Pohlenz, Deichgräber, Edelstein and Diller), in Britain (with Jones' Loeb edition), but also in France, notably under the impetus of philosophers who, in the first half of the century, were ahead of the philologists. Since I have the honour of speaking in front of an audience of philosophers, I will briefly recount their role in the development of Hippocratic studies by recalling the principal names. Monseigneur Diès, at the start of the century, highlighted in his studies in the *Revue critique d'Histoire de la Philosophie antique*, collected together in 1926 under the title *Autour de Platon. Essai de critique et d'histoire*, not only the scientific interest of the Hippocratic Corpus, but also its importance for the history of Greek philosophy: "all, or nearly all, of the questions it asks are echoed in the history of Greek philosophy, and particularly in that of the great Socratic schools"<sup>4</sup>—I hope that my paper will be a fitting illustration of this attractive proposition. At the time of intense academic study of the history of ancient medicine, particularly thanks to German and English scholarship, Diès hoped that French scholarship would reclaim the very important place that it had held in the nineteenth century with Littré, Daremberg and Pétrequin. This renaissance came from the Ancient Philosophy Department of the Sorbonne, under the direction of Léon Robin, and then Emile Bréhier. Pierre-Maxime Schuhl, a student of Léon Robin, wrote a chapter on ancient and modern medicine in his doctoral thesis entitled *La formation de la pensée grecque*, published in 1934.<sup>5</sup> Another member of this research group, Paul Kucharski, also took an interest in the Hippocratic Corpus, in particular because of the famous passage of Plato's *Phaedrus* on the Hippocratic method, in an article that appeared in the *Revue des Études grecques* in 1939.<sup>6</sup> A new sign of the renaissance of Hippocratic studies amongst specialists in ancient philosophy was the

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<sup>3</sup> R. Joly, *Recherches sur le traité pseudo-hippocratique Du Régime*, (Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège, 156) (Paris, 1960).

<sup>4</sup> A. Diès, *Autour de Platon. Essai de critique et d'histoire*. 2nd ed. revised and corrected, (Collection d'études anciennes) (Paris, 1972), p. 15.

<sup>5</sup> P.M.-Schuhl, *La formation de la pensée grecque. Introduction historique à une étude de la philosophie platonicienne*, (Bibliothèque de philosophie contemporaine) (Paris, 1934) (2nd ed. 1949).

<sup>6</sup> P. Kucharski, "La méthode d'Hippocrate dans le Phèdre," *Revue des Études grecques* 52, (1939), 301–357.

attractive translation and rich commentary of *Ancient Medicine* by A.J. Fesugière, published in 1948.<sup>7</sup> However, it was Louis Bourgey, who was introduced to the Greek doctors of the Hippocratic corpus by Léon Robin, who earned the merit of crowning this renaissance of Hippocratic studies coming from French philosophy. Indeed, he is the only philosopher to have dedicated his entire doctoral thesis to the Hippocratic Corpus, published in 1953 under the title “Observation et expérience chez les médecins de la *Collection hippocratique*.”<sup>8</sup> This takes us up to the middle of the century. Continuing this sketch of Hippocratic studies in France, we now turn to the philologists, in particular from the Department of Greek at the Sorbonne, who took things further in the second half of the century. Fernand Robert founded the Hippocratic seminar at the Sorbonne and trained numerous students, who in turn had their own students; Jean Irigoïn also played a decisive role in the study of the Hippocratic textual tradition through his courses at the École Pratique des Hautes Études, and later at the Collège de France. The story becomes more complicated here because of the very fruitful collaboration between philologists and historians of medicine, in particular Mirko Grmek, and then the internationalisation of Hippocratic research following the establishment of the Hippocratic colloquia, which took place every three years after the first colloquium held at Strasburg in 1972, which was organised by a professor of philosophy, Louis Bourgey, and myself, when I was professor of philology at Strasburg. I draw attention to this first colloquium, whose proceedings were published in 1975,<sup>9</sup> simply to highlight that it constitutes the coming together of two French traditions that developed independently of each other, and at different times: the philosophical tradition with Léon Robin, of whom Louis Bourgey was a student, and the philological tradition with Fernand Robert, of whom I was a student.

We return to the sixties, when Joly published his monograph on *Regimen*. Despite the renaissance of Hippocratic studies in the first half of the twentieth century, Joly notes in the introduction to his study that *Regimen* had not benefited from this to the same extent as other treatises. In fact, the only monograph on the treatise between that of Fredrich and that of Joly is a

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<sup>7</sup> *Hippocrate. L’Ancienne Médecine. Introduction, traduction et commentarire*, (Études et Commentaires 4) (Paris, 1948).

<sup>8</sup> L. Bourgey, *Observation et expérience chez les médecins de la Collection hippocratique* (Paris, 1953).

<sup>9</sup> L. Bourgey and J. Jouanna (eds.) *La Collection hippocratique et son rôle dans l’histoire de la médecine*, (Leiden, 1975).

German dissertation from Tübingen in 1933 by Adolf Palm.<sup>10</sup> Robert Joly had the merit of not only devoting to *Regimen* a rich and well-informed monograph of 260 pages, but also of publishing two editions of the treatise, one in 1967, published in the *Collection des Universités de France (CUF)*,<sup>11</sup> and the other in 1984, which we might call an *editio maior*, comprising not only the critical text and translation as in 1967, but also a commentary that is both abundant and sober. This second edition, prepared in collaboration with his student Simon Byl, was published in the collection *Corpus medicorum graecorum (CMG)*, and so had an international readership.<sup>12</sup> It incorporates the results of research on *Regimen* prior to the 1980s.

Since my own work has focused on other Hippocratic treatises, in particular the treatise *Nature of Man*, which was the subject of my doctoral thesis and published in the *CMG* in 1975, let me explain how I first became interested in the treatise *Regimen* by reading out something that is usually ignored, i.e. page VIII of Robert Joly's edition of *Regimen*, published in the *CUF* in 1967: "In accordance with the statutes of the Association Guillaume Budé, this volume was submitted for approval to the technical committee, which assigned to Jacques Jouanna the task of revision and of overseeing its correction in collaboration with Robert Joly." This administrative formula allows us to relive a bit of history: my teacher Fernand Robert, who originally promoted the edition of Hippocrates in the *Collection des Universités de France* had entrusted to me, when I was a young lecturer in Greek at the University Paris-Nanterre, the important task of revising Robert Joly's edition, which inaugurated the edition of this work of Hippocrates. The task of revision consists not only, as some people may think, in correcting factual errors; it is a revision concerned just as much with the establishment of the text as with the translation. This revision led to my interest in the theory of perception and intelligence in *Regimen*. In 1966, a year before the publication of the edition of *Regimen* in the *CUF*, I presented a paper to the *Société pour l'encouragement des Études grecques* on this subject, a detailed summary of which was published in the *Revue des Études grecques* of the same year.<sup>13</sup> Thus, it might seem strange that, thirty years after, I visit this

<sup>10</sup> A. Palm, *Studien zur Hippokratischen Schrift ΠΕΡΙ ΔΙΑΙΤΗΣ*, (Inaug.-Diss.) (Tübingen, 1933).

<sup>11</sup> R. Joly, *Hippocrate. Du régime*, (Collection des Universités de France) (Paris, 1967).

<sup>12</sup> The reference is given *supra*, no. 1.

<sup>13</sup> J. Jouanna, "La théorie de l'intelligence et de l'âme dans le traité hippocratique *Du régime*: ses rapports avec Empédocle et le *Timée* de Platon," *Revue des Études grecques* 79 (1966), pp. XV–XVIII.

subject again, all the more since the principal findings mentioned in this summary were widely advertised thanks to Joly's *editio major* of 1984, whom I should thank for the clarity and intellectual honesty with which he signalled each time in his commentary the new interpretations of the theory of the soul in *Regimen* that I had presented and the new connections with Plato's *Timaeus* that I had proposed. However, in 1984 Joly still awaited the publication of the paper, which he knew only in its summarised form. Why had I still not published it in its entirety? First, because for a long time I had mislaid the full version of the paper; then because, occupied by other work, I was under the impression that the essential points had already been said in the detailed summary that took up three pages of small font (pp. XV–XVIII). However, I became aware that this summary, easily lost amongst the Proceedings of the Association, and paginated, moreover, in roman numerals, is not very appealing. Although it was listed in various bibliographies (*Année philologique*; G. Maloney's *Bibliographie hippocratique*; L. Paquet's *Bibliographie des Présocratiques*), I gladly recognise that one could be forgiven for not consulting it. Its findings, although known to Hippocratic scholars, did not seem to reach the larger public of specialists in Greek philosophy. I was surprised, for example, to see that Luc Brisson's translation of the *Timaeus* in 1992,<sup>14</sup> although with an extensive but strictly Platonic bibliography, did not include this summary, even with its explicit title ("The theory of intelligence and the soul in the Hippocratic treatise *Regimen*: its connections with Empedocles and Plato's *Timaeus*"); Luc Brisson did not seem to be aware of any of the connections that I had made between *Regimen* and the *Timaeus*, despite the fact that they were made available by Joly's international edition.

Thus, I thought that it would be useful to breathe new life into this thirty year old paper by improving it with the nuances that maturity can bring. Hopefully, this invitation to speak at the Centre Léon Robin, extended by my colleague Gilbert Romeyer-Dherbey, whom I most heartily thank, might be the decisive moment which, along with a publication of the full text, will allow a better diffusion of what the Hippocratic Corpus can sometimes bring to our knowledge of pre-Platonic philosophy, and also to our understanding of Plato.<sup>15</sup>

<sup>14</sup> L. Brisson, *Platon. Timée. Critias*, (GF Flammarion 618) (Paris, 1992).

<sup>15</sup> *Habent sua fata libelli*. The present paper was delivered at the Centre Léon Robin of Paris-Sorbonne (Paris IV) on 12 April 1996. It was to be published in the series of the Centre. Unfortunately, due to the negligence of the person responsible for the publication of that

According to the author of *Regimen*, man, like all living beings, is formed of two basic elements, water and fire, whose mixture varies from one individual to another and determines the constitution of the body as well as the soul. In his account of the soul, towards the end of book 1, in chapter 35, the author devotes a long discussion to what he calls the φρόνησις ψυχῆς, ‘the intelligence of the soul’, and its opposite, the ἀφροσύνη, the ‘lack of intelligence’. He systematically presents an explanation as well as a typology of intelligence. For the history of ancient psychology, this is an extremely important document, if only because it is one of the rare pre-Platonic theories of intelligence that has been preserved, other than enigmatic fragments or watered-down doxographies. However, the theory has remained obscure, possibly because it is more exciting to reconstruct what no longer exists than it is to examine what still survives.

It is on this theory that I would like to pause in order to highlight some essential aspects that have not been noticed by commentators; and we will emphasize the particularly close connections which unite this theory to Empedocles and, above all, to Plato’s *Timaeus*.

If we may believe Socrates in Plato’s *Phaedo* (96a–b), the explanation of intelligence was a problem that fascinated the intellectual circles of the fifth century in their inquiry into nature (Περὶ φύσεως ἱστορία). Doctors and philosophers elaborated brilliant or extravagant ideas on the matter, and the debates flowed. Is intelligence located in the diaphragm, as was believed by some doctors who were more concerned with etymological roots than medical reality,<sup>16</sup> or in the blood, as Empedocles thought, or in the brain, according to Alcmaeon’s discovery? For the author of *Regimen*, it is found in the ψυχή, the soul, composed of fire and water; and different degrees of intelligence are to be explained by the different mixtures of fire and

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year’s seminar, the volume that should have been published by Vrin has still not appeared. The present text is that which would have been published in 1996, without any changes. The only other publication concerning chapter 35 of the *Regimen* that has appeared since then is S. Byl, “Le vocabulaire de l’intelligence dans le chapitre 35 du livre I du traité du *Régime*,” *Revue de philologie, de littérature et d’histoire anciennes* 76, (2002), 217–224. The author knows and uses the summary of my paper from 1966, quoted *supra*, n. 13, both for the connections with Empedocles (p. 218) and Plato’s *Timaeus* (p. 222). He studies ch. 35 from the point of view of its vocabulary of intelligence and madness and adds, in this regard, a parallel between ch. 35 of *Regimen* and Pseudo-Plato’s *Second Alcibiades*, 140c–e.

<sup>16</sup> See the very interesting criticism of this theory in the Hippocratic treatise *The Sacred Disease*, ch. 17. After this paper, I edited the treatise *The Sacred Disease* in the CUF (*Hippocrate*, t. II, third part, [Paris, 2003]). I add references to my edition in the notes. See Jouanna 30,4 ff. = Grensemann 86,14 ff. (= 6.392, 5 ff. L.).

water that constitute the soul.<sup>17</sup> On this basis, the author constructs a veritable pyramid of different kinds of intelligence, comprising seven categories. At the top, there is the intelligence elite, the φρονιμώτατοι (first category). The water and fire that constitute their soul are in a state of ideal balance. However, most of the time the two constituting elements are in a state of imbalance. Depending on whether water or fire dominates the mixture, we descend along one or the other side of the pyramid. First, we have those cases where the imbalance is due to a predominance of water. If the predominance of water is hardly noticeable (second category), people are still quite intelligent, but they have a slower mind. However, this slowness of mind is compensated by tenacity in work. These are dull but solid minds. If the predominance of water is more marked (third category), the slowness of the mind turns into foolishness. If the predominance of water over fire is extreme (fourth category), insanity occurs (μανία); yet this is not just any kind of insanity, but the depressive anger of stupid and anxious people who are in a state of total prostration, as though they have been struck by thunder (ἐμβρόντητοι). Finally, the author distinguishes three symmetric categories corresponding to the predominance of fire over water. If the predominance of fire over water is weak (fifth category), people are intelligent, and have a lively but not too fickle mind. If the predominance of fire over water is more marked (sixth category), people have a very lively but very fickle mind. These are lively but weak minds. If the predominance of fire over water is extreme (seventh category), the liveliness of the soul is excessive; these people are half-mad and may plunge into insanity at any point. However, this time it is a radically different kind of insanity from the previous one; it is excited madness characterized by hallucinations.

This is a brief summary of the author's curious classification of different kinds of intelligence, which happily combines elegance with geometry, and which applies to the domain of psychology one of the great intuitions of Hippocratic medicine, i.e. the idea that pathology, far from being due to divine intervention, is in fact the rupture of a delicate equilibrium, either in the sense of a hypofunctioning or hyperfunctioning. We should add that this classification of different types of intelligence is not a philosophical exercise totally unconnected to medicine and regimen, the principal subject of the

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<sup>17</sup> On this theory of intelligence, see K. Fredrich, *Hippokratische Untersuchungen* (see above, n. 2), who partly re-edited chapter 35 (p. 121f.) and commented on it (pp. 89–110 *passim.*); R. Joly, *Recherches* (see above, n. 3), pp. 83–89 and the notes ad loc. of his CMG edition; F. Hüffmeier, "Phronesis in den Schriften des Corpus Hippocraticum," *Hermes* 89, (1961), 51–84 (III. Phronesis in der Schrift *De Victu*, pp. 68–84).

work; the author of the Hippocratic treatise is convinced that he can modify faults in intelligence through an appropriate regimen, by reducing the imbalance between water and fire, the primary elements. Indeed, the author declares with regard to the second category (slight predominance of water over fire): “Given a proper regimen, an individual can become more intelligent and shrewder than his nature would like.”<sup>18</sup> Thus, a correct regimen improves nature. Each time the author discusses one of the six categories of intelligence characterized by the imbalance between fire and water, he also specifies at length the diet to follow, comprising food, drink and exercises. These recommendations on regimen are useful for an understanding of the author’s theory, since he gives not only prescriptions or prohibitions, but he also explains their effects on sensation and intelligence.

This is as far as commentators have got. I too would have left it at that if I had not been struck by a difficulty in the interpretation of this chapter which, by a happy coincidence, provides us with a deeper understanding of our author’s theory. This difficulty concerns the third category of intelligence that the author presents: εἰ δέ τι ἐνδεεστέρην τὴν δύναμιν τὸ πῦρ λάβοι τοῦ ὕδατος βραδυτέρην ἀνάγκη ταύτην (*sc.* τὴν ψυχὴν) εἶναι καὶ καλέονται οἱ τοιοῦτοι ἡλίθιοι.<sup>19</sup> There is no difficulty with this passage: “In the case where fire is less powerful than water in an individual, his mind is necessarily slower, and such individuals are called foolish.” The author then gives a difficult explanation that does not seem to me to have been well understood by translators:

ἄτε γὰρ βραδείης ἐούσης τῆς περιόδου κατὰ βραχύ τι προσπίπτουσιν αἱ αἰσθήσεις, ὀξεῖαι ἐούσαι, καὶ ἐπ’ ὀλίγον ξυμμίσγονται διὰ βραδυτῆτα τῆς περιόδου· αἱ γὰρ αἰσθήσεις τῆς ψυχῆς, ὅσαι μὲν δι’ ὄψιος ἢ ἀκοῆς εἰσιν, ὀξεῖαι, ὅσαι δὲ διὰ ψαύσιος, βραδυτέρας καὶ εὐαίσθητότερας.<sup>20</sup>

Littré translated the beginning of the sentence as follows: “Indeed, since the circulation is slow, the senses apply only briefly; they are quick, and this slowness makes them become attached only a little.”<sup>21</sup> This translation is, to say the least, enigmatic. It is difficult to see why the senses that are quick (αἱ αἰσθήσεις, ὀξεῖαι ἐούσαι) perceive less well; and the translation of the verb

<sup>18</sup> *Regimen*, ch. 35 Joly CMG 152,12 f. (= 6.514,15 f. L.)

<sup>19</sup> *Regimen*, ch. 35 Joly CMG 152,28–30 (= 6.516,7–9 f. L.)

<sup>20</sup> *Regimen*, ch. 35 Joly CMG 152,30–33 (= 6.516,9–14 L.)

<sup>21</sup> E. Littré, *Œuvres complètes d’Hippocrate*, vol. VI (Paris, 1849), p. 517, 11–13: “En effet, la circulation étant lente, les sens ne s’appliquent que brièvement; ils sont rapides, et cette lenteur fait qu’ils ne s’attachent qu’un peu.”

ξυμμίσγονται by 'apply' does not correspond with the meaning of the verb, which means 'are mixed'. Jones' translation seems in the first instance more precise: "For as the circuit is slow, the senses, being quick, meet their objects spasmodically, and their combination is very partial owing to the slowness of the circuit."<sup>22</sup> This translation interprets the noun αἰσθήσεις as 'sense', like Littré but, unlike Littré, gives the verb ξυμμίσγονται the exact meaning of 'to be mixed'. This translation would make sense if 'their' (in 'their combination'), which corresponds to ξυμμίσγονται, referred to the objects perceived by the senses. However, since the subject of ξυμμίσγονται is nothing other than αἱ αἰσθήσεις, 'their', in the expression 'their combination', can only mean the senses, and I do not see what this curious expression, 'combination of senses', can mean. We will leave the translations here and return to the text.

Before proposing a solution, we must begin with a detailed analysis of the two fundamental notions of this phrase: περίοδος and αἰσθήσεις.

The meaning of the word περίοδος does not really present any difficulty. Περίοδος appears often in *Regimen* and it refers to a rotation within the body comparable to an astral rotation.<sup>23</sup> However, its use is exceptional within the Hippocratic Corpus. What does this circular rotation refer to? Robert Joly asked this question in his monograph on *Regimen*, but did not find an answer. Examining the text can lead us to a possible solution. Βραδυτέρην in βραδυτέρην ἀνάγκη ταύτην εἶναι is certainly taken up by ἄτε γὰρ βραδείης ἐοῦσης τῆς περιόδου, and since ταύτην refers to the soul, we are inclined to think that it refers to a rotation of the soul. This is confirmed by the context. Something that has not been highlighted by the commentators is that the author of *Regimen* has a very dynamic and concrete conception of the soul. In chapter 35, he speaks of οἱ πόροι τῆς ψυχῆς, the 'passages of the soul',<sup>24</sup> and in the following chapter of οἱ πόροι δι' ὧν ἡ ψυχή πορεύεται, 'the passages through which the soul travels'.<sup>25</sup> He also speaks in chapter 35 of κίνησις τῆς ψυχῆς, 'the movement of the soul'.<sup>26</sup> Thus for the author of *Regimen* the

<sup>22</sup> W.H.S. Jones, *Hippocrates*, vol. IV, (The Loeb Classical Library 150) (Cambridge (Mass.)/London, 1931), p. 285.

<sup>23</sup> The term is used twice to mean an astral circuit and 15 times in *Regimen* to mean a circuit within the body; this second meaning is not attested elsewhere in the Hippocratic Corpus. See J.H. Kühn / U. Fleischer, *Index Hippocraticus*, fasc. 3, (Gottingae, 1988), p. 649, s.v. περίοδος.

<sup>24</sup> *Regimen*, ch. 35 Joly CMG 152,22 (= 6.514,26 L.).

<sup>25</sup> *Regimen*, ch. 36 Joly CMG 156,25 (= 6.522,24–524,1 L.).

<sup>26</sup> *Regimen*, ch. 35 Joly CMG 152,18 (= 6.514,22 L.).

soul is a fluid composed of fire and water,<sup>27</sup> which travels through the body through passages (πόροι). However, the question is whether this movement of the soul is circular. I think that we find proof in chapter 25, which expressly discusses the soul, not intelligence. We find here two symmetrical expressions that are closely similar to that of our passage:

The soul of man, as I said, is composed of fire and water ... it makes its way into every animal that breathes and naturally also in every man, young and old. But it does not develop the same way in everyone; in young bodies, since the rotation is quick (ἄτε ταχείης ἐούσης τῆς περιφορῆς) and the body is growing, it burns, becomes light and is consumed by the growth of the body; in older bodies, since the movement is slow (ἄτε βραδείης ἐούσης τῆς κινήσιος) and the body is cold, it is consumed by the deterioration of the man.<sup>28</sup>

The two symmetrical expressions are ἄτε βραδείης ἐούσης τῆς κινήσιος, 'given that the movement is slow',—and given the context, this must refer to the movement of the soul—and ἄτε ταχείης ἐούσης τῆς περιφορῆς, 'given that the rotation is quick'. The author establishes in chapter 25 a perfect synonymy between κίνησις and περιφορή. Thus, it seems established in the mind of the author of *Regimen* that the movement of the soul is circular and that περίοδος in chapter 35 also refers to the rotation of the soul. From now on, we can replace an abstract and static conception of the soul by a dynamic and concrete representation of the soul. The soul rotates within the body.

It even seems possible to be precise about the position of this rotation within the body thanks to chapters 9 and 10, where the author imagines the formation of the structure of the body of man in imitation of the whole (ἀπομίμησιν τοῦ ὅλου).<sup>29</sup> We can see how, during the formation of the foetus, after an external crust is formed, the imprisoned fire within the innermost part, nourished by the humidity, begins by digging a hole for the belly, which is the reservoir of humidity, then it digs the channels of respiration and nutrition which open into the exterior, whilst the imprisoned fire in the rest of the body digs three circuits around the belly. These three concentric circuits, which have connections between them, are in the image of the three circuits of the universe; the circuit closest to the belly is analogous to the circuit of the moon; the outermost circuit is analogous to the circuit of the stars, whilst the middle circuit is analogous to the circuit of the sun.<sup>30</sup>

<sup>27</sup> *Regimen*, ch. 25 Joly CMG 142,6 f. (= 6.496,20 f. L.).

<sup>28</sup> *Regimen*, ch. 25 Joly CMG 142,6–12 f. (= 6.496,20–498,5 f. L.).

<sup>29</sup> *Regimen*, ch. 10 Joly CMG 134,6 (= 6.484,18 L.).

<sup>30</sup> On these three circuits within the body, see F. Hüffmeier, "Phronesis" (see above, n. 17), p. 71 ff. The translation of the passage on the three circuits in the CMG edition (p. 134,13–16)

The hottest and strongest fire is located in the middle circuit, and “it is in this fire that the soul, intelligence and thought are located” (ἐν τούτῳ ψυχῆ, νοῦς, φρόνησις).<sup>31</sup> Thus, it seems that the circuit of the soul corresponds to the middle circuit.

The speed of the soul’s rotations varies depending on the mixture of the constituent elements, which is in accordance with the general principles of our author. Indeed, for him fire has the property of moving everything continually, and water has opposite properties: “Fire can move everything, water nurtures everything.”<sup>32</sup> From this, we can well understand the workings of our cyclotron. Fire is the accelerator of the particles of the soul; water is its brake. Thus, when water and fire are in equilibrium, the speed of the soul’s rotation is ideal. When fire overpowers water, the soul spins faster (ch. 35, sixth category θάσσον κινεῖται),<sup>33</sup> and if the fire is much more powerful than the water (ch. 35, seventh category), it rotates too fast and causes excited madness. On the other hand, if water dominates fire, the soul slows down (ch. 35, third category βραδυτέρην ἀνάγκη ταύτην εἶναι),<sup>34</sup> and if it slows down dangerously, it leads to the madness of stupidity, which the author describes, significantly, as μανίη ἐπὶ τὸ βραδύτερον (ch. 35, fourth category).<sup>35</sup> Thus, the author remarkably offers concrete support to the abstract vocabulary of psychology. The liveliness or slowness of the mind corresponds to

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is not totally accurate: “Inside, the fire established three series of circuits (περιόδους τρισσάς), which meet each other inside and outside; one, at the heart of humidity (πρὸς τὰ κοίλα τῶν ὑγρῶν) is like the moon; the other on the solid surface (πρὸς τὸν περιέχοντα πάγον) is like the stars; finally, the middle one, which attaches to both the interior and exterior, is like the sun” (“Là-dedans, le feu a établi trois séries de circuits qui se rejoignent en dedans et au dehors; l’une, au cœur de l’humide, a la capacité de la lune; l’autre, à la surface solide, a la capacité des astres; celle du milieu enfin, qui atteint l’intérieur et l’extérieur, a la capacité du soleil”). But we are dealing with three circuits, not three series of circuits. The innermost circuit, corresponding to the moon, is not at the heart of humidity, but situated “against the hollows of humidity,” i.e. the belly. It is the innermost circuit that spins around the belly. The outermost circuit is not on the solid surface, but “against the concretion that surrounds (the body)”; it is the outermost circuit close to the external envelope of the body, like the stars go around the external envelope of the earth. After the presentation of this paper, I wrote a study where I compared the three circuits of ch. 9 and 10 with those of ch. 89: “L’interprétation des rêves et la théorie micro-macrocosmique dans le traité hippocratique du *Régime*: sémiotique et mimésis,” in K.D. Fischer, D. Nickel and P. Potter (eds.), *Text and Tradition. Studies in Ancient Medicine and its Transmission*, presented to Jutta Kollesch, (*Studies in Ancient Medicine* 18) (Leiden, 1998), pp. 161–174.

<sup>31</sup> *Regimen*, ch. 10 Joly CMG 134,18 (= 6.486,9 L.).

<sup>32</sup> *Regimen*, ch. 3 Joly CMG 126,9f. (= 6.472,17f. L.).

<sup>33</sup> *Regimen*, ch. 35 Joly CMG 154,22f. (= 6.520,2 L.).

<sup>34</sup> *Regimen*, ch. 35 Joly CMG 152,29 (= 6.516,8f. L.).

<sup>35</sup> *Regimen*, ch. 35 Joly CMG 154,9 (= 6.518,4 L.).

the speed or slowness of the soul, and to the mixture of fire and water that rotates around a circuit enclosed within the body.

Returning now to our text relating to the third category, we find that certain points become clear, but the general sense of the passage is still not clear. There is a further hurdle to overcome, the *αἰσθήσεις*. A good strategy might be to translate the passage, whilst leaving the term in the Greek:

Since the rotation of the soul is slow, the *αἰσθήσεις* rush together for a short instant each time, since they are quick, and mix together in only a small quantity due to the slowness of the rotation. The *αἰσθήσεις* of the soul, when they pass through the channel of sight or hearing, are quick, whilst when they pass through the channel of touch, they are slower and *εὐαισθητότεροι* (a word whose meaning depends on that given to *αἰσθήσεις*).

In the singular, *αἴσθησις* means the faculty of perception in general or sensation. There is no difference for our author between sensation and perception. In the plural, which is what concerns us here, *αἰσθήσεις* normally means either sensations or sensory organs. We can immediately disregard a translation of *αἰσθήσεις* with ‘sensory organs’, since the author tells us that the *αἰσθήσεις* pass through the channel of sight, hearing, touching, i.e. the sense channel. The solution that remains is to translate it as ‘sensations’. Unfortunately this hypothesis leads us to an array of difficulties and absurdities, if, at least, we understand ‘sensations’ in the modern sense. Where do the sensations of the soul hurry to? Towards the object, as translators think. But now, with what do they mix? Above all, how can the sensations of the soul be quick when the soul’s rotation is slow? If they were quick, they would hurry to their objects and the soul would be more intelligent, but the author wishes to show us the opposite. Now we arrive at an impasse.

To escape from this impasse, the context will again be of great use to us. Indeed, twice in chapter 35, the author uses two analogous expressions to *προσπίπτουσιν αἱ αἰσθήσεις*; but this time the two terms are curiously reversed. It no longer concerns *αἰσθήσεις* that rush towards something, but the fire of the soul or the soul which rushes towards the *αἰσθήσεις* (ch. 35, second category, *προσπίπτει πρὸς τὰς αἰσθήσας* and sixth category *πρὸς τὰς αἰσθήσας ... προσπίπτει*).<sup>36</sup> There is no contradiction, as we might believe at first, between these two expressions. In fact they express two opposite movements, one of the soul towards the *αἰσθήσεις*, and the other of the *αἰσθήσεις* towards the soul. We know that for the ancients, in particular

<sup>36</sup> *Regimen*, ch. 35 Joly CMG 152,11 (= 6.514,13 f. L.) and *Regimen*, ch. 35 Joly CMG 154, 23 (= 6.520,2 f. L.).

for Empedocles, intellection is only possible if the objects emit a flux of sensory particles which penetrate the exterior towards the seat of thought. As such, what can αἰσθήσεις mean, if not sensory particles which, coming from the exterior, pass through the sensory channel and penetrate all the way to the soul? Of course, I am well aware that I am attributing to the word a very particular sense here—but we will see that this is not unique—because, usually in technical treatises, these particles are designated by neuter participles, such as τὰ ποτιπίπτοντα in Archytas,<sup>37</sup> or τὰ ἰόντα διὰ τῶν αἰσθήσεων in Plato's *Theaetetus*.<sup>38</sup> The author of *Regimen* also uses the neuter plural in chapter 35 to refer to these elements issued from objects that rush towards the exterior,<sup>39</sup> and he thus establishes synonymy between the neuter plural τὰ προσπίπτοντα and the expression προσπίπτουσιν αἱ αἰσθήσεις. In light of this equivalence, both our text and the author's theory of understanding become clear. Understanding comes about when sensory particles (αἰσθήσεις), coming from the object, rush (προσπίπτουσιν) towards the soul and are mixed (ξυμμίσγονται) into its rotation (περίοδος). However, the soul, for its part, is not passive. It is not like the piece of wax of the *Theaetetus* where the sensory particles leave an imprint. The particles of the soul, animated by their circular movement, rush towards the sensory particles, which are present in the gates of the soul, to catch them. The slower the circuit is, the slower the movement of the soul towards the sensory particles will be; the quicker the rotation is, the more rapid the movement of the soul towards the sensory particles will be. Thus, the more rapid the revolution is, the more sensory particles the soul will digest and the more intelligent it will be. Yet the soul should not turn too fast, because then it would not be able to digest the particles, which would lead to hallucinatory madness.

However, an obscurity remains. The author tells us that the speed of the penetration of the αἰσθήσεις varies according to the channel taken: those that pass through the channel of sight or hearing are quick, whilst those that pass through the channel of touch are slower.<sup>40</sup> Logically, we would expect those sensory particles that arrive rapidly to penetrate the soul rapidly and

<sup>37</sup> DK 47 B 1 (I, 433,13) regarding sounds that rush towards hearing and are perceived: τὰ μὲν οὖν ποτιπίπτοντα ποτὶ τὰν αἴσθασιν.

<sup>38</sup> Plato, *Theaetetus* 194C: "That which penetrates through the sensory channel (τὰ ἰόντα διὰ τῶν αἰσθήσεων) is imprinted onto the 'wax' of the soul."

<sup>39</sup> *Regimen*, ch. 35 Joly CMG 154,15 (= 6.518,12 f. L.) concerning the soul which quickly perceives τῶν προσπιπτόντων.

<sup>40</sup> *Regimen*, ch. 35 Joly CMG 152,32 f. (= 6.516,12–14 L.).

to be mixed in large quantities. However, the opposite happens. Quick particles “are mixed in small quantities” (ἐπ’ ὀλίγον ξυμμίσγονται), whilst the slower particles are “more easily seized” (εὐαισθητότεραι). We can simply suppose that the particles that arrive rapidly leave again equally rapidly, and only remain for a short instance each time (κατὰ βραχὺ τι)<sup>41</sup> in the gates of the soul. Conversely, the slower particles leave more slowly, and remain longer in the gates of the soul and can in this way be more easily caught, even if the rotation of the soul is slow. This is why mentally-impaired people, according to our author, still perceive tactile feelings, but not visual or auditory feelings.<sup>42</sup> Moreover, to understand it, we must think of very concrete experiences, as the ancients did. The sight of a flash of lightning gives the impression of a quick invasion of luminous particles that leave immediately, whilst the feeling of a burn leaves the impression of a slow invasion of hot particles which leave equally slowly and which remain for a long time in the gates of the soul.

Now the difficulties seem to me to be ironed out and the text clearer. Here is my proposed translation:

Since the rotation (of the soul) is slow, the sensory particles have only a short instant each time to rush into it when they are quick, and consequently they can only be mixed together in a small quantity due to the slowness of the rotation. The sensory particles seized by the soul, when they penetrate through the channel of sight or sound, are quick, whilst when they penetrate through the channel of touch, they are slower and more easily seized.

This interpretation was adopted by Joly in his edition of *Regimen* published in the *CUF* in 1967; it was also adopted without questioning by H. Ioannidi in his paper on “La sensation-perception dans le Corpus Hippocratique,” given at the VIIe Colloque International Hippocratique de Madrid (Madrid, 1992), p. 71 f. Joly adopted it in his 1984 CMG edition as well, but he modified it in one respect. Here is what he says in his commentary (p. 259 f.):

In my first edition, I adopted the translation and the brilliant interpretation proposed by J. Jouanna (‘La théorie de l’intelligence’, p. XVI f.). I have also used it here, but in slightly amended form. I no longer accept the translation of αἰσθησις by ‘sensory particle’. First of all, and especially when dealing with such difficult texts, I think that the translation should better reflect the possible ambiguity in the Greek. Then, the reason given by J. Jouanna seems

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<sup>41</sup> The temporal sense of the expression κατὰ βραχὺ τι is perfectly comprehensible. F. Hüffmeier, “Phronesis” (see above, n. 17), p. 81, n. 1 believes that we must understand this expression in a spatial (‘räumlich’) sense.

<sup>42</sup> *Regimen*, ch. 35 Joly CMG 152,33–35 (= 6.516,14–17 L.).

contestable: “The comparison between the two expressions where the terms are curiously reversed (προσπίπτουσι αἱ αἰσθήσεις, VI, 516,10 and προσπίπτειν πρὸς τὰς αἰσθήσεις, VI, 514,13–14 and 520,2–3 Littré) gives αἰσθήσεις a particular (but not unique) meaning: it concerns sensory particles, emitted by objects, that rush towards the soul and towards which the soul rushes, according to a contrasting yet complementary double movement (p. XVI).” Yet when sensation is the combination of an exterior stimulus with an impression left on the soul, we can therefore say just as naturally that sensation goes towards the soul as the opposite without introducing the notion of sensory particles. There is no discussion anywhere in *Regimen* of particles emitted by objects, which comes very close to the Democritean view.

In response to Joly’s remarks I would like to make the following observations. I gladly concede that the translation ‘sensory particles’ is explicit and leaves no ambiguity, but I do not believe that the word ‘sensations’ corresponds to what the author refers to here as αἰσθήσεις; we should at least put sensations in inverted commas in the translation in order to show that the word has a special sense and explain its meaning in a note. If it is true that sensation, in modern usage, is, as Joly says, a conjunction of an exterior stimulus with an impression felt by the soul, it is not this sensation that is meant by the term αἰσθήσεις in the expression προσπίπτουσιν αἱ αἰσθήσεις; these αἰσθήσεις correspond to what Joly calls the external stimulus, since the αἰσθήσεις rush from the exterior with a speed that varies according to the sensory channel in which they travel, and thus they already exist prior to this conjunction and are not necessarily felt or perceived by the soul. It is easier to gauge the particular sense of αἰσθήσεις here by comparing the phrase προσπίπτουσιν αἱ αἰσθήσεις in *Regimen* with an expression of Archytas (DK 47 B 1), speaking of the sounds that rush towards hearing and are perceived: τὰ μὲν οὖν ποτιπίπτοντα ποτὶ τὰν αἴσθησιν, “the sounds that rush towards τὰν αἴσθησιν,” a word that may be translated here by ‘sensation’, or rather by ‘sensory organ’. This use of αἴσθησιν, which presents no difficulty in Archytas, does not correspond to that of αἰσθήσεις in *Regimen*; προσπίπτουσιν αἱ αἰσθήσεις in *Regimen* corresponds to the neuter τὰ ποτιπίπτοντα of Archytas. Thus, we cannot translate the term αἴσθησις in the same way in both passages. The αἰσθήσεις of *Regimen* designate something concrete coming from the object and rushing in from outside in order to be perceived by the soul. We may add that this concrete sense of the plural αἰσθήσεις is facilitated by the well-known use, in Greek, of abstract terms in the plural referring to concrete manifestations.

The great difficulty in translating a term like this comes from the fact that in *Regimen*, the concept of αἴσθησις, which itself was a relatively late creation, still had a large degree of malleability that preceded the distinctions

that were to be at the root of our modern understanding. A recent doctoral thesis that I supervised with François Skoda, convincingly shows that the verb αἰσθάνομαι, from which the noun αἴσθησις is derived, belongs to a family of words whose initial meaning was that of perceiving by hearing.<sup>43</sup> The change from auditory perception to perception in general was a remarkable step forward in fifth-century Greek thought, already acquired at the time of *Regimen*. However, the linguistic distinction between the perceived (αἰσθητός) and the act of perception (αἴσθησις) was not yet known. Moreover, perception could be understood by the same author as a purely receptive process and as an act of the subject (which explains why we find in the same chapter the apparently opposite expressions of προσπίπτουσιν αἰ αἰσθήσεις and προσπίπτειν πρὸς τὰς αἰσθήσεις), and we must add that there is no difference between sensation/perception and thought in this regard. Our difficulty in understanding and translating an expression such as προσπίπτουσιν αἰ αἰσθήσεις probably arises from the fact that we find it difficult to imagine how ‘sensation’, understood as something completely receptive, can already exist outside a human being before entering the perceiving subject.

Let me add here an example from the Hippocratic treatise *The Sacred Disease* that illustrates in a similar way our difficulty in understanding the ancients’ conception of sensation. The author criticises those who think that the source of thought is the diaphragm or the heart, and he defends the theory that the brain is the source of thought.<sup>44</sup> This brilliant intuition relies in fact on an idea that has nothing scientific about it, but which represents the process of thought in a very concrete way. The brain is the seat of intelligence because the author is convinced that the brain is the first part of the body to receive the air penetrating through the nostrils, and this part picks out the ‘thinking element’ contained in the air; thus, the other parts of the body that receive the air, from now on deprived of its thinking faculty, cannot be the seat of thought. Thus, thought is not perceived essentially as an act of the brain. The brain is the receptacle of thought contained in the air, and this receptacle should be a cavity of sufficient volume to store the harvest of the thinking element contained in the air.<sup>45</sup> Thus, thought

<sup>43</sup> I. Böhm, *De l’audition à l’intellection. Naissance et développement de αἰσθάνομαι et de sa famille de l’époque archaïque à la fin du Ve siècle*, (Thèse Paris-Sorbonne [Paris IV]) (Paris, 1996).

<sup>44</sup> For criticism of the diaphragm and the heart as the centre of thought, see *The Sacred Disease*, ch. 17 Jouanna 30,4 ff. = Gensemann 86,14 ff. (= 6.392,5 ff. L.). For the brain as centre of thought, see *The Sacred Disease* ch. 16 Jouanna 29,4 ff. = Gensemann 84,23 ff. (= 6.390,10 ff. L.).

<sup>45</sup> See *The Sacred Disease*, ch. 17 Jouanna 30,10 f. = Gensemann 86,18 f. (= 6.392,10 L.),

exists outside the thinking subject. The expression used by the author to indicate that the air “deposits in the brain that which has thought and contains intelligence” (ch. 16, καταλελοιπῶς ἐν τῷ ἐγκεφάλῳ ... ὅ τι ἂν ᾗ φρόνιμὸν τε καὶ γνώμην ἔχον),<sup>46</sup> leaves no doubt that the thinking element pre-exists in the air before its penetration into man. The author even speaks of the thought of the air (τῆς φρονήσιος τοῦ ἠέρος),<sup>47</sup> which is perceived by the brain. Thus, ‘thought’ (φρόνησις) in *The Sacred Disease* is a quality of the air, which is deposited in the brain just like, in *Regimen*, ‘perception’ (αἴσθησις) is an element that is issued from the object and penetrates the soul. In the concrete imagination of these doctors or intellectuals, action nouns can designate concrete properties outside man, and these action nouns and the corresponding neuters are not always distinguished. This completely passive conception of thought being deposited by the air in the brain, does not prevent the author of *The Sacred Disease* from conceiving the brain at the same time as that which interprets thought (τὸν ἐρμηνεύοντα τὴν σύνεσιν)<sup>48</sup> and from thereby giving it an active role. Thus for the author of *The Sacred Disease*, the brain has both a passive and an active role in the process of thinking, just as for the author of *Regimen* the soul has a passive and an active role in the process of perception. The two texts clarify each other mutually.

Finally, Joly disagrees with the notion of particle, objecting that *Regimen* nowhere mentions particles emitted by objects, which would be very close to the Democritean way of thinking. On this point, I would like to make two remarks. The first consists in recalling that the author of *Regimen* employs, in the context of perception, the neuter plural τὰ προσπίπτοντα to refer to that which comes from the outside and is perceived by the soul (ch. 35, fifth category, αἰσθανομένη τῶν προσπιπτόντων).<sup>49</sup> What can this neuter plural mean if not something that emanates from objects, which we might call particles, or corpuscles, or any other word that comes to mind? My second remark is that this conception of perception is not the prerogative of Democritus. Of course, it was the opinion of Democritus, to judge from his theory of *eidola* or ‘images’ reported in Plutarch’s *Table Talk*: the *eidola* emitted from objects and living beings rush in from outside (we

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where it is said that the diaphragm cannot be the centre of thought because it does not contain a suitable cavity to receive anything good or bad.

<sup>46</sup> *The Sacred Disease*, ch. 16 Jouanna 29,15 f. = Grensemann 86,7 f. (= 6.390,18–20 L.).

<sup>47</sup> *The Sacred disease*, ch. 17 Jouanna 31,9 = Grensemann 88,4 (= 6.394,2 f. L.).

<sup>48</sup> *The Sacred Disease*, ch. 16 Jouanna 30,4 = Grensemann 86,12 f. (= ch. 17, 6.392,4 L.).

<sup>49</sup> *Regimen*, ch. 35 Joly CMG 154,15 (= 6.518,12 f. L.).

find in 735b in Plutarch the same participle *προσπίπτοντα*) and penetrate the body through channels (*διὰ τῶν πόρων*).<sup>50</sup> However, this explanation of perception by particles emanating from perceived objects is more generally widespread. There is the well-known opinion of Empedocles, who speaks of ‘effluxes’ emanating from objects and penetrating the channels (*πόροι*) of the body (DK 31 B 109 a; cf. A 88; cf. A 86,20 etc.; see the *Index* of DK, s.v. *ἀπορρεῖν, ἀπόρροια*). In Empedocles, the picture is also very concrete: the effluxes are small parts that detach themselves from the object,<sup>51</sup> even if the metaphor of effluxes (a term derived from the Greek verb ‘to flow’) contains at the same time discontinuity (drop of liquid) and continuity (flow of the liquid). Without this concrete picture, we cannot make sense of Theophrastus’ discussions of effluxes in his *De sensibus*. With regard to the Empedoclean explanation of the sense of smell by effluxes, here is what Theophrastus says in his critical examination (*De sensibus* 20 = DK 31 A 86):

Moreover, if there is a deterioration of a body due to the efflux (*διὰ τὴν ἀπορροήν*), the most general sign that Empedocles uses (to explain perception), and if the odours are also produced by a flux (*ἀπορροῆ*), things that contain the strongest smell would deteriorate most quickly. In fact, almost the opposite happens; for what is most odorous, either plants or something else, is what survives the longest.

This argument supposes that the emanations separated from the objects lead, in Empedocles’ theory, to a reduction of the objects, a reduction which is all the larger because the effluxes that detach themselves are more numerous. We should suppose that these effluxes penetrate the human body through the pores which are suited to them. However, this does not mean that we can totally assimilate the effluxes of Empedocles to the *eidola* of Democritus, since the effluxes of Empedocles evidently do not imply everything that the atoms of Democritus represent, these indivisible particles of different form and size that are dislodged in space.<sup>52</sup>

<sup>50</sup> DK 68 a 77 (II 103, 23); cf. also DK 67 A 30 (= Aetius 4.8.10). Leucippus, Democritus and Epicurus say that feeling and intellect are produced when images come from outside; neither occurs without an image rushing in (*τοῦ προσπίπτοντος εἰδώλου*).

<sup>51</sup> See for example, A.A. Long, “Thinking and Sense-Perception in Empedocles: Mysticism or Materialism?,” *Classical Quarterly* 16 (1966), 256–276 (notably p. 260, “These *ἀπόρροια*, like everything else, are material and presumably, though we have no evidence on this point, analogous to the *εἶδωλα* of Democritus. We may infer that they are qualitatively identical with the body which produces them, for one of the conditions of perception is the reception of *ἀπόρροια* by the sense organs”).

<sup>52</sup> On this problem, see the very clear and well documented article by M. Laura Gemelli Marciano, “L’Atomismo e il corpuscolarismo empedocleo: frammenti di interpretazioni nel

In short, I think that if we separate the problem of the interpretation of the term *αἰσθήσεις* in the passage of chapter 35 of the *Regimen* from that of its translation (which will always be a transposition, since we will never find in English an identical term that can take into account the full sense of *αἰσθησις* in all the passages), the objections raised by Joly will have to be discarded; at any rate they are not concerned with the essential point.

If this is our author's explanation of intelligence; if it is true that it is based, as we have tried to show, on a rotation within the body; and if this rotation means the rotation of the soul, we can use these new premises to put this

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mondo antico," *Elenchos* 12 (1991), 5–37. The article arrives at a negative conclusion: "The traces of corpuscularism in Empedocles are thus very rare and always presented through the filter of other contemporary or posterior doctrines of atomist or corpuscularist nature" (p. 37). In fact, ancient 'naturalists', in their explanation of perception and intelligence, could subscribe, explicitly or implicitly, to the idea of the flux of perceptible material in the form of particles more or less detached from objects, without agreeing with everything that Democritus' theory of indivisible atoms implies. The desire to attribute to Democritean influence a corpuscular conception of material derived from observations of everyday life (liquid and drops of water; flame and sparks; metal and bodies of metal; wood and sawdust) is simplistic and abstruse. Concerning Empedocles, I find it difficult to agree with M. Laura Gemelli that the theory of *ἀπορροαί* was interpreted by the most ancient sources (not only Theophrastus in his *De sensibus*, but also Plato) without reference to corpuscles. Taking the oldest witness, Plato, I do not think that we can establish a distinction between the Empedoclean theory of perception reported by Plato in his *Meno* (76 c–d), which was not corpuscular, and the comparable theory reported by Plato in his *Timaeus* (67 c–d), which was. It is true that Plato speaks explicitly of *μόρια* in the *Timaeus*, whilst the word does not appear in *Meno*. However, in the *Meno*, colour is defined as *ἀπορροή σχημάτων* (*σχημάτων* BTWF and not *χρημάτων*, as M. Laura Gemelli Marciano writes following DK, which adopts a variant of T) *ἔψει σύμμετρος καὶ αἰσθητός*, whilst colour is defined in the *Timaeus* as *φλόγα τῶν σωμάτων ἐκάστων ἀπορρέουσιν*, *ἔψει σύμμετρα μόρια ἔχουσιν πρὸς αἴσθησιν*, "a flame that emanates from every sort of body, and has particles adapted to the sense of sight." What else can *ἀπορροή σχημάτων* (which is the reading of the manuscript archetype) mean in the *Meno* if not the flow of limited elements (cf. the definition of *σχῆμα* as *στερεοῦ πέρας* in 76 a), which are detached from perceived objects? In the *Timaeus* there is no incompatibility between the expression of a continuous flow coming from the objects and the belief that this flow is made up of particles. The flame emitted by objects that defines colour, whilst it is composed of particles, is said 'to emanate': the verb *ἀπορρέουσιν* in the *Timaeus*, which corresponds to the theory of fluxes (*ἀπορροαί*) enunciated in the *Meno*, is used with regard to the flow of the flame issued by objects, whilst this flame is said in the same sentence to be composed of particles (*μόρια*). The model of this representation is the flame which appears in burning wood; it continues burning at its base, it divides into smaller flames and into sparks at the top. Thus, this flame can be quite naturally interpreted as a flux of sparks which seems continuous at its base, where the sparks are numerous and dense, but discontinuous at the top where the sparks become less numerous. This understanding is so natural that even today the word 'spark' is defined in the dictionaries as "a bit of material set alight that rises from a fire" (Le Petit Larousse illustré).

theory in the context of the biological thought of the end of the fifth and the start of the fourth century BC, i.e. to show the privileged relay role that it was able to play between Empedocles and Plato's *Timaeus*.

We should be clear that the date of *Regimen* is not absolutely certain. Following Werner Jaeger in 1938, the treatise was traditionally dated to the fourth century. Robert Joly placed it at the end of the fifth century, but the question remains open.<sup>53</sup> In any case, it seems highly improbable that *Regimen* was written after the *Timaeus*.

That *Regimen's* classification of different kinds of intelligence is not totally original, but rather inspired by Empedocles, is, since the start of the century, one of the common criticisms of Hippocrates.<sup>54</sup> However, since a systematic comparison has not been undertaken and since new evidence has emerged, it seems indispensable to return to this comparison. Here is the account given by Theophrastus on the theory of intelligence according to Empedocles, and facing it, the corresponding passages from *Regimen*.

Theophrastus, *De sensu*, ch. 10–11

(10) ... ὡσαύτως δὲ λέγει καὶ περὶ φρονήσεως καὶ ἀγνοίας ... τῷ αἵματι μάλιστα φρονεῖν· ἐν τούτῳ γὰρ μάλιστα κεκρασθαι ἐστὶ τὰ στοιχεῖα τῶν μερῶν.

(11) ... Ὅσοις μὲν οὖν ἴσα καὶ παραπλήσια μέμικται καὶ μὴ διὰ πολλοῦ μῆδ' αὐτὴ μικρὰ μῆδ' ὑπερβάλλοντα τῷ μεγέθει, τούτους φρονιμωτάτους εἶναι καὶ κατὰ τὰς αἰσθήσεις ἀκριβεστά-

*Regimen*, ch. 35 (*passim*)

Περὶ δὲ φρονήσιος ψυχῆς ὀνομαζομένης καὶ ἀφροσύνης ὧδε ἔχει.

... ἡ δὲ ψυχὴ σύγκρησιν ἔχουσα πυρὸς καὶ ὕδατος ...

Πυρὸς τὸ ὑγρότατον καὶ ὕδατος τὸ ξηρότατον χρῆσιν λαβόντα ἐν τῷ σώματι φρονιμώτατον ... Ἐκ τούτων δ' ἡ ψυχὴ συγκρηθεῖσα φρονιμωτάτη καὶ μνημονικωτάτη.

... τούτους ἤδη οἱ μὲν ἀφρονας ὀνομάζουσιν, οἱ δὲ ἐμβροντήτους

<sup>53</sup> See V. Schmidt in *Gnomon* 45 (1973), 16–18.

<sup>54</sup> R. Joly, *Recherches*, (see above, n. 3) pp. 88–89, after having connected ch. 35 of *Regimen* with Theophrastus' account of Empedocles, thinks that this connection was missed by Fredrich. In fact, Fredrich, very attentive to the connections between Empedocles and the Hippocratic Corpus, had made this connection in his *Hippokratische Untersuchungen*, (see above, n. 2) p. 125, n. 3. On Empedocles, after the oral presentation of this paper, there was an important new discovery with the publication of the Strasbourg papyrus: A. Martin and O. Primavesi, *L'Empédocle de Strasbourg (P. Strasb. gr. Inv. 1665–1666)*, Introduction, édition et commentaire, (B.N.U.S.) (Berlin/New York, 1999) (with numerous reviews of the book). However, this has not led to any changes in the text of the present paper.

Theophrastus, *De sensu*, ch. 10–11

τους, κατὰ λόγον δὲ καὶ τοὺς ἐγγυτάτω τούτων, ὅσοις δ' ἐναντίως, ἀφρονεστάτους· καὶ ὧν μὲν μανὰ καὶ ἀραιὰ κεῖται τὰ στοιχεῖα, νωθροὺς καὶ ἐπιπόνους· ὧν δὲ πυκνὰ καὶ κατὰ μικρὰ τεθραυσμένα, τοὺς δὲ τοιούτους ὀξεῖς φερομένους καὶ πολλὰ ἐπιβαλλομένους ὀλίγα ἐπιτελεῖν διὰ τὴν ὀξύτητα τῆς τοῦ αἵματος φορᾶς.

*Regimen*, ch. 35 (*passim*)

... φρόνιμοι μὲν καὶ οὔτοι, ἐνδεέστεροι δὲ τῆς προτέρης, διότι κρατεόμενον τὸ πῦρ ὑπὸ τοῦ ὕδατος καὶ βραδείην τὴν κίνησιν ποιούμενον, νωθρότερον προσπίπτει πρὸς τὰς αἰσθήσιας· παρὰ μόνιμοι δ' εἰσὶν ἐπεικικῶς αἱ τοιαῦται ψυχαὶ πρὸς ὅ τι ἂν προσέχωσιν.

... ὀξυτέρην μὲν τοσοῦτῃ ἀνάγκῃ εἶναι τὴν ψυχὴν ὅσῳ θάσσον κινεῖται, καὶ πρὸς τὰς αἰσθήσιας θάσσον προσπίπτειν, ἦσσον δὲ μόνιμον τῶν πρότερον, διότι θάσσον ἐκκρίνεται τὰ παραγινόμενα καὶ ἐπὶ πλείονα ὀρμάται διὰ ταχυτήτα.

Having discussed how Empedocles envisioned the working of the different senses, Theophrastus comes to the explanation of thought. He begins by explaining that the principle of thought is analogous to sensation; intelligence is produced by things that are similar to each other, whilst its opposite is produced by things that are dissimilar. He then recalls that the seat of thought is the blood, the humour in which the elements are best mixed.<sup>55</sup> He then expounds a classification of intelligences. I will rapidly go through the most evident comparisons, which have already been picked out by commentators. The philosopher and the doctor tackle exactly the same subject: intelligence and its opposite (Theophrastus: *περὶ φρονήσεως καὶ ἀγνοίας*; *Regimen*: *Περὶ φρονήσιος καὶ ἀφροσύνης*). The explanation of intelligence is analogous: the source of thought is a fluid made up of the combination of primary elements which are in a state of mixture (Theophrastus: *κεκρᾶσθαι*; *Regimen*: *σύγκρησιν*). The different degrees of intelligence are explained by the different types of mixture. It is, in one way or another, an essay in classification of different kinds of intelligence. Empedocles, before the author of *Regimen*, distinguished the category of the most intelligent (Theophrastus: *φρονιμωτάτους*; *Regimen*: *φρονιμώτατον*—*φρονιμωτάτη*). The explanation given was the same: the mixture of primary elements is perfect. To this category, Empedocles, before *Regimen*, contrasted the *ἀφρονέστατοι*, who owed their foolishness or their madness to the excessive imbalance of the elements. Such comparisons have already been highlighted. They are

<sup>55</sup> Theophrastus quotes on this occasion two verses of Empedocles (= DK 31 B 107). Compare also DK 31 B 105 and 110 with the commentary of A.A. Long, "Thinking" (see above, n. 51), p. 267 ff.

evident, but Empedocles and the author of *Regimen* are not the only ones to explain intelligence or its opposite by the balance or imbalance of the constitutional elements.

In the second part of Theophrastus' account the connections become more precise. Between the two extreme categories (the most intelligent and the least intelligent), Empedocles distinguishes two intermediary categories of intelligence. Here is the first: *καὶ ὧν μὲν μανὰ καὶ ἀραιὰ κέῖται τὰ στοιχεῖα νωθροὺς καὶ ἐπιπόνους*, "and when the elements (of the blood) are rare and unmixed, people are νωθροὺς καὶ ἐπιπόνους." Opinions are divided on the meaning of these two terms. Our dictionaries (Liddell-Scott and Bailly), followed by Robert Joly<sup>56</sup> and Jean-Paul Dumont,<sup>57</sup> invite us to translate it by 'slow and quickly tired', giving ἐπίπονος, uniquely in this passage, a meaning contrary to its normal one. Ἐπίπονος means 'arduous' and there is no reason here not to give it its normal meaning, as Burnet<sup>58</sup> and Bollack,<sup>59</sup> for example, already saw. However, it seems to me that νωθροὺς and ἐπιπόνους refer to different things and mean a lack of intelligence compensated by a quality of temperament. They have a slow spirit (νωθροὺς) and (καὶ)<sup>60</sup> they are hard working (ἐπιπόνους). This intermediary category of intelligence is exactly what we find in *Regimen*. It is the second category: *φρόνιμοι μὲν καὶ οὗτοι, ἐνδέεστεροι δὲ τῆς προτέρης, διότι κρατεόμενον τὸ πῦρ ὑπὸ τοῦ ὕδατος καὶ βραδείαν τὴν κίνησιν ποιέομενον νωθρότερον προσπίπτει πρὸς τὰς αἰσθήσιας· παραμόνιμοι δ' εἰσὶν ἐπιεικέως αἰ τοιαῦται ψυχαὶ πρὸς ὃ τι ἂν προσέχωσιν*, "These individuals are also intelligent, but less so than the preceding ones because the fire is dominated by the water and therefore has a slow movement and is rushed slower onto the sensory particles; but these souls are rather persistent in whatever they turn their attention to." Νωθροὺς in Theophrastus corresponds to νωθρότερον in *Regimen*, and ἐπιπόνους in Theophrastus seems to correspond to παραμόνιμοι in the *Regimen*. In both cases, the same lack of intelligence and slowness of spirit is compensated by the same quality of character, tenacity, the desire to work.

<sup>56</sup> R. Joly, *Recherches* (see above, n. 3), p. 89 ("nonchalants et vite fatigués").

<sup>57</sup> J.-P. Dumont, *Les Présocratiques*, (Bibliothèque de la Pléiade, 345) (Paris, 1988), p. 364 ("lymphatiques et vite fatigués").

<sup>58</sup> J. Burnet, *L'aurore de la philosophie grecque*, trad. A. Reymond, (Paris, 1952), p. 283 ("obtus et laborieux").

<sup>59</sup> J. Bollack, *Empédocle I. Introduction à l'ancienne physique*, (Paris, 1965), p. 253, n. 5 ("lents et laborieux"). C. Gallavotti, *Empedocle. Poema fisico e lustrale*, (Scrittori greci e latini) (Milan, 1975), p. 114, translated by "tardi et preoccupati." B. Inwood, *The Poem of Empedocles. A Text and Translation with Introduction*, (Toronto, 1992), p. 190, understands "sluggish and laboured [in their thinking]."

<sup>60</sup> For this meaning of καὶ, "and yet," see Denniston GP<sup>2</sup>, p. 292.

For the second intermediary category of intelligence distinguished by Empedocles, the connections are no less striking. First, here is the text given by Theophrastus: ὦν δὲ πυκνὰ καὶ κατὰ μικρὰ τεθραυσμένα, τοὺς δὲ τοιούτους ὀξεῖς φερομένους καὶ πολλὰ ἐπιβαλλομένους ὀλίγα ἐπιτελεῖν, “when the elements are concentrated and divided into small particles, such individuals have a lively mind and, if they throw themselves into many enterprises, they achieve little.” Once again, this category finds correspondence in *Regimen*. It is the sixth category, where fire prevails substantially over water: ὀξυτέρην μὲν τοσοῦτῳ ἀνάγκη εἶναι τὴν ψυχὴν ὅσῳ θάσσον κινεῖται καὶ πρὸς τὰς αἰσθήσιας θάσσον προσπίπτειν ἦσσον δὲ μόνιμου τῶν πρότερον, διότι θάσσον ἐκκρίνεται τὰ παραγινόμενα καὶ ἐπὶ πλείονα ὀρμάται, “the soul is necessarily more lively since it moves quicker, and necessarily rushes quicker onto the sensory particles, but it is less persistent than the preceding case because it discerns objects presented to it quicker and rushes to more things.” This time, both cases concern a quality of intelligence, the liveliness of spirit, which is made lifeless by a lack of character, the lack of tenacity. The connections between the terms used are no less striking. Theophrastus’ ὀξεῖς corresponds with *Regimen*’s ὀξυτέρην. Theophrastus’ πολλὰ ἐπιβαλλομένους corresponds to *Regimen*’s ἐπὶ πλείονα ὀρμάται.

The theory of *Regimen* is more complex than that of Empedocles, since whilst Empedocles recognises two categories of intermediary intelligence, *Regimen* has four. We can see the start of a third intermediary category in the account given by Theophrastus with the expression κατὰ λόγον δὲ καὶ τοὺς ἐγγυτάτω τούτων, “and it is the same in those who are closest to them.” However, in such a context of resemblances, what seems most important for our purposes is the similarity in the explanations given by Empedocles and the author of *Regimen* in the intermediary category of intelligence where liveliness of spirit is joined to mildness of character. The author of *Regimen* says διὰ ταχυτήτα, ‘due to the quickness’; we saw above that this can only concern the quickness of the circular movement of the soul. What is the explanation given by Theophrastus? διὰ τὴν ὀξύτητα τῆς τοῦ αἵματος φορᾶς, “due to the rapid movement of the blood.” The similarity is more interesting because there is reason to think that the circuit of the soul in *Regimen* is also the circuit of blood. Indeed, in the section on dreams the author of *Regimen* mentions the circuit of the blood (ch. 90 αἵματος περιόδον),<sup>61</sup> which cannot be different from the circuit of the soul.

<sup>61</sup> Hippocrates, *Regimen*, ch. 90, Joly CMG 226, 14 (= 6.654, 20 L.): “Rivers that do not flow as they should are a sign of the circuit of blood, a sign of excess if they flow too abundantly,

What kind of movement of the blood is at issue in Empedocles? The term *φορά* itself does not determine the nature of the movement, since it can mean any type of movement, not just circular movement, for example that of stars (Plato, *Symposium* 188b). The fragments of Empedocles do not give very clear information about the movement of blood. The only fragment that alludes to a movement of blood connected to thought is fr. 105, quoted to show that blood is the instrument of comprehension (ὡς ὀργάνου πρὸς σύνεσιν τοῦ αἵματος ὄντος):<sup>62</sup>

αἷματος ἐν πελάγεσσι τετραμμένα ἀντιθρόντος  
τῆ τε νόημα μάλιστα κικλήσκειται ἀνθρώποισιν  
αἷμα γὰρ ἀνθρώποις περικάρδιόν ἐστι νόημα

τετραμμένα codd.: τεθραμμένη Grotius τεθραυσμένα proposerim e Theophr. *De sensibus* II || ἀντιθρόντος Scaliger ἀντιθρώντος FP ἀντιθροώντος P<sup>2</sup>

The participle *ἀντιθρόντος*, in the context of a metaphor of the sea, must refer to the movement of blood that dashes forward like a tide. Yet several points remain obscure in this fragment. First, opinions are divided as to whether the feminine participle *τεθραμμένη* concerns the heart or thought, but it is too often forgotten that this is Grotius' conjecture of a neuter plural participle *τετραμμένα*.<sup>63</sup> If the neuter plural is preserved, "one could make the elements the subject of the participle," as J. Bollack proposes (III, p. 445). Indeed, it is by means of the elements that we think (cf. B 107, where the elements are designated by a neuter plural *τούτοις*). But the participle *τετραμμένα*, which means "twisted (towards)" does not make

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and of a deficit if they flow in too small an amount." On the probable identification of the circuit of blood and the circuit of the soul, see F. Hüffmeier, "Phronesis" (see above, n. 17), p. 76. We note the identification of blood with the soul in a passage in ch. 35. In the therapeutic discussion of the sixth category (a quite large dominance of fire over water), the author advises that such people should lose weight in order to become intelligent, and he justifies his treatment as follows: "For the abundance of flesh necessarily leads also to the inflammation of blood, and when this happens to a soul, it becomes mad, with water dominated and fire attracted." This unrest of the soul, as F. Hüffmeier, p. 76 says, is understood best if it is identical to the inflammation of the blood.

<sup>62</sup> Stobaeus 1.49, 53 (extract from Porphyry, *On the Styx*).

<sup>63</sup> The force of this traditional interpretation of the fragment is such that it has influenced the textual tradition. M.R. Wright, *Empedocles: The Extant Fragments* (New Haven and London, 1981), obeliscizes the text of the manuscripts at the end of verse 1 of the fragment *τετραμμένα ἀντιθρώντος* (p. 130), but translates and comments as if she adopted Grotius' correction: "(The heart) nourished in seas of blood coursing to and from" (p. 250). J. Bollack is the only one to preserve the neuter participle, rightly remarking (p. 446, n. 2) that the first verse seems detached from the one that precedes it.

sense.<sup>64</sup> Conversely, if we read τεθραυσμένα (prompted by Theophrastus' account of Empedocles' explanation of thought),<sup>65</sup> we understand that the elements manifest themselves in the form of fine particles 'broken' in the blood; and these four elements in the form of fine particles carried in the sea of blood are the source of knowledge, following the principle expounded by Theophrastus that, according to Empedocles, we recognise each elementary particle (coming from the outside) with the help of each elementary particle contained within the blood.<sup>66</sup> Moreover, what is it exactly against which the flood of blood dashes (ἀντιθρόντος)? Is it the blood that rushes against the effluxes coming from the exterior, as the soul in *Regimen* rushes to meet the perceptible particles coming from the outside, given that the processes of sensation and thought are not radically different? The only thing we can be totally sure about is that the blood around the heart (or in the region of the heart) is, for Empedocles, the source of thought.

Taking the strict correspondence between Theophrastus' account of the different categories of intelligence in Empedocles and the exposé of *Regimen*, we may ask if Empedocles had not already introduced the liveliness of the rotation within the body in order to explain the different types of intelligence. Obviously, this rotation of the blood within the body would not be incompatible with the movements of the blood from the interior to the exterior, which explain respiration in the famous comparison with the clepsydra (DK 31 B 100).<sup>67</sup> On any account, already in Empedocles, and before *Regimen*, the theory of intelligence is connected with the liveliness of the movement of a fluid (composed of the mixture of the primary elements),<sup>68</sup> which is the source of thought, a liveliness that varies depending on the composition of that fluid.

<sup>64</sup> The perfect τετραμμένα, which marks a state, cannot be translated by "they go (in waves of blood which is splashing back and forth)" (Bollack II, p. 188).

<sup>65</sup> The verb is first attested in poetry in Aeschylus (*Persians*, 416; cf. also 196). Theophrastus in his account would have taken a verb already used by Empedocles. We observe that the verb is used in Aeschylus in the context of vessels broken in a sea battle. Thus, we find an analogy with its use in Empedocles, where the broken parcels of the elements are carried by the sea of blood, like the debris of the vessel broken by the storm.

<sup>66</sup> This is the meaning of the phrase ἕκαστον ἐκάστω γνωρίζομεν (Theophrastus, *De sensibus* 10); cf. B 109.

<sup>67</sup> In the passage on respiration and the comparison with the clepsydra, the movement of the blood is also expressed with a composite of θρόσσω (lines 8 and 25 εἶτε δ' ἀναθρόσκη). On the comparison with the clepsydra, see D. O'Brien, "The effect of a smile: Empedocles' Theories of seeing and breathing," *Journal of Hellenic Studies* 89 (1969), 140–179.

<sup>68</sup> With the difference that the primary elements in Empedocles are four in number (fire, water, air, earth), whilst in the Hippocratic doctor they are two (fire, water).

However, compared with Empedocles, the theory of *Regimen* marks a transposition of historical importance: it concerns not only the circulation of the blood, but also the rotation of the soul. This naturally leads us to think of Plato who, in his *Timaeus*, explains intelligence and its opposite by the rotations of the soul. We will not exhaustively compare *Regimen* and the *Timaeus*,<sup>69</sup> but simply show that, on the precise problem of the theory of intelligence and the soul, some specific connections present themselves which seem difficult to explain as due to chance. Here are the texts that we will compare:

<i>Regimen</i> :	<i>Timaeus</i> :
τῆς περιόδου (sc. τῆς ψυχῆς) (ch. 35)	τάς τῆς ψυχῆς περιόδους (43d) ψυχῆς περίοδον (47d)
ἄτε ταχείης ἐούσης τῆς περιφορῆς (ch. 25)	τῆ ταύτου καὶ ὁμοίου περιφορᾶ (36c)
ἄτε γὰρ βραδείης ἐούσης τῆς περιόδου (ch. 35)	τῆ ταύτου καὶ ὁμοίου περιόδῳ (42c)
πλοκεῖς ἄγοντες κύκλω πλέκουσιν, ἀπὸ τῆς ἀρχῆς ἐς τὴν ἀρχὴν τελευτῶσι τοῦτο περίοδος ἐν τῷ σώματι, ὁκόθεν ἄρχεται, ἐπὶ τοῦτο τελευτᾶ (ch. 19)	... αὐτὸ ἐποίησε κύκλω κινεῖσαι ... Ἐπὶ δὲ τὴν περίοδον ταύτην (34a)
—	—
ὅκως μὴ ... τὸ ἀποκριθὲν ... ἑυμίσηται τῆ ψυχῇ (ch. 35)	χυμοὶ ... τῆ τῆς ψυχῆς φορᾶ συμμειζαντες παντοδαπά νοσήματα ψυχῆς ἐμποιοῦσι (86e–87a)
ἀπόκρισιν ... ὑπεναντίην τῆ περιόδῳ (ch. 93)	ἐναντία αὐτῇ (sc. τῆ τοῦ ταύτου περιόδῳ ῤέουσai) (43d)

<sup>69</sup> On comparisons between *Regimen* and the *Timaeus*, see A. Olerud, *L'idée de microcosmos et de macrocosmos dans le Timée de Platon* (Uppsala, 1951), pp. 64–66. The author draws our attention to the comparison with circuits in *Regimen* and the *Timaeus*. Although my study does not owe its initial idea to Olerud's thesis, which I read later, I will quote fully what Olerud said about the comparison with these circuits: "We note a curious coincidence in the detail of the use of the term *περίοδοι*, and in the fact that it refers, in the macrocosm, to the celestial circles. In *π. διαίτης* these circles are three in number, whilst in the *Timaeus* there are only two. However, we observe that one of these two circles is elliptic and includes the solar and lunar circle, as well as all the planetary circles. The main difference is that in the microcosm, these circles correspond to different things. In Plato, they are more or less the symbol of the immortal soul and they reside in the head. In the author of *π. διαίτης* they represent certain venous networks. However, here we must not exaggerate the differences. These venous networks are in fact a type of circulation of fire, particularly the intermediary network, which corresponds to the solar circle, and is truly a circle of thought" (p. 64f.).

*Regimen:*

βαρύνεσθαι γὰρ ἀνάγκη τῆς ψυχῆς τὴν κίνησιν ὑπὸ τῶν τοιοῦτων (ch. 35)

—

προσπίπτουσιν αἱ αἰσθήσεις (ch. 35)

—

εἰ δὲ ὀρθῶς διαιτῶντο, βελτίους γίνονται ἂν καὶ οὗτοι (ch. 35)

*Timaeus:*

τὴν μὲν ταύτου (περίοδον) παντάπασιν ἐπέδησαν (43d)

—

... ὅτε ... ὑπὸ πάντων τούτων διὰ τοῦ σώματος αἱ κινήσεις ἐπὶ τὴν ψυχὴν φερόμεναι προσπίπτουσιν· αἱ δὲ καὶ ἔπειτα διὰ ταῦτα ἐκλήθησάν τε καὶ νῦν αἰσθήσεις συνάπασαι κέκληνται (43c)  
... αἷς (sc. περιφοαῖς) δ' ἂν ἔξωθεν αἰσθήσεις τινὲς φερόμεναι καὶ προσπεσοῦσαι (44a)

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ἂν μὲν οὖν δὴ καὶ συνεπιλαμβάνηται τις ὀρθὴ τροφή παιδεύσεως, ὀλόκληρος ὑγιῆς τε παντελῶς τὴν μεγίστην ἀποφυγῶν νόσον γίγνεται (44b–c)

We know that for Plato, in the *Timaeus* (and only in the *Timaeus*) the movement of the immortal soul is also circular. The first coincidence is that Plato calls these movements by the same term as the author of the *Regimen*: περίοδος. He usually uses the plural, as in 43 d: τὰς τῆς ψυχῆς περιόδους, which is only natural as he distinguishes two rotations, that of the Same and that of the Other. However, he also uses the singular to mean not only the revolution of the two circles, but also that of the entire soul, as in 47 d: ψυχῆς περίοδον. It goes without saying that the word περίοδος covers exactly the same notion in both authors. It does not mean just any cycle, but rather a circular rotation, as is shown in both authors by the significant connection between κύκλος and περίοδος (*Regimen* ch. 19; *Timaeus* 34a). There is another verbal coincidence that merits attention. To designate the rotation of the soul, both employ a synonym of περίοδος, περιφορά. In *Regimen*, the interchangeability between the two terms is clear from the comparison of the two expressions ἅτε ταχείης ἐούσης τῆς περιφορῆς from chapter 25 and ἅτε γὰρ βραδείης ἐούσης τῆς περιόδου from chapter 35. We also find this synonymy in the *Timaeus*, where Plato designates, without making any distinction, the same cycle by τῆ ταύτου καὶ ὁμοίου περιφορᾶ (36 c) or τῆ ταύτου καὶ ὁμοίου περίοδῳ (42 c). Moreover Plato, like the author of *Regimen*, connects the rotations inside the body with astral cycles. Even though the correspondence between bodily and astral rotations is not the same in all detail, since Plato's astronomical system is more complex than

that of *Regimen*, it nevertheless remains that both held very similar ideas about the correspondence between the structure of the microcosm and the macrocosm.

Here, then, are some very close parallels. In both the *Timaeus* and *Regimen*, the soul travels in rotations, and these rotations are called by the same name and are connected with astral rotations. However, we should be careful here. These analogies do not permit us to conclude, for the moment at least, a direct influence of *Regimen* on the *Timaeus*, since these two theories, even if they are close to each other, could derive independently from a common source,<sup>70</sup> possibly Pythagorean.<sup>71</sup> I will gladly leave this problem of a common source in parentheses because, even if certain aspects of the theory of the *περίοδος* of the soul in the *Timaeus* and *Regimen* can be traced back to a common source, this does not exclude the hypothesis of a direct influence of *Regimen* on the *Timaeus*, if only for the very specific medical ideas they have in common. Thus, we will continue the comparison.

Both works clearly connect intelligence with the rotations of the soul. We saw that, for the author of *Regimen*, intelligence was perfect when the speed of the soul's rotation was perfect. The explanation given by Plato in the *Timaeus* is comparable. When the rotations of the Same and the Other are at their ideal speed and trajectory, knowledge, whether rational or perceptual, are perfect. By contrast, both in the *Timaeus* and in *Regimen*, disturbance of the rotations of the soul causes mental disorder, even leading to insanity. Especially in its account of mental pathology, the *Timaeus* appears extremely close to the *Regimen*. I refer in particular to those striking passages where Plato describes mental disorder arising from the entrance of the immortal soul's rotations into the body (43b–44b). Once bound to the body, the soul, Plato tells us, has grave troubles. Its rotations are disturbed. The rotation of the Other is dislocated, that of the Same is slowed, if not stopped. The soul, incapable of discerning the Same from the Other, finds itself deprived of intelligence (*ἄνοος*). To explain these troubles, Plato advances two physiological causes which attract our attention. The first is the abundant tide of nutriment that flows in and out of the body (cf. 43b

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<sup>70</sup> In his discussion of the date of *Regimen*, V. Schmidt (*Gnomon* 45 [1973], 18, n. 3) states: "Dieselbe Erwägung (sc. the possibility of a common model) gilt auch für das Verhältnis zu Platons Timaios, in dem Jouanna REG 79, 1966, XVIII, Einfluss von Vict. zu erkennen glaubt." V. Schmidt does not say what this common model might be.

<sup>71</sup> See A. Olerud, *L'idée de microcosmos et de macrocosmos*, (see above, n. 69) p. 69 f. and R. Joly, *Recherches*, (see above, n. 3) p. 52, which is less affirmative, noted the paucity of our information.

πολλοῦ γὰρ ὄντος τοῦ κατακλύζοντος καὶ ἀπορρέοντος κύματος ὃ τὴν τροφήν παρείχεν). This is an unusual idea. How can an abundance of nutriment disturb the rotations of the soul? To be sure, Plato's text is not very clear about this process. However, it is relatively easy to reconstruct his view by comparing it with another passage from the *Timaeus* (86e–87a), where Plato explains the diseases of the soul by an unhealthy state of the body, by a state of abundance of nutriment leading to ignorance and forgetfulness, a state of plethora which seems to mimic the initial disorder of the incarnate soul, although with less intensity. This is the process: the tide of food leads to a state of plethora. With this plethora, the humours secreted by this food (phlegm and bile) wander around the body and if they cannot evaporate to the exterior, they congregate inside, they mix the vapour issued from them with the movement of the soul and they mix themselves with this (86e χυμοὶ ... τὴν ἀφ' αὐτῶν ἀτμίδα τῆ τῆς ψυχῆς φορᾶ συμμειξαντες ἀνακερασθῶσι). This is how they cause diseases of the soul (ibid. παντοδαπὰ νοσήματα ψυχῆς ἐμποιοῦσι). These diseases differ according to the part of the soul affected; if it is the part of intelligence, the plethora causes forgetfulness and ignorance (87a ἔτι δὲ λήθης ἅμα καὶ δυσμαθίας). This shows that Plato had a concrete conception of the soul, at least when it is embodied. Following a process analogous to that of the incarnation of the soul, the humours coming from the food penetrate the rotations of the soul; instead of being led by the rotation of the Same, they are opposed to its course (cf. 43d ἐναντία αὐτῇ ῥέουσai); and the rotation of the Same is slowed and hindered (cf. 43d τὴν μὲν ταυτοῦ παντάπασιν ἐπέδησαν), whilst the rotation of the Other is disturbed (cf. 43d τὴν δ' αὖ θατέρου διέσεισαν). All these perturbations lead to the initial madness of the soul's incarnation (44b). In short, the abundance of nutriment is, for Plato, an essential factor in the perturbations of intellect, not only in the initial incarnation of the soul but also when plethora leads to disturbances in the soul's rotations and troubles of thought such as forgetfulness and ignorance.

This theory is entirely comparable to that found in the Hippocratic treatise *Regimen*. The author places great importance on considerations of intelligence because he was convinced that an unhealthy regimen could have a negative influence on intelligence. The process involved was analogous. When there is plethora, whether from nutriment or exercise, the humours secreted are mixed with the soul (ch. 35, second category concerning the effect of exercises τὸ ἀποκριθὲν ... ξυμμίσγηται τῇ ψυχῇ, which corresponds with τῆ τῆς ψυχῆς φορᾶ συμμειξαντες from *Timaeus* 87a). Once in the soul, these humours clog up the pores of the soul (ch. 35, ibid. φράσσωνται οἱ πόροι

τῆς ψυχῆς) and slow down its movement (ch. 35, second category, following a state of plethora, βαρύνεσθαι γὰρ ἀνάγκη τῆς ψυχῆς τὴν χλίησιν). The author of *Regimen* equates disturbance of intelligence with the slowing down of the soul. According to *Regimen*, as in Plato's *Timaeus*, the secretion is sometimes opposed to the rotation. This process is mentioned by the author of *Regimen* at the very end of his work in a discussion of the category of dreams that foretell trouble of the body. Here is what he says (ch. 93): "Each time (in a dream) one is hit, bitten or enslaved by something else, this means that there exists in the body a secretion that is opposed to the rotation (ἀπόκρισιν ... ὑπεναντίην τῆ περιόδῳ)." The author of *Regimen* does not indicate precisely which rotation he has in mind, but this process is in any case comparable to that of the *Timaeus*, where the rotation of the soul is also hindered by a fluxation coming from the exterior, which is opposed to it (ἐναντία αὐτῇ ῥέουσαι of *Timaeus* 43d). These parallels between Plato's *Timaeus* and the Hippocratic treatise *Regimen* are based on a very detailed medical theory that was discussed in depth by the Hippocratic doctor. The coincidence seems to be very convincing here, and very difficult to put down completely to chance.

However, in these pages from the *Timaeus*, there is another, even more decisive coincidence which concerns not only the impact of regimen on intellect, but the theory of sensation itself. To explain the troubles of the soul arising from its incarnation, Plato introduces a second and more important factor of trouble for the soul, over and above the invasion of nutriment: the invasion of the perceptible, which rushes in mass to the soul (43b–c):

For while the flood which foamed in and streamed out and which supplied the nutriment was immense, still greater was the great trouble produced by the effects caused by the particles which rushed towards each individual (τὰ τῶν προσπιπτόντων παθήματα), each time someone's body collided with an alien fire from the exterior that it met by chance, or with a solid lump of earth or liquid glidings of waters, and if the body was seized by a storm of winds driven by air, and when the motions due to all these causes rushing through the channel of the body, the κινήσεις impinged upon the Soul (αἱ κινήσεις ἐπὶ τὴν ψυχὴν φερόμεναι προσπίπτουσιν), κινήσεις which were named because of this and are still called αἰσθήσεις today. (Transl. W.R.M. Lamb, modified)

In the text that follows, Plato shows the effects of these κινήσεις/αἰσθήσεις which, jointly with the perpetual flood of nutriment, strongly disturb the soul's rotations (43d σείουσαι τὰς τῆς ψυχῆς περιόδους), hindering the rotation of the Same by flowing contrary to it and preventing its domination, whilst they disturb completely the rotation of the Other, all of which lead to errors and insanity.

A little later in the same passage, Plato returns to the effect produced by the αἰσθήσεις of the soul's rotations. Here is the text that seems to me to be the most important (44a):

The rotations of the soul towards which the αἰσθήσεις are carried and collide from the exterior (ἔξωθεν αἰσθήσεις τινές φερόμεναι καὶ προσπεσοῦσαι), take with them the whole vessel of the soul, whilst these rotations, though actually mastered, appear to have the mastery. Thus, because of all these affections, now as in the beginning, the soul becomes at first irrational (ἄνους) when it is bound within a mortal body. (Transl. Lamb, modified)

There seems to be an undeniable connection between the use of αἰσθήσεις in this passage of the *Timaeus* and in ch. 35 of *Regimen*, because we find in both texts the use of the plural noun αἰσθήσεις/αἰσθήσεις, subject of the same verb of movement προσπίπτειν (*Regimen* ch. 35, third category προσπίπτουσιν αἱ αἰσθήσεις; *Timaeus* 44a αἰσθήσεις ... προσπεσοῦσαι), and in both cases it concerns the same movement of transfer of sensory particles coming from the exterior and issued from objects, and of the same movement of penetration of these sensory particles against the rotation of the soul by the corporeal channel of the senses. We could add that the sensory particles coming from the exterior have a comparable effect on the soul. Indeed, we find in both texts the same verb, σείειν, 'to disturb', to refer to the effect of the sensory particles on the soul (*Regimen* ch. 35, number 3 ἦν γὰρ μὴ σεισθῆ ἢ ψυχῇ ὑπὸ τοῦ προσπεσόντος, οὐκ ἂν αἴσθοιτο, ὁποῖόν ἐστιν; *Timaeus* 43 c–d σεῖουσαι τὰς τῆς ψυχῆς περιόδους). I know of no other text in pre-Platonic literature that is so close to the *Timaeus* as that of *Regimen*, both for its theory of sensation / perception / intelligence tied into the rotations of the soul and for the use of αἰσθήσεις, referring to the sensory particles which come from objects and which are enlivened by an autonomous movement towards the subject. This dynamic representation of αἰσθήσεις finds etymological support in the text of the *Timaeus*, if we use the phrase where Plato justifies the designation of αἰσθήσεις from κινήσεις. It is because of this (διὰ τοῦτα) that they are called αἰσθήσεις, i.e. because they were moving. Thus, Plato justifies the name αἰσθήσεις with an etymological explanation which connects the noun with a term designating movement. Whilst Plato is not more explicit, since for him it is an obvious fact, it is clear that Plato, in an etymological explanation comparable to those which we find in his *Cratylus*, associates the root αἰσ- of αἰσθήσεις with that of αἴσσω, 'to dash forward'. It matters little that this etymology does not correspond to the etymology modern philologists attach to αἰσθάνομαι and the action noun αἴσθησις, which derives from the older verb αἰῶ, which means 'to hear' (cf. P. Chantraine, Dictionnaire étymologique de la langue grecque: "The connection between αἰῶ, 'to hear,

perceive' and αἰσθάνομαι, 'to feel, perceive' is almost certain"). The essential point is that Plato's representation of αἰσθήσεις cannot correspond uniquely to that which we call sensation, i.e. the conjunction of a stimulus and of a felt impression, but first of all to a dynamic picture of the αἰσθήσεις which come from the exterior before penetrating to be perceived. Also when Plato speaks of αἰσθήσεις which rush forward (προσπέσουσαι), in his mind this is almost a *figura etymologica*, given that Plato attaches the root of the action noun αἰσθησις to αἶσσω, 'to dash forward'. The αἰσθήσεις mean here, as in *Regimen*, above all the 'sensory particles', which will be called in Aristotle's *De anima* αἰσθητά. However, these sensory particles, to the extent that they are called by an action noun ending in -σις and not by a verbal adjective in the passive sense in -τός, are not considered in a passive aspect, but in an active and dynamic one. It is this dynamic aspect of 'movement' that Plato recovers in his etymology.

We should note that this implicit etymology of Plato, that I have made explicit by the examination of the text, had already been proposed by Proclus in his *Commentary on Timaeus* (ed. E. Diehl 3.332, 3–16). However, Proclus adds a refinement: he considers that the root αἶσ- comes from αἶσσω, 'to dash forward', but he associates the end of the word—θησις to τίθημι, 'to place', which applies only approximately, since we would expect θέσις with an epsilon. Thus, the composite word αἶσθησις would combine two opposites, movement and rest. It is clear that this refinement does not correspond to Plato's text, which associates the word with the idea of movement, but we understand the rationale of this refinement, which allows a conception of αἶσθησις that is closer to the usual meaning of 'sensation'. Indeed, Proclus comments on this double aspect, saying: "sensory particles are on the one hand moved from the exterior, and on the other placed in the sensory organs." Thus, we find this remarkable use of the word αἶσθησις, which we encountered in *Regimen* in relation to the sensory particles coming from the exterior, again very clearly in the passage of the *Timaeus* just quoted, which echoes *Regimen*. There, the coincidence appears less due to chance than anywhere else because nowhere in the *Theaetetus*, nor in the rest of the *Timaeus*, is this use of αἰσθήσεις found. Of course, it is quite possible that chapter 35 of *Regimen* and this very clear passage of the *Timaeus* are the only witnesses of a technical sense of the word that had currency in the medical and philosophical writers of the end of the fifth and the start of the fourth century. However, it is not unreasonable, in the light of the cluster of other similarities we have found, to think that Plato borrowed from *Regimen* here directly. In short, although we cannot totally exclude the explanation of certain convergences by a

common source, it is not improbable to conclude that Plato knew *Regimen* and that he had read with particular interest its discussion on the theory of intelligence.

However, despite the resemblances, there is an important transposition in Plato compared to *Regimen* which marks an important stage in the history of theories of thought: Plato does not situate the rotations of the soul in the region of the belly, but in the brain. Does this allow us to think that *Regimen* was one of the catalysts that later revealed to Plato an idea that he would hold dear until his death, that of the explanation of intelligence by the rotations of the soul? In any case, the treatise *Regimen*, in virtue of its explanation of intelligence by reference to the speed of a rotation within the body, seems a neglected link of the chain which, in theories of perception and thought, should link Empedocles to Plato's *Timaeus*.<sup>72</sup>

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<sup>72</sup> This evidently does not exclude a direct influence of Empedocles on the *Timaeus*; on this problem, see J.P. Hershbell, "Empedoclean Influences on the *Timaeus*," *Phoenix* 28 (1974), 145–166.



## CHAPTER TWELVE

### AT THE ROOTS OF MELANCHOLY: IS GREEK MEDICINE MELANCHOLIC?

In a colloquium on melancholy in the modern world, this paper may well be considered out of place. However, I am very grateful to the organisers for welcoming these thoughts on the origins of melancholy and the melancholic temperament in Greek medicine. They may be helpful in showing the difference(s) between ancient and modern understandings of melancholy. In any case, they provide a good occasion for a critical examination of the way in which the relevant concepts and technical terms are established and perpetuated in the medical tradition, quite independently from the philosophical tradition. My paper will also make use of new Greek medical texts, or translations from Greek, which contribute to what we know about the melancholic temperament in Late Antiquity and Byzantium.

I will begin with the Hippocratic Corpus, the collection of medical writings attributed to Hippocrates, the great fifth century BC Greek doctor, comprising some sixty treatises that the Renaissance knew firstly in Latin, and then in Greek, from 1525–1526 onwards. This is an appropriate beginning, because it shows that the three fundamental notions of black bile, melancholy and the melancholic temperament, whilst being related, did not originate at the same time and were not necessarily used in one and the same context.

The *Nature of Man* is the only treatise from the Hippocratic Corpus that can be attributed with any certainty to an author, Polybus, Hippocrates' student and son-in-law. It is also considered, with some justification, to be the foundation stone of the history of black bile, the melancholic temperament and melancholy in the medical tradition. However, we must refine and clarify the place and role of this treatise concerning these three concepts.

The treatise is undoubtedly the first text to present clearly the theory of the four humours innate in man: blood, phlegm, yellow bile and black bile. Let us recall its famous definition of the nature of man, of health and of illness:

The body of man contains blood, phlegm, yellow bile and black bile. This is what constitutes the nature of the body; this is the cause of disease or good health.<sup>1</sup>

Out of two varieties of bile, the author has created two different humours, and in this sense, we can say that he has invented black bile. By means of this differentiation, the medical writer created a four-fold humoral theory defining the nature of man, a theory that was indirectly influenced by Empedoclean philosophy, despite the author's desire to distinguish, within his own definition, the four principles from the four elements of the universe (air, fire, water, earth). In this way, the author laid down fundamental tenets that would fully develop in later western Greek and Latin medicine, and then in medieval thought.

However, we must carefully distinguish between what we find in the treatise *Nature of Man* and what we do not find there. The Hippocratic writer makes a clear connection between the natural cycle of the humours and the cycle of the seasons, each of the four humours predominating in each of the four seasons, according to a clear correspondence between the elemental qualities defining each humour and each season. Black bile (*melaina cholê*), which is defined by two of the four elemental qualities (cold and dry), predominates in autumn, a season defined by the same elemental qualities.<sup>2</sup>

Humours are further connected with ages. When discussing quartan fever, the author indicates in passing that black bile dominates in men aged between twenty-five and forty-two years old, corresponding to maturity, i.e. the autumn of life.<sup>3</sup> This suggests a relationship between the four humours with the four ages of life, although the theory is not as systematically discussed as the relationship with the seasons.

However, no physiological relationship is established between the humours and the bodily organs. Thus black bile is never associated with the

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<sup>1</sup> Hippocrates, *Nature of Man*, ch. 4, ed. Jouanna CMG I 1, 3<sup>2</sup>, 2002, p. 173. On the history of the theory of the four humours, the work of E. Schöner, *Das Viererschema in der antiken Humoralpathologie*, in *Sudhoffs Archiv*, Beiheft 4, Wiesbaden, 1964, remains fundamental. Simultaneously, a monumental study was published by R. Klibansky, E. Panofsky and F. Saxl, *Saturn and Melancholy. Studies in the History of Natural Science, Religion and Art*, New York, 1964, which extends from antiquity to Dürer. It includes a first chapter on "Melancholy in the Physiological Literature of the Ancients," with clear comparisons of the texts that present the theory of the four temperaments. This study was praised and used by H. Flashar, *Melancholie und Melancholiker in den medizinischen Theorien der Antike*, Berlin, 1966. It was preceded by a previous work by Panofsky / Saxl on *Dürers "Melancholia I"*, Leipzig, 1923.

<sup>2</sup> Hippocrates, *Nature of Man*, ch. 7, ed. Jouanna, p. 182,3f.

<sup>3</sup> Hippocrates, *Nature of Man*, ch. 15, ed. Jouanna, p. 204,15–19.

spleen, an organ that is never mentioned in *Nature of Man*.<sup>4</sup> Above all, there is not the slightest trace in the treatise of a theory of the four physical or moral temperaments corresponding with the predominance of each of the four humours. Thus, although the author of *Nature of Man* is, as we have just seen, the inventor of black bile, he is not the inventor of the melancholic temperament. Of course, there are a few passages in the Hippocratic Corpus where the melancholic constitution (which is dominated by black bile) is distinguished from the 'choleric' constitution (which is dominated by yellow bile), but we find no systematic discussion of the four temperaments defined in physical and moral terms.<sup>5</sup> In this sense, the theory of the four humours in *Nature of Man* is a stepping stone for a theory of the four temperaments that would only appear much later, in an elaborated form, in a post-Galenic phase of Greek medicine, to which we shall return below.

What about melancholy itself? Although it might seem paradoxical, there is no mention in the *Nature of Man* of the affliction called melancholy (*melancholiê*).<sup>6</sup> This does not mean that the author does not discuss pathological cases caused by an excess of black bile, and he describes how illnesses caused by black bile predominate in autumn and cease in spring.<sup>7</sup> Yet we do

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<sup>4</sup> When was the connection between the spleen and black bile made for the first time? The association between the two is attested in texts discussing the four temperaments. See, for example, the work *On the Constitution of the Universe and of Man*, ed. Ideler I, p. 303,23f. ("black bile is in the spleen"). In Galen, a relationship between black bile and the spleen is already taken for granted. See, for example, *On the Natural Faculties* 1, ch. 13, 2.40,9 K. (criticising Asclepiades on black bile and the spleen); *Theriac to Piso*, 14,277,4 K. (medically removing black bile from the spleen); *Commentary on Hippocrates' Aphorisms*, 17 B.659,15 (the large size of the spleen in illnesses caused by black bile); but the spleen is not yet the seat of black bile in the way in which the gall bladder is the seat of yellow bile; see *On Black Bile*, ch. 8, 9, ed. W. de Boer 93, 16–18.

<sup>5</sup> The passage that comes closest to a theory of the four temperaments is *Epidemics* 3,14, ed. Kuehlewein 1.231,15 (= 3.98,4 L.), where three temperaments are distinguished: 1. Melancholics and sanguinics; 2. Phlegmatics; 3. Choleric. Thus there are only three temperaments here, and they are considered only from a physical point of view. On the distinction between melancholics and choleric, see also *Regimen in Acute Diseases*, ch. 16, 2.358,1f. L. (ch. 61, Joly CUF, 63,10f.), where we read that the acidity of vinegar sits better in those in whom bitter bile dominates (*pikrocholoisi*) than those in whom black bile dominates (*melancholoisi*). In *Affections*, ch. 36, ed. Potter 58,11, there is a distinction between the bilious, whom one must give medicines in order to evacuate bile, and melancholics, whom one must give medicines in order to evacuate black bile; but the passage is suppressed by Artelt and Potter, since it contradicts the bi-humoral theory (phlegm, bile) of the treatise (cf. ch. 1 and ch. 37).

<sup>6</sup> The author knows the adjective 'melancholic'. Used once in the neuter (ch. 15, ed. Jouanna, 204,15 *melancholikon*), it is the exact synonym of black bile. Latin *atrabilis* corresponds to the melancholic humour.

<sup>7</sup> Hippocrates, *Nature of Man*, ch. 8, ed. Jouanna, 186,17–19.

not find any systematic enumeration of these illnesses. It is only in passing that he gives a clear example of a complaint caused by black bile: quartan fever.<sup>8</sup>

In short, whilst the *Nature of Man* has invented black bile within the framework of the theory of the four humours, it does not discuss the theory of melancholic temperament, nor does the treatise mention the complaint called ‘melancholy’. However, this does not mean that the author was not aware of it, since the illness was attested in a slightly older Hippocratic treatise.

The oldest text where melancholy is attested is the Hippocratic treatise *Airs, Waters, Places*, which could well be the work of Hippocrates himself, although this cannot be proven beyond doubt. Less theoretical than *Nature of Man*, the treatise *Airs, Waters, Places* is aimed at practitioners, and it enumerates the illnesses that are likely to occur according to the orientation of places or the succession of seasons. Melancholy is mentioned here in the discussion of climate. The author states that if we take the example of a year where the summer and start of the autumn are characterised by dryness with a northerly wind, the climate favours phlegmatic constitutions, but is very harsh to bilious ones. He then enumerates the illnesses that arise, ending with melancholy:

This period is most inimical to the bilious, for they become too dry, and ophthalmia of a dry nature supervenes, acute and long-lasting fevers, and in some cases melancholy (*melancholiai*). For the wettest and most watery part of the bile is consumed, whilst the thickest and most acrid portion is left; the same applies to the blood, when these diseases occur amongst the bilious.<sup>9</sup>

This passage is of crucial importance because it is the first text in Greek literature where the word *melancholiê* is attested. Linguistically speaking, this feminine noun ending in *-iê* is derived from the composite adjective *melancholos*, attested once in the ancient period in a poetic text, Sophocles’ *Trachiniae*, concerning the poison of the Lernaean hydra. The adjective means etymologically ‘of black or dark bile’.<sup>10</sup> The noun *melancholiê* undoubtedly

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<sup>8</sup> In a separate discussion of fevers, which are also four in number (ch. 15, ed. Jouanna, p. 202,10f.), the author of *Nature of Man* attributes quartan fever to black bile and explains the tenacity of this fever by the nature of black bile, the most viscous of the body’s humours (ibid. 204,8–14).

<sup>9</sup> Hippocrates, *Airs, Waters, Places*, ch. 10, ed. Jouanna, *CUF*, 1996, pp. 217,5–218,2; Transl. C.D. Adams, modified.

<sup>10</sup> Sophocles, *Trachiniae*, v. 573f. (μελαγχόλους ... ιούς). The adjective does not necessarily presuppose the existence of black bile as a humour, but can be understood as referring to a

refers to an illness and not to anything else. It is surprising that the medical writer mentions the illness without listing any symptom, which shows that it was well-known during his time. Thus, the author of *Airs, Waters, Places* did not invent melancholy in the sense in which the author of *Nature of Man* invented black bile as a humour in its own right. Melancholy originated in Greek medicine at a stage prior to Hippocrates, and its origin will remain hidden in the shadows of Greek medical prehistory.

Thus, the existence of the illness pre-dates the existence of black bile as an independent humour. In fact, the explanations given in *Airs, Waters, Places* to account for melancholy are not yet situated in a theory in which black bile is found as an innate humour. It is the pathological change of bile that explains melancholy, whilst other illnesses affect the bilious temperaments due to a particularly dry climate. They originate from a drying and thickening of bile and blood.

From these two early Hippocratic treatises, we can see that there were two possible models of humoral explanation for melancholy by means of bile: either a degradation of bile, which is transformed into black bile by an excess of dryness, or black bile directly, an innate humour. These two different options contained in the two Hippocratic treatises explain what Rufus of Ephesus said much later in the first century AD on two types of melancholy:

It makes a great difference, for the treatment, to find out how the illness began. One must know that there are two types of melancholy. Some people are naturally melancholic by virtue of their congenital temperament. By contrast, others acquire it later following an unhealthy diet. This second variety is

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variety of dark bile. Also deriving from the adjective, we find the verb *μελαγχολᾶν*, which is attested also in poetry (Aristophanes, *Birds*, line 14; *Wealth*, lines 12, 366, 903), with a wider meaning of 'being mad'. The use of the verb in the Hippocratic Corpus is not certain: in *Diseases* 1, ch. 30 (ed. Wittern 88,8), it is a *varia lectio* for *μελαγχολῶδῃ*; and in *Affections*, ch. 36, ed. Potter 58,11, the passage is suppressed by Artelt and Potter (since it contradicts the treatise's bi-humoral theory of phlegm/bile). There is an abundant bibliography on the origins of melancholy and black bile, which includes W. Müri, "Melancholie und schwarze Galle," *Museum Helveticum* 10, 1953, pp. 21–38; J. Starobinski, *Histoire des origines de la mélancolie des origines à 1900*, Basel, 1960; R. Klibansky, E. Panofsky and F. Saxl, 1964 (quoted in n. 1); E. Schöner, 1964 (quoted in n. 1); H. Flashar, 1966 (quoted in n. 1); J. Jouanna, ed. *Nat. hom.*, 1975, pp. 48–50; R. Joly, "Sur une édition nouvelle de la Nature de l'homme," *L'antiquité classique* 38, 1969, pp. 151–154 and "Le Système cnidien des humeurs," in: L. Bourgey, J. Jouanna (eds.), *La Collection hippocratique et son rôle dans l'histoire de la médecine* (Colloque de Strasbourg, 1972), Leiden, Brill, 1975, pp. 107–127; J. Pigeaud, *La maladie de l'âme*, Paris, 1981, pp. 122–138; J.-M. Jacques, "La bile noir dans l'Antiquité grecque: médecine et littérature," *Revue des Etudes Anciennes*, 100, 1998, pp. 217–234; P. Dandrey, *Anthologie de l'humeur noire*, Paris, Gallimard, 2005.

always accompanied by slowness and dullness of mind. Since it is following excessive combustion of yellow bile that these people are affected by delirium, they are more daring, quicker tempered than others, inclined to strike and commit dangerous acts, especially when this combustion of excessive bile takes place. Later, as time goes by, when the bile is extinguished, they become sombre, sad and timid.<sup>11</sup>

We saw that in this first important attestation of melancholy in Hippocrates, there is no indication of the symptoms of the disease. Can we find complementary information on this illness, particularly on its symptoms, in other Hippocratic treatises?

If we only look for the Greek word *melancholiê*, the harvest seems poor.<sup>12</sup> Melancholy appears once elsewhere in an enumeration of twelve non-fatal illnesses, save for complications, caused by black bile.<sup>13</sup> This passage is certainly interesting for the prognosis of the illness and its possible outcomes, but it does not give any more information than *Airs, Waters, Places* on its symptoms. However, our investigation into melancholy in Hippocrates should not stop there, since melancholy can be designated not only by the noun *melancholiê*, but also by the adjective that derives from it, *melancholikos*. In this regard, we should bear in mind the semantic law of derivation according to which the derived adjective takes its meaning from the noun from which it derives. Since *melancholiê* in the Hippocratic Corpus refers to a well-defined complaint—regardless of whether it is due to bile that becomes black or to innate black bile—the adjective *melancholikos* refers etymologically to something relating to this well-defined complaint.<sup>14</sup> I will take as an example the most famous passage, that of *Aphorisms* (6.23):

<sup>11</sup> Rufus of Ephesus, Frag. 70 (*On Melancholy*), ed. Daremberg-Ruelle, 1879, pp. 357,10–358,6.

<sup>12</sup> There are two other Hippocratic treatises (if we omit the apocryphal *Letters*, 9.358,12 L. and 9.398,23 L.) that mention the illness under this designation. One of them, *Aphorisms*, dating from the fourth century, is taken from the text of *Airs, Waters, Places*.

<sup>13</sup> *Diseases* 1, ch. 3, ed. Wittern, 1974, p. 8,12–17 (= 6.144,12 L.): “The following diseases are not mortal, at least as long as there are no complications: *kedmata*, melancholy (*melancholiê*), gout, sciatica, tenesmus, quartan fever, tertian fever, strangury, ophthalmia, lepra, lichen and arthritis. But as a consequence of these diseases, the patients are maimed: they are paralysed in the hands and feet, powerless in speech and paraplegic, as a result of black bile ....”

<sup>14</sup> However, we should note that the adjective *melancholikos*, ‘melancholic’, sometimes has, from the Hippocratic Corpus onwards, a range of possible meanings that the corresponding noun does not have. In the neuter, it can mean black bile (see above, n. 1), or the temperament in which black bile dominates (see above, n. 2), or in masculine the temperament in which black bile dominates (cf. n. 2 above, the contrast between the two adjectives *melancholikos* and *pikrocholos*). The adjective can, in this case, refer to a healthy state rather than anything pathological.

If the fear or despondency lasts for a long time, this is a melancholic state (*melancholikon*).<sup>15</sup>

By *melancholikon* we should understand etymologically that this state 'relates to melancholy', is characteristic of melancholy, and not in the wider sense 'caused by dark or black bile'. What is discussed here is not the cause of the illness, but its diagnosis. A prolonged fear or despondency allows us to identify a characteristic of the illness called melancholy.

Thus, the illness is characterised in Hippocrates firstly by a depressive kind of fear. It is also characterised by disturbances of the mind. We could even say that the disturbances of the mind in melancholy became standard features, since in his description of the state of a bed-ridden patient, the author of *Epidemics* 1–3 says "the state of the mind was melancholic (*melancholika*)."<sup>16</sup> Doctors reading the patient's medical case complemented it with their own knowledge, which is no longer available to us.<sup>17</sup> Explicit descriptions of the disturbances of the mind associated with melancholy are extremely rare in the Hippocratic Corpus.<sup>18</sup>

Besides fear or despondency, and a certain form of delirium, a third type of symptom characteristic of melancholy are troubles of speech or paralysis of a part of the body, as testified by a further Hippocratic aphorism:

If the tongue suddenly becomes powerless, or if a part of the body is struck by paralysis, this is a melancholic state (*melancholikon*).<sup>19</sup>

It is probably because of these latter symptoms that a relationship was established between melancholy and epilepsy. In *Epidemics* 6, the connection between the two illnesses is expressed thus:

Melancholics (*melancholikoi*) tend to become epileptic in the majority of cases, and epileptics are prone to becoming melancholic (*melancholikoi*).

<sup>15</sup> Ed. Jones 4 (1931), 184,9 f. (= 4.568,11 f. L.). My interpretation is different from that by J. Pigeaud (*Aristote, L'homme de génie et la mélancholie*, Paris, Rivages, 1988, p. 58: "we should understand that such a state comes from the humour black bile or from the black character of the bile").

<sup>16</sup> Hippocrates, *Epidemics* 3, 17 b, ed. Kuehlewein 1 (1894), 235,6 (= 3.112,11 f. L.).

<sup>17</sup> Another Hippocratic testimony points in the same direction. In *Diseases* 1, ch. 30 ed. Wittern (1974), 88, 7 f. (= 6.200,18 f. L.), derangements of the mind during phrenitis are compared to those with melancholy: "concerning the derangement of the mind, those who are affected by phrenitis resemble above all those who are affected by melancholy."

<sup>18</sup> The treatise *Prorrhetic* 1.123, ed. H. Polack (1954), 92,15 f. (= 5.552,5 f. L.) considers short bouts of madness to be characteristic of melancholy.

<sup>19</sup> Hippocrates, *Aphorisms* 7.40, 4.588,8 f. L.; on paralysis of part of the body, cf. *Aphorisms* 6.56, *ibid.*, 576,19 f. These symptoms recall what is said in *Diseases* 1, ch. 3 (ed. Wittern 8, 16 f. = 6.144,15 f. L.) about the consequences of a range of complaints, of which melancholy is one, due to black bile.

Each of these two states arises according to the direction the disease takes; if it turns towards the body, people are epileptic; if it turns towards the mind, they are melancholic (*melancholikoi*).<sup>20</sup>

Thus, we have the three principal symptoms of melancholy, which sometimes affects the body, and more often the mind. For the Hippocratic doctors, this illness possessed a clear conceptual position between epilepsy and madness. It is no coincidence that these three illnesses form a triad in the enumeration of illnesses of autumn in the *Aphorisms*: epilepsy, madness and melancholy.<sup>21</sup> However, the illness eludes any identification with a modern counterpart, which is the case for much Hippocratic nosology.<sup>22</sup>

In short, from this initial investigation of the Hippocratic Corpus, it appears that the three fundamental notions (the illness, the humour and the temperament) do not appear at the same time, nor are they necessarily associated with each other. The illness called melancholy pre-dates Hippocratic medicine. Black bile was born as a humour in its own right in Hippocratic medicine, which supposes that melancholy was attributed firstly to a pathogenic variety of bile. The melancholic temperament is rarely attested. There is no characterisation of it and it is not brought within the context of the theory of the four humours.

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<sup>20</sup> Hippocrates, *Epidemics* 6, 8, 31, 5.354,19–356, 3 L. (= Manetti-Roselli 192, 10–194, 5). The Hippocratic Corpus, which is, as is well known, a collection of texts written by various authors, is not entirely coherent on this matter. In *The Sacred Disease*, ch. 5 (ed. Jouanna 12, 21 f.), it is said that epilepsy affects phlegmatics, and not the bilious.

<sup>21</sup> *Aphorisms* 3.22, ed. Jones 4 (1931), 130, 6 f. (= 4.496,7 f. L.); cf. also springtime illnesses, *ibid.*, 3, 20, ed. Jones 4 (1931), 128, 16 f. (= 4.494,16 f. L.): madness, melancholy (or melancholy, madness), epilepsy.

<sup>22</sup> I would like to conclude this discussion of melancholy in Hippocrates by warning against an approach that in my view is not sufficiently precise in that it includes in the discussion on melancholy some texts where the terms melancholy, melancholic or black bile do not appear. This is the case, for example, in the illness called *phrontis*, 'worry', in *Diseases* 2.2, ch. 72 (ch. 61) (ed. Jouanna p. 211, 15 f.), or those diseases that are called 'black illness', ch. 73 (ch. 62) and 74 (ch. 63) (*ibid.*, p. 212,11 f.). We must resist reinterpreting these illnesses with terms that are not there. In the oldest part of the treatise, *Diseases* 2, ch. 12 f. (which I have called *Diseases* 2 A or *Diseases* 2 2), black bile is not known as an independent humour, unlike the younger part of *Diseases* 2, chs. 1–12 (which I have called *Diseases* 2 B or *Diseases* 2 1). See J. Jouanna, *Hippocrate. Pour une archéologie de l'école de Cnide*, Paris, 1974, pp. 108–114. I believe that these illnesses belong to a stage prior to melancholy and offer a nosologic outline reflecting the prehistory of melancholy. At any rate there is no need to change the title from *Phrontis* into *Phrenitis*, as M. Gronewald proposes, "Bemerkungen zu Menander," *Zeitschrift für Papyrologie und Epigraphik*, 99, 1993, p. 24, even if J.M. Jacques (quoted in footnote 10), p. 233, finds this conjecture attractive.

I will now consider how the starting points that we find in Hippocratic medicine in relation to melancholy and the melancholic temperament developed in post-Hippocratic medicine. Unlike other aspects of humoral theory, however, the study of melancholy and the melancholic temperament in Greek medicine cannot ignore a chapter that is found in the school of Aristotle and which is crucial for modern historians of melancholy and the melancholic temperament. This is the long discussion of the subject of melancholy in *Problem 30.1*.<sup>23</sup> This *Problem* is well known, but I shall briefly summarise its content. It begins by raising the question why men who excel in philosophy, politics, poetry and the arts have a melancholic temperament, i.e. a temperament in which black bile dominates. The response dwells on a long and complex analogy with wine, whose different effects serve to explain the effects of black bile on the mind. This Aristotelian *Problem* has been called revolutionary.<sup>24</sup> Yet what is the connection between this text and Greek medicine? Two questions arise here: is there a link between the Aristotelian concept and preceding medical, i.e. Hippocratic theory? Second: did the Aristotelian concept have an influence on post-Hippocratic Greek medicine? In other words, did Greek medicine become melancholic in the Aristotelian sense of the word?

As to the first question, careful comparison between Hippocratic medicine and the Aristotelian *Problem* suggests a predominately negative response. Even if we do not want to speak in terms of influence, the differences that exist between Hippocrates and Aristotle can clearly be seen.

First, we should remember that the Aristotelian *Problem*, whatever the identity of its author, was not the work of a doctor. He refers explicitly to doctors, which is proof that he is not one. Thus, the author is a non-specialist, even if he has medical knowledge. This means that the approach to melancholy in the Aristotelian *Problem* is distinctly different, indeed the reverse, of that of the Hippocratic doctors. Hippocratic doctors are interested primarily in melancholy, whilst the Aristotelian *Problem* is interested primarily in the melancholic temperament. This notable difference in

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<sup>23</sup> This problem is traditionally attributed to Aristotle, although modern scholars are more inclined towards Theophrastus. See J. Pigeaud, *Aristote, L'homme de génie et la mélancolie*, Paris, Éditions Rivages, 1988, pp. 54–56. However, P.J. van der Eijk, *Medicine and Philosophy in Classical Antiquity*, Cambridge, 2005 (chapter 5, Aristotle on Melancholy = “Aristoteles über die Melancholie,” *Mnemosyne*, 43, 1990, pp. 214–229 slightly adapted), pp. 139–168, sees no disagreement between the views of Aristotle and those of *Problem 30.1*.

<sup>24</sup> See for example R. Klibansky, E. Panofsky and F. Saxl (quoted in footnote 1), p. 15 (“The notion of melancholy as revolutionised by the Peripatetics: Problem XXX,I”).

perspective between Hippocrates and Aristotle partly explains the difficulties posed by the question of the links of the Aristotelian *Problem* with Hippocratic medicine. I will pursue the comparison by taking the three fundamental elements: illness, temperament and humour.

Concerning the illness, the Aristotelian *Problem*, unlike Hippocrates, never uses the noun *melancholiê*. If we wanted to be provocative, we could say that melancholy virtually does not exist as such in the Aristotelian *Problem*. The adjective *melancholikos* is certainly frequent, but its meaning has become wider, even in the domain of nosology. Whilst in Hippocrates it meant, in accordance with its etymological sense, ‘relating to melancholy’, in the Aristotelian tradition it has adopted the widened meaning of ‘relating to black bile’. The reason is that the author of the *Problem* does not refer to the particular complaint that the Hippocratic doctors called melancholy, but rather more generally to all illnesses caused by black bile.<sup>25</sup> From Hippocratic melancholy, it has progressed to melancholic complaints in general. The consequence is that the nosologic model established by specialists disappears, to privilege only the connection with black bile.<sup>26</sup>

The attention that I pay here to the nosologic vocabulary and to the difference we find between the use by specialists (doctors) and non-specialists (philosophers and others) is not simply excessive nit-picking by a philologist seized by melancholy, but rather a necessary step to rediscover secure

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<sup>25</sup> 953a13: τοῖς ἀπὸ μελαίνης χολῆς ἀρρωστήμασιν. Thus, when the adjective *melancholikos*, in a nosologic context, is used in the neuter singular it refers to an illness caused by black bile (954a28: νόσημά τι μελαγχολικόν) and, in the neuter plural, the illnesses caused by black bile (954b29–30: τὰ μελαγχολικὰ νοσήματα). To describe the illnesses, several terms used in the *Problem* are synonymous (ἀρρώστημα, νοσήματα; also πάθη). There is no difference between these terms, *contra* P. Dandrey (quoted in footnote 10), p. 39, footnote 1 (*in fine*). His cross-reference to Pigeaud, footnote 17, p. 113, does not work because Pigeaud does not establish a difference between the meanings of these two terms.

<sup>26</sup> The only passage of the *Problem* that seems to me to mean melancholy in the Hippocratic sense of the term is found in the comparison between the effects of black bile and wine. Concerning the effect of wine drunk in too much quantity, we read (Aristotle, *Problem* 30.1, 953b6): “Drunk in too great a quantity, wine relaxes and makes the individual silly, like those who are epileptic from childhood or those who are strongly affected τοῖς μελαγχολικοῖς, i.e. by melancholy.” The neuter plural *ta melancholika* cannot mean here illnesses caused by black bile in general, for the simple reason that in the *Problem*, epilepsy was already included in diseases caused by black bile. Thus, putting it in the same sentence here supposes that *ta melancholika* has a more restricted meaning and means melancholy in the Hippocratic sense of the term. This interpretation is all the more likely considering the connection established between epilepsy and melancholy in several other Hippocratic treatises (*Epidemics* 6, *Aphorisms*). Thus, we may detect contact with Hippocratic medicine in this passage. However, we are certainly far from finding in the *Problem* the precision of the nosologic outline that we found in Hippocratic medicine.

traces of the complicated history of melancholy. I will not pursue this avenue of research, which some may find dry and others exciting, much further, but I cannot resist tracing the development of this nosologic vocabulary in an author who read Aristotle's *Problem* in the second century AD, i.e. Plutarch.

The Aristotelian *Problem* chose Lysander as an example of an eminent politician whose temperament was melancholic. Plutarch, in his *Life of Lysander*, refers to this as follows:

Aristotle, showing that great natures are melancholic (*melancholikas*), such as Socrates, Plato, and Heracles, tells us that Lysander, not at first, but in old age, suffered from melancholy (*melancholia*).<sup>27</sup>

Plutarch's reading introduces a new simplification into the medical domain. Aristotle's *Problem* said that Lysander had some ulcers towards the end of his life, and that these ulcers were caused by black bile. Plutarch instead reintroduces the noun *melancholia*, which was absent from the *Problem*. Yet in doing so, Plutarch does not return to the melancholy of the Hippocratic doctors; this is a different melancholy, which has expanded to include all illness caused by black bile.<sup>28</sup> In non-specialist usage, melancholy no longer refers to a particular illness of black bile, but to the illness of black bile more generally, encompassing all illnesses caused by black bile. We can explain this semantic expansion of the noun *melancholia* by the intermediary of the Aristotelian *Problem*, which departed from the distinctions of Hippocratic nosology by widening the meaning of the adjective *melancholikos* to include illnesses caused by black bile in general.

Let us continue with the comparison between Hippocrates and Aristotle. The difference is larger still concerning the melancholic temperament, in which black bile dominates. The *Problem* clearly takes a new direction which is completely different from Hippocrates. For example, the *Problem* introduces a psychological dimension to the melancholic temperament and justifies this by a long comparison with wine. All this is not found in Hippocrates. The *Problem* also takes as its point of departure a value judgement, which it presents as a given, i.e. the excellence of the melancholic temperament, which is the source of all the elite men of philosophy, politics, poetry and the arts. That this notion is not of a medical origin is reinforced by the

<sup>27</sup> Plutarch, *Life of Lysander*, ch. 2, 5 (175b–c).

<sup>28</sup> Plutarch returns to Lysander's melancholy at the end of this discussion, where he connects it with his difficult character (ch. 28, 1: "Lysander was a difficult character due to melancholy, which became more intense in old age ..."). It is this psychological aspect of melancholy that interests Plutarch, although it does not appear in his model.

subsequent discussion because, by reserving this excellence for those who are melancholic not by illness but by nature, the author of the *Problem* goes beyond the doctor's domain. The very basis of what makes the Aristotelian *Problem* famous does not seem to be of medical, and certainly not of Hippocratic, origin.

Even the concept of black bile in the Aristotelian *Problem* is different to that of Hippocratic medicine. Of course, there is a possible connection, to the extent that black bile is an innate humour in both the *Problem* and in *Nature of Man*. However, the author of the Aristotelian *Problem* does not seem to have known this Hippocratic treatise: there is no trace of a theory of four humours, and, above all, the Aristotelian *Problem* takes as its basis a concept of black bile that is incompatible with that of *Nature of Man*. This is a fundamental point: while in *Nature of Man*, black bile is a cold and dry humour, corresponding with autumn, the cold and dry season, the Aristotelian *Problem* presents black bile, a natural humour, in a very different way:

This melancholic humour is present in the body as a mixture from the beginning and by nature. Indeed, it is a mixture of hot and cold. Its nature is constituted by these two principles. It is because of this that black bile can be extremely hot or extremely cold.<sup>29</sup>

Thus, a single humour can have totally opposite effects and provoke in those who are melancholics through illness two afflictions with contrasting symptoms: if black bile is cold, it provokes despondency and fear (which are the symptoms of Hippocratic melancholy; on this precise point, there is agreement); but if black bile is heated, it provokes the reverse behaviour, being joyous and singing—such symptoms are not Hippocratic.<sup>30</sup> What is more peculiar is that melancholics are also divided by nature into two radically opposed categories according to the temperature of the black bile at their birth:

Those in whom black bile pre-exists in excess and is cold are slow and silly; those in whom black bile pre-exists in excess and hot are impassioned, talented, inclined towards love and easily led to anger and desire, some being rather talkative. Quite often, since this heat is close to the seat of the intellect, they are taken by diseases such as mania and enthusiasm; this explains the Sibyls, the soothsayers and all those inspired, if they are like this, not by disease, but by natural temperament.<sup>31</sup>

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<sup>29</sup> *Problem* 30.1 (954a12).

<sup>30</sup> *Problem* 30.1 (954a21–26).

<sup>31</sup> *Problem* 30.1 (954a30–38).

A single humour that can be either colder or warmer at the time of birth is contrary to Hippocratic thinking, and particularly to that of the author of *Nature of Man*. In medical thought, one and the same innate humour cannot be defined by the mixture of two opposed elemental qualities: it is not a mixture of cold and hot, but it is, by nature, either hot or cold.<sup>32</sup> The same goes for dryness or wetness. What the Aristotelian *Problem* explains by the opposite effect of the same humour was, in Hippocratic medicine, the work of two naturally opposed humours: bile and phlegm. In fact, the Hippocratic treatise *The Sacred Disease* distinguishes between two types of madness: the madness of excited people, caused by bile, a warm humour, and the opposite madness of calm people, caused by phlegm, a cold humour.<sup>33</sup> The Aristotelian tradition is outside the Hippocratic medical tradition, to the extent that it attributes two opposing characteristics to a single humour, black bile.

In short, Hippocratic medicine cannot be the principal source of the Aristotelian *Problem*, neither for the joyous madness of melancholic affections, nor for the melancholic temperament, nor for its concept of black bile. Aristotelian melancholy is fundamentally not Hippocratic.<sup>34</sup>

What about medicine after Hippocrates? Does it follow the Hippocratic medical tradition? Was it influenced, in addition, by the Aristotelian tradition? I will consider this double question in two ways; firstly, from the complaint called melancholy, and then from the temperament in which black bile dominates.

A well-known problem of post-Hippocratic Greek medicine is posed by the great lacuna caused by the loss of the writings of the medical authors in the three centuries after him. Melancholy as an illness did not reappear

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<sup>32</sup> The position of the *Problem* on the definition of black bile according to the elemental qualities is very delicate to understand. It is naturally a combination of hot and cold, which gives it the possibility of being very hot and very cold, but it is said at the same time to be cold by nature (954a21: φύσει ψυχρά). Whilst it might be naturally cold, it can be hot at birth (954a32).

<sup>33</sup> Hippocrates, *The Sacred Disease*, ch. 15, ed. Jouanna 27, 5–11. We note the contrast in the seat of intellect: the head in the Hippocratic treatise, the heart in the Aristotelian *Problem*.

<sup>34</sup> Instead, we should rather consider whether Diocles of Carystus may have had more influence than Hippocrates on the Aristotelian conception (although Diocles' date is uncertain). The *Problem* mentions doctors with regard to flatulent or hypochondriac illnesses, which are caused by black bile (953b24–25). This cannot allude to Hippocrates (where they are not mentioned), but very probably to Diocles. Indeed, for the labelling of flatulent diseases and hypochondriacs (πνευματώδη τε και ὑποχονδριακά), Galen, *Comm. Epidemics* VI, 3, 12 (ed. Wenkebach 138, 19 f. = 17b29,10 K.) looks firstly to Diocles, and to Pleistonius. By insisting on the flatulent character of melancholic illnesses, the *Problem* attaches itself to the medical tradition of Diocles.

in the direct tradition until Aretaeus of Cappadocia, a doctor from the first century AD, and Galen, a doctor from the second century AD. Between these two periods, we possess only indirect information. We know that Diocles of Carystus, in the fourth century, had discussed a form of melancholy, different from that of Hippocrates, affecting the stomach. Galen quotes fairly long extracts.<sup>35</sup> However, the lacuna in the history of melancholy in Greek medicine from the Hellenistic period is not only accidental. It occurred because the humoral view of man was replaced in this period by a solidist view. Thus, Galen reproaches one of the two most important doctors of this period, Erasistratus, for not having written anything about melancholy and for failing to account for the humoral faculty.<sup>36</sup>

Despite this large gap in the history of Greek medicine, due to both lack of evidence and an intermission of humoral pathology, the Hippocratic conception of melancholy remains strongly present in the medical tradition of the Roman period. This is explicitly recognised by Galen. When he discusses melancholy in his *On Affected Places* 3, ch. 10, he comes to quote and comment on two passages of Hippocrates: the passage from *Epidemics* 6 on the connections between epilepsy and melancholy,<sup>37</sup> and *Aphorism* 6.23 on the symptoms of melancholy. Having highlighted the different kinds of fear that can afflict melancholics by means of very clear examples, none of which are found in the Hippocratic Corpus,<sup>38</sup> Galen concludes by stating:

Hippocrates seems to have been right to reduce under two headings the symptoms of melancholics: fear and sadness (φόβον και δυσθυμίαν).<sup>39</sup>

Thus, Galen's nosologic model remains Hippocratic.<sup>40</sup> The melancholic illness remains what it was in Hippocrates, a well-determined illness, included

<sup>35</sup> Galen, *De locis affectis* 3, ch. 10 (= 8.186,1f. K.).

<sup>36</sup> Galen, *De locis affectis* 3, ch. 10 (= 8.191,12–14 K.).

<sup>37</sup> *Ibid.*, 180, 6–8.

<sup>38</sup> Here is Galen's discussion on these cases: "Melancholics are prone to fears; but the fantastic images do not always appear to them in the same form. Thus, one imagines he is made of shells and so is scared of being crushed. Another, seeing a cockerel sing who flaps his wings before singing, imitates the voice of the animals and beats his side with his arms. Another fears that Atlas, tired from the weight of the earth he supports, cannot support his burden, and in this way, fears from time to time that we are all going to perish. And innumerable other such ideas go through their mind. There is a difference between melancholics. All are prone to fear, to sadness, they blame life and hate men, but they do not all wish to die. By contrast, in some the main characteristic of melancholy is fear of death. Others seem odd; they fear death and at the same time desire it." (190)

<sup>39</sup> Galen, *De locis affectis* 3, ch. 10 (= 8.188,6 f. K. and 8.190,17–19 K.).

<sup>40</sup> Another quotation and use of *Aphorism* 6.23 in *De symptomatum causis* 2, ch. 7, 7.202,18–203, 3 K. (quotation 203, 3–4).

amongst the complaints caused by black bile.<sup>41</sup> This has an important consequence for our question. The derangement of the mind caused by melancholy in Hippocrates and Galen cannot align with the Aristotelian concept of two opposed, ecstatic and depressive forms of melancholic afflictions. A joyous madness caused by melancholy finds no place in Galen. Scholars have said that *Problem* 30.1 on melancholy was the most famous of the Aristotelian *Problems*. However, the problem, if I may say so, is at what time and in what context it was famous. Galen quotes once in his work an Aristotelian *Problem* on melancholy, but it is not this one. It is the *Problem* on the propensity of melancholics to make love.<sup>42</sup> It is important to keep in mind Galen's impermeability to what we consider the central *Problem* of Aristotle, for there is no doubt that it was Galen who determined the direction in which later Greek medicine continued.

One may object that Galen is a textbook case and that Hippocrates' influence does not manifest itself so clearly in Galen's predecessors. Yet the only predecessor whose description of melancholy has been preserved in its entirety is Aretaeus of Cappadocia, whose nosologic description stands in direct connection with Hippocrates. It is no coincidence that Aretaeus, in his account of chronic illnesses, successively discusses epilepsy, melancholy and madness. It is the famous Hippocratic triad that we find in the enumeration of autumn (and spring) illnesses given in the *Aphorisms*.<sup>43</sup> Furthermore, melancholy is defined in Aretaeus as it was in Hippocrates, as despondency (*athumiê*), with the addition that the despondency is due to an obsession and that the illness is without fever.<sup>44</sup>

Should we nevertheless agree that the Aristotelian *Problem* influenced the other face of Hippocrates known to the Renaissance, i.e. that of the

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<sup>41</sup> A passage from his *Commentary on Hippocrates' Aphorisms* is in this respect very characteristic. Galen enumerates the afflictions caused by black bile (17 B 659,9–660,3 K.): "In fact, due to black bile, the colour of the whole body turns black; and the exanthems are black due to the colour of black bile. All the complaints that are caused by an abundance of black bile clearly show the strong presence of the humour, such as elephas and carcinoma. Quartan fever also comes from the melancholic humour. The inflammation of the spleen, dark varicose veins, are complaints originating from this same humour, also called melancholy (ἡ μελαγχολία καλουμένη), and all perturbation of intelligence which is quick-tempered, bold, fierce (καὶ πᾶσα παραφορά διανοίας, ὀργίλη, θρασεία, θηριώδης). Hippocrates also pointed out the abundant presence of the humour in women, on the basis of menstruation, and he described its signs in the first book of *Diseases of Women*."

<sup>42</sup> *Commentary on Hippocrates' Epidemics VI*, 3.12 ed. Wenkebach 139,2–5 = 17b29,13–17 K. = *Problem* 4.30 (880a30–33): "Why are melancholics prone to making love?"

<sup>43</sup> See *supra*, p. 236.

<sup>44</sup> Aretaeus of Cappadocia, 3, ch. 5, ed. Hude<sup>2</sup>, 39–40.

*Letters*, which were written later than the medical treatises? In the famous story of Hippocrates and Democritus, melancholy is mentioned during the discussion of Democritus' madness, for which the Abderans asked for Hippocrates' help. Some modern scholars have wanted to connect this reference to melancholy with the Aristotelian *Problem*, where philosophical geniuses have a melancholic temperament.<sup>45</sup> However, let us re-read the letter where melancholy is discussed. It is the *Letter of Hippocrates to Philopoemen* (letter 12), where Hippocrates thanks Philopoemen for his hospitality at Abdera, where he went at the invitation of the Abderans to cure Democritus. The actual discussion of the symptoms of melancholy compared to the behaviour of the wise man is found in the following passage:

The following symptoms often happen to melancholics (*melancholōsi*): they are sometimes taciturn and solitary; and they love deserted places; they avoid company, thinking that when they see people close to them they see strangers. In the same way people who are passionate about acquiring knowledge abandon all other preoccupations in order to obtain knowledge.<sup>46</sup>

This description of melancholy is interesting from a medical point of view since it explicitly describes symptoms that remained implicit in the medical writings of Hippocrates, and which correspond to those found in doctors that came after him: Aretaeus of Cappadocia, Rufus of Ephesus or Galen. For example, fear or hatred of men is a symptom pointed out by all these medical writers.<sup>47</sup> Now it is certainly true that we find the symptom of isolation already in the Aristotelian *Problem*; thus, Bellerophon, who "sought deserted places,"<sup>48</sup> is taken as an example of a melancholic temperament. However, there is an essential difference between the melancholic model of Aristotle and the Hippocrates of the *Letters*. Whilst in the Aristotelian tradition, the melancholic temperament explains the excellence of any philosopher, the Hippocrates of the *Letters*, whilst highlighting the comparison between the symptoms of melancholy and the behaviour of the wise man,

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<sup>45</sup> See for example P. Dandrey (quoted in footnote 10), p. 67 (regarding the Hippocratic *Letters* on the madness of Democritus): "There are two threads to this story: one medical, clearly attached to the pathological doctrine of the melancholic temperament and to the analyses of *Problem* 30.1; the other moral ... which discusses ... the topic of the inaccessible and misunderstood wise man." See also J. Pigeaud (quoted in footnote 10), p. 457f.

<sup>46</sup> 9.330,13–16 L.

<sup>47</sup> For Aretaeus of Cappadocia, see 3, ch. 5, ed. Hude<sup>2</sup>, 40,2: "They flee into solitude for hatred of men"; for Rufus of Ephesus, see frag. 70 (*On Melancholy*), ed. Daremberg-Ruelle, 1879, p. 354, 11–12: "One fears his family and friends and the other all men"; for Galen, see *De locis affectis* 3, ch. 10, 8.190,12 f. K.: "to hate men."

<sup>48</sup> Aristotle, *Problem* 30.1 (953a22).

makes this comparison only in order subsequently to contrast a melancholic's madness with the wise man's *ataraxia*. Thus, the wise man here does not have a melancholic temperament at all and the position of Hippocrates in the *Letters* is different from that of the Aristotelian *Problem*.<sup>49</sup>

Despite this, do there exist possible influences of the Aristotelian *Problem* on the nosology of melancholy in Greek medicine? What became of the Aristotelian *Problem*'s second form of melancholic complaints in Greek medicine, i.e. joyous delirium? The problem has already been posed concerning a passage by Aretaeus, which I just mentioned (see n. 44 above), where the manuscripts present a clear error of *thumêdiê*, 'joy', instead of its opposite *athumiê*, 'despondency'. Those who do not correct the text arrive at an untenable contradiction. When Aretaeus defines melancholy as despondency (*athumiê*), how can we translate, with Coray, three lines later that melancholics are "continually in bad humour or continually happy"? Despite my admiration for Coray, this translation is untenable.<sup>50</sup> According to Aretaeus, man's delirium brought on by melancholy is uniquely depressive, and if signs of joy appear from time to time, it is a sign that the person's melancholy has changed into *mania*.<sup>51</sup> In fact, according to Aretaeus, melancholy is often the start (or a part) of *mania*.

<sup>49</sup> For a comparable position, see Th. Rütten, *Demokrit: lachender Philosoph und sanguinischer Melancholiker. Eine pseudohippokratische Geschichte* (Mnemosyne. Suppl. 118), Leiden, Brill, 1992, p. 125f. Moreover, apart from the description of melancholy in the *Letter to Philopoemen*, the vocabulary of melancholy is rare in the rest of the *Letters*, and it plays an insignificant role, apart from the diagnosis of melancholy envisaged provisionally by Hippocrates but which will turn out to be false: *μελαγχολᾶν* (*Letter to Damagetus* I, 9.338,17 L.: false diagnosis regarding Democritus); *μελαγχολίη*: *Letter to Damagetus* II, 9.358,12 L. (in an enumeration of the symptoms) and *Letter to the King Demetrius*, 9.398,23 L. (aphorism on melancholy: spasms occurring in melancholics stop the melancholies); and *μελαγχολικός*, *Letter from Hippocrates to Philopoemen*, 9.330,14 L. (see above) and *Letter to King Demetrius* 9.398,23 L. (see above). The rarity of the term in the *Letters* contrasts with the importance that modern scholars accord to the *Letters* in the history of melancholy.

<sup>50</sup> Coray's translation of this chapter on melancholy can be found, for those who cannot consult the whole of Coray's translation in the *Pragmateiai* of the Academy of Athens, vol. 13, 3, Athens, 1950 (published by Aristote P. Kousis after the manuscript 191 in the Library of Chios) in P. Dandrey, *Anthologie de l'humeur noire*, Paris, 2005, p. 135. See also the position of Laennec, who had translated it with 'découragement' ('despondency') and replaced it after with 'joyousness' in R.T.H. Laennec, *Arétée de Cappadoce. Des causes et des signes des maladies aiguës et chroniques*, ed. M. Grmek, Droz, 2000, p. 73. Laennec had already made the connection with the symptom of joy in Paul of Aegina when he translated it with 'despondency'. We do not know the reasons for his correction, which goes back to the manuscripts.

<sup>51</sup> Aretaeus of Cappadocia, 3, ch. 5, ed. Hude<sup>2</sup>, 40,3–5.

On the other hand, there is a doctor much later than Aretaeus for whom joy is a symptom of melancholy: Paul of Aegina, a medical writer from the seventh century AD. His definition of melancholy appears similar to that of Aretaeus, apart from a small, but important, detail. Whilst Aretaeus defined it as despondency (*athumiê*) without fever, Paul of Aegina defined it as madness (*paraphrosunê*) without fever. This is an important difference, because it permits the introduction of joy into the account of the symptoms. Of course, Paul of Aegina begins with the traditional symptoms in post-Hippocratic Greek medicine (fear and despondency), but he adds cases where certain people laugh. This is incontestably an innovation compared to the Hippocratic tradition.<sup>52</sup> Should we see here an indirect influence of the Aristotelian *Problem*? We should add in this respect that Paul of Aegina mentions that some melancholics believe themselves to be possessed by a divinity or to be able to predict the future,<sup>53</sup> a symptom we saw mentioned in the Aristotelian *Problem*.<sup>54</sup> However, the doctor focuses on the symptoms of the illness, whilst in the Aristotelian tradition the real capacity to predict the future in a state of enthusiasm is accorded to a select group amongst those who have a melancholic temperament. Thus, an influence of the philosophical tradition on medicine is possible but, if it exists, it is limited.

We must add a parallel little known by commentators on Aristotle's *Problem*. In the pseudo-Galenic treatise *Introduction or Doctor*, the author, having stated that yellow bile is the cause of madness, says that black bile is the cause of melancholy:

The cause of melancholy is black bile, a humour that is colder and darker. This is why such patients are troubled and despondent, distrustful of everything, misanthropic and desirous of solitude, such is said of Bellerophon (*Iliad* VI, 201–202): He wandered alone on the Aleiean plain, eating his heart out and fleeing from men.<sup>55</sup>

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<sup>52</sup> In Alexander of Tralles (sixth century), too, we find a type of melancholy where the patients laugh for no reason. Alexander insists on the diverse manifestations of this illness, which are due to the fact that it is not caused by one single humour. Thus, this aetiology of melancholy is not analogous to that of the Aristotelian *Problem*, which explains all the symptoms, even the most contrasting, by one single humour: black bile.

<sup>53</sup> This symptom was mentioned by Rufus of Ephesus according to Rhazes (Frag. 127 Daremberg-Ruelle, p. 456,1f.) "Et contingit quod quidam istorum narrant et somniant praeter solitum, et pronosticantur futura, et eveniunt quae ipsi praedicunt."

<sup>54</sup> *Problem* 30.1, 954a34–37 (quoted *supra*, p. 240). It even uses two comparable terms to mean possession by a divinity: Aristotle, *Problem* 954a35 ἐνθουσιαστικοίς; Paul of Aegina: ἐνθεαστικοί.

<sup>55</sup> 14,740–741 K.

By taking Bellerophon as an example of a melancholic hero and by quoting two verses from Homer, pseudo-Galen attaches himself to the Aristotelian *Problem*. Indeed, at the start of the *Problem*, Bellerophon is mentioned amongst the mythological examples of great melancholics, along with Heracles and Ajax, and it also quotes the verses from Homer. This similarity is probably not due to chance, and is most likely to be explained by assuming that pseudo-Galen refers to Aristotle's *Problem* without quoting it, unless the similarity is explained by a common model.

Thus, it is possible that there are sporadic souvenirs of the Aristotelian *Problem*, above all in a late period. However, the descriptions of Greek doctors in the Roman period remain in a continuous line with the analyses of Hippocrates and his nosologic model. Of course, their descriptions are more explicit in detailing symptoms and more complex in distinguishing three types of melancholy, which had been established at least from Galen,<sup>56</sup> not to mention their integration of innovations from the Hellenistic period, notably the symptom given by Aretaeus of the melancholic's pulse.<sup>57</sup> However, the depressive character of the illness remains fundamental. Greek medicine is not melancholic in the Aristotelian sense of the term.

Let us now turn to the history of the melancholic temperament in Greek medicine. Theoretically, conditions are more favourable to a diffusion of the analyses of the Aristotelian *Problem*; Hippocratic medicine offered practically nothing compared to the analyses of the *Problem*, whose originality lies especially in the development of the psychological aspects of the melancholic temperament. However, it is again a Hippocratic starting point that is at the root of a typology of temperaments in later medicine, and not the Aristotelian tradition.

We saw that the theory of the four humours in the *Nature of Man* had not yet given rise to a theory of four temperaments. However, Galen contributes to the exceptional fate of the four humours at the end of Antiquity and the Middle Ages, by attributing to Hippocrates what was actually the work of his student, Polybus, and considering the theory of the four humours to be the

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<sup>56</sup> Galen, *De locis affectis* 3.10. The third type is hypochondria or flatulence, on which Galen quotes rather long passages from Diocles of Carystus. Galen is obliged to refer to Diocles because this third type does not belong to the Hippocratic tradition. Cf. also the definition given by pseudo-Galen, *Medical Definitions*, 19.416,9–13 K.: "Melancholy is a complaint that affects the mind with emphatic despondency and with turning away from one's most loved people, unaccompanied by fever; in some, there is so much black bile that it affects the stomach, so that they vomit it and, in this way, their mind is hurt." The three types of melancholy are clearly found in Paul of Aegina.

<sup>57</sup> Aretaeus of Cappadocia 3, ch. 5, ed. Hude<sup>2</sup>, 41.3f.

fundamental teaching of the father of medicine. However, the theory of the four temperaments which results from this was not known in its definitive form until a period after Galen.<sup>58</sup> This last stage is represented by several Greek or Latin texts from Late Antiquity.

Some of these have been highlighted and compared in the now classic study on melancholy by Raymond Klibansky, Erwin Panofsky and Fritz Saxl, *Saturn and Melancholy*. In this work, two Greek texts (pseudo-Galen *On the Humours*, and an anonymous *On the Constitution of the Universe and of Man*) and two Latin texts (pseudo-Soranus, *Isagoge Saluberrima* and Vindician, *Letter to Pentadius*) are presented in columns. The texts are compared and briefly commented on.<sup>59</sup> Following the publication of an unedited Armenian text by Jean-Pierre Mahé on the four humours and the four temperaments, I was able to undertake a study of these texts and add others to it, both edited and unedited.<sup>60</sup> Without being able to enter here into the detail of this investigation, I would like to point out briefly what this study adds by way of novelty compared to Klibansky, firstly on the date of the appearance of the theory of the four temperaments, and then on the melancholic temperament.

We must firstly make an important correction to the date of the appearance of the theory of the four temperaments. Klibansky believes that the pseudo-Soranic *Isagoge Saluberrima* can be dated to the third century AD, earlier than Vindician's *Letter*. Vindician, we should remind ourselves, is a doctor thought to date from the fourth century AD, from the province of Africa, known to Augustine. However, when we compare the section on the humours and the temperaments in pseudo-Soranus and Vindician, pseudo-Soranus seems to represent a more developed version of a part of the manuscript tradition of Vindician's *Letter*. Thus, pseudo-Soranus can

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<sup>58</sup> Galen undoubtedly constitutes an important stage in the elaboration of the theory of the four humours and of the four temperaments. However, he does not present an elaborated theory of the four temperaments. See for example E. Schöner, *Das Viererschema in der antiken Humoralpathologie* in *Sudhoffs Archiv*, Beiheft 4, Wiesbaden, 1964, pp. 86–93; J. Jouanna and J.-P. Mahé, “Une Anthologie médicale arménienne et ses parallèles grecs,” *CRAI*, 2004, pp. 549–598 (pp. 564–566); J. Jouanna, “La Postérité du traité hippocratique de la Nature de l'homme: la théorie des quatre humeurs,” in *Ärzte und ihre Interpreten. Medizinische Fachtexte der Antike als Forschungsgegenstand der Klassischen Philologie*, Fachkonferenz zu Ehren von Herrn Dr. sc. Diethard Nickel, (Berlin, 14–15 May 2004), Berlin, 2006, pp. 123–147 (pp. 125–128); see chapter 16 in the present volume.

<sup>59</sup> R. Klibansky, E. Panofsky, F. Saxl (quoted above in footnote 1), pp. 62–63.

<sup>60</sup> J. Jouanna and J.-P. Mahé, “Une Anthologie médicale arménienne et ses parallèles grecs,” quoted in footnote 58.

only post-date Vindician's *Letter*.<sup>61</sup> Moreover, we still do not know if Vindician's *Letter* is authentic or if, as I believe, it is a fabrication elaborated from a Greek discussion of the four humours and the four temperaments.<sup>62</sup> The only date that is currently certain as a *terminus ante quem* for the appearance of the theory of the four temperaments is provided by Bede, who presents the theory of the four temperaments in his *De temporum ratione* (ch. 35 *De quatuor temporibus, elementis, humoribus*), datable with certainty to 725 AD. The theory necessarily pre-dates that date, and I have hypothesised that it might date to the second renaissance of Greek medicine in Alexandria in the sixth century, possibly through the intermediary of the Latin translation through Ravenna.<sup>63</sup> In any case, we can no longer rely on the dating of the *Isagoge Saluberrima* to date the appearance of the theory of the four temperaments to the third century AD.

To finish our discussion of the melancholic temperament within the theory of the four temperaments, we come now to some new documents not included by Klibansky.<sup>64</sup> Firstly, we should recall the context in which the portrait of the melancholic is found. The melancholic temperament comes in third position in an order that is generally fixed: 1. sanguine temperament;

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<sup>61</sup> For a criticism of the early date of pseudo-Soranus, see K.-D. Fischer, "The Isagoge of Pseudo-Soranus. An Analysis of the Contents of a Medieval Introduction to the Art of Medicine," *Medizinhistorisches Journal*, 35, 2000, pp. 3–30 (p. 20, footnote 45). According to Fischer, the treatise dates to the early Carolingian period. On the connections between Vindician's *Letter* and Pseudo-Soranus, see J. Jouanna, "La Théorie des quatre humeurs et des quatre tempéraments dans la tradition latine (Vindicien, Pseudo-Soranus) et une source grecque retrouvée," *Revue des Etudes Grecques*, 118, 2005, pp. 138–167.

<sup>62</sup> See J. Jouanna (2005), quoted in footnote 61. I also mention here a supplementary witness. The elaborated theory of the four humours and the four temperaments in the letter attributed to Vindician does not seem to have been known to Isidore of Seville (560–636), since in his work on *On Numbers*, ch. 23, we read, with regard to the fourth number, that the world is made up of four elements (fire, air, water and earth), the year of four seasons and man of four elemental qualities (hot, cold, wet, dry); see the edition by Jean-Yves Guillaumin, *Isidorus Hispalensis, Liber Numerorum*, Paris, Belles-Lettres, 2005, p. 30.

<sup>63</sup> See J. Jouanna and J.-P. Mahé (2004), quoted in footnote 58, p. 582f.; J. Jouanna (2005, quoted in footnote 61, pp. 166–167, with footnote 44 bearing a new element).

<sup>64</sup> I add two Greek texts that have already been edited and two Greek texts that remain unedited, not to mention the translations into Hebrew or Armenian. On the translation into Armenian, see J. Jouanna and J.-P. Mahé, quoted in footnote 58. Here is the passage on the melancholic temperament (p. 584): "He who has too much black bile, his face is black and puffy with fat. He is very quick tempered and loves solitude and silence. He is very troubled and holds grudges and has fits of fear." On the translation into Hebrew, see E. Peyser, *Eine hebraische medizinische Handschrift. Beitrag zur Komplexionenlehre*, Diss. Basel, 1944, pp. 31–33. Here is the passage on the melancholic temperament: "The masters of medicine said that the bodies of people with black bile are cold and dry like the earth, and that their heart and thoughts are in constant fear of things which there is no need to fear."

2. bilious temperament; 3. melancholic temperament; 4. phlegmatic temperament. This order is probably explained by the successive predominance of the humours according to age: blood in infancy, yellow bile in youth, black bile in maturity and phlegm in old age. Each temperament is the subject of a brief discussion of its physical or moral characteristics. I would add, to finish with this general outline, a remark on vocabulary. The temperaments are not designated by an adjective corresponding to the humour, but by a periphrasis. Thus, the Greek does not say “melancholic people” but “those in whom black bile is found,” and so we do not find the terms *melancholia* or *melancholikos*. Only the word for black bile (*melaina cholê*) is used. Nevertheless, for reasons of convenience I will speak of the melancholic temperament.

Despite a comparable scheme of exposition, the content of the discussions can vary. From the diversity of descriptions, some groups appear to correspond to different portraits of melancholics. To take an example, I will focus here on three principal groups.<sup>65</sup>

The first group comprises three Greek texts. Of these three texts, Kliban-sky knew only one: the anonymous *On the Constitution of the Universe and of Man*, which is the best known Greek text on the theory of the four temperaments. To this we must add two letters, one attributed to Hippocrates (but which does not form part of the corpus of *Letters* of Hippocrates known to the Renaissance), the *Letter* from Hippocrates to Ptolemy (the long version), and the other a letter attributed to John of Damascus, called *Quid est Homo?*<sup>66</sup> Here is the discussion of the melancholic temperament in these three texts:

A. *Of the Constitution of the Universe and of Man* (ed. Ideler, 2.304):

Those who are constituted of black bile are indolent, pusillanimous and sickly (*philasthenoi*); as for their bodies, they have black eyes and black hair.<sup>67</sup>

B. *Letter from Hippocrates to Ptolemy* (long version, ed. Ermerins, *Anecdota Medica graeca*, Lugduni Batavorum, 1840, p. 281):

<sup>65</sup> In J. Jouanna and J.-P. Mahé (2004), quoted in footnote 58, p. 568f. I have distinguished these three groups of Greek texts presenting the theory of the four humours.

<sup>66</sup> On this letter, see J. Jouanna, “Le Pseudo-Jean Damascène, *Quid est homo?*,” in V. Boudon-Millot and B. Pouderon (ed.), *Les Pères de l'Église face à la science médicale de leur temps*, Paris, Beauchesne, 2005, pp. 1–27.

<sup>67</sup> Greek text: “Ὅσοι δὲ ἀπὸ μελαίνης χολῆς τυγχάνουσιν, οὗτοί εἰσι ῥάθυμοι καὶ ὀλιγόψυχοι καὶ φιλάσθενοι, καὶ σώματά εἰσι μελανόψιοι καὶ μελάντριχοι.

(Those who are constituted of black bile) are indolent, pusillanimous, cowardly, sickly (*philasthenoi*).<sup>68</sup>

C. John of Damascus, *Quid est homo?* (ed. Migne PG 95, 244):

Those who are constituted of black bile are indolent, pusillanimous, sickly (*philasthenoi*), hesitant and cowardly.<sup>69</sup>

What allows us to unite these three texts is the use of the rare Greek adjective *philasthenoi*, 'sickly', which is not attested elsewhere. On this basis, the resemblance seems very clear. The three descriptions carry the same triad of adjectives ('indolent', 'pusillanimous' and 'sickly'), which suggests, despite their apparently diverse origin (one being anonymous, the other attributed to Hippocrates and the third to John of Damascus), that they go back to a common model that discusses the four temperaments and presents the melancholic temperament as a sickly temperament, characterised by indolence and cowardice.

In this presentation of the melancholic temperament, cowardice might correspond to one of the two feelings characteristic of the melancholic affection in accordance with Hippocrates' *Aphorisms*. Surprisingly, we find no mention of the second characteristic sentiment, despondency (*athumiê*), giving the impression that in this group of texts the characterisation of the melancholic temperament is independent from the symptom of the affliction called melancholy. This is what is said in the first group.

We come now to the second group. It includes two Latin texts known to Klibansky (Vindician's *Letter* and pseudo-Soranus, whose date and relationship, as we saw, still need to be confirmed). To these we must add two Greek texts that I have discovered. The most important in the history of melancholy is a small treatise attributed to Hippocrates called *On the Pulse and the Human Temperament* because it is, as I have shown elsewhere,<sup>70</sup> the Greek

<sup>68</sup> I have filled a lacuna in the manuscript tradition by comparison with two other texts; see J. Jouanna and J.-P. Mahé (2004), quoted p. 572. The re-constructed Greek text reads: οἱ δὲ μελαίνης χολῆς ὄντες γίνονται ῥάθυμοι, ὀλιγόψυχοι, δειλοί, φιλάσθενοι.

<sup>69</sup> Greek text: ὅσοι δὲ ἀπὸ χολῆς μελαίνης τυγχάνουσιν, εἰσὶ ῥάθυμοι καὶ ὀλιγόψυχοι, φιλάσθενοι καὶ ὀκνηροὶ καὶ δειλοί.

<sup>70</sup> I presented a provisional edition of this text in *Mélanges A. Hurst* (2005), "Un Traité pseudo-hippocratique inédit sur les quatre humeurs (Sur le pouls et sur le tempérament humain)," pp. 449–461; and I have studied in detail the relationship between the Latin and Greek text, which actually comprises two versions, in "La Théorie des quatre humeurs et des quatre tempéraments dans la tradition latine (Vindicien, Pseudo-Soranus) et une source grecque retrouvée," *Revue des Etudes Grecques* 118, 2005, pp. 138–167.

model for the Latin letter of Vindician, an important source for the diffusion of the theory of the four humours and the four temperaments in the Latin Middle Ages, as Klibansky points out. The second is a longer treatise called *On the Formation of Man*.<sup>71</sup>

Here is the melancholic temperament in these four texts:

- A. Vindician's *Letter*: "Black bile makes men cunning, angry, miserly, fearful, sad, lethargic, envious, and frequently having black scars on their feet."<sup>72</sup>
- B. Pseudo-Soranus, *Isagoge Saluberrima*: "Black bile makes men cunning, miserly and perfidious, sad, lethargic, envious and fearful."<sup>73</sup>
- C. Hippocrates, *On the Pulse and the Human Temperament*:  
Version A, ed. Jouanna in *Mélanges Hurst*, 2005, pp. 449–461: "Black bile makes man completely treacherous, very worried, overwhelmed and very lethargic."<sup>74</sup>  
Version B unedited (in *Par. gr.* 2494): "Black bile (makes man) treacherous, full of anger, constantly worried; it makes people very lethargic and normally with serous fluid in their feet."<sup>75</sup>
- D. Hippocrates, *On the Formation of Man*, ch. 8 (the melancholic temperament); ed. Jouanna in *Atti del V Colloquio internazionale sull'ecdotica dei testi medici*, Napoli 1–2 ottobre 2004, Naples, 2006, p. 315.
1. And if it is the seventh, eighth, or ninth hour of the day or night that the seed is retained in the womb and it uses these three hours for its transformation, (such a mixture) will be cold and dry, because these hours of the day and night (are cold and dry). There is a great quantity of black bile. For black bile abounds in these hours.
  2. And the child formed is tinted black. Its hair and eyes are black. Also its whole body. Its vessels are fine and hidden. *And there is an*

<sup>71</sup> For the edition of this treatise, see J. Jouanna, "Un Traité inédit attribué à Hippocrate, *Sur la formation de l'homme: editio princeps*," in V. Boudon-Millot, A. Garzya, J. Jouanna and A. Roselli (ed.), *I testi medici greci: tradizione e ecdotica*, Atti del V<sup>o</sup> Convegno internazionale (Naples, 30 sept.–2 oct. 2004), Naples, 2006, pp. 273–319.

<sup>72</sup> Latin text: *Cholera nigra facit homines subdolos cum iracundia, avaros, timidos, tristes, somniculosos, invidiosos, frequenter habentes cicatrices nigras in pedibus*.

<sup>73</sup> Latin text: *Cholera nigra facit subdolos, avaros et perfidos, tristes, somniculosos, invidiosos et timidos*.

<sup>74</sup> Greek text: ἡ μέλαινα χολή ποιεῖ τὸν ἄνθρωπον ὄλον ἐπίβουλον, φθονερόν, πολυμέριμον, θλιβόμενον, καὶ πολλὸν κοιμώμενον.

<sup>75</sup> Greek text: ἡ δὲ μέλαινα χολή (sc. ποιεῖ τὸν ἄνθρωπον) ἐπίβουλον, ἀπλόψυχον μετ' ὀργῆς, ἀπληστα φοβούμενη (lege φοβούμενον)· πολλὰ κοιμώμενος, καὶ ὡς ἐπὶ τὸ πλείστον νωτίδα (lege νωτίδα suadente Roselli) ἔχοντας ἐν τοῖς ποσὶν αὐτῶν.

*abundance of black bile within it, which makes man a plotter, irritable, timid, overwhelmed, sleepy, envious.*<sup>76</sup>

3. He has respiratory difficulties and heaviness of the knees. The bones in his feet hurt. He has colics. He is struck with dysury. He has colics in his lower stomach. His urine is red and troubled. He does not desire food as food, but it becomes like vinegar during digestion. When he vomits food, the humour in it is excessively black. He also has a wild (?) spirit. When phrenitis occurs, lethargy and pains; from inspired (?) states and phrenetic states; strangury ... within. These are the disease of the body of man when there is abundant black bile.

Late medical texts are characteristically malleable, which we can observe thanks to the two quite different Greek versions found in the same treatise, which served as a model for Vindician. Even without entering into a detailed comparison, we notice that in one or the other, or both, of the Greek versions, we find many of the same nouns defining the melancholic temperament as in Vindician's Latin translation: treachery accompanied by anger, fear, sadness, lethargy, envy. A single characteristic of the Latin version that does not have an equivalent in the Greek version is miserliness.

If we compare these portraits of the melancholic, we notice that the Greek vocabulary of the first group is different and, consequently, that there were different sources. The psychological analysis of the second group is richer, even if based on two main characteristics: fear or cowardice, and indolence or lethargy. Surprisingly, we do not find in the first group one of the fundamental symptoms of melancholy, sadness or depression, which is present in the second. To this we can also add treachery with anger and envy. Thus, the psychological profile is richer in the second group.

The second rediscovered Greek treatise also belongs to the second group, since the sentence on the characterisation of the melancholic temperament (which I have put in italics) is roughly comparable to Vindician's Greek model, even if the adjectives are not in the same order. We find fear and lethargy, depression and also trickery, irritability and envy.<sup>77</sup> However, this

<sup>76</sup> Greek text of the part in italics: Πληθύνεται δὲ ἐν αὐτῷ ἡ μέλαινα χολή, ἣτις ποιεῖ τὸν ἄνθρωπον ἐπίβουλον καὶ πικρὸν καὶ φοβερὶζόμενον, καὶ θλιβόμενον, φιλῶπνον, φθονερόν.

<sup>77</sup> It is particularly similar to version A. We find the same Greek words: treacherous (ἐπίβουλον), envious (φθονερόν), worrying (θλιβόμενον). However, as in version B, there is also fear (φοβερὶζόμενον). A final characteristic common to Vindician's *Letter* and his Greek model is lethargy (*somniculosos*, πολλὸν κοιμώμενον). However, the Greek term is different:

sentence is inserted in a context that differs from the presentation in the other texts in two ways: the explanation of the melancholic temperament by genetics and the addition of a nosology proper to the temperament.<sup>78</sup>

These are the two principal groups of Greek texts on the melancholic temperament. A third group is made up of pseudo-Galen *On the Humours* and by the treatise *Nature of Man* by Meletius the monk. The two treatises offer a short comparable discussion of the effect of the predominance of the four humours. The two passages were compared by Klibansky.<sup>79</sup> Here are the two texts, quoted this time not by the single extract on the melancholic temperament, but by their discussion of the four temperaments:

A. Meletius, *De natura hominis* (ed. Cramer, 130, pp. 23–26). Extract: influence of the four humours on the soul.

1. When blood dominates, it makes the soul *happier*
2. When it is yellow bile, this makes the soul more *passionate* and *bold*
3. When it is black bile, this makes the soul more majestic and vigorous<sup>80</sup>
4. When it is phlegm, this makes the soul *lazier* and more stubborn.

B. Pseudo-Galen, *On the Humours*, 19,492f. K. Extract: influence of the four humours on the soul.

The humours determine the habits of the soul

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it is φιλόϋπνον, ‘someone who loves sleep’. No doubt this moral analysis of the melancholic temperament goes back to the same common model as the Greek model of Vindician’s *Letter*. However, we find a new adjective: πικρόν, ‘irritable’. It could correspond to the *iracundia* of Vindician’s *Letter* and to the ὀργή of version B of its model, the treatise *On the Pulse and the Human Temperament*.

<sup>78</sup> Using the theory of the predominance of each of the four humours according to the four periods of the day and night, the author explains the formation of the four temperaments according to the hour of conception. If conception takes place at a time when black bile dominates, a child will be born with a temperament corresponding to that humour, and so on. I do not know any parallel to this theory. Surprisingly, in the discussion on illnesses appropriate to the temperament in which black bile dominates, neither melancholy, nor the two other illnesses related to melancholy (epilepsy and madness), appear. Thus, the theory of the temperaments in Greek medicine in Late Antiquity seems to function largely independently from the pathology of melancholy.

<sup>79</sup> Klibansky (footnote 1), p. 61, footnote 98, sees an influence of pseudo-Galen on Meletius the monk. However, the solution is not as simple as this. How do we explain readings of Meletius that are not scribal errors? It might relate to a common source with variants. With the possible connection between Meletius the monk and the Venerable Bede on the description of melancholics, Meletius deserves to figure in Klibansky’s table, pp. 116–117. In any case, the resemblances between pseudo-Galen and Meletius are not due to chance. The pair of adjectives qualifying bilious people are not found elsewhere in Greek literature; see J. Jouanna and J.P. Mahé (2004), quoted p. 574.

<sup>80</sup> Greek text: ἡ δὲ μέλαινα, σεμνοτέραν καὶ εὐσθενεστέραν.

1. Blood makes the soul *more joyful*
2. Yellow bile makes the soul angrier, *bolder* or more *passionate* or both.
3. Phlegm makes the soul *lazier* and sillier.
4. Black bile makes the soul angrier and insolent.<sup>81</sup>

Regarding the psychological features of the temperaments in which blood, yellow bile or phlegm dominate, Meletius the monk and pseudo-Galen display some agreement. The common terms are written in italics. Conversely, the melancholic temperament has no term in common. Neither is there any connection between the contents, because the portrait in Meletius is laudatory, whilst in pseudo-Galen it is critical. Is this by chance or is it a sign that the melancholic temperament is more fluctuating than others?

Meletius the monk seems isolated in the Greek tradition by speaking of the “majestic” soul of melancholic temperaments. Yet we find a parallel in the Latin tradition. Bede qualifies melancholics as “firm, serious and of a calm character” (*stabilis, graves, compositos moribus*),<sup>82</sup> and the Greek *semnotês* and the Latin *gravitas* refer to similar concepts. This gives an idea of the complexity of the representation of the melancholic temperament already in the Greek medical tradition. Generally qualified by disparaging terms, without there being a consensus on these nouns, it is favourably described in a very different way in Meletius’ *De Natura hominis*. This case is so far unique in the Greek medical tradition.

However, this final period of Greek medicine is still badly known and further discoveries are still possible. Indeed, it is possible that Vindician’s *Letter* may not be the only Latin treatise on the four humours and the four temperaments translated directly from Greek. The small Latin work *On the Four Humours*, attributed to the oldest period of the School of Salerno, presents a discussion on the four temperaments which is also associated to what I have termed the second group. Here is the description it gives of the melancholic temperament: “Black bile makes man suddenly irritable, miserly, greedy, sad, lethargic and envious.”<sup>83</sup> Klibansky, having noted the connection with Vindician’s *Letter*, thinks that the treatise is formed of this *Letter*, augmented with various additions. However, the work

<sup>81</sup> Greek text: ἡ δὲ μέλαινα ὀργιλωτέραν καὶ ἰταμωτέραν.

<sup>82</sup> Bede, *De temporum ratione*, ch. 35, ed. C.W. Jones, 1977, p. 392: “Nigra bilis stabilis, graves, compositos moribus dolosusque facit.”

<sup>83</sup> Latin text: “Colera nigra facit hominem subito iracundum, avarum, cupidum, tristem, somnolentum et invidum.”

is distinguished from the *Letter* by a part of its vocabulary and by certain significant variations; moreover, it preserves a trace of a Greek word.<sup>84</sup> Thus, it could be another Latin translation made from another Greek model that is yet to be found.

To illustrate the fact that the complexity will only increase following the transition from the Greek to the Latin tradition, I take here as an example what became the portrait of melancholy within the tradition of the School of Salerno in the thirteenth century.<sup>85</sup> Here is the outline from the *Flos medicinae*:

Melancholics

We now turn to describe the powers of black bile,

Which makes men sad, poor, and little-speaking.

They stay up late to study and their mind is not given to sleep,

They persevere in their goals and think nothing to be certain for them.

He is envious, sad, greedy, with a tenacious right hand.

He is not without experience of trickery, is timid and has a muddy colour.<sup>86</sup>

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<sup>84</sup> The Latin work, found in *Laurentianus* lat. LXXIII, 1 (A.M. Bandini, *Catalogus codicum latinorum Bibliothecae Mediceae Laurentianae*, 1774–1777, t. II, p. 406) was edited by S. de Renzi in his *Collectio Salernitana*, II, pp. 411–412 and hypothetically attributed to Johannes Monachus, a student of Constantine the African. Klibansky (quoted in footnote 1), p. 172, footnote 119, declares that “the text is Vindician’s *Letter*, augmented by various additions.” I cannot compare the two texts here in detail, but we should note the presence of a Greek word at the end of the *On the Four Humours* in a discussion on phlebotomy which is absent from Vindician’s *Letter*: “*lyptusma*” (read λέπτυσμα?, a neuter noun not attested instead of the masculine λέπτυσμος), translated by *idest lassitudo vel debilitatio stomachi*. For the rest, an important variant seems to show that the work cannot be derived from Vindician’s Latin translation: in the rubric on the places of humours, Vindician’s *Letter* says that phlegm dominates “in part of the head and in part of the bladder,” whilst in this work it is said that it dominates “in part of the bladder and in part of the chest.” This reading (“in the chest”) is attested precisely in the two Greek treatises I discovered; see J. Jouanna (quoted footnote 71), p. 292 and footnote 32. Thus, it is directly from a Greek text, and not through the intermediary of the Latin tradition of Vindician, that the work *On the Four Humours* took this reading. Although the ultimate foundation of the text might be Greek, it used an Arabic source. Indeed, at the start it refers, in a definition of health and illness, to something not found in Vindician’s *Letter*, “to the seventh book *epodon* [sic].” By *epodon* we should understand, as Anna Maria Ieraci Bio suggested to me, the *Ephodia* of ibn al Gazzar (end of the tenth century). Thus, whilst the foundations of the text are Greek, as Vindician’s *Letter*, this does not stop the author from making reference to an Arabic authority as well. If it does concern a reference to the *Viaticum* of ibn al Gazzar (c. 878–980), the redaction of the work is posterior to it. Since the *Viaticum* was translated into Latin by Constantine the African, we can legitimately connect this text to the School of Salerno, as S. de Renzi did.

<sup>85</sup> On the spread of the doctrine of the four temperaments in the School of Salerno in the twelfth and the thirteenth centuries, see Klibansky (quoted in footnote 1), p. 182 f.

<sup>86</sup> *Flos medicinae*, ed. de Renzi, *Collectio Salernitana* I, *Flos medicinae* 4, 2, 4, reviewed by

In this outline, we can recognise several of the characteristics mentioned in the second group, that of the Greek tradition which is the origin of Vindician's *Letter*: sadness, envy, greed, trickery, fear.<sup>87</sup> Thus, the medical tradition of Salerno seems, like Vindician's *Letter*, to have come from the Greek tradition. However, there is a noticeable difference relating to sleep. Whilst the two new Greek treatises, like Vindician's *Letter* and the Latin work *On the Four Humours*, when it is discussed, describe melancholics as sleepy, the *Flos medicinae*, on the other hand, presents them as intellectuals whose spirit is not given to sleep.<sup>88</sup>

The divergence is not due to chance, since it fits within a systematic contrast between the melancholic and phlegmatic temperament. In the texts from the second group, there was an antithesis between the melancholic, who was sleepy, and the phlegmatic, who was lively. It is exactly the opposite in the *Flos medicinae*.<sup>89</sup> The evolution of the image of the melancholic is considerable.

Should we see the influence of *Problem 30.1* in this more positive presentation of the melancholic as an intellectual? Probably.

Thus, the Aristotelian tradition, if less present in the Greek medical tradition, reappeared in the medieval period in the Latin tradition of the

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Ch. Daremberg in Ch. Meaux Saint-Marc, *L'École de Salerne*, Paris, Ballière, 1880, p. 171. Latin text:

Melancholici:

Restat adhuc cholera virtutes dicere nigrae;  
 Quae reddit *tristes*, pravos, perpauca loquentes;  
 Hi vigilant studio, nec mens est dedita somno;  
 Servant propositum, sibi nil reputant fore tutum;  
*Invidus et tristis, cupidus*, dextraeque tenacis,  
*Non expers fraudis, timidus*, luteique coloris.

<sup>87</sup> Certain words are the same as those in Vindician's *Letter* (*tristis, timidus, invidus* vel *invidiosus*), others are synonymous (Vindician: *avarus*; *Flos medicinae: cupidus*. Vindician: *subdolosus*; *Flos medicinae: Non expers fraudis*).

<sup>88</sup> Phlegmatics are described as sleepy in the *Flos medicinae*: "*Hic somnolentus*." Klibansky (quoted in footnote 1), p. 182, highlights the same absence of the noun 'sleepy' for the melancholic in the *Flores diaetarum*, a work dating from the twelfth century. Should we see an evolution within the School of Salerno between the treatise *On the Four Humours* (tenth/eleventh century) and the texts produced in the twelfth and thirteenth centuries?

<sup>89</sup> In Bede (in 752), the phlegmatic is already called *somnolentus*. However, in this description of the melancholic (quoted in footnote 82), nothing is said on sleep or being awake. This is probably also the case in the first version of the *Flos medicinae*, where only two verses were dedicated to each temperament (here the two last verses for melancholics). The addition of the four first verses provides the outline of the melancholic with its intellectual dimension. However, already in the first version the phlegmatic was qualified as *somnolentus*, which contradicts the older work *On the Four Humours*, in which the phlegmatic is lively ("*Phlegma facit hominem vigilantem*").

theory of the temperaments, coming to be attached to the Greek medical tradition of Late Antiquity, which continues to claim to follow Hippocrates, whilst the foundation treatise of the whole theory, the *Nature of Man*, seems forgotten.

PART THREE

THE RECEPTION OF HIPPOCRATIC MEDICINE  
IN GALEN AND IN LATE ANTIQUITY



## CHAPTER THIRTEEN

### GALEN'S READING OF HIPPOCRATIC ETHICS

Galen often refers to the ancients in order to judge the moderns; they are a point of reference, even in an art such as medicine, where progress might negate the need to refer to the men of the past. Amongst these men of the past, the one that occupies the most eminent place in medicine is also the oldest: Hippocrates. Of course, Galen was not the only admirer of Hippocrates during his time. Even if we take into account contemporary detractors of Hippocratic medicine, in particular the Methodists, admiration for Hippocrates and interest in his work was widespread in Galen's time, and not only amongst the Hippocrateans.<sup>1</sup> Nevertheless, Galen's originality comes from the passion with which he reconstructs a model of the man and his work that remains, in his opinion, of utmost relevance to all branches of medicine. We will limit ourselves here to medical morality, for the study of medical ethics has been neglected in studies on Galen's Hippocratism.<sup>2</sup> We will study Galen's reading of Hippocratic ethics successively in two ways: from his *Commentaries* on Hippocrates' works and from a more general study of the Hippocratic model as the ideal doctor.

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<sup>1</sup> See G.E.R. Lloyd, *Methods and Problems in Greek Science* (Cambridge, 1991), 398ff.: "Galen on Hellenistics and Hippocrateans: contemporary battles and past authorities," on the different positions concerning Hippocrates during Galen's time.

<sup>2</sup> On Galen's Hippocratism in general, see G. Harig and J. Kollesch, "Galen und Hipokrates," in L. Bourgey and J. Jouanna (eds.), *La Collection Hippocratique et son rôle dans l'histoire de la médecine: Colloque de Strasbourg, 23–27 octobre 1972*, (Leiden, 1975), pp. 257–274 (with an account of the previous works of J. Mewaldt, K. Deichgräber, L. Edelstein, H. Diller, O. Temkin, pp. 257–259); the article discusses anatomy, nosology, pharmacology and therapy, but does not discuss ethics. W.D. Smith, *The Hippocratic Tradition*, (Cornell publications in the history of science.) (Ithaca and London, 1979), pp. 61–176: "Galen's Hippocratism," P. Manuli, "Lo stile del commento. Galeno e la tradizione ippocratica," in F. Lasserre and Ph. Mudry (eds.), *Formes de pensée dans la Collection hippocratique*, (Publications de la Faculté des lettres / Université de Lausanne, 26) (Geneva, 1983), pp. 471–482; the article by G.E.R. Lloyd (1991), quoted in footnote 1; D. Manetti—A. Roselli, "Galeno commentatore di Ippocrate," in *ANRW* II 37, 2 (Berlin and New York, 1994), 1529–1635; M. Vegetti, "L'immagine del medico e lo statuto epistemologico della medicina in Galeno," *ibid.*, 1672–1717 (particularly 1681 with footnote 18); J. Jouanna and V. Boudon, "Remarques sur la place d'Hippocrate dans la pharmacologie de Galien," in Armelle Debru (ed.), *Galen on Pharmacology, Philosophy, History and Medicine Proceedings of the 5th International Galen Colloquium, Lille, 16–18 March 1995*, (Studies in ancient medicine, 16) (Leiden, 1997), pp. 213–234.

Surprisingly, Galen does not comment on any of the treatises of the Hippocratic Corpus that modern scholars qualify as deontological. Indeed, if we refer to the fifteen commentaries that Galen lists in his *On my Own Books* (*Aphorisms, Joints, Fractures, Prognosis, Regimen in Acute Diseases, Wounds in the Head, Epidemics 1 and 3, Epidemics 2, Epidemics 6, Humours, Surgery, Airs, Waters, Places, Nutriment, Nature of Man*), we note the absence of five deontological treatises from the Hippocratic Corpus (*The Oath, Law, Physician, Decorum and Precepts*).<sup>3</sup> This does not mean that Galen was not interested in Hippocratic ethics, and we will see in his existing commentaries that he tackles ethical questions. However, it is important to account for the absence from this list of the deontological treatises from the Hippocratic Corpus, which cannot be fully explained. Concerning the formation of the Hippocratic Corpus, we must divide the treatises into two groups: first, the *Oath and Law*; then, the three treatises *Physician, Decorum and Precepts*. It is clear that the *Oath and Law* formed part of the Hippocratic Corpus in Galen's time as Erotian, who lived during Nero's reign (and so a century before Galen), quotes the *Oath and Law* amongst Hippocrates' works and places these two treatises in the category of works relating to the art (with two other treatises, *The Art and Ancient Medicine*).<sup>4</sup> By contrast, the three treatises *Physician, Decorum and Precepts* did not form part of the Hippocratic Corpus during Erotian's time, and the situation had probably not changed a century later during Galen's time. In any case, Galen does not make reference to any of these three treatises, even if certain topics Galen discusses in his reading of Hippocratic ethics might relate to certain passages from them.<sup>5</sup> He might not have known them or, if he did know them, he may not have been sure about their attribution to Hippocrates.

Thus, the *Oath and Law* formed part of the traditional Hippocrates known by Galen and, like Erotian, he should have recognised their authenticity. However, he does not mention in his bibliography any commentary on

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<sup>3</sup> On Galen's commentaries on Hippocrates, see D. Manetti—A. Roselli, "Galeno commentatore di Ippocrate," quoted in footnote 2.

<sup>4</sup> See the list of treatises in E. Nachmanson (ed.) *Erotiani vocum Hippocraticorum collectio cum fragmentis* (Göteborg, 1918), p. 9.

<sup>5</sup> Criticism of the love of money (see *infra.*, p. 233ff.); doctor-philosopher (see *infra.*, p. 238); the 'philanthropic' doctor (see *infra.*, pp. 238–240). However, despite these similarities concerning medical ethics, there are also differences (Galen's ethical rigor compared to the flexibility of Hippocratic ethics), and even contradictions (particularly on the important problem of knowing when to tell or not tell the patient the truth; see *infra.*, p. 230, n. 39). When Galen discusses ethical topics similar to those found in later Hippocratic treatises, we do not note an influence of Hippocratic writings on Galen (nor an inverse influence), but rather similarities in these *topoi* that are not, in any case, found only in Galen.

these two treatises. Moreover, he does not seem to make direct reference to either of them in the rest of his work. Thus it is paradoxical that Hippocrates' *Oath*, which became the veritable basis of western medical ethics, should be so remarkably absent from Galen's reading. However, we must make an important qualification here that could eventually solve this paradox. The Arabic tradition knew a commentary by Galen on the *Oath*, a commentary written in Greek that was part of a book translated into Syriac in the ninth century by the great translator Ḥunain ibn Ishaq, and then from Syriac into Arabic by two of his students.<sup>6</sup> In this commentary, the existence of the *Oath* in written form was connected (and rightly so, in my opinion) with the growth of the medical school of Cos, when students from outside were initiated into the family of the Asclepiads. It is still debated whether this commentary, known only by fragments, is authentic or not; the current trend is to lean towards its authenticity.<sup>7</sup>

Even if Galen did not write an entire commentary on a Hippocratic deontological treatise, or if this commentary has not been preserved—supposing that the *Commentary on the Oath* is authentic—ethical discussions are nevertheless present in his existing commentaries. Galen highlighted the main points where the Hippocratic treatises tackle either the purpose of the medical art or the relationship between the doctor and patient, and discussed the ethical principles raised by the Hippocratic text. Without aiming at an exhaustive study, I will focus on some of the most significant passages concerning the purpose of the art and the issues concerning the relationship between doctor and patient.

On the purpose of the art, the most famous passage in the Hippocratic writings commented on by Galen is of course the maxim where the author of *Epidemics I* says: "In disease, two things must be done: be useful, or do no harm."<sup>8</sup> It is worth citing Galen's comments on this maxim in full:

<sup>6</sup> Ḥunain ibn Ishaq, *Risālah*, n. 87 (ed. G. Bergsträsser, in *Abhandlungen für die Kunde des Morgenlandes* 17, 2 [1925], 32).

<sup>7</sup> The fundamental study is F. Rosenthal, "An Ancient Commentary of the Hippocratic Oath," in *Bulletin of the History of Medicine* 30 (1956), 52–87; cf. his opinion on the problem of authenticity p. 86, "Galen's authorship can be neither confirmed nor rejected"; see also G. Strohmaier, "Asklepios und das Ei," in R. Stiehl and H.E. Stier (eds.), *Beiträge zur Alten Geschichte und deren Nachleben. Festschrift für F. Altheim*, (Berlin, 1970), pp. 143–153 (= 448–455), who leans towards its authenticity, drawing on the critical judgement of Hunain (145: "So ist es m. E. doch wahrscheinlicher, dass die erhaltenen Fragmente auf Galen selbst zurückgehen"). V. Nutton, "What's in an Oath," *Journal of the Royal College of Physicians of London* 29 (1995), 518–524 (520 and n. 12, where he refers to "Beyond the Hippocratic Oath," 20), accepts its authenticity.

<sup>8</sup> Hp. *Epid.* 1.5, 2.634,8–636,1 L. (= 1.190,2f. Kuehlewein).

I for one thought previously that this maxim was insignificant and that it was not worthy of Hippocrates. Indeed, I thought that everyone understood that the doctor should do the best for his patients, and certainly not harm them. But when I saw reputable doctors quite rightly charged for what they had done whilst performing a phlebotomy, in bathing someone or administering a drug, or wine or cold water, I understood that this may have happened to Hippocrates himself, and that in any case it necessarily happened to many other doctors in his time; and from that moment, I considered, if by chance I had to administer some powerful drug to a patient, to examine beforehand myself not only how I would be useful in obtaining my aim, but also how I would not harm him. Thus, I have never done anything without beforehand taking care, in case I do not achieve my aim, of not harming the patient in any way. By contrast, some doctors, like those who throw a dice, tend to administer remedies to patients which, if they do not work, cause them great damage. For those who learn the art, I know that, as it was for me, the maxim 'be useful or do no harm' seems not to be worthy to have been written by Hippocrates; but for those who subsequently practise medicine, I know very well that the force of the phrase will be clear; and if it occurs that after an erroneous use of a strong drug a patient dies, they will understand most clearly the force of what Hippocrates advised.<sup>9</sup>

This charmingly personal commentary demonstrates the evolution of Galen's judgement on this Hippocratic maxim. First, when he was a medical student, he held a certain contempt for a maxim that seemed to him to set out an obvious fact, to the extent that he did not judge the idea worthy of Hippocrates; then, there is a change of heart following the experience of medical practice when he discovers, through the failure of reputable doctors, the importance of this maxim's negative dimension ("do no harm"), and where he defines, on the basis of this Hippocratic maxim, a method which he subsequently applied to treatment, a method which we could define as implicit prognostic treatment. Before choosing a treatment, Galen calculates in advance the harmful effects that each of the possible remedies could eventually cause the patient in case it fails, and he chooses the remedy that will not be harmful. He distinguishes himself here from doctors that trust in chance and play with the life of the patient like a throw of the dice. Hippocrates' ethical advice, whose value was discovered by Galen through practical, rather than theoretical, means, is the basis of Galen's own method, always choosing his treatment according to the patient's interest. From this first important example, we can see how Galen's reading of

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<sup>9</sup> Gal. *Commentary on Hippocrates' Epidemics* 1 2.50 (17A.148f. K. = pp. 76,29–77,15 Wenkebach-Pfaff).

Hippocratic ethics can exceed, in some cases, the level of a commentary and explanation, to the extent that it becomes the point of departure for Galen's rediscovery of the value of this ethics and for an innovative assimilation that, whilst respecting the spirit of Hippocratic ethics, formalises it into a viable method for all cases. Since Galen constructed from this maxim an indispensable method for any decision on treatment, it is not surprising to find reference to it in his therapeutic treatises. Thus, in the introduction to his treatise called *The Composition of Drugs According to Places*,<sup>10</sup> Galen criticises doctors who, using remedies without any method (χωρίς μεθόδου) against alopecia, sometimes fail and cause significant damage (βλάπτουσιν ισχυρώς). He contrasts his own attitude in the following way:

By contrast, as far as I am concerned, I have always followed Hippocrates' recommendation and tried very hard to exercise the art in such a way that the drug administered, according to what the great man wrote, is either useful or does no harm (ὠφελείν ἢ μὴ βλάπτειν).<sup>11</sup>

The reference to the passage of *Epidemics* 1 is clear, although Galen is content to mention Hippocrates without being precise about which work, and Galen's position on treatment is comparable to that found in his *Commentary On Hippocrates' Epidemics* 1. We note above all two recurring features: the insistence with which Galen proclaims his continual fidelity to the Hippocratic precept, and his desire to distance himself from other doctors who do not respect this precept. The presence of the word 'method' (μέθοδος) in the second passage is new, and did not appear in his *Commentary*. Galen accuses those who do not observe the Hippocratic principle of practising 'without method'. Thus, Hippocrates' ethical precept is well incorporated into Galen's method of treatment.<sup>12</sup>

The famous phrase of *Epidemics* 1 on the purpose of the medical art is followed by a no less famous sentence on the three elements that comprise the medical art and on the relationship between them: 'Ἡ τέχνη διὰ τριῶν, τὸ νόσημα καὶ ὁ νοσέων καὶ ὁ ἰητρὸς: ὁ ἰητρὸς ὑπηρέτης τῆς τέχνης: ὑπεναντιοῦσθαι

<sup>10</sup> 1.1, 12.381,4–7 K.

<sup>11</sup> Ibid., 381,4–7 K.

<sup>12</sup> To conclude Galen's reading of this Hippocratic precept in the therapeutic treatise *The Composition of Drugs According to Places*, we add that he returns to it for a second time in the course of the treatise and adds a nuance to his egocentric view of the history of medicine: he recognises that the successors of Hippocrates followed this precept and he contrasts them with certain modern doctors who treat patients without method (6.8, 12.965,11–15 K.). For more details on the reference to Hippocrates in these two passages of Galen's pharmacological treatise, see J. Jouanna and V. Boudon, "Remarques sur la place d'Hippocrate dans la pharmacologie de Galien," quoted in footnote 2.

τῷ νοσήματι τὸν νοσέοντα μετὰ τοῦ ἰητροῦ, “The art comes about by three elements: the disease, the patient and the doctor; the doctor is the servant of the art; the patient should oppose the disease with the help of the doctor.”<sup>13</sup> This prompts Galen to a discussion of the second important aspect of medical ethics after the purpose of the art, i.e. the relationship between doctor and patient. Here is Galen’s commentary:

He (sc. Hippocrates) says that there are three elements in relation to which and through which treatment can occur: first of all, the disease, then the doctor, with these two elements opposing each other and, we might say, struggling and fighting against each other, (i.e.) the doctor and the disease. For the doctor undertakes to overwhelm the disease, whilst for the disease, the stake is to not be destroyed. Over and above these there is the third element, the patient. If he obeys the doctor and follows his orders, he is his ally and he fights the disease; but if he rebels against him, he acts on behalf of the disease and wrongs the doctor on two levels: first, because he reduces the patient-doctor pair to a single person; second, because he has helped the disease, which was previously standing alone. Hippocrates says that two elements are necessarily more powerful than one. It is clear that by abandoning the doctor, the patient helps the disease when, whilst the doctor orders him to abstain from cold drinks, the patient, scorched by fever, is persuaded by the disease to drink; also, if he takes a bath or drinks some wine or does something else that the doctor has forbidden him from doing, he favours the disease by doing what is favourable to it, whilst he betrays the doctor by doing what he forbids.<sup>14</sup>

This commentary allows us to pick out other aspects of Galen’s reading. First, the Hippocratic metaphor that underlies the relationships between the three elements (disease, patient and doctor)—combat—which is, of course, one of the fundamental metaphors of ancient medicine;<sup>15</sup> then, the art of illustrating through specific examples the relationship between doctor and patient as set out in general terms in Hippocratic thought, such as the example of the patient who, drinking cold water contrary to the prohibition of the doctor, works in favour of the disease. Above all, what we notice here is Galen’s slight tendency to distort the conceptual relationship between the patient and doctor expressed in the Hippocratic text. The shift is probably imperceptible to a hurried reader; however, it seems to me to

<sup>13</sup> Hp. *Epid.* 1.5, 2.636,1–4 L. (= 1.190,3–6 Kuehlewein).

<sup>14</sup> Gal. *Commentary on Hippocrates’ Epidemics* 1 2.51 (17A.150f. K. = pp. 76,29–77,12 Wenkebach-Pfaff).

<sup>15</sup> On metaphor in general in Galen, see H. von Staden, “Science as text, science as history: Galen on metaphor,” in P.J. van der Eijk, H.F.J. Horstmanshoff, P.H. Schrijvers (eds.), *Ancient Medicine in its Socio-Cultural Context* 2, (Clio Medica 28) (Amsterdam, 1995), pp. 499–517.

have had an important effect on the traditional reading of modern scholars. The Hippocratic text expounds the three constituent terms of medicine in the order disease, patient and doctor, and discusses the antagonism between the patient and the disease before discussing the assistance of the doctor. Galen, meanwhile, reverses the two terms of patient and doctor in his commentary and insists on the combat of the doctor against the disease. According to Galen, the doctor is the principal adversary against the disease; the patient himself has a secondary role: he is the doctor's ally if he carries out his orders, whilst he actually becomes the ally of the disease when he does not.<sup>16</sup>

We could explain this shift in interpretation as a result of the very natural prejudice in any practitioner convinced of the pre-eminence of his role, but it is also explained by Galen's desire to achieve consistency between ethical passages that belong to different treatises and that Galen attributes to the same author. Indeed, Galen returns to this passage of *Epidemics* 1 in his *Commentary on Hippocrates' Epidemics* 6,<sup>17</sup> but he connects it with another famous passage from the *Aphorisms*, the end of the first *Aphorism*, where it is said: "It is not only the doctor who should behave in conformity to his obligations, but also the patient and the people present."<sup>18</sup> In this passage from the *Aphorisms*, it is the doctor who is quoted first; the patient comes second. However, by placing the two passages of *Epidemics* 1 and *Aphorisms* together, Galen reconstructs a coherent, if twisted or at least simplified, image of Hippocratic deontology: he emphasises the duties of

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<sup>16</sup> This Galenic reading of the Hippocratic text, giving pre-eminence to the doctor over the patient in the struggle against disease, seems to have influenced certain translations that have played a historic role in the interpretation of Hippocrates. Whilst Cornarius in the 16th century, in his Latin translation, renders the text faithfully by respecting the syntax expressing the relationship between the disease, patient and doctor (*Ars ex tribus constat, morbo, aegrotu et medico artis ministro. Aegrotum cum medico adversari morbo oportet*), É. Littré in the 19th century (1840) translated it in a way that the patient becomes, as in Galen, the ally of the doctor: "The art has three components: the disease, the patient and the doctor. The doctor is the servant of the art; the patient must help the doctor combat the disease" ("L'art se compose de trois termes: la maladie, le malade et le medecin. Le medecin est le desservant de l'art; il faut que le malade aide le medecin à combattre la maladie"); cf. also W.H.S. Jones (1923): "The art has three factors, the disease, the patient, the physician. The physician is the servant of the art. The patient must co-operate with the physician in combating the disease." Such modern interpretations seem to be, directly or indirectly, dependent on Galen's commentary on the relationship between the doctor, patient and the disease.

<sup>17</sup> Gal. *Commentary on Hippocrates' Epidemics* 6 4.10 (17B.147,4–6 K. = p. 204,19–21 Wenkebach-Pfaff).

<sup>18</sup> Hp. *Aphorisms* 1.1 (4.458,2–4 L. = p. 98,3–5 Jones).

the patient to aid the doctor against the disease and omits the duty of the doctor to collaborate with the patient against the disease. It is in the context of the doctor's speeches recalling his duties to the patient that Galen's commentary on *Epidemics* 6 introduces this connection between the two Hippocratic passages. Indeed, Galen advises the doctor to explain to the patient what Hippocrates wrote on the subject after a persuasive exordium; it is in this context that Galen quotes the two passages of *Aphorisms* and *Epidemics* 1, comments on them and concludes by saying:

This example should be sufficient for you in order to understand by analogy that there are many other speeches of the same type addressed to the patient on behalf of the doctor.<sup>19</sup>

Thus, the Hippocratic model becomes the specific point of reference that ideally feeds the doctor's conversation with the patient, reminding him and making him understand his duty of obedience.

The Hippocratic model serves as a guide not only for the behaviour of the patient, but also for that of the doctor. In the *Commentary on Hippocrates' Epidemics* 6, Galen dwells at length on the ideal attitude of the doctor in relation to the patient by explaining the following Hippocratic words: "Entering the patient's house, conversation, behaviour, clothing ... the style of hair, nails, smell."<sup>20</sup> Unlike previous passages, we cannot quote Galen's commentary in its entirety because it is too long: five pages of Galen to comment on two lines of Hippocrates! This discrepancy already shows that Galen, by explaining at such length a text that is comprised of simple chapter headings, necessarily re-creates the content.

Two important ideas concerning the doctor's behaviour in relation to the patient emerge from this commentary: the definition of the ideal behaviour of the doctor with a view to obtaining the patient's trust; and the possible or necessary divergences from this ideal behaviour in order to take into

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<sup>19</sup> Gal, *Commentary on Hippocrates' Epidemics* 6 4.10 (17B.147,16–18 K. = p. 205,2–4 Wenkebach-Pfaff).

<sup>20</sup> Hp. *Epidemics* 6.4.7, 5,308,15f. L. (= p. 88,4–5 Manetti-Rosselli); Gal. *On Hippocrates' Epidemics* 6 4.10 (17B.144–152 K. = pp. 203,1–207,21 Wenkebach-Pfaff). On this passage of Galen's commentary, see W. Riese and L. Bourgey, "Les gracieusetés à l'égard des malades. Commentaire de Galien sur *Épidémies* VI, section 4, division 7," in *Revue philosophique de la France et de l'Étranger* 150 (1960), 142–162; the text is translated by L. Bourgey and studied by W. Riese. The passage is partially translated by P. Moraux, *Galien de Pergame. Souvenirs d'un médecin* (Paris, 1985), pp. 114–118. See particularly the study by K. Deichgräber, *Medicus gratosus. Untersuchungen zu einem griechischen Arztbild*, (Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, 1970,3) (Mainz, 1970), pp. 31–51.

account certain aspects of the patient's psychology. We will see first how Galen defines the ideal behaviour of the doctor. Galen condemns excessively superior or humble behaviour, and recommends a middle course that defines the most reasonable attitude of the doctor to obtain the patient's trust. For example, when the doctor arrives to visit the patient, he should avoid being too harsh, which would arouse hatred in the patient, but also too much flattery, which would lead to contempt. By contrast, what the doctor should aim for, in his facial expression, his voice and his attitude, is what Galen calls *semnon*, the measured dignity that should arouse the patient's admiration and trust.<sup>21</sup> What is at the basis of this ideal behaviour is clearly expressed in a phrase that Galen uses when he comments on the doctor's manners: "He must avoid any excess and try to find the perfect measure."<sup>22</sup> The notion of a perfect measure or mean (*μέσον, μεσότης*) is the fundamental rule that dictates the entire commentary on the doctor's entering the patient's house, his manner of speaking, his attitude, his hair style, nails and perfume when visiting the patient.<sup>23</sup> We come now to the second important idea found in his commentary on medical ethics, i.e. the requirement that the doctor take account of the patient's particular psychology. For example, he will adjust the frequency of his visits to the patient's needs; whilst some are irritated by too many visits, others are reassured. Likewise, concerning the doctor's conversations with a patient, it is necessary to take account of the patient's level of education, and not to use solecisms or barbarisms with an educated patient. The result is that the doctor will eventually be able to depart in his behaviour from the perfect mean if the patient is not a man who appreciates the right measure. This surprising affirmation can be clearly illustrated by what Galen says concerning the doctor's clothing:

Clothing. This should also be, following the same reasoning, the perfect mean (*μέση*), neither luxurious to the extent of seeming opulent, nor grimy or too humble, except if by chance the patient himself has no sense of right measure (*ἀμετρότερον*), or if they love luxurious clothes or take pleasure in grimy clothes; in these cases, you will depart from the right mean (*ἀπὸ τῆς μεσότητος*) in order to be more agreeable to the patient, within the limits that you think are most compatible with yourself (*σοι σύμμετρον*).<sup>24</sup>

<sup>21</sup> The term is used twice (17B.146,7 and 13 K. = p. 204,6 and 12 Wenkebach-Pfaff).

<sup>22</sup> 17B.148,13 f. K. = p. 205,15 f. Wenkebach-Pfaff.

<sup>23</sup> On the importance of the notion of the perfect mean in Galen's ethics, see W. Riese, "La pensée morale de Galien," in *Revue philosophique de la France et de l'Étranger* 153 (1963), 331–346 (335 f.).

<sup>24</sup> 17B.149,1–7 K. = p. 205,21–26 Wenkebach-Pfaff.

The ideal is the right mean between being too excessive and too humble. However, in considering whether the patient has a taste for one of the two excesses, the doctor can depart from this perfect mean in order to make his relationship with the patient better; nevertheless, there is a limit to such departure, which is left to the doctor's judgement who should remain, at all time, unlike the patient, a man with a sense of proportion.

In the context of this discussion of the patient's preferences, which may lead the doctor to depart, within limitations, from his normal behaviour, we further find what Hippocrates calls in his *Epidemics* 6, the 'graces' (χάριτες), carried out by doctors for patients. They give rise to an important commentary by Galen, to which we now turn. The principal grace consists in adjusting the treatment by making concessions to the patient in line with his preferences or habits. Here is what Hippocrates says: "(to administer) what does not do great harm or is easily repairable, such as cold, where it is appropriate."<sup>25</sup> Galen's commentary on this passage<sup>26</sup> goes beyond the hermeneutic technique that we have already noted, which consists in explaining Hippocrates by Hippocrates by means of other passages. He compares here the passage from the *Aphorisms* where it is said that "It is preferable for food or drink to be less good, but more agreeable, than better but more disagreeable."<sup>27</sup> More important is the manner in which Galen problematises what is simply stated in Hippocrates. First, Galen clarifies the extent of the problem by contrasting the course of action to be followed by the doctor as a rule, namely here the strict truth, and that of the doctor who in the case of the graces does not follow it but gives in to the desire of the patient. Yet this could imply that the graces do not form part of the art. In order to avoid this possible objection, Galen introduces a distinction not found in the Hippocratic text, between bad and good graces. Bad graces are those of bad doctors, who place themselves in service to the patient's passions in order to obtain the most money. Such graces do not conform to the art,<sup>28</sup> since they imply a complete reversal of roles: the patient is in command of the doctor; it is the reign of passion, satisfying the patient's desires and the

<sup>25</sup> Hp. *Epidemics* 6.4.7, 5.308,14–15 L. (= p. 88,1–2 Manetti-Roselli). On Galen's commentary on this passage, see particularly the study by K. Deichgräber, *Medicus gratus* (see above, n. 20), pp. 13–31.

<sup>26</sup> 17B.135,4 ff. K. = p. 198,1 ff. Wenkebach-Pfaff.

<sup>27</sup> Hp. *Aph.* 2.38, 4.480,17 f. L. (= pp. 116,26–118,2 Jones). On this connection, see P. Manuli, "Lo stile del commento" (see above, n. 2), p. 474: "Si crea una coesione fra le due citazioni sulla base di una concordanza supposta e non dimostrata del senso globale, non di quello letterale."

<sup>28</sup> 17B.136,12 f. K. (= p. 198,21 f. Wenkebach-Pfaff).

doctor's passion for money. By contrast, Galen approves of the graces recommended by Hippocrates and the best doctors. However, he introduces a justification that, whilst being authentically Hippocratic, does not appear in the Hippocratic texts on the graces: the notion of the interest of the patient. This is clear in both his commentary on the *Aphorisms* and his commentary on *Epidemics* 6. Whilst the text of the *Aphorisms* justifies a choice of treatment that might be less beneficial, but more agreeable, with an appeal to the patient's pleasure only, Galen, in his commentary on the *Aphorisms*, is careful to justify this choice not only with a view to the patient's pleasure, but also his interest: "It is not only for the patient's pleasure that this should be done," says Galen, "but also in the belief that it will be more useful to him (ὠφελιμώτερον)."<sup>29</sup> He then gives the medical reason for his assertion: food that is less beneficial, but more agreeable, will be more easily digested. Thus, Galen adds a supplementary and positive foundation to the Hippocratic advice on graciousness by transforming into a beneficial effect something that was in the Hippocratic text probably nothing more than a lesser evil; by doing so, he brings the Hippocratic proposition in perfect conformity with the positive aim of the art according to Hippocrates: to be useful. We could say that Galen, in his reading of Hippocrates, saves Hippocrates by Hippocrates. What we might call here an over-interpretation of the text of the *Aphorisms* can also be seen in the text about graces taken from *Epidemics* 6, because the graces afforded to patients by the best doctors are justified there again by reference to the patient's interest (χρησίμως).<sup>30</sup> Galen was of course not able to demonstrate this by physiological reasons, as in the case of the *Aphorisms*, because giving some drink or food the day before, when it would be better give it the next day, cannot be justified directly by reference to the interest of the patient's health. However, Galen recovers this notion of the patient's interest through the roundabout means of a psychological (and no longer physiological) explanation. The concessions made by a good doctor are justified to the extent that they will allow him to obtain greater obedience from the patient during the rest of the treatment. Therefore, such graces, if they do not cause problems, definitely serve the patient's interests because they facilitate the application of the most important part

<sup>29</sup> Galen, *Commentary on Hippocrates' Aphorisms* 2.38, 17B.537 K.; cf. the repeated use he makes of this explanation in his commentary on the passage of *Aphorisms* in his *Commentary on Epidemics* 6 (17B.135 f. K. = p. 198,11–13 Wenkebach-Pfaff).

<sup>30</sup> 17B.136,14 K. = p. 198,23 Wenkebach-Pfaff: "But (the graciousness) indicated in the *Aphorisms* and the (graces) discussed now (in *Epidemics* 6), are afforded by the best doctors for the benefit of the patients (χρησίμως)."

of the treatment. In Galen's mind, these types of graces provide the occasion for a strict negotiation between the doctor and patient: the doctor will make small concessions only if the patient will promise to obey him for the remainder of the treatment.<sup>31</sup> Thus, Galen seriously limits the range of graces of the Hippocratic doctor in the name of the Hippocratic ideal.<sup>32</sup> Galen here seems more Hippocratic than Hippocrates.

Yet sometimes Galen does not agree with Hippocratic advice. This is the case in a famous passage from *Epidemics* 6 on deceit. Here is the recommendation as given by Hippocrates: "If the ear is painful, wrap up some wool around your finger, pour on some warm oil, then place the wool in the palm of your hand and then place it in the ear until the patient believes something has come out; then deceitfully (ἀπάτη) throw it into the fire."<sup>33</sup> Galen cannot accept that Hippocrates recommended deceit, even if to ease the patient's pain. Thus, to save Hippocrates, the only solution is to contest its attribution to Hippocrates. Galen finishes his commentary saying: "It is better to suppose that this sentence was not written by Hippocrates." Philologically speaking, Galen can draw on another commentator, Dioscorides (first century AD), who, when copying down the passage, marked it with an obelus (†). However, the philological solution adopted by Galen is simply the translation of an ethical demand. Galen, for whom the doctor is the companion of truth,<sup>34</sup> cannot accept deliberate deception as a therapeutic method and consequently cannot accept that his ethical model, Hippocrates, recommended it. He can distance himself slightly from the truth in the practice of medicine, but he cannot turn his back on the truth. This time Galen, to save Hippocrates, is obliged to amputate him.

The question of truth or deceit in the relationship between doctor and patient is discussed by Galen in another passage of the *Commentary on Hippocrates' Epidemics* 6 concerning the patient's talking.<sup>35</sup> Following a simple remark in the *Epidemics* 6 on "the patient's talking" (ἀ δηγεῖται),

<sup>31</sup> On the importance of the patient's obedience in Galen, see H.F.J. Horstmanshoff, "Galen and his patients," in *Ancient Medicine in its Socio-Cultural Context*, ed. P.J. van der Eijk, H.F.J. Horstmanshoff, P.H. Schrijvers (Amsterdam 1995), 183–99 (95).

<sup>32</sup> He also limits them in the name of truth: before conceding graces to patients, the doctor should announce in advance that they will suffer pain (17B.142,8 K. = p. 201,23 f. Wenkebach-Pfaff: προλέγοντα μὲν ὅτι βλαβήσονται).

<sup>33</sup> Hp. *Epid.* 6.5.7, 5.318,1–4 L. (= p. 110,5–8 Manetti-Roselli); Gal. *Commentary on Hippocrates' Epidemics* 6.5.13, 17B.266–269 K. = pp. 282,7–284,6 Wenkebach-Pfaff.

<sup>34</sup> See *infra.*, p. 236.

<sup>35</sup> Hp. *Epid.* 6.2.24, 5.290,4–6 L.; Galen, *Commentary on Hippocrates' Epidemics* 6, 17A.994–995 K. = pp. 115,25–116,7 Wenkebach-Pfaff.

Galen discusses an ethical problem of knowing if it is proper to announce or not the truth of the diagnosis and the prognosis to the patient. Here is Galen's commentary:

Patients tend to talk (διηγείσθαι), which can give indications about their state of mind, so that if we did not know them previously, we can understand from what they say what type of person they are, and we can interact with them in the following way: if you recognise that the individual is sensible and, moreover, is not fearful (δειλόν), you will try hard to tell the truth (ἀληθεύειν), without belittling anything that might happen during the disease; but if you recognise that they are not sensible, and that they are fearful, you will try hard to say graciously what will make him most courageous (εὐθυμότερος), without lying too much (μηδὲν μέγα ψεύδεσθαι); and if occasionally you are pressured due to the extreme cowardice (δειλίαν) of the patient to announce a guaranteed recovery, at least go out and tell the truth (τᾶληθῆ) to those who are taking care of him. Also, try when you are addressing the patients themselves, even if they are extremely fearful (δειλοί), not to announce their recovery in the way in which those who are given to lying (ψευδόμενοι) do this, without adding that you yourself will be the start of this recovery on the condition that he carries out everything properly and that he obeys the orders of the doctors. In this way, he will not be discouraged and you will often tell the truth (ἀληθεύσεις).

Thanks to this commentary on the Hippocratic text, we firstly note the importance that Galen affords ethics in medical practice, since he inserts it into his commentary on a text from which it was absent. We then note that the foundation of Galenic ethics is the demand for truth, which does not seem essential in Hippocrates; or at least we observe a discrepancy in a comparison of the use of the same term in Hippocrates and Galen. In this passage of Galen's commentary, we twice note the use of the verb ἀληθεύειν, 'to tell the truth', to the patient about the disease. This verb is much rarer in Hippocrates (used three times in all the ancient treatises, twice in *Prognostic*<sup>36</sup> and once in *Prorrhetic 2*).<sup>37</sup> Its use is certainly comparable in both Hippocrates and Galen, to the extent that it concerns the doctor telling the truth about the course of a disease; but the problem is very different. In both Hippocratic treatises, the problem is not an ethical one, as in Galen, but a scientific one. To tell the truth for the Hippocratic author of *Prognostic* and *Prorrhetic 2*<sup>38</sup> is to make an exact prognosis. Thus, there is a difference in

<sup>36</sup> Hp. *Prog.* 15, 2.150,14 f. L. (= p. 213,14 Alexanderson); 25, 2.190,2 f. L. (= p. 231,3 Alexanderson).

<sup>37</sup> Hp. *Prorrh* 2.1, 9.6,14 L.

<sup>38</sup> The two treatises could be the work of the same author; see J. Jouanna, "Place des *Épidémies* dans la *Collection hippocratique*: le critère de la terminologie," in G. Baader and

the term's meaning: in Hippocrates, it means 'to tell the truth' in the sense of 'not committing an error', whilst in Galen it means 'to tell the truth' in the sense of 'not lying'. The need for truth in Galen is at the heart of the dialogue between doctor and patient. It is necessary to respect it as much as possible. However, morality has to work in practice, and practicality sometimes leads to divergences from the ideal, as in the case of the graces. The doctor, whilst trying to remain faithful to his ethical ideal of truth, sometimes has to compromise with the personality of the patient; but here the doctor should take into account not the patient's desires, as in the case of the graces, but his feelings, which come from the θυμός. Indeed, it is when the patient is fearful (δειλόν) that the doctor is forced sometimes to deviate from the ideal of truth so that the patient finds courage (εὐθυμότερος). However, Galen is careful to limit and justify such deviations. Even if the patient is fearful, the doctor should not lie too much; and if the patient is extremely fearful and the doctor is forced to tell him that he will certainly recover, the doctor should tell the truth to the patient's entourage instead. Moreover, as in the case of the graces, the doctor should obtain in compensation from the patient his obedience to the prescriptions. Thus, Galen's position on the question of knowing whether to tell the truth or not to the patient is entirely comparable to his position on the graces.

We may now conclude our discussion of this first form of Galen's reading of Hippocratic ethics, i.e. his reading in the *Commentaries*. Beyond the diversity of ethical questions concerning the aim of the art and the doctor's relationship with the patient, and beyond the fragmentation of the questions caused by the genre of the commentary, the coherence of Galen's ethical attitude manifests itself in the following features: implacable condemnation of divergences from the ideal and from the truth motivated by the interest of the doctor and not that of the patient; reserved acceptance of divergences from the ideal that are explained by the desire to please the patient (graces) or to comfort him (problem of the truth), but on two conditions: that the divergences do not harm the patient too much and that the divergences be accompanied by a compensation that will be useful to the patient, namely obedience of the patient to the doctor. In conclusion, Galen inserts in the Hippocratic ethic, whose aim is to be useful to the patient and to cause him no harm, a desire for truth that we might call more Platonic

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R. Winau (eds.), *Die hippokratischen Epidemien*, (Sudhoffs Archiv, Beiheft 27) (Stuttgart, 1989), p. 69f. We can add this use of ἀληθεύειν to the examples I gave to show the connections between these two treatises.

than Hippocratic.<sup>39</sup> Divergences from the truth can be justified only if they serve, directly or indirectly, the interest of the patient.

Galen does not restrict himself simply to commenting on the Hippocratic treatises; in a small synthetic work called *That the Best Doctor is also a Philosopher*, he outlines the ideal doctor, taking Hippocrates as a model. This small work is connected to Hippocrates by Galen in his bibliography. He says: "There is also another short work connected to Hippocrates, in which I show that the excellent doctor should also be a philosopher."<sup>40</sup> This short work was probably written late in Galen's output, associated with Galen's final commentaries on Hippocrates, those on *Nature of Man and Airs, Waters, Places*.<sup>41</sup> This work will serve as the basis for the second part of our study, analysing how the fundamental concepts of medical ethics are organised within the image of the ideal doctor outlined by Galen from the life and work of Hippocrates.<sup>42</sup>

<sup>39</sup> On Galen's Platonism, see Ph. De Lacy, "Galen's Platonism," in *AJPh* 93 (1972), 27–39. On the ethical problem of whether to tell the truth or not to the patient, Galen contrasts with the later deontological treatise of *Decorum (Decent.)* 16 (9.242,5–8 L. = p. 29,17–19 Heiberg), which declares: "Nothing must be revealed to patients about what will happen or what threatens them; for patients have been made worse by telling them the prognosis of what is threatening them or what will happen."

<sup>40</sup> Galen *Libr. prop.* 6, p. 114,2–5 Mueller.

<sup>41</sup> See E. Wenkebach, "Der hippokratische Arzt als das Ideal Galens," *Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin*, Bd. 3, Heft 4 (1932–1933), 155 [363]–175 [383], particularly 160 [368], where the author draws on numerous allusions to *Airs, Waters, Places* contained in the work to place it after the redaction of the *Commentary on Hippocrates' Airs, Waters, Places* which closes the production of Galen's commentary of Hippocrates: "It is natural to suspect that Galen wrote the work after the completion of his commentaries on Hippocrates, i.e. during the last decade of his life at Rome." J. Ilberg, in his article on the chronology of commentaries on Hippocrates (in *RhM* 44 [1889], 207–239), does not mention this work. Cf. also H. Diller, "Zur Hippokratesauffassung des Galen," in *Hermes* 68 (1933), 167–181, particularly 180: "In any case, we can place the writings π. φύσιος ἀνθρώπου and π. ἀέρων, which played a crucial role in Galen's image of Hippocrates in his later life, before Galen's *On my Own Books* (scr.min. 2.114, 2 ff.), in which the books appear and are noted for their small size and connection with Hippocrates. The commentary on π. φύσιος ἀνθρώπου, and probably that on π. ἀέρων, both written at about the same time, and both rather late, would constitute the *terminus post quem*."

<sup>42</sup> For the Greek text of this treatise, see, besides the edition of I. Mueller in the *Scripta minora* 2 (Leipzig, 1891), 1–8, that of E. Wenkebach in the article quoted in the preceding footnote, 170 [378]–175 [383]; see also the Arabic translation, translated into German by P. Bachmann (1965). There is a French translation by Ch. Daremberg in Galen, *Œuvres anatomiques, physiologiques et médicales* 1 (Paris, 1854), 1–7. \* [A new critical edition with French translation and notes was recently published by V. Boudon-Millot, *Galen. Introduction générale. Sur l'ordre de ses propres livres. Sur ses propres livres. Que l'excellent médecin est aussi philosophe* (Collection des Universités de France. Série grecque, 450) (Paris, 2007)].

We begin with the issue with which the treatise opens. Galen begins with what seems to him to be a surprising observation, namely the contrast that he observes in the majority of his contemporary doctors between the admiration that they hold for Hippocrates, considered as the first amongst all doctors, and their inability to imitate him, doing in reality everything contrary to what Hippocrates recommends. Galen undertakes to look into the reason why. In other words, how to explain the inferiority of modern doctors compared to Hippocrates, the first amongst doctors (in both senses of time and stature)? Galen's investigation draws on a general study of the causes of success and failure, not only in medicine but also in all the other activities of man, both intellectual and physical. Galen illustrates his study with an example of athletes. According to him, there are two causes of success and failure (chapter 2):

"I find," he says, "that all success comes to men because of will and ability (βουλήσει τε και δυνάμει); anyone deprived of one of these two qualities will also necessarily fail in his aim."<sup>43</sup>

The distinction between these two qualities is fundamental to the rest of his explanation, since modern doctors' inferiority compared to Hippocrates can be explained theoretically either by the absence, in modern doctors, of both these two qualities, or the absence of just one of them. Galen believes that there is no reason for modern doctors to be inferior to Hippocrates for their ability (δυνάμει). Here is what he says (chapter 2):

The idea that any (modern doctor) does not possess a natural intellectual ability (δύναμιν ... ψυχικήν) fitting to receive an art so dear to man does not seem to me to have a reasonable foundation, since the world is the same now as it was then, the order of the seasons has not changed, the course of the sun is still the same, and no star, whether fixed or wandering, has undergone any change.<sup>44</sup>

In this sentence, we can clearly see what Galen understands by δύναμις and the reason why δύναμις should not be lacking in modern doctors. Δύναμις is a natural ability; in the case of the athlete, it is the natural ability of the body, and in the case of the doctor, the natural ability of the mind. In the case of the doctor, his natural ability of intelligence allows him to acquire and discover medical knowledge. Since it is a natural quality and the order of nature has not changed, there is no reason to think that this natural ability has reduced. Between Hippocrates and the times of the moderns, nature

<sup>43</sup> P. 3,6–8 Mueller (= p. 171,21f. Wenkebach).

<sup>44</sup> Pp. 3,18–4,2 Mueller (= p. 172,6–11 Wenkebach).

has remained a stable element; historic decline is not due to nature, which remains invariable. By contrast, if success depends solely on natural ability, there should have been progress between Hippocrates and the moderns. Since natural ability is unchanged, modern doctors benefit from an advantage over Hippocrates: the knowledge of discoveries that he made over his lifetime, which Galen's contemporary doctors can appropriate rapidly, leaving them more time to make other discoveries. If we only consider *δύναμις*, the medical art should have progressed between Hippocrates and the moderns, and not declined. Thus, only *βούλησις* ('desire') can remain as the cause of the decline. However, Galen continues with his analysis by making a division between two causes underlying this inferiority of modern doctors' *βούλησις*: the bad life-style of modern people and their desire for money. Here is what Galen says (chapter 2):

Thus, it is reasonable to think that it is due to the bad regimen (*διὰ μοχθηρὰν τροφήν*) that men follow now and due to their preference of wealth over virtue (*διὰ τὸ τὸν πλοῦτον ἀρετῆς εἶναι τιμιώτερον*) that there is no man similar to Phidias amongst sculptors, or Apelles amongst painters or Hippocrates amongst doctors.<sup>45</sup>

Thus, it is clear that the decline of the medical art between Hippocrates and doctors in modern times, like the decline in other arts such as painting or sculpture, has a moral explanation. Galen goes on to discuss in turn each of the two aspects associated with the decline of *βούλησις*.

First, the love of money. Galen sees an antagonism between the love of money and the practice of the art of medicine. He says (chapter 2):

For it is certainly not possible to seek money and at the same time practice an art as great (as medicine), rather it is inevitable that anyone who strives intensely for one of these activities neglects the other.<sup>46</sup>

In painting the portrait of the ideal doctor who restrains himself to a natural limit of wealth (i.e. that which permits him to meet his basic needs), Galen refers to the life of Hippocrates, which serves as his model (chapter 3):

And most certainly if such a doctor exists, he will scorn Artaxerxes and Perdiccas; he will never even see one of them, whilst the other he may perhaps treat when he is ill and needs the art of Hippocrates, but he will not think it right to remain with him all the time, and instead he will provide treatment to the poor of Cranon, Thasos and the other towns.<sup>47</sup>

<sup>45</sup> P. 4,3–7 Mueller (= p. 172,11–14 Wenkebach).

<sup>46</sup> P. 4,18–21 Mueller (= pp. 172,22–173,1 Wenkebach).

<sup>47</sup> P. 5,6–12 Mueller (= p. 173,6–10 Wenkebach).

This portrait of an Hippocrates who was disdainful of money and a doctor of the poor is evidently a reconstruction drawn not only from biographical information but also from his own work. As for Galen's use of Hippocrates' own work, we find allusion to patients from Cranon and Thasos in the *Epidemics* and, although these patients might have been slaves, there is nothing to indicate that doctors treated poor people out of preference; we never find the word πένης, 'poor', in the *Epidemics* to describe patients treated by Hippocratic doctors, whether from Cranon, Thasos or elsewhere.<sup>48</sup> By a very significant discrepancy in vocabulary, Galen moulds the image of Hippocrates according to the needs of his own demonstration. Moreover, Galen fails to mention something he knew very well from Plato's *Protagoras*, i.e. that Hippocrates, like Phidias or Polycletus, taught his art for remuneration.<sup>49</sup>

To finish with the Galenic image of an Hippocrates disdainful of money, we note that this image actually agrees with what the later deontological writings of the Hippocratic Corpus recommend. Indeed, a connection was made a long time ago (for example by Daremberg in 1854) with the treatise *Precepts*, where the author makes the following recommendations to a doctor concerning fees: "As for the fee, think only of the desire for education. I urge you not to be too unkind, but to consider carefully the patient's fortune or means. Sometimes give your services for nothing, calling to mind a previous benefaction or the present motive of reputation."<sup>50</sup> However, Galen did not know this text, or did not recognise it as authentic.

Thus, Galen found this first ethical condition necessary for being a true doctor, the disdain for money, in Hippocrates. It is the love of money that characterises modern doctors who, according to Galen, merit the name of 'drug sellers' rather than 'doctors'. This diatribe against money-hungry doctors is a frequent theme in Galen. For example, in *The Therapeutic Method*, we find the paradoxical case of rich men who are less well treated for plethora than poor people, in part because the doctors of rich men hope to boost their fees for the daily treatment they carry out, which actually does more harm than good.<sup>51</sup>

<sup>48</sup> Cranon is quoted in the group *Epid.* 2–4–6 (once in *Epid.* 2, twice in *Epid.* 4 and twice in *Epid.* 6). Thasos is quoted primarily in the group *Epid.* 1–3 (five times in *Epid.* 1, and six times in *Epid.* 3); it is also found twice in *Epid.* 6 and once in *Epid.* 7.

<sup>49</sup> Plato, *Prot.* 311b–c.

<sup>50</sup> Hp. *Praec.* 6, 9.258,5–8 L.; Transl. Jones, LCL, modified.

<sup>51</sup> Gal. *Meth. med.* 11.15 (10.783,8 ff. K.).

The second fault with which Galen explains the inferiority of modern doctors in his treatise *That the Best Doctor* is bad regimen. What Galen understands by this is drunkenness, rich food and sex. However, it is useful to understand the reason behind this moral condemnation. Whilst the condemnation of the love of money is explained by the desire to preserve the patient's interests, the condemnation of an unregulated life is explained by the desire to preserve the doctor's competence; for Galen, an unregulated life is incompatible with the love of effort necessary to master any area of expertise.<sup>52</sup> In an important sentence defining the true doctor, the double ethical need (disdain for money and a love for work and self-control) is intimately linked with the requirement of truthfulness:

It is necessary that this doctor [sc. the one who is like Hippocrates] will not only disdain riches (χρημάτων καταφρονεῖν), but also will be completely devoted to work (φιλόπονον ἐσχάτως). It is not possible to be devoted to work when he is intoxicated, when he is full of food or when he is given over to love or when, to put bluntly, he is a slave to sex and his stomach. Thus, the true doctor is a friend of self-control (σωφροσύνης ... φίλος) and also a companion of truth (ἀληθείας ἐταῖρος).<sup>53</sup>

Both for the second moral quality of the ideal doctor (love of work) and for the first (disdain of money), Hippocrates is used as a model. Hippocrates proved his love of effort by leaving his native island to travel all through the cities of Greece with a view to verifying by experience what he had been taught.<sup>54</sup> Galen uses his knowledge of Hippocrates' work, in this case the treatise *Airs, Waters, Places*, to infer the moral qualities of its author. Galen could also find praise for the love of effort in one of the two deontological treatises of the Hippocratic Corpus known to him, *Law*. Indeed, the φιλοπονήη is one of the necessary qualities to be a good doctor, in addition to nature. As *Law* puts it nicely, teaching needs to be well implanted in nature in order to bear fruit. This moral quality, essential in Galen's eyes, is necessary in all the stages of a doctor's life, first in his theoretical training, but above all in

<sup>52</sup> An unregulated life is also contrary to the preservation of acquired competence; compare *De optimo medico cognoscendo* 9.18, p. 113,8–11 Iskandar: "I think that even a man with the knowledge and insight of Hippocrates would have quickly forgotten all his knowledge if he had been distracted by good food, abundant wine, frequent travels, hanging about the doorsteps of the rich, and other distractions, all of which are useless for medicine."

<sup>53</sup> P. 6,4–10 Mueller (= p. 173,10–22 Wenkebach).

<sup>54</sup> Pp. 5,12–6,6 Mueller (= p. 173,20–25 Wenkebach). Galen alludes elsewhere to another famous episode in Hippocrates' life, the curing of a plague (*Ad Pisonem de theriaca liber* 16, 14.281,8–18 K.); but Galen's admiration for Hippocrates in this passage comes not from his moral qualities, but from the accuracy of his treatment.

his practice. The frequency of the use of the term φιλόπρονος in Galen's work (almost one hundred times) indicates the importance of the theme, since it often characterises the doctor. In the *Constitution of the Medical Art to Patrophilus*, the love of effort is one of the seven necessary conditions for the discovery of the truth; it is the fourth condition listed: "In fourth place," says Galen, "to greatly love effort and to practise his knowledge day and night."<sup>55</sup> However, whilst in his *Constitution of the Medical Art to Patrophilus*, Galen lists all the conditions of success in the search for truth as being on the same level, *The Best Doctor* presents a more structured account of the necessary conditions for being a true doctor. The leading idea here is that the true doctor, in order to learn and practice his art, covers in total the three parts of philosophy: logic, physics and ethics (τό τε λογικόν και τὸ φυσικόν και τὸ ἠθικόν). Logic is the study of the logical method; physics is the study of the body at all its levels;<sup>56</sup> ethics, and what interests us now from the perspective of medical ethics, is precisely what Galen had referred to at the start of his treatise, βούλησις, 'desire', which is divided in the course of the treatise into two branches, one being the disdain of money and the other what is presented sometimes as the love of effort and sometimes as the practice of wisdom. These two virtues, Galen adds, lead necessarily to all the others. Even though this ideal view of the doctor is constantly associated with the Hippocratic model, and even if the true doctor appears as a reincarnation of Hippocrates, the ideal is in fact constructed and structured around a tripartite conception of philosophy that post-dates Hippocrates and which became, through the intermediary of Stoicism,<sup>57</sup> a kind of common place in Galen's time. We might be tempted to compare this Galenic theme that a doctor should also be a philosopher with a deontological treatise from the Hippocratic Corpus where we again find the theme of the doctor-philosopher. In the treatise *Decorum*, we read that it is necessary to combine medicine with philosophy and that the doctor-philosopher is equal to a god. However, what Galen understands by philosophy is more elaborated: whilst the author of *Decorum* lists what we might call moral and

<sup>55</sup> *De constitutione artis medicae ad Patrophilum liber 6*, 1.244,13–15 K.

<sup>56</sup> On Galen's philosophy of nature, see P. Moraux, "Galien comme philosophe: la philosophie de la nature," in V. Nutton (ed.), *Galen. Problems and Prospects* (London, 1981), pp. 87–116.

<sup>57</sup> This division of philosophy into three parts can already be found in the founder of Stoicism, Zenon of Citium (333–262); see Diog. Laert. 7.39 and 40 and Cic. *fin.* 4.4 (= *SVF* 45, 1.15 Von Arnim).

intellectual qualities without order and in the same context,<sup>58</sup> Galen organises the qualities of the ideal doctor into the three areas of philosophy. Galen uses the conceptual framework of a philosophy that post-dates Hippocrates to give structure to what remains unorganised in this Hippocratic treatise of more recent date and which is, in fact, closer to the ancient Hippocratic mentality.

In this comprehensive picture of the ideal doctor as presented in *That the Best Doctor*, it may come as a surprise that we do not find an equally thorough discussion of the relationship between doctor and patient as in his *Commentaries*. It is above all a portrait of the ideal doctor that we are given here. Nevertheless, the doctor's care for the patient is clearly implicit when discussing the disdain of money in a doctor that treats the poor. We also find another term in this work which positively defines, albeit in passing, the relationship between the doctor and patient: φιλόανθρωπος. The art of medicine is described once as τέχνη οὔτω φιλόανθρωπος, "an art also which is also a friend of man."<sup>59</sup> This description is not connected in this work with Hippocrates; but comparison with another work of Galen confirms that Galen saw in Hippocrates the model of the doctor φιλόανθρωπος. Indeed, in book 9.5, 1ff. of his treatise *The Doctrines of Hippocrates and Plato*,<sup>60</sup> Galen recalls, after Plato's *Statesman*, that the aim of the art is the interest of the person for whom it is practised, not of the person who practises it. Thus, the aim of medicine is the health of the patient. However, Galen adds that not all doctors work towards this aim with the same motivation. There are those who do it for love of money or glory, and those who do it for love of man (διὰ φιλοανθρωπίαν). To illustrate this, Galen quotes names. Modern doctors act for love of money or glory, such as the Empiricist Menodotus, whilst most ancient doctors "treated men for the love of men" (διὰ φιλοανθρωπίαν ἐθεράπευον τοὺς ἀνθρώπους); and amongst the ancients, Galen quotes three names: Diocles, Hippocrates and Empedocles. Thus, Hippocrates appears in Galen as the model of doctors who treat men for the love of men and not for

<sup>58</sup> *Decent.* 5, 9.232,11–234,1 L. (= p. 27,4–7 Heiberg).

<sup>59</sup> Chapter 2, p. 3,19f. Mueller (= p. 172,7f. Wenkebach). On the relationship between medicine and 'philanthropy', see K. Deichgräber, *Professio medici. Zum Vorwort des Scribonius Largus*, (Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, 1950, 9) (Mainz, 1950); L. Edelstein, "The Professional Ethics of the Greek Physician," in *BHM* 30 (1956), 391–419; D. Gourevitch, *Le triangle hippocratique dans le monde gréco-romain. Le malade, sa maladie et son médecin* (Bibliothèque des Ecoles Françaises d'Athènes et de Rome, 251) (Rome, 1984), pp. 281–284.

<sup>60</sup> 5.750–751 K. = p. 564,10ff. De Lacy.

the love of money or reputation.<sup>61</sup> This view is of course a reconstruction, for the terms *φιλανθρωπία* and *φιλόανθρωπος* do not appear in the ancient writings of the Hippocratic Corpus.<sup>62</sup> To be sure, these terms are used in two of the three later deontological treatises of the Hippocratic corpus: in *Precepts*, where *φιλανθρωπία* is contrasted, as in Galen, with the love of money and is connected with an authentic conception of the art by means of the famous phrase: “Where there is love of men, there is also love of the art”;<sup>63</sup> and in *Physician*, where the ideal doctor is described by the two adjectives *σεμνός* και *φιλόανθρωπος*, which we also find in Galen’s writings.<sup>64</sup> However, Galen’s view probably does not come from the reading of the later deontological treatises, which he did not know or did not believe to be authentic.

In order to appreciate the importance afforded by Galen to medical ethics and the role that Hippocrates plays in his ethical philosophy, we need only read the conclusion of the treatise *That the Best Doctor*:

If we are to be true followers of Hippocrates, we should first practise philosophy; and if we do, nothing will stop us from being not only like him, but even better than he was, by learning from what he has written and by discovering ourselves what remains to be discovered.

This conclusion shows firstly that Galen considers Hippocrates to be the true doctor-philosopher, whom the modern doctor should try to imitate. We shall not dwell too much on what might seem paradoxical of this view of Hippocrates the philosopher,<sup>65</sup> except that Galen, in order to arrive at this view, resorts to philosophical schemes that post-date Hippocrates and disregards the polemic of *Nature of Man* against philosophy, even though he attributes this polemic to Hippocrates himself. He instead reduces it to a polemic against monism, a polemic of which Galen approved, since monism did not account for combination and change, and consequently for

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<sup>61</sup> L. Edelstein, “The Professional Ethics of the Greek Physician” (see above, n. 59), 408, concludes from this passage that, according to Galen, “philanthropy is not indissolubly joined with the practice of medicine.” We cannot agree with this conclusion. Philanthropy, to the extent that it is the positive face corresponding to the disdain of money, is a necessary ethical component of the true doctor, according to Galen, as the love of effort is the positive face corresponding to a disdain of a loose life.

<sup>62</sup> The remark was previously made by D. Gourevitch, *Le triangle hippocratique* (see above, n. 59), p. 282, in her discussion of ‘La philanthropie, concept nouveau’.

<sup>63</sup> *Hp. Praec.* 6, 9.258,10 L., trans. W.H.S. Jones.

<sup>64</sup> *Hp. Medic.* 1, 9.204,9–10 L.

<sup>65</sup> By contrast, Celsus presents Hippocrates as the first doctor to separate medicine from philosophy; see Celsus, *preface* to the *De medicina* 8.

biological phenomena as evident as pain and generation.<sup>66</sup> From the treatise's conclusion emerges not only the static view of man, but also the dynamic view of the art. Galen expresses the hope that, if modern doctors, despite the admirable character of Hippocrates' work, compete with him in all the domains of medicine, medicine will be able to progress, despite its current decadence. What conditions are missing for this progress to take place? It is not intellectual conditions, because these exist, as we have seen, since the natural ability to learn did not change after Hippocrates. Moreover, modern doctors are in a more favourable position than Hippocrates, since they have inherited his discoveries and can dedicate more time to making new ones than he did. What is missing, then, are moral conditions. The indispensable condition for the progression of the medical art is a moral revival that would cause the desire for money, pleasure or glory to disappear, and replaces it with a desire for work, truth and the love of humanity.

These are the two approaches that we find in Galen's reading of Hippocratic morality, whether reading it through his *Commentaries*, or through his synthetic reconstructions that take Hippocrates as a model of the ideal doctor, for both his life and his works.

We may now conclude on the way Galen read Hippocratic ethics. I will not recall everything that has been said on ethical themes relating to the aim of the art or the relationship between doctor and patient that Galen found in the Hippocratic text or which he transplanted onto the text, nor on the recurring problems he creates by connections and slight changes, nor on the tension between the aspirations of idealism and the needs of practice. However, I would like to highlight the dimension of Galen's reading that he considers as the most important, i.e. the need to implement what he has read and to incorporate this in his own activities. Galen's most important phrase on the levels of reading of Hippocrates can be found in his work *That the Best Doctor*, in his criticism against contemporaries who, despite their admiration for Hippocrates, do not read him at all, or do so badly (chapter 2):

This is why I thought it necessary to discover the reason why all doctors, although they admire Hippocrates, do not read his writings or, if they do read them, do not understand what the text says, or if they are lucky enough to understand, fail to follow the theory in practice because they lack the will to confirm these principles in themselves or to make a habit of practising them.<sup>67</sup>

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<sup>66</sup> See P. Moraux, "Galien comme philosophe" (see above, n. 56), p. 90 and n. 27.

<sup>67</sup> Pp. 2,21–3,6 Mueller = p. 171,17–21 Wenkebach. On Galen's contemporary doctors'

Thus, it is necessary to read Hippocrates and to understand him, but theory must be completed with practice in order to strengthen the Hippocratic teaching and to incorporate it in such a way that it becomes second nature. This is particularly true of ethics, which is of no value except when put into practice. As a result, we now better understand why Galen's ethical comments on Hippocrates include personal perspectives, when Galen gives an example of what he does and castigates his co-practitioners who do not apply Hippocratic precepts in their work. These two aspects of Galen's Hippocratism are as inseparable as the two faces of Janus. Since Galen claims to have applied Hippocrates' ethical principles in his own life, it would be easily tempting to compare his own acts and words. In fact, he did not neglect money in his treatment of patients. In his *On Prognosis*, he recalled having received from the consul Boethus a sum of four hundred pieces of gold for having cured his wife of vaginal discharges.<sup>68</sup> The disdain of glory certainly cannot define Galen's personality.<sup>69</sup>

However, we will leave to one side this anecdotal aspect and finish with a connection that shows that Galen desired himself to be read as he read Hippocrates, comparing the image that he gives of Hippocrates in his work *That the Best Doctor* with that which he gives of himself in his treatise *Affected Parts*. According to *That the Best Doctor*, Hippocrates, thanks to his love of effort over a long studious life, was able to make discoveries; these discoveries will allow doctors, if they know how to read Hippocrates, to assimilate them rapidly and to dedicate the rest of their life to making science progress; and we saw that this reading was only possible for those who put Hippocratic ethics into practice. According to *Affected Parts*, Galen has also made many discoveries over his long life thanks to intensive research, and these can easily be found by reading his works; but there is a necessary ethical condition. According to Galen, only the doctor who "wishes to be famous for the actions of his art and not for his sophistic speeches," can read Galen;<sup>70</sup> it is another way of defining the true doctor.

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ignorance of Hippocrates, see also the *De optimo medico cognoscendo* 5.1, p. 69,4–7 Iskandar: "You will find many famous physicians in our time, of whom people speak favourably, ignorant of any books in which Hippocrates mentioned these (precepts) and unaware of the reasoning behind them."

<sup>68</sup> Galen *Progn.* 8, 14.647,12 K. = p. 116,18 Nutton, with the note p. 179f. relating to doctor's fees at Rome (note to p. 90,22).

<sup>69</sup> For example, see *Progn.* 5, 14.625,8–11 K. (= p. 94,12–15 Nutton): "concerning leading men, the diagnoses and care I gave them were worthy of great praise, and I enjoyed a great reputation with all: the name of Galen was great." See J. Kollesch, "Galen und seine ärztlichen Kollegen," *Das Altertum* 11 (1965), 47–53.

<sup>70</sup> Gal. *De locis affectis* 3,4, 8.146,2–5 K.: "If anyone wishes to be famous for his deeds and

Note that this new definition of the true doctor restores the ethical glory which is condemned elsewhere by Galen himself, on the condition that there is a distinction between a bad glory, due to fallacious speech, and a good glory based on "actions of the art." The essential point is that with regard to both Galen's and Hippocrates' work, reading does not consist solely in learning and understanding, but in action. In conclusion, the ethical dimension in Galen is not only necessary in the practice of medicine, i.e. in the relationship between the doctor and the patient, whether in prognosis or treatment. It is, more profoundly, a necessary condition for the realisation of the progression of the medical art, thanks to the reading of the great exemplary doctors who have made discoveries, above all Hippocrates and Galen himself. Put another way, the deepest message of Galen on the connections between morality and medicine is that medicine, whilst being a science, cannot exist and progress without morality. The good is a necessary condition for the tradition and discovery of the truth.<sup>71</sup>

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not for his Sophist speeches, he can easily read the discoveries that I have made over a lifetime of intense research."

<sup>71</sup> In a comparison between legislators and doctors, at the start of his treatise *On the Power of Purgative Drugs* (*De purgantium medicamentorum facultate*) 1 (11.323,1 ff. K.), Galen revealingly parallels the increase in errors in science and the increase in errors in crime as having one single cause: perversity (*κακία*). The absence of perversity in the ancient period explains why Hippocrates did not have to refute audacious errors, because they did not exist; similarly, ancient legislators did not have to suppress major crimes. However, following the increase of perversity, modern doctors who honour the truth (such as Galen) are obliged to combat these grave errors, just as modern legislators are obliged to combat major crimes.



## CHAPTER FOURTEEN

### GALEN'S CONCEPT OF NATURE

Galen tells us that he had discussed the meaning of the word 'nature' in the fifth book of a work called *Medical Names*, a treatise that is now lost.<sup>1</sup> This loss is regrettable, but it is compensated by Galen's scattered discussions of the meanings of the term, which he sometimes analyses, particularly when he encounters it in the Hippocratic texts on which he is commenting.

In the first part of this paper, we will consider Galen the philologist, and examine some important passages where he discusses the meaning of φύσις ('nature'), or the expression κατὰ φύσιν ('according to nature'). In the second part of the paper we will turn to Galen as a historian of the inquiry into nature, using the important text that serves as an introduction to his *Commentary on Hippocrates' Nature of Man*. We will conclude with Galen the φυσικός, the observer of the works of nature, drawing on a passage from *The Natural Faculties*, where Galen recognises Hippocrates as the first philosopher and doctor to have studied the works of nature.

As this outline shows, I do not intend to write a synthesis of nature in Galen by looking at his work from the outside, a task that is all the less necessary following the recent study by Franjo Kovavic.<sup>2</sup> Instead, this is an attempt to discern Galen's views of nature from within, by following trails found in some of his less well known works. My selection of these texts is fairly personal, and hence contestable, but it is guided by something that is clearly evident throughout his works, namely the extraordinary importance, in Galen's thought, of the figure of Hippocrates—obviously a reconstructed Hippocrates—when he talks about nature at all levels, whether discussing the meaning of the word, the history of inquiry into the primary elements, or the conception of the works of nature.

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<sup>1</sup> Galen tells us this in his *In Hippocratis De natura hominis* (= HNH) 1, Prooemium (CMG V 9, 1, p. 6, 9f. = 15.7,7f. K).

<sup>2</sup> *Der Begriff der Physis bei Galen vor dem Hintergrund seiner Vorgänger* (Stuttgart 2001), 320 p., which includes an extensive bibliography. See particularly P. Moraux, "Galien comme philosophe: la philosophie de la nature," in *Galen. Problems and Prospects*, ed. V. Nutton (London, 1981), 87–116.

Let us start by examining Galen's discussions of the meaning of φύσις, beginning with the joint examination of two passages from his *Commentary on Hippocrates' Aphorisms*. The first is the commentary on *Aphorism 2.34*, where it is said that there is less danger "when the illness is in accordance with the nature (τῆς φύσιος) of the patient";<sup>3</sup> the second is the comment on *Aphorism 3.2*, where it is said that "amongst the natures (τῶν φύσιων), some are well or badly disposed toward summer, others toward winter."<sup>4</sup> These two passages are already connected in Galen's mind because in the latter he refers to the former.<sup>5</sup> Therefore, we will comment on the two passages together. Galen says that the term φύσις has several meanings,<sup>6</sup> and although he does not list these meanings, he establishes a hierarchy and order between them. In his own words, there is a meaning that is 'most important and primary'<sup>7</sup> and which, Galen says, is the sense in which Hippocrates uses the word in several of his works, particularly throughout his treatise *Nature of Man*.<sup>8</sup> We notice here the role of reference point that the treatise *Nature of Man* plays in Galen's mind. According to Galen, this meaning is the most important and primary because it is the one that is most in keeping with the οὐσία ('property, substance') of nature itself.<sup>9</sup> He defines this meaning as being the combination or mixture of the four primary elements,<sup>10</sup> i.e. hot, cold, dry and wet.<sup>11</sup> Galen refers to his treatise *Mixtures* to remind us that whilst there is only one good mixture, there are eight bad mixtures: four in which a single quality dominates, and four in which two qualities dominate.<sup>12</sup> It is clear that this Galenic reconstruction is the product of a systematisation that has nothing to do with Hippocrates.

<sup>3</sup> Hipp. Aph. 2.34: οἷσιν ἂν οἰκείη τῆς φύσιος ... ἢ νοῦσος ἦ = Gal. Hipp. Aph. 17B529–532 K.

<sup>4</sup> Hipp. Aph. 3.2: τῶν φύσιων αἱ μὲν πρὸς θέρος, αἱ δὲ πρὸς χειμῶνα εὖ ἢ κακῶς πεφύκασιν = Gal. Hipp. Aph. 17 B.565–566 K.

<sup>5</sup> Gal. Hipp. Aph. 17 B.565 K: ἐλέγομεν δ' ἐν τοῖς ἔμπροσθεν.

<sup>6</sup> Gal. Hipp. Aph. 17 B.529 K: τῆς φύσεως πολλαχῶς λεγομένης.

<sup>7</sup> Gal. Hipp. Aph. 17 B.565 K: τὸ κυριώτατόν τε καὶ πρῶτον σημαίνόμενον.

<sup>8</sup> Gal. Hipp. Aph. 17 B.529 K.

<sup>9</sup> Gal. Hipp. Aph. 17 B.565 K.

<sup>10</sup> Gal. Hipp. Aph. 17 B.529 K: κράσις ... τῶν πρῶτων στοιχείων.

<sup>11</sup> We should add to this discussion on the meaning of φύσις that found in *In Hippocratis de acutorum morborum victu* (= HVA), CMG V 9, 1, p. 189,22–24 Helmreich = 15.570,1–4 K, where φύσις in Hippocrates is understood in the sense of κράσις. The passage is of interest because, apart from φύσις/κράσις, it explains ξίσις by τῶν μορίων κατασκευή.

<sup>12</sup> Gal. Hipp. Aph. 17 B.565 K. In a person where a single quality dominates, the four harmful elements are hot, cold, dry and wet; and in those where two qualities dominate, the four harmful temperaments are hot and dry, wet and hot, cold and wet and cold and dry.

Besides the discussion of this principal and primary meaning that we find in these two passages from the *Aphorisms*, Galen draws attention to another meaning and refers to a passage in *Epidemics* 1, where we read that “above all, those people died whose nature was inclined towards phthisis.”<sup>13</sup> Galen says that φύσις does not mean here a ‘mixture of elements’, but rather the ‘form of the body’ (τὴν τοῦ σώματος ιδέαν), and he adds: “indeed, φύσις sometimes means that.”<sup>14</sup> Galen adds by way of explanation that the nature of the man who is inclined towards phthisis is that of a man who has a narrow thorax (στενόθωραξ),<sup>15</sup> and this makes it clear that the word, in Galen’s mind, refers to the visible form of the body, or possibly the arrangement of its parts.

I have chosen these two passages from the *Commentary on Hippocrates’ Aphorisms*, which distinguish two meanings of φύσις, partly to demonstrate that Galen’s discussion of the meaning of the word serves not only as a one-off explanation with what we might call a purely philological aim; it also plays a role in Galen’s strategy to be an advocate for Hippocrates in the etymological sense of the word, i.e. to defend Hippocrates against his critics. Galen distinguishes these two meanings of the word φύσις to show that apparent contradictions picked up by commentators in certain passages of Hippocrates in reality stem from the fact that they have not accounted for the different meanings that the word φύσις can have in his writings. Galen criticises these commentators for having committed a mistake “concerning both the truth of things and the opinion of Hippocrates.”<sup>16</sup> Galen’s irritation at wasting his time on pointless discussions about the choice of different, but synonymous, words is well known. However, there are some words about which he was very serious, and the word φύσις was one of these, for it could refer to aspects of reality as distinct as the invisible texture of the body or a visible aspect of its shape.

The choice of these two passages from the *Commentary on Hippocrates’ Aphorisms*, where Galen highlights these two distinct meanings of the word φύσις, is further motivated by the historical importance they possess for the inquiry into the meaning of φύσις in writers after Hippocrates seen through Galen. Indeed, these are the two first meanings distinguished by the Alexandrian commentators of Hippocrates and Galen in the sixth and seventh

<sup>13</sup> *Epid.* 1.1.2. 2.604,7 f. L.

<sup>14</sup> *Gal. Hipp. Aph.* 17 B.532,6–8 K.

<sup>15</sup> *Gal. Hipp. Aph.* 17 B.532,10 K. On the word στενόθωραξ, see *infra.*, p. 290.

<sup>16</sup> *Gal. Hipp. Aph.* 17 B.532,15 f. K: καὶ περὶ τῆς τῶν πραγμάτων ἀληθείας καὶ τῆς Ἱπποκράτους γνώμης.

centuries AD, when they discuss the different meanings of φύσις.<sup>17</sup> They define the first meaning as a ‘mixture’ (κράσις), and the second meaning as the ‘arrangement of the parts’ (μορίων κατασκευή). We can be certain that the two short passages from Galen’s *Commentary on Hippocrates’ Aphorisms* are the source of their teaching. This is because of the examples they choose in order to illustrate each of the two meanings: for the first meaning they choose *Aphorism* 3.2, the very passage where Galen defined φύσις by κράσις in his commentary and, for the second, the example used by Galen in his commentary on *Aphorism* 2.34, i.e. the man with the narrow thorax (στενόθωραξ). The term στενόθωραξ is extremely rare in Greek literature. Apart from the two attestations in Galen, it is used only by the Alexandrian commentators, precisely in their definition of φύσις in Hippocrates and Galen.<sup>18</sup> Therefore, we can be confident that the reflection on φύσις as found in the medical commentators during the second Alexandrian renaissance derives from Galen’s commentary on the best-known Hippocratic text, the *Aphorisms*.

The commentators do not leave it at the two meanings distinguished by Galen in his commentary. They add two others, and so distinguish four meanings: the third meaning is ‘organising ability’ (τὴν διοικοῦσαν τὰ σώματα), and the fourth is the ‘impulse of the souls’ (τὴν ὀρμὴν τῶν ψυχῶν). To illustrate these latter two meanings, they take two Hippocratic statements as an example: for the third meaning they use a statement from *Epidemics* 6: “natures are the doctors of diseases”;<sup>19</sup> and for the fourth, a statement from the treatise called *Nutriments*: “the natures of living beings are not taught.”<sup>20</sup> The source of the Alexandrians’ third definition can be found in the very long and detailed commentary that Galen devoted to this famous phrase in his *Commentary on Hippocrates’ Epidemics* 6. Galen defines the meaning of nature by saying: “by the word φύσις we should understand the ability (δύναμις) residing in the very bodies that were organised by her” (ἐνοικοῦσαν

<sup>17</sup> The five texts that discuss this meaning were conveniently compared by I. Garofalo in “La nature d’Hippocrate chez les Alexandrins,” in *Le normal et le pathologique dans la Collection hippocratique*, Actes du X<sup>ème</sup> Colloque International Hippocratique, oct. 1999, ed. A. Thivel (Nice 2002), 753–765, particularly 755–757. They are Stephanus of Alexandria, *In Gal. Ad Glauc.* (with its summary in Arabic); Palladius of Alexandria, *In Epid. VI* 5.1; Ioannes Alexandrinus, *In Epid. VI* 4.13; Agnellus iatrosophista, *In Gal. De sectis*.

<sup>18</sup> LSJ lists only one attestation in Galen, which is our passage (17 B.532 K.). We should add 17 B.34.13 f. K. See Stephanus Alex. (*In Gal. Ad Glauc.* 22, 8 Dickson = 1.234.17 Dietz) and Palladius Alex. (*In Hipp. Epid. VI*, 2.127,1 Dietz) in the definition of φύσις; cf. Theophilus, *In Hipp. Aph.* 2.361,18 and 2.361,30 Dietz.

<sup>19</sup> *Hipp. Epid.* 6.5.1, p. 100,7 Manetti-Roselli (= 5.314,5 L.).

<sup>20</sup> *Hipp. Alim.* 39, p. 145,12 Joly (= 9.112,3 L.); the text presents a variant compared to the direct tradition: “the natures of living beings” instead of “the natures of all things.”

αὐτοῖς τοῖς σώμασι τοῖς διοικουμένοις ὑπ' αὐτῆς).<sup>21</sup> The Alexandrian commentators retained this last part of the sentence as a definition because they were interested not in the natural ability residing in the body, but rather the organising nature, which is evidently one of the most important meanings in Galen. Unfortunately, I have not been able to find the source of the Alexandrians' fourth definition. However, like the preceding third definition, the Hippocratic sentence that illustrates it is one of the principal citations that Galen takes from Hippocrates on nature; or, if we prefer, one of the Hippocratic pearls on nature that Galen retained in the jewellery box of his memory.

With the explanation of the word φύσις that we find in the first passage of the *Commentary on Hippocrates' Aphorisms*, I would like to compare an explanation of the expression κατὰ φύσιν that we find in a more complex passage from book 6 of *The Doctrines of Hippocrates and Plato*:

The expression κατὰ φύσιν has several meanings, but in this case we should understand it in the following sense: what is produced κατὰ πρῶτον λόγον by nature. What we call that which is produced κατὰ πρῶτον λόγον by nature is that which she intends as an aim (σκοπῶν), and not things that necessarily follow other things. Such movement κατὰ φύσιν exists, regardless whether what is moved is moved by itself or by something else.<sup>22</sup>

There is a clear connection between these two passages because they begin in exactly the same way. In Galen's commentary on the *Aphorisms*, the first sentence explaining φύσις begins with "φύσις has several meanings" (τῆς φύσεως πολλαχῶς λεγομένης);<sup>23</sup> in *The Doctrines of Hippocrates and Plato*, the explanation of κατὰ φύσιν also begins with a comparable genitive absolute "κατὰ φύσιν has several meanings" (πολλαχῶς δὲ τοῦ κατὰ φύσιν λεγομένου). In both passages, a similar statement follows that defines the meaning that applies in the case under discussion. Thus the first passage, "one must understand this here in the following sense" (ἀκουστέον νῦν ἐστὶν αὐτῆς κατ' ἐκεῖνο τὸ σημαίνον), can be compared to the second "this is what we should understand by it now" (τοῦτ' ἀκούειν χρὴ νῦν). In both cases, the demonstratives announce the explanation of the meaning.

<sup>21</sup> Gal. *Hipp. Epid. VI*, 5,1, CMG V, 10, 2, 2, p. 253,19–21 = 17 B.223,6–8 K: δύναμιν δὲ προσήκει νῦν ἀκούειν ἐκ τοῦ φύσεως δνόματος ἐνοικοῦσαν αὐτοῖς τοῖς σώμασι τοῖς διοικουμένοις ὑπ' αὐτῆς.

<sup>22</sup> Gal. *PHP* 6.1,8–9, 2.362,5–9 De Lacy (= 5.507,12–18 K.): Πολλαχῶς δὲ τοῦ κατὰ φύσιν λεγομένου, τοῦτ' ἀκούειν χρὴ νῦν ὁ κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως γίγνεται. Κατὰ πρῶτον δὲ λόγον ἐκεῖνα γίγνεσθαι φαμεν ὑπὸ τῆς φύσεως, ὡν ὡσπερ σκοπῶν ἀντιποιεῖται καὶ μὴ δι' ἀκολουθίαν τινὰ ἑτέροις ἐξ ἀνάγκης ἔπεται. Ἡ τοιαύτη κίνησις κατὰ φύσιν, εἴτ' ἐξ αὐτοῦ κινεῖτο τὸ κινούμενον εἴθ' ὑφ' ἑτέρου.

<sup>23</sup> See *supra*, p. 288 and n. 6.

The explanation of the meaning of *κατὰ φύσιν* given in *The Doctrines of Hippocrates and Plato* can only be understood by reference to its context. Galen tells us that he is engaged in an explanation of words (τὴν τῶν ὀνομάτων ἐξηγήσιν).<sup>24</sup> The explanation of *κατὰ φύσιν* is placed, like a Russian doll, within another explanation of words, the definition of *ἐνέργεια* and *πάθος*. Galen first states the primary meaning of these two terms: *ἐνέργεια* is a movement (*κίνησις*) that comes from what is moved, whilst *πάθος* is a movement coming from something other than what is moved. In the course of the explanation, Galen discusses the other meaning of the two words, and it is in this second definition that we find the expressions *κατὰ φύσιν* ('according to nature') and *παρὰ φύσιν* ('contrary to nature'). *Ἐνέργεια* is defined as a movement *κατὰ φύσιν*, and *πάθος* as a movement *παρὰ φύσιν*. At this very moment, Galen gives his own definition of *κατὰ φύσιν*, which I just quoted: that which is brought about through nature (*ὑπὸ φύσεως*) *κατὰ πρῶτον λόγον*. Since the expression can seem obscure, he adds what it means. It is the aim nature has in mind, and not that which results necessarily from other things. Galen believes that after this definition, the reader will have a clearer understanding of the passage, but he renders things even clearer by giving some specific examples.

It is surprising that Galen gives this definition without providing further commentary, since the expression *κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως* is found in his other works. A study of this expression would be a major undertaking.<sup>25</sup> I will only take some examples, but this rather long detour seems necessary not only to clarify the expression, but above all to judge Galen's manipulation of the meaning of *κατὰ φύσιν*, which itself is quite a common expression. There is a very similar passage to this one in his *Mixtures*.<sup>26</sup> Galen contrasts hair with the eyebrows and eyelashes. The growth (*γένεσις*) of hair varies according to the body's *φύσεις*, defined as *κράσεις* (this is the same definition of *φύσις* that we saw in the *Commentary on Hippocrates' Aphorisms*, where Galen referred to *Mixtures*—thus, the circle is closed), and also according to age and places. By contrast, eyebrows and eyelashes exist from infancy. The terms that Galen uses to define the growth of the eyebrows and eyelashes correspond to the definition of *κατὰ φύσιν* in *The Doctrines of Hippocrates and Plato*:

<sup>24</sup> Gal. *PHP* 6.1,3, 2.360,13 f. De Lacy (= 5.506,6 f. K.).

<sup>25</sup> In his notes to the passage from the *De placitis*, Phillip De Lacy restricts himself, for the expression *κατὰ πρῶτον λόγον*, to a comparison with Nemesius of Emesa, *De natura hominis*

7.

<sup>26</sup> Gal. *Temp.* 2.5, 1.619,8 ff. K.

Their growth (*sc.* eyebrows and eyelashes) does not resemble that of grass, but that of plants, since they (*sc.* eyebrows and eyelashes) are created by nature *κατὰ πρῶτον λόγον* and are not a necessary consequence of the mixtures, as is shown in *The Usefulness of the Parts*.<sup>27</sup>

The connection between these two texts, which use the same positive (*κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως*) and negative (*μη ... ἐξ ἀνάγκης ἔπεται / οὐκ ἐξ ἀνάγκης ἐπομέναις*) expressions, shows the remarkable coherence of Galen's writing in general and his representation of φύσις in particular. It is the nature-Demiurge (φύσις) that is at work, and not the natural phenomena that necessarily result from the different constitutions (φύσεις = κράσεις). However, the passage from *Mixtures* is more specific in its formulation than that of *The Doctrines of Hippocrates and Plato*, as we can see by the comparison with plants, and not with grass. The comparison is found in another work, to which Galen himself refers, *The Usefulness of the Parts*. Indeed, it is in this work<sup>28</sup> that we find, in a more developed form, the allusive comparison given in *Mixtures*, which risks being obscure to an uninformed reader: the apologue developed in the *The Usefulness of the Parts* of the farmed field where there grow seeds (φύττα) planted by the labourer, contrasted with an uncultivated part where weeds (πόαι) grow, clarifies what Galen wishes to say in *Mixtures*. The growth of the eyelids and eyelashes is the work of φύσις, as the growth of the plants is the work of the labourer.<sup>29</sup> To be sure, the apologue of the *The Usefulness of the Parts* does

<sup>27</sup> Gal. *Temp.* 2.5 1.619,10–14 K.: γένεσις γὰρ δὴ ταύταις, οὐχ οἷα ταῖς πόαις, ἀλλ' οἷα τοῖς φυτοῖς, κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως ἀπειρασμέναις, καὶ οὐκ ἐξ ἀνάγκης ἐπομέναις ταῖς κράσεσιν, ὡς καὶ τοῖς περὶ χρεῖας μορίων δείκνυται.

<sup>28</sup> Gal. *UP* 11.14, 2.159,21 ff. Helmreich = 3.907,8 ff. K.

<sup>29</sup> However, we observe a discrepancy between the two treatises: in the *De usu partium*, the contrast is between the eye lashes, the eyebrows and hair on the one hand, and the hair of the armpit and the rest of the body on the other, whilst in the *De temperamentis* it is between the growth of hair and that of the eyelashes and eyebrows. We should also compare a third text concerning the growth of hair, the introduction of the *De compositione medicamentorum secundum locos* (= *Comp. Med. Loc.*) 1.1, 12.379,8–380,9 K., which clearly refers to the *De temperamentis*. We find there: 1.) the comparison with plants; 2.) the contrast between plants that grow through the art and prior decision of the cultivator (*κατὰ τὴν τέχνην καὶ προαίρεσιν τοῦ γεωργοῦ*), and those that grow due to natural causes (*κατὰ τὰς φυσικὰς αἰτίας*); 3.) the comparable contrast between hairs that grow on the head and those that grow on the rest of the body: "as for these latter ones, it is not *κατὰ πρῶτον λόγον* that nature tends to make them grow, but due to some accidental cause. The hairs of the eyelid and the eyelashes showed that they were of no small use to living beings, whilst the hairs of the chin and the genitals seem to exist for a smaller use" (380,1–4 οὐ γὰρ κατὰ πρῶτον λόγον ἢ φύσις αὐτὰς εἴωθε γεννᾶν, ἀλλὰ κατὰ τι συμβεβηκόσ' αἱ γέ μὴν κατὰ τε βλέφαρα καὶ τὰς ὀφρῦς ἐδείκνυτο χρεῖαν οὐ μικρὰν παρέχουσαι τοῖς ζώοις· αἱ δ' ἐπὶ τῶν γενείων τε καὶ τῶν αἰδοίων ἔνεκα μικροτέρων χρεῖων γεγενῆσθαι δοκοῦσι).

not use the phrase *κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως*. However, this formula appears in several places in the treatise and even has, in one passage, a programmatic function. Indeed, it defines the limits of the subject of the work:

We will explain in this treatise not those things that are a necessary consequence of those things that are for a purpose (*ἔνεκά του*), but those that are produced by nature *κατὰ πρῶτον λόγον*.<sup>30</sup>

Galen's intention in *The Usefulness of the Parts* is to discuss parts produced by nature in view of a use, and not those that, like the jejunum, do not serve any need themselves, but are a necessary consequence of other parts that were created in view of a need. We find here the same positive (*τῶν κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως δεδημιουργημένων*) or negative (*Οὐ ... τῶν ἐξ ἀνάγκης ἐπομένων*) expressions that we encountered in *The Doctrines of Hippocrates and Plato* or *Mixtures* as well as the statement, formulated in the *The Doctrines of Hippocrates and Plato*, that nature works with an aim in mind.<sup>31</sup>

I have not translated the expression *κατὰ πρῶτον λόγον*. This expression is remarkable because it does not appear, to my knowledge, in Greek literature before Galen, who uses it thirteen times and, amongst these thirteen times, seven times with the complement *ὑπὸ τῆς φύσεως*, or with *φύσις* as the subject. Daremberg, in the passage of *The Usefulness of the Parts* just quoted, translates it as "(the things that have been created by nature) as part of the original plan." However, when he finds the same expression later, he translates it as "with the principal aim" (10.14), "by a first calculation" (11.13) and "in the first place" (15.8).<sup>32</sup> There is here, to say the least, some lack of consistency. Whether we give the expression a full meaning ("as a principal aim," "by a first calculation"), or an adverbial meaning ("most important," "primordially"), it refers to that which is primary, primordial, principal, essential, as opposed to that which is secondary, accidental or accessory, because it is found in passages in Galen where the expression is contrasted either with "of secondary importance" (*κατὰ δεύτερον λόγον*)

<sup>30</sup> Gal. *UP* 5.3, 1.257,4–8 Helmreich = 3.350,16–351,2 K.: Οὐ γὰρ τῶν ἐξ ἀνάγκης ἐπομένων τοῖς ἔνεκά του γεγονόσιν, ἀλλὰ τῶν κατὰ πρῶτον λόγον ὑπὸ τῆς φύσεως δεδημιουργημένων ἐξήγησιν ἐν τοῖσδε τοῖς ὑπομνήμασι ποιούμεθα.

<sup>31</sup> Compare the use of *σκοπῶν* and here *ἔνεκά του* in the passage from *PHP* quoted.

<sup>32</sup> Ch. Daremberg (ed.) *Œuvres anatomiques, physiologiques et médicales de Galien* (Paris 1854), 1, p. 342: '(les choses qui ont été créés par la nature) dans un dessein primitif'; 1, p. 342: 'dans un but principal'; p. 648: 'par un premier calcul', and 2, p. 156: 'en premier lieu'.

or “accidentally” (κατὰ συμβεβηκός), or another comparable expression.<sup>33</sup> Thus, the work of nature fundamentally relates to that which is primary and primordial.

After this rather long detour, let us return to the text of *The Doctrines of Hippocrates and Plato*, where Galen clarifies the meaning of κατὰ φύσιν. We note with surprise that Galen attributes a unique meaning to this well-known adverbial phrase (he is probably the only author to do so), which usually refers to the conformity to a natural or normal order, by reinterpreting the expression within his understanding of nature-Demiurge, producing in a primordial way the different parts of the body in view of a precise aim: their usefulness.

Thus the definition that Galen gives of κατὰ φύσιν in *The Doctrines of Hippocrates and Plato*, whilst aiming for clarity so as to avoid any misunderstanding on the part of the reader, becomes an instrument of linguistic manipulation: it twists the usual meaning of the words towards his own conception of nature, but it also reduces significantly the extension of what κατὰ φύσιν meant in common usage and, consequently, it extends the domain of παρὰ φύσιν. It goes without saying that Galen does not always keep to this technical meaning and that he knows how to play with the plurality of meanings of this expression, as we can see perfectly in his discussion on the problem whether old age is κατὰ φύσιν or not, in his treatise *Marasmus*.<sup>34</sup> He does not dare to go against the common meaning to the point of saying that old age (which is, to be sure, a πάθος ἐξ ἀνάγκης ἐπόμενον) is παρὰ φύσιν, which he should say in line with its technical meaning. He prefers to interrupt the discussion that he started on the meaning of κατὰ φύσιν by agreeing to say, in accordance with actual usage, that

<sup>33</sup> For the contrast κατὰ πρῶτον λόγον / κατὰ συμβεβηκός, see for example the text quoted in footnote 29 (*in fine*). We even find the expression κατὰ τρίτον λόγον three times in the *De anatomicis administrationibus* (= AA) 6.1, 2.349,11 and 351,3 Garofalo (= 2.542,13 and 543,17 K.) and 6.3, 2.351,29 Garofalo (= 2.545,6f. K.). The passages are very interesting because they establish, with regard to the organs (of nourishment) a more elaborated hierarchy that contains three levels: those that are “of first rank from nature” (πρῶτον λόγον ὑπὸ τῆς φύσεως), those that are “of second rank” and those that are of “third rank.”

<sup>34</sup> Gal. *De marcore* (= *Marc.*) 2, 7.669,6ff. K. Here, Galen recognises that κατὰ φύσιν has several meanings, and he seems to use it in a sense that is closer to common usage. Indeed, although affirming that old age is not a work of nature, but a *pathos* that necessarily follows from the works of nature (τὸ γήρας δὲ οὐκ ἔργον [sc. τῆς φύσεως], ἀλλὰ πάθος ἐξ ἀνάγκης ἐπόμενον), he is happy to call it κατὰ φύσιν and does not think it necessary to continue to examine the other meanings of the expression. Thus, he is happy to call in this passage κατὰ φύσιν that which follows necessarily from the works of nature, which is not the case in the *De placitis*.

old age is *κατὰ φύσιν* to the extent that it accords with the natural order of the development of every living being.<sup>35</sup>

I do not wish to dwell on other, more usual, meanings of *κατὰ φύσιν* and *παρὰ φύσιν*. However, one of them merits mention. It concerns the contrast between the normal and the pathological. For example, in the *Art of Medicine*, we read that “everything is in accordance with nature (*κατὰ φύσιν*) in a healthy body, and contrary to nature (*παρὰ φύσιν*) in a sick body, insofar as it is ill.”<sup>36</sup> This connection was already being formed in the writings of the Hippocratic doctors. Thus, in the treatise *Prognostic*, the rhythm of sleep, which is normal in a healthy state (*κατὰ φύσιν*), serves as a criterion to measure the gravity of the patient’s state;<sup>37</sup> and in *Nature of Man* it is said that the cause of illnesses is the unnatural state (*παρὰ φύσιν*) of the body’s constituting elements.<sup>38</sup> However, the contrast is not as clear in the Hippocratic treatise as it is in Galen, for Galen introduces an intermediary state in the border area (*ἐν μεθορίῳ*) between *κατὰ φύσιν* and *παρὰ φύσιν*, while such a concept of the in-between is unknown in the Hippocratic doctors.<sup>39</sup>

With this first group of texts, where Galen the philologist discusses the meaning of the word *φύσις* or the expression *κατὰ φύσιν*, and where we can glimpse Galen’s most profound thoughts on nature, I wanted to show both that Galen is aware of the issues raised by the diverse meanings of the word and by its more or less technical registers, where ignorance amongst interpreters or readers risks leading to errors of judgement, and also that *φύσις* is tied, in the final analysis, into the unifying notion of the primary and fundamental.

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<sup>35</sup> We even note comparable indecision regarding the use of the expression *κατὰ πρῶτον λόγον*. Whilst in the *De placitis* the work of nature stops at what is *κατὰ πρῶτον λόγον*, it extends to what is *κατὰ συμβεβηκός* in the *De compositione* (for the text, see footnote 29 *in fine*), to the extent that we can detect a certain usefulness in that which is *κατὰ συμβεβηκός*, even if it is weaker than what is *κατὰ πρῶτον λόγον*. Thus, the contrast with what is according to nature is sometimes envisaged as a question of degree.

<sup>36</sup> Gal. *Ars med.* 21, 1.337,6–8 Boudon (= 1.358,7–9 K.).

<sup>37</sup> Hipp. *Prog.* 10, p. 205,9 Alexanderson (= 2.134,5 L.).

<sup>38</sup> Hipp. *Nat. hom.* 2, p. 168,7f. Jouanna (= 6.36,2–4 L.).

<sup>39</sup> The notion of *ἐν μεθορίῳ*, also expressed by *ἐν τῷ μεταξὺ*, in Galen means the border situated between two (contrasted) states that can be mutually transformed into each other, in such a way that it is, to a certain degree, part of both; for this definition, see *De compositione medicamentorum per genera* (*Comp. Med. Gen.*) 7.1, 13.950,10–12 K.: “As in all things that by nature are such that they can be transformed into each other, there is a border that, to a certain degree, is part of both.”

We now turn to the most important text where Galen discusses the meaning of φύσις: the introduction to his *Commentary on Hippocrates' Nature of Man*.<sup>40</sup> With this text, we begin the second part of this paper, concerning Galen's view of the history of philosophical inquiry into nature. Galen here talks about the meaning of φύσις in philosophers whose works are called *On Nature* (Περὶ φύσεως), and above all he goes beyond the philological perspective by connecting this inquiry with a method of analysing φύσις. Galen becomes a historian of philosophy, and we will see how this history of philosophy is seen from a doctor's perspective.

In the introduction, Galen begins by giving the meaning of the word φύσις in the inquiries of the philosophers:

The first point consists in stating the possible meaning of the term φύσις, from which some ancient philosophers took their name and were called φυσικοί. The reason I say this will become clear when you read their writings Περὶ φύσεως. It is clear that they discuss the primary substance (τὴν πρώτην οὐσίαν), a substance which they say is ungenerated and eternal and is at the root of all bodies susceptible to being created and destroyed, and which consists of the elements, which according to their own logic (κατὰ τὸν ἴδιον λόγον)<sup>41</sup> constitute each generated and perishable being, elements which, once known, lead to knowledge of everything which is not known by its own logic (οὐ κατὰ τὸν ἴδιον λόγον), as belonging to each of the substances one by one. For this is what makes a lesson on the nature of each existing thing complete, even if someone explains only one or two constituting principles of a thing.<sup>42</sup>

In a way that might seem paradoxical, Galen compares the definition of nature according to the philosophers to that given by the poet *par excellence*, Homer, and quotes a passage from the *Odyssey* (10,303). This passage provides the first attestation of the word φύσις in Greek literature. It concerns the φύσις of a plant, defined by the poet as having a black root and a white flower. Galen characterises this nature, described by the poet and, after him, by botanists, as the observable nature (τὴν αἰσθητὴν φύσιν), and he contrasts it with the primary nature of the philosophers (ἡ δὲ τοῦτων

<sup>40</sup> See J. Jouanna, "La lecture du traité hippocratique de la *Nature de l'homme* par Galien. Les fondements de l'hippocratisme de Galien," in *Le commentaire entre tradition et innovation*, ed. M.-O. Goulet-Cazé (Paris, 2000), 273–292, also included in this volume as ch. 15.

<sup>41</sup> The expression κατὰ τὸν ἴδιον λόγον is to some extent comparable to κατὰ τὸν πρῶτον λόγον, since it also concerns the idea of the primary and is contrasted with κατὰ τὸ συμβεβηγός; see, for example, *Ad Thrasymbulum utrum medicinae sit an gymnasticae hygieine* 17, *Scripta min.* 3.55,1f. = 5.836,15f. K.: κατὰ τι συμβεβηγός, οὐ πρῶτως οὐδὲ κατὰ τὸν ἴδιον λόγον. It refers to what is primary and not resulting by accident.

<sup>42</sup> Ed. J. Mewaldt, CMG V 9, 1, pp. 3,20–4,7.

ἀνωτέρω καὶ πρώτῃ).<sup>43</sup> In the course of his analysis of the inquiry into φύσις, he quotes archaic, classical and Hellenistic Greek philosophers. He alludes to five pre-Socratic philosophers, which he calls the ‘ancient philosophers’ (τῶν παλαιῶν φιλοσόφων), and quotes them in the following order: Empedocles, Parmenides, Melissus, Alcmaeon and Heraclitus.<sup>44</sup> The presence of Melissus of Samos in this list is not surprising, for he is also quoted at the start of Hippocrates’ *Nature of Man*, the text that forms the object of Galen’s commentary.<sup>45</sup> As for the classical period, Galen mentions Plato and Aristotle. Hellenistic philosophy is represented by a single name, Epicurus. Surprisingly, there is no mention of the Stoics, whose philosophy of nature Galen considers to be an indirect heritage of Hippocrates.<sup>46</sup> To conclude this survey of the history of the philosophy of nature, we note that Galen distinguishes between the vocabulary used by the ancient philosophers and their successors to refer to the elements. He noted that the ancients did not use the term στοιχεῖον (‘principal element’), whilst its use became usual among their successors.<sup>47</sup> He also knows that the homeomers are an Aristotelian designation. This discussion of the term φύσις in Greek philosophy shows that Galen pays great attention to the history of the language of philosophy and the appearance of certain terms in the course of this history. However, this attention is not systematic, for although Galen recalls that the philosophical treatises were known under the title Περὶ φύσεως, ‘On nature’, he uses the term φυσιολογία to refer to philosophical inquiry into nature, without pointing out that this is a later term. Indeed, the ancients spoke of περὶ φύσεως ἱστορία, as Socrates did in the *Phaedo*;<sup>48</sup> the term φυσιολογία became usual to refer to this research only from Hellenistic philosophy, particularly in Epicurus.<sup>49</sup>

<sup>43</sup> The expression of observable nature, i.e. perceptible by the sensory organs, does not seem to be found elsewhere in Galen. It is probably the desire to integrate the Homeric use in this continuity of research on φύσις, whilst distinguishing the philosophical use, which led Galen to qualify it as such.

<sup>44</sup> Compare the list of the *De elementis* (= *Hipp. Elem.*) 1.9,27, CMG V 1, 2, p. 134,17–19 De Lacy = 1.487,12–14 K.: we find the same names, except that Heraclitus is not included, while Gorgias and Prodicus are added.

<sup>45</sup> *Hipp. Nat. hom.* 1.166,11 Jouanna (= 6.34,6 L.).

<sup>46</sup> See *infra*, p. 300.

<sup>47</sup> See also *Hipp. Elem.* 1.9, 25,134,13 ff. De Lacy = 1.487,8 ff. K.

<sup>48</sup> Pl. *Phaedo* 96a5 ff. (‘When I was young, I was tremendously eager about this knowledge which they call investigation of nature’).

<sup>49</sup> Epicurus presents the first occurrence in extant Greek literature of φυσιολογία used in the general sense of ‘science of nature’; see *Letter to Herodotus*, ed. J. Bollack, 37, 2 and 3 and 78, 2. However, two composite words from the same family, the noun φυσιολογος and the verb φυσιολογέω, are already frequent in Aristotle. The φυσιολογοι designate those who have

In this panorama of philosophical inquiry into nature, Galen focuses less on words, as he himself says, than on realities. The method of understanding the primary nature is more important than the words used. Galen finds the formulation of this method in Plato, not in his *Timaeus*, as we might expect, but in his *Phaedrus*, where Plato, searching for a method to understand the nature of the soul, refers to the Hippocratic method of understanding the nature of the body.<sup>50</sup> This Platonic method consists in dividing the object whose nature is being sought into its basic elements and, having numbered them, in determining their natural properties relative to their actions or results. In the next section of his *Commentary on Hippocrates' Nature of Man*, Galen designates the first part of the Hippocratic treatise as the source to which Plato referred in his discussion of this method.<sup>51</sup> The consequence, which might seem paradoxical, is that Galen comes to present Plato as an 'imitator', a 'zealot', of Hippocrates in his method of research on nature.<sup>52</sup> From this, we can understand the pre-eminent role that Galen attributes to Hippocrates in the history of the study of nature, not only amongst doctors, but also amongst philosophers. He even goes as far to affirm in the *De elementis*, which pre-dates the commentary on *Nature of Man*:

Hippocrates is clearly the first of all to have discovered the elements of nature and the first to demonstrate them in a satisfactory way.<sup>53</sup>

The repetition of the word 'first' is significant. Hippocrates is the first to discover the science of nature, since he discovered not only the results (i.e. the primary elements of the nature of living beings), but also the method to uncover them. In the same treatise, Galen uses a very characteristic expression: the "Hippocratic science of nature" (τὴν Ἱπποκράτειον φυσιολογίαν).<sup>54</sup>

Like Plato, Aristotle and Theophrastus are also presented as those who continued Hippocrates' teaching. Here is what we read in *The Natural Faculties*:

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written works on nature, such as Empedocles and Democritus. By contrast, φυσιολογία is only attested once in Aristotle in a particular use on the research on plants (*De sensu* 442b25; ἐν τῇ φυσιολογίᾳ τῇ περὶ τῶν φυτῶν). None of the three composite words appear in Plato.

<sup>50</sup> Pl. *Phaedr.* 270 c.

<sup>51</sup> In the *De elementis*, which we know to be a synthetic commentary of the treatise *Nature of Man*, Galen attributes the method of the discovery of nature by counting backwards to Hippocrates, but he does not mention Plato (1.2, 1–2.58,6–10 De Lacy = 1.415,4–10 K.).

<sup>52</sup> Gal. *HNH* 1.42, CMG V 9, 1, p. 54,10 Mewaldt = 15.103,11 K.: μιμῆσθαι; cf. *UP* 1.8, 1.11,21–23 Helmreich = 3.16,7–9 K.: "Plato was a supporter (ζῆλωτής) if there ever was one, having taken from him the most important of his doctrines."

<sup>53</sup> Gal. *Hipp. Elem.* 1.9, 25–27.134,13 ff. De Lacy = 1.487,8–9 K.

<sup>54</sup> Gal. *Hipp. Elem.* 1.9, 21.134,3f. De Lacy = 1.486,10f. K.

If we study the writings of Aristotle and Theophrastus, we would believe to have found commentaries on the theory of Hippocrates on the hot, the cold, the dry and the wet, on their mutual action, the hot being amongst the most active elemental qualities, and the cold coming after it for its power; all these remarks were made by Hippocrates first, and Aristotle second.<sup>55</sup>

This quotation is the start of a long discussion, where Galen shows Aristotle to be the successor of Hippocrates. I have only quoted what is of relevance to the science of nature itself. A little further on in the same passage, Galen further develops the inheritance by adding the Stoics, and he talks about their doctrines on nature:

Hippocrates was first, Aristotle second, and the Stoics third, with a single modification, namely that for them the qualities are bodies.<sup>56</sup>

In his work *The Best Doctor is also a Philosopher*, Galen returns to this Hippocratic method of knowledge of the *physis*, which he qualifies as a logical method, and he clearly distinguishes three levels, something which he did not do in his commentary on *Nature of Man*.

The same method also teaches us what is the nature (*φύσις*) of the body itself; that which proceeds from the primary elements, which are all mixed; that which proceeds from the secondary elements, those that are perceptible, and which are also called homoeomers, and the third, in addition to these two, that which proceeds from organic parts.<sup>57</sup>

Of course, these three levels are Galenic and not Hippocratic. Yet Galen also considers Hippocrates to be the first doctor and philosopher who studied the ‘works of nature’ (*τὰ τῆς φύσεως ἔργα*). He says the same thing in his treatise *On the Natural Faculties*.<sup>58</sup> Galen does not see any discontinuity between this statement and the previous one, although they concern very different meanings of *φύσις*, from the meaning of ‘primary constitution of living beings’, to that of ‘active nature’. However, where Galen does not see any discontinuity, the Hippocratic treatises which serve as references for him are different, and this difference is there as a criterion to show that the representation of nature is, at the outset, different.

As for the works of nature (*τὰ τῆς φύσεως ἔργα*) in Galen, let us therefore turn to the passage from *The Natural Faculties* where Galen recognises

<sup>55</sup> Gal. *Nat. Fac.* 2.4 *Scripta min.* 3.165,12–19 Helmreich = 2.88,14–89,4 K.

<sup>56</sup> Gal. *Nat. Fac.* 2.4, p. 168,11–13 Helmreich = 2.92,14–16 K.

<sup>57</sup> Gal. *Opt. Med.* 3, *Scripta min.* 2.6,14–19 Mueller = 1.60,2–6 K.

<sup>58</sup> Gal. *Nat. Fac.* 1.13, p. 128,23 ff. Helmreich = 2.38,10 ff. K. For the text of this passage with critical apparatus, see A. Anastassiou/D. Irmer, *Testimonien zum Corpus Hippocraticum* II 2 (Göttingen 2001), 38.

Hippocrates to be the first amongst philosophers and doctors who studied the works of nature. The text is found in a polemic against Asclepiades on the way in which urine reaches the bladder:

If anyone wishes to conduct these experiments himself on an animal, I think he will strongly condemn the temerity of Asclepiades. If he learns the reason why nothing regurgitates from the bladder into the ureters, this examination alone will suffice to convince him of the forethought and art of nature (πρόνοιάν τε καὶ τέχνην τῆς φύσεως) regarding living beings. Hippocrates, the first doctor and philosopher known to us, and the first who discovered the works of nature (τὰ τῆς φύσεως ἔργα), admires her (θαυμάζει), and continually praises her (διὰ πάντος ταύτην ὑμνεῖ), calling her 'just' (δικαίαν = *Fract.* 1, 3.414,1 L.) and says that she alone is sufficient in every respect for living beings (καὶ μόνην ἐξαρκεῖν εἰς ἅπαντα τοῖς ζώοις φησὶν = *Alim.* 15, 9.102,16 L.), performing of her own accord and without any teaching all that is required (αὐτὴν ἐξ αὐτῆς ἀδιδάκτως = *Alim.* 9, 9.102,3 L. πρᾶττουσαν ἅπαντα τὰ δέοντα = *Epid.* 6.5, 5.314,8 L.). Nature being such, Hippocrates supposes, she possesses certain faculties, one attracting what is appropriate, and another eliminating what is foreign, and he thinks that nature nourishes living beings and makes them grow, and that she judges the diseases with her faculties. For this reason he says that there is in our bodies a concordance of flux, a concordance of the air, and that everything is in sympathy (σύμπνοιάν τε μίαν εἶναι φησι καὶ σύρροισιν καὶ πάντα συμπαθεῖα = *Alim.* 23, 9.106,6 L.). Conversely, according to Asclepiades, nothing is in sympathy with anything else, because all substance is divided by nature and broken up into inharmonious elements and absurd particles.<sup>59</sup>

This is a long quotation, but it is impossible to shorten it because it contains a discussion by Galen of what Hippocrates thought about nature and its works. A detailed analysis of this passage seems essential to understand, from within, the way in which Galen reconstructs Hippocrates, who is for him the founder of the idea of nature, not only, as we saw in the previous section, in virtue of his method, which goes back all the way to the primary nature of living beings and which served as a model for Plato, but even in virtue of his conception of an organising nature that structures living beings.

Before introducing Hippocrates in this passage, Galen considers the physiology of urine, which is not taken back in the ureters, and he draws from this an indication of the "foresight and art of nature." This idea and expression are very Galenic. It is a Leitmotiv that unfolds particularly in the

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<sup>59</sup> Gal. *Nat. Fac.* 1.13, pp. 128,17–129,12 Helmreich = 2.38,4–39,6 K. We should add and compare another text: the passage of the *PHP* 9.8.26–27. p. 596,21–29 De Lacy = 5.790,16–791,8 K., where Galen assembles the quotations of Hippocrates which make him the champion of nature-Demiurge. Some quotations are common to both texts.

*The Usefulness of the Parts*, where we find evoked some seventy times the foresight of nature or, much more rarely, the foresight of the Demiurge, a word that is sometimes substituted for φύσις without any real difference in meaning. When the word ‘foresight’ (πρόνοια) is paired with another word, it is, in the great majority of cases, with the word ‘art’ (τέχνη). This couplet is found no less than sixteen times in *The Usefulness of the Parts*.<sup>60</sup> One example may suffice.<sup>61</sup> When Galen discusses the distribution of the veins and arteries, he declares: “In all of this, it is clear that nature acted with forethought” (προνοητικῶς ἡ φύσις ἐργασαμένη),<sup>62</sup> then, in observing in particular the route of the cavernous vein, he remarks: “I know that it will seem to you that the art and forethought of nature (τέχνη τε καὶ πρόνοια) are not insignificant.” Thus, this is the same expression employed in chiasma. In Galen’s mind, Hippocrates is the discoverer of this foreseeing and artistic nature.

However, when we read the Hippocratic treatises themselves, and no longer through Galen’s eyes, we note a clear discrepancy in the use of the term πρόνοια. The word is found just twice (if we exclude the apocryphal *Letters*) and with a very different meaning: it concerns the doctor’s πρόνοια, in the sense of ‘prognosis’, and not ‘foresight’. We find these two uses at the start of the *Prognostic*. We read in the first sentence of the treatise that the best doctor is the one that knows how to practice prognosis (πρόνοιαν).<sup>63</sup> There is a similar discrepancy in the relationship between φύσις and τέχνη. In the ancient Hippocratic writings, the art of nature is never discussed; rather, it is the art of the doctor. Nature and art are two orders that are not confused, and the relationship between art and nature can even be conflicting. Moreover, when there is parallelism between the two, it is the arts of men that imitate nature.<sup>64</sup> The vocabulary of human activities is not yet transferred to nature.

Nevertheless, Galen presents Hippocrates to us as though he was the first person who understood the works of nature, which he admires (θαυμάζει).

<sup>60</sup> We find more rarely the couplet σοφία/πρόνοια, and still more rarely the couplet σοφία/δικαιοσύνη.

<sup>61</sup> Gal. *De usu partium* 16.14, 2.435,10 ff. Helmreich = 4.343,12 f. K.

<sup>62</sup> The adverb προνοητικῶς is attested eight times in Galen, and remarkably seven of these eight times alongside nature: *AA* 5.4, 2.502,9 K = 2.299,21 Garofalo; *UP*, besides our passage, 6.21, 2.372,7 Helmreich = 3.511,13 K; 7.22, 1.441,13 Helmreich = 3.607,13 K.; *At. Bil.* 7, 5.131,12 K.; *Hipp. Epid. VI*, 5, 3, CMG V, 10, 2, 2, p. 264,6 Wenkebach = 17 B.240,12 K. and 5, 25.304,4 f. Wenkebach = 17 B.287,7 K.

<sup>63</sup> *Hipp. Prog.* 1, p. 193,1 Alexanderson = 2.110,1 L.

<sup>64</sup> See *Hipp. Vict.* 11, p. 134,21 f. Joly = 6.486,13 f. L.: “Whilst men use arts that are similar to human nature, they do not understand them.”

The phraseology, completely absent from the Hippocratic Corpus, is Galenic throughout. In speaking of Hippocrates, Galen tells us much about himself. The sense of admiration for nature is very characteristic of Galen. The vocabulary of admiration towards nature is consistent, particularly in his *The Usefulness of the Parts*. In one passage, Galen talks about the admirable foresight of nature (θαυμαστήν τινα πρόνοιαν);<sup>65</sup> in another, of its admirable art (τέχνην θαυμαστήν).<sup>66</sup> He urges his reader to admire nature, along with doctors and philosophers who admire nature, such as Hippocrates or Plato, or even Aristotle, but he castigates those philosophers and doctors who insult the art of nature instead of admiring it,<sup>67</sup> i.e. the atomists, amongst whom it is particularly Asclepiades and his students he has in mind in our passage above. According to Galen, Hippocrates not only admires nature, but constantly celebrates it (διὰ πάντος ὑμνεῖ ταύτην). It would be futile to look for the verb ὑμνεῖν in the Hippocratic Corpus: it is again a Galenic word. Galen nurses a religious admiration for a personified and almost deified nature. While we should probably not forcibly equate the meaning of the verb ὑμνεῖν (which Galen uses as an intensive of ἐπαινεῖν) with the meaning of “to praise greatly,” certain passages demonstrate the presence of a religious connotation, in particular when the noun ὕμνος is used. The most famous passage can be found in *The Usefulness of the Parts*, where Galen, discussing the arrangement of the foot, engages in a hymn on the Demiurge, the organiser of the macrocosm and the microcosm, a Demiurge who is none other than nature herself.<sup>68</sup> He composes a veritable hymn (ὕμνον ἀληθινὸν συντίθημι) in honour of the Demiurge, which he considers to be the authentic form of piety (τὴν ὄντως εὐσέβειαν).<sup>69</sup> Galen's attitude concerning nature is totally absent from the ancient writings of the Hippocratic Corpus.

How, then, can Galen justify that Hippocrates constantly celebrates nature? In the course of his discussion of nature in Hippocrates we can locate his points of reference in the Hippocratic texts and gauge the different degrees of his reinterpretation, because Galen alludes to expressions or quotations that can be easily found. He is correct when he says that Hippocrates describes φύσις with the adjective δικαία (δικαίη in Ionian), ‘just’.

<sup>65</sup> *UP* 4.13, 1.221,3 Helmreich = 3.301,3 K.

<sup>66</sup> *UP* 2.8, 1.89,10 Helmreich = 3.122,2 K.

<sup>67</sup> *UP* 7.14, 1.415,22 Helmreich = 3.572,2 K.

<sup>68</sup> Gal. *UP* 3.10, 1.174,7 Helmreich = 3.237,11 K.

<sup>69</sup> See also the very end of the *De usu partium* with the allusion to the epode of the melic poets praising the gods (ὕμνοῦντες τοὺς θεοὺς) before the altars.

This adjective, whether used in the positive, comparative or superlative, is used to describe the word φύσις five times in the surgical treatises *Fractures* and *Joints*. However, although this comment is factually correct, Galen distorts it and uses it in a way that departs from the Hippocratic text. First, it is used in a distorted manner because Galen gives the impression, not only here but also elsewhere,<sup>70</sup> that the appellation is frequent in Hippocrates. However, the expression is used only five times in a single group of treatises or, more exactly, in a single treatise, if it is true that *Fractures* and *Joints* together constitute one larger whole. Yet Galen continually reminds us that Hippocrates describes nature as just: in a single treatise, *The Usefulness of the Parts*, he recalls it six times, and so more often than the word was used by Hippocrates. This is an extraordinary technique of publicity or self-persuasion. Most importantly, Galen considerably changes the semantic range of the Hippocratic meaning. Whilst the expression has a restricted technical use in the Hippocratic surgical treatise, referring to the normal and correct position of a limb, Galen recycles the expression into his representation of nature as the organising principle of living beings, as we can see from the example of the important suggestion in *The Usefulness of the Parts* regarding the two leg muscles that are of unequal length: “Nature, always just, measured the length of these muscles by the use of their function that each one should fulfil.”<sup>71</sup> The equity of nature consists here in a just proportion between the size of the organ and its function. For Galen, “nature organised everything justly” (δικαίως ἢ φύσις ἅπαντα διέταξεν); this recalls the organising principle of Anaxagoras. Galen does not contend himself with freely using Hippocratic passages on δικαίη φύσις, but clearly attributes to Hippocrates the meaning that he himself has reinterpreted. Indeed, going back to the reference to Hippocrates in *The Usefulness of the Parts* that we saw in *Natural Faculties*, Galen takes an additional step in his appropriation by speaking of Hippocrates who “continually celebrates nature’s justice and its foresight with regard to living beings” (διὰ παντός ὑμνοῦντι τὴν δικαιοσύνην αὐτῆς καὶ τὴν εἰς τὰ ζῶα πρόνοιαν).<sup>72</sup> From a nature being described as ‘just’, Galen passes, through a significant distortion, to nature’s justice, and this justice is placed in the same context as foresight. The Hippocrates that serves as Galen’s model has, thanks to the

<sup>70</sup> See UP 1.22, 1.59, 21 Helmreich = 3.81, 10 f. K.: δικαία ἢ φύσις, ὡς πολλάκις αὐτὴν Ἴπποκράτης εἶωθεν ὀνομάζειν.

<sup>71</sup> Gal. UP 3.10, 1.171, 8 Helmreich = 3.233, 10–11 K.

<sup>72</sup> Gal. UP 3.10, 1.172, 15–17 Helmreich = 3.235, 6–8 K.

misappropriation of a technical meaning and an apparently insignificant distortion of vocabulary, been perfectly galenised.<sup>73</sup>

Let us now consider, still using our passage as a basis, how Galen uses Hippocratic quotations to reinforce the concept of nature he attributes to him. He twice uses the verb 'he says' (φησι), quoting Hippocrates in indirect speech. Here is the first phrase: "he says that she alone (sc. Nature) is sufficient in every respect for living beings, performing of her own accord and without any teaching all that is required."<sup>74</sup> These are actually two quotations taken from the same treatise, *Nutriments*, but from two different contexts. The first corresponds to the following Hippocratic text: "nature alone is sufficient for all in every respect" (φύσις ἐξαρκεῖ πάντα πᾶσιν),<sup>75</sup> and the second to: "natures are in every respect untaught" (φύσεις πάντων ἀδίδακτοι).<sup>76</sup> However, Galen very skilfully mixes together this second quotation taken from *Nutriments* with a sentence from *Epidemics* 6: "nature, without being taught and without having learned, does what is fitting" (ἀπαίδευτος ἐούσα καὶ οὐ μαθοῦσα τὰ δέοντα ποιεῖ).<sup>77</sup> The collage succeeds thanks to the synonymy of the two adjectives ἀδίδακτος and ἀπαίδευτος ('untaught'), and the replacement of the plural φύσεις with the singular φύσις in the quotation from *Nutriments*. The perfection of this collage comes from the similarity of the content and from the aphoristic forms of the two passages, forming two maxims independent of any context. Here, then, are three quotations from two different works given in the statement following the first 'he says' (φησι). The second φησι introduces the following statement: "He says that in our bodies there is a continuity of flux, a continuity of air, and that everything is in sympathy."<sup>78</sup> This is again a quote from *Nutriments*.<sup>79</sup> Concerning this

<sup>73</sup> On Galen's reinterpretation of Hippocrates' δικαίη φύσις, see A. Roselli, "Dalla δικαίη φύσις dei trattati chirurgici alla δικαιοσύνη τῆς φύσεως di Galeno," in *Le normal et le pathologique dans la Collection hippocratique*, Actes du X<sup>ème</sup> Colloque International Hippocratique, ed. A. Thivel and A. Zucker (Nice 2002), II 731–752.

<sup>74</sup> The Greek text reads: καὶ μόνην ἐξαρκεῖν εἰς ἅπαντα τοῖς ζώοις φησὶν, αὐτὴν ἐξ αὐτῆς ἀδιδάκτως πράττουσαν ἅπαντα τὰ δέοντα.

<sup>75</sup> Hipp. *Alim.* 15. p. 141,24 Joly = 9.102,16 L.

<sup>76</sup> Hipp. *Alim.* 39. p. 145,12 Joly = 9.112,3 L.

<sup>77</sup> Hipp. *Epid.* 6.5.1, p. 102,1–2 Manetti-Roselli = 5.314,7–8 L.

<sup>78</sup> The Greek text reads: ἐν τοῖς σώμασιν ἡμῶν σύμπνοιάν τε μίαν εἶναι φησι καὶ σύρροιαν καὶ πάντα συμπαθέα.

<sup>79</sup> Hipp. *Alim.* 23. p. 143,1 Joly = 9.106,6 L.: σύρροια μία, σύμπνοια μία, συμπαθέα πάντα. The rest of this aphorism ("For the whole, everything is in sympathy and for the parts, the parts of each part in view of their function"), quoted and discussed, serves as a basis for Galen at the start of his *De usu partium* 1.8, 1.12,23 ff. Helmreich (3.17,14 ff. K.), to discuss his method of research on the utility of parts.

quotation, we should remark that the phrase chosen by Galen is, at least in its formulation, unique in the Hippocratic Corpus. None of the three terms making up this aphorism (σύρροια, σύμπνοια, συμπαθής) are found elsewhere in the Hippocratic treatises. By contrast, it is a phrase where two of the three terms are characteristic of Stoicism. We can compare a passage in Plutarch, who summarises the doctrine of Chrysippus in his *De fato* 11 (574 E): “The cosmos is ruled by nature in such a way that there is within it a continuity of spirit and sympathy” (σύμπνουσιν καὶ συμπαθῆ αὐτὸν αὐτῷ ὄντα). The formal parallelism is notable. It is also currently thought that the Hippocratic treatise *Nutriments*, despite its Heraclitean style, is of more recent date and post-dates Stoicism. If this is true, Galen unknowingly reconstructed a Hippocrates affected by Stoicism. What seems undeniable, in any case, is that the conception of nature as an organising principle and of an organism where all parts are united, through acting and being affected, is closer to Stoic conceptions of nature than those that can be found in the treatises of the *Hippocratic Corpus* that were possibly written by Hippocrates or his contemporaries on Cos. However, to be fair to Galen, we should point out that he was by no means the only one in Antiquity to consider *Nutriments* to be a work of Hippocrates.<sup>80</sup>

Without entering further into the details of the analysis of the passage where Galen discusses Hippocrates' concept of nature, we can conclude that Galen reconstructs the theory of nature in Hippocrates from diverse materials that he intelligently and skilfully assembles, but whose meaning he does not hesitate to blur if necessary in order to make them into a coherent whole. The coherence that Galen recreates is quite remarkable, given that the diversity of the materials is not perceptible in the synthesis he creates. Galen even reconstructs from these materials the logic of Hippocrates' thought, not to mention the history of his discovery of the works of nature. At the root of this discovery we find the conception of a providential and technical nature. Immediately following this (τοιαύτην δὲ οἶσαν εὐθὺς ... ὑπέλαβεν), Hippocrates assumed the existence of the natural faculties of attraction and repulsion. All in all, Galen reconstructs the genesis

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<sup>80</sup> The treatise forms part of Erotian's list of Hippocrates' works at the start of his *Hippocratic Glossary* (= *Gloss.*) (*Vocum Hippocraticarum collectio*, rec. E. Nachmanson [Göteborg 1918], 9, 16). The quotation is also attributed to Hippocrates, not only by Stephanus, a commentator of Galen (*Commentarii in priorem Galeni librum therapeuticum ad Glauconem*, 220,5 Dickson = 1.321,35–322,1 Dietz), but also by John Philoponus, a commentator of Aristotle (*In Aristotelis de generatione et corruptione* 1.5 CAG XIV 2, p. 106,33 f. Vitelli, and *De aeternitate mundi* 7.17, p. 283,19 f. Rabe).

of Hippocrates' discovery of nature by indicating an order in the discovery, despite the immediacy of the succession.

At the end of the passage that has served as a basis for our study, Galen contrasts the Hippocratic understanding of nature with that of Asclepiades, who proceeds on the basis not of continuity, but discontinuity, believing that all living substance is naturally divided into atoms. The contrast between the two doctors can be understood from a broader view on the two possible schools that Galen distinguishes in the inquiry into nature. In another important passage from *Natural Faculties*, Galen discusses this overall view. The introductory sentence clearly shows the issue:

There exist two schools in medicine and philosophy amongst those men who have discussed nature (τῶν ἀποφηναμένων τι περὶ φύσεως ἀνδρῶν).<sup>81</sup>

Galen discusses the two schools and the principles that characterise them. The first believes that the substance forming the substrate of living beings subject to generation and corruption is one, but subject to change, and that nature is anterior to the body which it fashions with art and foresight by the faculties it possesses. The second divides material into immutable atoms and does not believe in the existence of a technical and foreseeing nature that has its own faculties at its disposal. Galen uses Asclepiades as an example of the second school, whilst Hippocrates was the originator of the first. Following Hippocrates came Plato, who follows Hippocrates' method, and then Aristotle, whom Galen describes as an "exegete of Hippocrates' reasoning on nature" (ἐξηγητήν ὄντα τῶν περὶ φύσεως λογισμῶν Ἱπποκράτους Ἀριστοτέλη),<sup>82</sup> and then the Stoics who "subscribe to all of Hippocrates' opinions on nature" (ἅπαντα ... τὰ περὶ φύσεως Ἱπποκράτους δόγματα).<sup>83</sup> Last but not least, of course, Galen believes himself to be more faithful to Hippocrates than Aristotle or the Stoics. Only the person who studies nature according to this path merits the term φυσικός.

Galen does not judge it worth mentioning those who ascribe to one of the two schools, only to then deviate from it. In particular, he thinks of Erasistratus, who claims to follow the teaching of the Peripatetics on nature by celebrating it as technical, but in reality does nothing of the sort because to affirm that nature is technical is to recognise that it does nothing by chance. The formula οὐδὲν ἢ φύσις ἐργάζεται μάτην, found as a

<sup>81</sup> Gal. *Nat. Fac.* 1.12, *Scripta min.* 3.120,7–9 Helmreich = 2.27,1–3 K.

<sup>82</sup> Gal. *MM* 1.2, 10.15,8f. K.

<sup>83</sup> Gal. *MM* 1.2, 10.16,8 K.

litany in *The Usefulness of the Parts*, is too famous for him to dwell on.<sup>84</sup> According to Galen, Erasistratus in fact denies this affirmation because he does not believe in the purpose of certain organs.<sup>85</sup> He does not recognise the existence of natural faculties placed by nature in each of the organs and he does not differentiate between the art of men and the art of nature.<sup>86</sup>

We can see that Galen does not fundamentally distinguish between philosophers and doctors in the inquiry into nature, since the initiator of this φυσιολογία, defined as the science that studies bodies subject to birth, destruction and, in a word, to change, is a doctor, Hippocrates. We read in the prologue of *The Therapeutic Method*: “The *physiologia* of Hippocrates gained victory (ἡ Ἱπποκράτους νικᾷ φυσιολογία), according to Plato, according to the Peripatetics, and according to the Stoics.”<sup>87</sup> Thus, it is the work of a doctor, Hippocrates, which was followed and continued by the philosophers Plato, Aristotle and the Stoics, before being taken up again by the doctor Galen. This method of presenting the history of the inquiry into nature by privileging the founder over the second and third successor, seems to be mirrored in Galen’s own reasoning in his research on nature, where he goes back to what is primordial and organised by nature, to use his own words, whilst the rest is simply a necessary consequence. This causes Galen to minimise the role of the philosophers compared to the founder, a doctor, in particular Aristotle’s contribution to nature compared to that of Hippocrates.

The passages where Hippocrates and Aristotle say the same thing, with the one discussing the principles of medicine and the other the principles of *physiologia*, are indeed exceptional.<sup>88</sup> Aristotle normally appears in second place behind Hippocrates, when there is no discussion of Plato, and he eventually precedes the Stoics, who come in third place.<sup>89</sup> There is a very significant phrase from *Natural Faculties*: “Hippocrates, the first of all those we know, spoke correctly; Aristotle, secondly, correctly explained.”<sup>90</sup> By expressing it in this way, Galen fails to recognise everything he owes to Aristotle in his vocabulary and in his representation of nature as a

<sup>84</sup> Gal. *UP* 12.14, 2.222,14 Helmreich = 4.56,13 K.; 13.2, 2.237,20 Helmreich = 4.78,6f. K.; 13.8, 2.263,2 Helmreich = 4.112,6f. K.; 15.5, 2.359,8 Helmreich = 4.240,17 K.; cf. also 15.4, 2.350,6 Helmreich = 4.228,14 K.

<sup>85</sup> Gal. *Nat. Fac.* 2.4, *Scripta min.* 3.167,13 Helmreich = 2.91,8ff. K.

<sup>86</sup> Gal. *Nat. Fac.* 2.3 and 4, 3.159,5–169,5 Helmreich = 2.80,6–93,13 K.

<sup>87</sup> Gal. *MM* 1.2, 10.17,2–4 K.

<sup>88</sup> Gal. *Hipp. Elem.* 1.5.4. p. 92,24–26 De Lacy = 1.449,2–4 K.

<sup>89</sup> Gal. *Nat. Fac.* 2.4 *Scripta min.* 3.168,11f. Helmreich = 2.92,14–15 K.

<sup>90</sup> Gal. *Nat. Fac.* 2.4, 3.166,10–12 Helmreich = 2.90,2–3 K.

Demiurge. It is not in Hippocrates that Galen found the expression that comes so often to him: ἡ φύσις ἐδημιούργησε,<sup>91</sup> but rather in the biological writings of Aristotle. For example, when I cite the phrase καὶ ταῦτα πάντα εὐλόγως ἡ φύσις δημιουργεῖ (“nature organises everything rationally”), we would believe we were reading Galen; yet it is, in fact, Aristotle.<sup>92</sup> We should also remember that when Galen says “nature does nothing in vain,” he takes the expression from Aristotle ἡ φύσις οὐδὲν ποιεῖ μάτην, which we find some twenty times in the philosopher’s work, notably in his biological writings.<sup>93</sup> It is no longer Hippocrates who spoke about the works of nature. It is in Aristotle that we find for the first time the expression τὰ τῆς φύσεως ἔργα.<sup>94</sup> Consequently, it is not from Hippocrates, but rather from Aristotle, that Galen took the theme that is so recurrent in the comparison between the art of the nature-Demiurge and human arts, as well as the superiority of nature’s works over those by man.<sup>95</sup> Even this admiration of the works of nature, which I highlighted above as being so characteristic of Galen, is taken from a beautiful passage in Aristotle’s *Parts of Animals*, from which I quote the final phrase: “in all the works of nature there is something marvellous” (ἐν πᾶσι γὰρ τοῖς φυσικοῖς ἔνεστι τι θαυμαστόν).<sup>96</sup> I do not wish to suggest by this that Galen is a simple exegete of Aristotle. Nor do I wish to suggest that Galen did not recognise the merits of Aristotle, whom he knew well,<sup>97</sup> because Galen’s work is so vast and complex that one always has to qualify one’s claims. In exceptional cases, Galen does recognise Aristotle’s merit: “he who is so skilful in particular in discussing the art of nature” (τέχνην φύσεως).<sup>98</sup> However, it is significant that this praise comes as a counterpoint to introduce a criticism. Above all, what I wish to show is that Galen, in the

<sup>91</sup> Gal. *Nat. Fac.* 1.10, 3.117,18–19 Helmreich = 2.23,11 K.; 2.9. 3.196,16–17 Helmreich = 2.131,11 K.; *UP* 1.18, 1.47,6–7 Helmreich = 3.64,14 K.; 2.12, 1.100,22 Helmreich = 3.137,9 K.; 3.6, 1.141,24–25 Helmreich = 3.193,18 K. etc.

<sup>92</sup> Arist. *De generatione animalium* 1.23, 731a24.

<sup>93</sup> Arist. *De incessu animalium* 2, 704b15 (with numerous references given ad loc. in the edition of P. Louis, p. 13, n. 6, i.e. p. 155); variant of ἡ φύσις οὐδὲν δημιουργεῖ μάτην in *De incessu animalium* 12, 711a18.

<sup>94</sup> Arist. *De partibus animalium* 1.1, 639b6: ἐν τοῖς τῆς φύσεως ἔργοις and 1.5, 645a24–25; cf. *De generatione animalium* 5, 778b4; *De incessu animalium* 2, 704b14; *Meteorologica* 389b27–28; see also *Problemata* 10.45, 895b32–33.

<sup>95</sup> See in Aristotle, *GA* 2.6, 743b22–25: comparison of demiurge-nature with painting; *PA* 2.9, 654b29 ff.: comparison of demiurge-nature with sculptors. For the superiority of nature’s works over those of human arts, see *PA* 1.1, 639b19–21.

<sup>96</sup> Arist. *PA* 1.5, 645a17 f.

<sup>97</sup> For Galen’s knowledge of Aristotle’s philosophy of nature, see P. Moraux, *Der Aristotelismus bei den Griechen* II (Berlin 1984), 729–791.

<sup>98</sup> Gal., *UP* 1.8, 1.11,24–26 Helmreich = 3.16,10–12 K.

discussion of his teleological conception of nature-Demiurge, sets Aristotle in the background to favour Hippocrates, a mythical archegete, who is reconstructed by Galen.<sup>99</sup>

Thus, Galen privileges a doctor in the history of inquiry into nature. There were of course some differences, in Galen's mind, between medicine and philosophy in this domain. Certain problems debated by philosophers are too subtle for doctors. For example, there is a slight difference between Aristotle and the Stoics on the problem whether the mixture applies only to the qualities, as in Aristotle, or also to the bodies, as in the Stoics; but for Galen, to debate this divergence is not useful for doctors.<sup>100</sup> Conversely, "the research of the utility of parts ... is useful not only to the doctor, but rather more to the philosopher, who seeks to acquire the science of all of nature (τῆς ὅλης φύσεως ἐπιστήμην); thus he should be initiated into this mystery."<sup>101</sup>

However, there is a question about nature that remains particular to doctors and that is essential for them, and with which I shall end. Whilst *physiologia* has the sole aim of the theoretical study of nature, medicine is an art whose aim is the recovery of the body.<sup>102</sup> Thus, what is its place alongside the work of nature, which both creates and repairs the body? I will just outline Galen's approach toward this problem, so as not to stray too far into the concept of art, by taking one of the important statements that Galen attributed to Hippocrates on nature. It is the aphorism from *Epidemics* 6 on "natures, doctors of diseases" that I mentioned above in the first part regarding the definition of nature in Alexandrian commentators.<sup>103</sup> If nature is the doctor of illnesses, does the art of medicine exist? Galen echoes this objection that could be made against Hippocrates and he responds to it in a long commentary on the Hippocratic passage.<sup>104</sup> According to Galen, there is no contradiction, but rather a hierarchy between doctor, art and nature: the doctor is the 'servant of the art', a Hippocratic phrase;<sup>105</sup> but Galen adds

<sup>99</sup> The obscurity and the conciseness of Hippocrates alleged by Galen favour this reconstruction.

<sup>100</sup> Gal. *MM* 1.2, 10.16,13–16 K.

<sup>101</sup> Gal. *UP* 17.1, 2.447,25–448, 4 Helmreich = 4.360,15–361, 2 K.

<sup>102</sup> On this distinction between *physiologia* (or *physikē*), a theoretical art, and medicine, a productive art leading to the recovery of the body, see the discussions on the diaeresis of the arts in *Thras.* 30, *Scripta min.* 3.71ff. Helmreich = 5.861f. K. and in *CAM* 1, CMG V 1, 3, p. 56, 19 ff. Fortuna = 1.227,10 ff. K.

<sup>103</sup> See *supra*, p. 290 and footnote 19.

<sup>104</sup> Gal. *Hipp. Epid.* VI 5.1, 17 B.222–233 K.

<sup>105</sup> Hipp. *Epid.* 1.5, 2.636,2 L. (ὁ ἰητρός, ὑπηρέτης τῆς τέχνης).

that medicine is, in its turn, the servant of nature (τὴν ἰατρικὴν αὐτὴν, ἥτις πάλιν ὑπηρετεῖ τῇ φύσει),<sup>106</sup> which is the first and most important of all the healing arts (τὴν φύσιν ἀπασῶν τεχνῶν πρώτην τε καὶ κυριωτάτην ὄνσαν εἰς τὰς) ἰάσεις).<sup>107</sup> We find in this Galenic definition of nature as medicine the technical and demiurgic conception of nature, which is never explicit in Hippocrates, but also the idea that nature is primary and primordial.

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<sup>106</sup> For medicine as the servant of nature, see also the discussion on the diaeresis of the arts in *Thras.* 30, *Scripta min.* 3.73,6–8 Helmreich = 5.862,5–7 K.; nature (ἡ φύσις) makes the body and repairs it when it is ill; medicine serves (ὑπηρετικῆ) nature and aids the recovery of the body. Compare also *PHP* 9.8, 27.596,25f. De Lacy = 5.791,2–3 K, where the doctor is said to be “servant and imitator of nature” in a statement that Galen attributes to Hippocrates. The distortion is clear as a type of shortcut: whilst the Hippocratic text says that the doctor is servant of the art, Galen makes it say that he is the servant of nature; cf. *Ars Med.* 26.358,12f. Boudon = 1.378,9–10 K: ἡ μὲν φύσις ἐστὶ δημιουργός, ὁ δ' ἰατρὸς ὑπηρετικῆς.

<sup>107</sup> *Gal. Hipp. Epid.* 6.5,1, CMG V 10, 2, p. 258, 1f. and 259, 5f. Wenkebach = 17 B.231,12f. and 233,6f. K.



## CHAPTER FIFTEEN

### GALEN'S READING OF THE HIPPOCRATIC TREATISE *THE NATURE OF MAN*: THE FOUNDATIONS OF HIPPOCRATISM IN GALEN

More than any other medical writer from Greek antiquity, it was Galen who by means of his extensive œuvre—which comprises more than ten percent of all Greek literature that has survived from Homer to the end of the second century AD—contributed most effectively to the spread of the work attributed to his precursor, Hippocrates, a doctor from the fifth century BC, whom he considers the most eminent of all the ancient doctors who preceded him.\* In particular, he wrote commentaries on several Hippocratic treatises, amongst them a commentary on *The Nature of Man*.<sup>1</sup>

I have selected this commentary as the subject of this paper, firstly because *The Nature of Man* has remained the most famous Hippocratic work in Western medicine, since it discusses the humoral theory associated

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\* This paper is part of a series of studies on Galen's reading of Hippocrates that I have carried out, either in collaboration with Véronique Boudon, or alone. The first discussed an aspect of therapeutics (J. Jouanna and V. Boudon, "Remarques sur la place d'Hippocrate dans la pharmacologie de Galien," in A. Debru (ed.) *Galen on Pharmacology, Philosophy, History and Medicine*, Leiden, 1997, pp. 213–234). The second discussed Galen's reading of Hippocratic ethics (J. Jouanna, "La lecture de l'éthique hippocratique chez Galien," in H. Flashar and J. Jouanna (eds.), *Médecine et morale dans l'Antiquité*, coll. Entretiens sur l'antiquité classique XLIII, Vandoeuvres-Geneva, 1997, pp. 211–253 \* [also included in English translation as ch. 13 in the present volume]). The third discussed an aspect of nosology (J. Jouanna, "Miasme, maladie et semence de la maladie. Galien lecteur d'Hippocrate," in D. Manetti (ed.) *Studi Galenici*, Florence, 2000, pp. 39–72). On Hippocratism in Galen in general, see H. Diller, "Zur Hippokratesauffassung des Galen," *Hermes* 68, 1933, pp. 167–181 (= *Kleine Schriften*, Berlin, 1973, pp. 3–16); *id.* "Empirie und Logos: Galens Stellung zu Hippocrates und Platon," in K. Döring and W. Kullmann (eds.), *Studia Platonica. Festschrift für Hermann Gundert*, Amsterdam, 1974, pp. 227–238; G. Harig and J. Kollesch, "Galen und Hippokrates," in L. Bourgey and J. Jouanna (eds.) *La Collection hippocratique et son rôle dans l'histoire de la médecine*, Leiden, 1975, pp. 257–274 (with bibliography); W.D. Smith, *The Hippocratic Tradition*, Ithaca-London, 1979, pp. 61–176; G.E.R. Lloyd, *Methods and Problems in Greek Science*, Cambridge, 1991, p. 398 ff.; M. Vegetti, "L'immagine del medico e lo statuto epistemologico della medicina in Galeno," *ANRW* II, 37, 2, Berlin-New York, 1994, pp. 1672–1717.

<sup>1</sup> On Galen's commentaries on Hippocrates, see particularly D. Manetti and A. Roselli, "Galeno commentatore di Ippocrate," *ANRW* II, 37, 2, Berlin-New York, 1994, pp. 1529–1635.

with Hippocrates, that of the four humours: blood, phlegm, yellow bile and black bile. The second reason is of a more philological nature: I felt it was necessary to work on the basis of a scholarly critical edition of the Greek text. Despite the renaissance of Galenic studies at the end of the twentieth century, several Galenic works are still not available in a scholarly critical edition. This is not the case for Galen's commentary on *The Nature of Man*. Indeed, we find ourselves in an exceptional situation: we possess a critical edition of both the Hippocratic treatise and Galen's commentary, published in the international collection of the *Corpus Medicorum Graecorum*; for Galen, that of J. Mewaldt (CMG V, 9, 1, Berlin 1914) and for Hippocrates, that of J. Jouanna (CMG I, 1, 13, Berlin, 1975). However, there is a difference between these two editions: that of Hippocrates includes a translation of the Greek into a modern language (in this case, French), whilst that of Galen includes only the Greek. There is, to my knowledge, no translation in a modern language of Galen's *Commentary on Hippocrates' The Nature of Man*, which obviously presents a major obstacle to the dissemination and study of this commentary.<sup>2</sup> The international project of a critical edition of Galen's works in the *Collection des Universités de France* is in progress, but an edition of this commentary has not yet appeared. I therefore present in this paper my own translation of the passages of Galen that are quoted. Above all, I have chosen Galen's commentary on this treatise because it allows me to reconstruct, better than any other text, before an audience of philosophers, the image that Galen has of Hippocrates and of his role in the history of a philosophical question as fundamental as that of nature, of *physis*.

Before examining the commentary itself, let us remind ourselves of the structure and technique of Galen's *Commentary on Hippocrates' The Nature of Man*. It comprises three books (or sections), corresponding to three parts of the Hippocratic treatise: the first book of the commentary corresponds to chapters one to eight of the treatise, where the Hippocratic author critically denounces a monist conception of human nature and affirms that man is formed of four humours (blood, phlegm, yellow bile and black bile), which are mixed when man is in good health and separated when man is sick. The second section of Galen's commentary corresponds to chapters nine to fifteen of *The Nature of Man*, where the discussions are less coherent

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<sup>2</sup> \*[An English translation of this commentary by W.J. Lewis can be found on [http://www.ucl.ac.uk/~ucgajpd/medicina%zoantiqua/tr\\_GNatHom.html](http://www.ucl.ac.uk/~ucgajpd/medicina%zoantiqua/tr_GNatHom.html); a new English translation with introduction and notes (by R.J. Hankinson) is due to appear in 2013 in the *Cambridge Galen Translations*, edited by P.J. van der Eijk].

and more dispersed than in the first part, but where we find in particular a long discussion of the blood vessels that was already famous by Aristotle's time, who quotes it in his treatise *History of Animals*.<sup>3</sup> The third section of Galen's commentary corresponds to chapters sixteen to twenty three of the treatise *The Nature of Man* (which Littré and Jones both published erroneously under the title *Regimen in Health*). This last section is more coherent than the second part and is dedicated to the diet of people in good health. These are the main divisions found in Galen's commentary on *The Nature of Man*.

The commentary's technique, which is comparable to that of Galen's other commentaries, is what we call a linear commentary. Galen begins by copying a passage of the Hippocratic text, and then comments on it, before copying another passage of the Hippocratic text and commenting on it. Thus, Galen's work appears as an alternation between what we call the Hippocratic *lemmata* (the words of Hippocrates that Galen has copied) and the explanations given by Galen. The *lemmata* that Galen copied are not of equal length, and they can range from a single sentence to an entire paragraph; moreover, Galen did not copy the entire text of Hippocrates,<sup>4</sup> although he did copy most of it. An unexpected consequence of this technique is that it allows us to reconstruct the Hippocratic work by extracting the Hippocratic *lemmata* from Galen's explanations. This method of reconstructing the Hippocratic text from Galen's commentary is well known in the Arabic tradition of the school of Hunayn in the ninth century, but it is also attested in the Greek tradition itself, although cases are rarer.<sup>5</sup> Thus, we

<sup>3</sup> Aristotle, *History of Animals* 3.3, 512a12–513a7.

<sup>4</sup> On Galen's incomplete copying of Hippocrates' text, see the recent study by J. Jouanna, *Hippocrate II 2<sup>e</sup> partie: Airs, eaux, lieux*, CUF, Paris, 1996, p. 142, n. 272; see also *id.* "Le traité hippocratique du Régime dans les maladies aiguës," *RHT* 6, 1976, pp. 1–30 (particularly p. 7, n. 2) and previously F. Kudlien, *Die handschriftliche Überlieferung des Galenkommentars zu Hippokrates De Articulis*, Berlin, 1960, pp. 55–57.

<sup>5</sup> *The Nature of Man* was preserved in the Arabic tradition thanks to reconstruction from Galen's *lemmata*. See J. Jouanna, *Nature de l'homme* (1975), pp. 99–107 (particularly p. 104, n. 1). The Arabic text of the treatise, along with an English translation, was published by J.N. Mattock and M.C. Lyons, *Hippocrates: On the Nature of Man in Arabic Technical and Scientific Texts*, vol. 4, Cambridge, 1968. The same applies to other Hippocratic treatises: *Aphorisms, Airs, Waters, Places, Regimen in Acute Diseases, In the Surgery, Generation/Nature of the Child; the Oath; Sevens*; see G. Strohmaier, "Der arabische Hippokrates," *Sudhoffs Archiv* 64, 1980, pp. 234–249 (particularly p. 244 f.). On this technique of reconstruction in the Greek tradition see, for example, *Parisinus gr.* 396 (13th century), which presents the preamble of Hippocrates' *Prognosis*, reconstructed from Galen's *lemmata*; see B. Alexanderson, *Die hippokratische Schrift Prognostikon*, coll. "Studia Graeca et Latina Gothoburgensia," XVII, Uppsala, 1963, p. 79.

can see how Galen's commentaries on Hippocrates have been able to contribute indirectly to the survival of Hippocrates himself through the reconstruction of the Hippocratic Corpus from the Galenic tradition.

To conclude our presentation of Galen's commentary, we should add that the linear commentary is preceded by a long introductory overview of seven pages (ed. Mewaldt, pp. 3–11), that each of the other two sections of the commentary are preceded by a shorter introduction as well (second section, ed. Mewaldt, p. 57; third section, ed. Mewaldt, p. 89) and, finally, that the first section ends with a rather long conclusion on the method and authenticity of this section (Mewaldt, pp. 53–56), whilst the other two sections do not have any particular conclusion. Thus, there are four discussions in the form of overviews, in addition to the linear explanations, although the most important for our purposes are the preamble and the conclusion attached to the first part.

Following this brief overview of the commentary, my paper will focus on three important questions: first, the place of this commentary in Galen's life and work and the commentary's intended audience; second, Galen's discussion of the treatise's authenticity and its impact on the text; third, the philosophical significance that Galen gives to *The Nature of Man*.

We begin with the place of the commentary in Galen's life and activity as a commentator. We cannot avoid this traditional question, since Galen continually spoke about himself and his work, even in his most technical writings such as his commentaries.<sup>6</sup> Exceptionally, at the end of his life Galen wrote two works on his own bibliography, his *On My Own Books*, at the request of his friend Bassus, in which he classifies his works according to their subjects, and the other, *The Order of My Own Books*, dedicated to Eugenianus, in which he advises a reading order for those who wish to tackle his work.<sup>7</sup> In both bibliographical works, Galen mentions his commentaries on Hippocrates. In the first, he reports, with great precision, the different commentaries that he has written with the number of books included in each of them. His work as a commentator is considerable. Under the rubric of what Galen calls ἐξηγήσεις καθ' ἑκάστην αὐτοῦ λέξιν, i.e. line

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<sup>6</sup> Paul Moraux has contributed significantly to our knowledge of this autobiographical aspect of Galen's work by translating into French the principal passages where Galen speaks of himself and his writings, in a work entitled *Galien de Pergame. Souvenirs d'un médecin*, published in 1985 in Paris by Belles Lettres.

<sup>7</sup> Galen, *On My Own Books*, ed. I. Mueller, *Scripta Minora* II, pp. 91–124; *On the Order of My Own Books*, *ibid.* pp. 80–90.

by line commentaries, he lists seventeen commentaries on Hippocratic treatises, each comprising between one and eight books. Most of these commentaries have been preserved in Greek, although some are forgeries; some have been preserved only in Arabic. In this respect, we must highlight a most wonderful recent discovery in an Arabic manuscript in Cairo of the full commentary on *Airs, Waters, Places* that was lost in Greek; the translation is still not published, but I was able to use it for my edition of *Airs, Waters, Places* in the *Collection des Universités de France* in 1996.<sup>8</sup> In this list of commentaries that Galen himself established, the commentary on *The Nature of Man* comes last. Galen was not content in giving only the number of books, as for the other commentaries, but he adds something extra:

Commentary on *The Nature of Man*: two books; after they had been written, and after hearing that some people criticised this work (sc. *The Nature of Man*) as not being authentic, I wrote another three under the following title: "That Hippocrates in his other writings clearly has the same opinion as in *The Nature of Man*."<sup>9</sup>

Thus after having written his commentary, Galen, noticing continued criticism against the authenticity of *The Nature of Man*, wrote another work in three books to demonstrate its authenticity another way. This latter work is lost, but from these details it appears that the problem of authenticity played a particularly important role in Galen's approach to *The Nature of Man*.

Besides the enumeration of Galen's commentaries on Hippocrates with their number of books, Galen's bibliographic work *On My Own Books* establishes an important distinction between two categories of commentaries, which are distinguished by the date of their composition, their destination and their content. The first series of commentaries (comprising commentaries to *Aphorisms, Fractures, Joints, Prognosis, Regimen in Acute Diseases, Wounds, Injuries of the Head, Epidemics 1*) belongs to a period when Galen wrote his commentaries either for training purposes or for the private instruction of a particular friend. This corresponds to his first visit to Rome, where he no longer had access to the library he had left behind at Pergamum and where he would have been able to find the commentaries of his predecessors (the years 162–166, under Marcus Aurelius). The second

<sup>8</sup> See pp. 133–148.

<sup>9</sup> Galen, *On My Own Books*, ed. I. Mueller, *Scripta Minora II*, p. 113, 13–18. Galen's commentary on *The Nature of Man* contains three books. Hunayn, in his *Risala*, also recognised three books (ed. Bergsträsser, no. 102, p. 36).

series of commentaries was written for a wider audience and dates from his second stay in Rome (from 168 onwards, under Marcus Aurelius, and then Commodus). Galen now had access to all the documents that he had left at Pergamum during his first trip. It is this second series that includes the commentary on *The Nature of Man*. Galen quotes this commentary alongside eight others (those on *Epidemics 2*, *Epidemics 3*, *Epidemics 6*, *Humours*, *Nutriments*, *Prorrhetic*, *Surgery* and *Airs, Waters, Places*). Thus, there are two variables that explain the different nature of the two categories of commentary: the first relates to the destination of the commentary, the second, more contemporarily, the state of the documentation that Galen could consult. When he did not have access to the commentaries of his predecessors, Galen only rarely referred to their opinion, except when they committed grave errors in their interpretation, and he restricted himself to giving his own personal commentary. Moreover, when he wrote his commentaries for a particular friend, he could take into account his level of culture and leave out of his commentary what its recipient already knew. By contrast, in the second category of commentaries, when Galen had a group of various readers, rather than a particular reader, in mind (even if he dedicated his work to a particular person), he explained everything without presupposing any previous knowledge of the reader. Elsewhere, when he had access to the commentaries of his predecessors, he could present a commentary that was not only personal, but also critical and complete.

We find confirmation that the commentary to *The Nature of Man* belongs to the second category in the start of the preamble (ed. Mewaldt, p. 3,4–19):

A long time ago, when I gave the work I had written on the elements according to Hippocrates to one of my friends who was going abroad, I tailored it towards his level of culture. I therefore did not offer any demonstration for the things of which I knew he had an accurate understanding at the start of the text, nor even gave a summary of it, as I tend to do when my discussion is destined to be presented to all those who will read it. Since this work, in ways I do not understand, fell into the hands of a number of other people, I did not think it prudent to write a second treatise in addition to this one. This was, however, also the reason why I postponed writing a commentary on the book *The Nature of Man*, because all the principal points had been clearly discussed thanks to this previously published treatise, which is called *The Elements According to Hippocrates*. But now, since my friends have asked me to supply them with the exegesis of the Hippocratic treatise itself, not only on the passages indispensable for the understanding of its doctrine, as I had already provided in the other work, but on all the passages in order, I will begin by first writing those things which I had omitted to say at the start of *The Elements According to Hippocrates*, since I knew that my friend was already familiar with them.

This passage, whilst giving us a good example of the author's presence in his work, illustrates the distinction between the two categories of commentaries that Galen wrote; and here the distinction is applied exceptionally to two commentaries on one and the same Hippocratic treatise. We clearly recognise in this preamble the distinction between a commentary destined for a friend and a commentary destined for a wider public. Regarding *The Nature of Man*, Galen composed a first commentary destined for one of his friends, the treatise called *The Elements according to Hippocrates*, a treatise that has been preserved and that was published by the American scholar De Lacy in the *CMG* in 1996. Then Galen wrote a second commentary for his friends (in plural!), this time for a larger audience. This difference in audience explains, according to Galen, the absence of certain discussions in the first work, discussions that were not necessary because he was aware that his reader already knew them. Thus, we find careful considerations here on the part of the author concerning the difference in his writing with regard to the audience he was addressing. The two treatises are also differentiated by the method of their commentary. The treatise *The Elements according to Hippocrates*, whilst drawing on sentences from *The Nature of Man*, is a synthetic commentary, whilst the later commentary on *The Nature of Man* is a commentary that explains the expressions 'in order', as Galen himself says, i.e. line by line. It was the existence of the first commentary, Galen adds, that led him to postpone the redaction of the second. The linear commentary on *The Nature of Man* is probably one of the last two Hippocratic commentaries written by Galen, the second being the commentary to *Airs, Waters, Places*, and it might even be the very last, around 190AD, during the final years of the reign of Commodus.<sup>10</sup>

Having considered the place of the treatise in Galen's work and life, and its destination as a work meant for a wider public, we come now to one of the aspects of the commentary that explains its structure and determines the view that the author has of the Hippocratic treatise, namely the problem of its author. We have seen that after writing his commentary, Galen felt the need to return to the question of the work's authenticity due to the scepticism of some people, in a work that is unfortunately lost. For Galen, it is a crucial question that affects his overall interpretation of the Hippocratic treatise *The Nature of Man*.

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<sup>10</sup> See J. Ilberg, "Über die Schriftstellerei des Klaudios Galenos I," *Rheinisches Museum* 44, 1889, p. 236.

During Galen's lifetime in the second century AD, the Hippocratic question, i.e. the problem of attributing treatises to Hippocrates, was already openly disputed. It is certain that of the sixty or so medical treatises collected under the name of Hippocrates, not all of them could have been written by Hippocrates because of differences in style or doctrine. Even though people in Galen's time were less sceptical than today on the Hippocratic question, they nevertheless debated the origins of certain treatises. Galen had himself written a treatise, now lost, called *The Authentic and Spurious Writings of Hippocrates*. This treatise predated his commentary on Hippocrates' *The Nature of Man*, because Galen refers to it in his commentary and even quotes a long passage he had written in the previous treatise on the authenticity of *The Nature of Man*.<sup>11</sup> Galen quotes in his *Commentary on Hippocrates' The Nature of Man* what he had previously written because his position had not fundamentally changed. In his *The Authentic and Spurious Writings of Hippocrates* he pointed out that *The Nature of Man* was composed of several parts through a process of revision and merging: the first part on the elements and humours was completely in accordance with Hippocrates, as was the last part on regimen; by contrast, in the middle part, certain passages were interpolated, in particular the description of the blood vessels, because it does not agree with visible phenomena and it is inconsistent with the description of the blood vessels in *Epidemics 2*, which Galen attributes to Hippocrates.<sup>12</sup> Thus, when he wrote *The Authentic and Spurious Writings of Hippocrates*, Galen saw *The Nature of Man* as a composite treatise, whose main part was, however, written by Hippocrates.

Yet in his *Commentary*, Galen does not just quote what he has already written, but thoroughly retackles the problem. In the preamble, Galen notes that a small minority denied its authenticity, about which he is indignant, but he explains this error by the composite character of the Hippocratic work. He also notes that certain people did not attribute it to the master Hippocrates, but to his student, Polybus, something which does not make a lot of difference in Galen's eyes, because Polybus is reported to have changed nothing of Hippocrates' doctrines in any of his works (although it remains unclear how Galen knows this). After the preamble, Galen devotes the synthetic parts of the three sections (the conclusion of the first section and the two introductions to the remaining sections) to resolving the problem of its authenticity and to proposing a rather personal

<sup>11</sup> Galen, *In Hippocratis De natura hominis*, ed. Mewaldt CMG V 9, 1, pp. 7,19–8,18.

<sup>12</sup> The description of blood vessels in *Epidemics 2* is in chapter one of section four (5,120,13–124 L.).

solution. Galen does not attribute the same status to the three parts he distinguishes in *The Nature of Man* and which correspond to the three divisions that he makes in his *Commentary*. He regards the first part on the elements of the nature of man (chapters one to eight) as the work of the master Hippocrates and the last part on regimen by his student Polybus. Thus, we note a slight difference compared to the position he previously upheld in his *The Authentic and Spurious Writings of Hippocrates*. Whilst in his work on the Hippocratic question he connects the first and last part by saying that they are from the hand of Hippocrates (first part = ed. Mewaldt, p. 8, 10: παντοίως ἐχόμενον τῆς Ἱπποκράτους τέχνης; third part = ed. Mewaldt, p. 8, 17: τῆς Ἱπποκράτους ἐχόμενα τέχνης), here he upgrades the first part by attributing it to Hippocrates, openly opposing those who believe the whole treatise to be inauthentic, and slightly downgrades the last part by attributing it to his student Polybus. Of course, this change in opinion on the attribution of the last part is not fundamental to Galen, because he holds that Polybus did not change the theories of Hippocrates; instead, it is probably a concession to those who attribute the entire treatise to Polybus. For the middle part of the Hippocratic treatise (chapters nine to fifteen), Galen now holds a more radical position than he used to have. Some passages which he had previously judged to be in agreement with the Hippocratic art, along with the first part (such as the distinction between epidemic and sporadic diseases), seem now less correct to him. On the causes of epidemic disease, he chastises the author of the passage for having taken into account only the pathogenic emanations contained in the air, without also considering, as Hippocrates does in his *Epidemics*, either a generally unhealthy diet or an imbalance in the elemental qualities of the air without the presence of pathogenic elements. But above all, Galen is no longer content with establishing the composite character of *The Nature of Man*; he reconstructs the history of its creation. He attributes the middle part to a forger who had brought together two smaller books that were previously separate: the short work *The Nature of Man* by Hippocrates that forms the first part of the treatise and the short work *Regimen in Health* by Polybus that forms the last part of the treatise. Galen presents this reconstruction not as a hypothesis, but as a fact, which he skilfully inserts into the history of the book during the Hellenistic period. Here is what he says in the introduction to the second part of his *Commentary* (ed. Mewaldt, p. 57,12–20):

Indeed, in the era of the kings of the line of Attalus and those of the line of Ptolemy, as they competed with each other for the acquisition of books, there began to arise a certain recklessness in the (false) attribution and compilation

of them by those who, in order to get money, brought books by famous authors to the kings. Since both of the two books *The Nature of Man* and *Regimen in Health*, were short, someone, thinking that each of these two might be disregarded for its shortness, combined the two volumes into one; and some other, or perhaps the person who first combined them, inserted certain discussions amongst them.

Thus it was in the Hellenistic period that the *The Nature of Man* had been put together by the merging of two works taken from the school of Hippocrates, the School of Cos, undertaken by one or two forgers in order to obtain a better price from the court of Pergamum or Alexandria. In support of this historical fiction, Galen sustains that the lengthy description of the blood vessels comprising four pairs of vessels descending from the head, found in what he believes to be the interpolated section, is wholly unworthy of Hippocrates and contradicts the system of two major vessels described in *Epidemics 2*, which Galen attributes to Hippocrates. Galen picks up the argument that he had previously made in his *The Authentic and Spurious Works of Hippocrates*; but to further lambast this outrageous description of eight vessels coming from the head, he launches into a lengthy enumeration of all the doctors who preceded him and in whom there is no such stupidity (ed. Mewaldt, pp. 69,30–70,17).

For no other doctor argued that there are eight vessels leading from the head down into the lower parts of the body, neither amongst those who practised dissection less carefully, nor among those who practised it more carefully, neither Diocles, nor Praxagoras, nor Erasistratus, nor Pleistonius, nor Philotimus, nor Mnesitheus, nor Dieuches, nor Chrysippus, nor Aristogenes, nor Medeios, nor Euryphon, nor any other of the ancient physicians. What more need we say about those who came after them who made the greatest advances in anatomical observation, like Herophilus and Eudemus, to whom no one has yet added any discovery in methodology, up to Marinus and Numisianus? Or Heracleianus, whom I knew in Alexandria, and who is not without importance. There are many students of these men; but the most famous are my teacher Pelops, the student of Numisianus, and Quintus, student of Marinus. Of course, Quintus did not write a book on anatomy, nor any other work; but from all the others we have no small number of books on anatomy; there are also anatomical writings by the students of Quintus, such as Satyrus, our teacher, and Lycus. Of all of these, and of the others who have written books on anatomy besides them, no one recognises four pairs of vessels leading from the head.

Galen is not content with quoting all the doctors that concerned themselves with anatomy before him to confound the author of such a description, but he pursues it with sarcasm, comparing his error with that of mistakenly counting the hills of Athens or Rome (ed. Mewaldt, p. 70,17–23).

This statement (i.e. the statement that there are eight vessels descending from the head) is similar to saying that Athens has eight acropoleis, whilst in reality there is only one. It is like someone saying that there are eight or six hills at Rome; in each case, he is out by one; but if he said that instead of seven there was only one hill that was inhabited, or conversely that at Athens there were eight instead of one, he would be far more wrong than the person who had been mistaken only by one.

Not content with ridiculing the author of this description of blood vessels by comparing his error to saying there are eight hills in Athens instead of one, or one at Rome instead of seven, Galen also calls him four times a new Prometheus and, moreover, a “new Prometheus who talks drivell.”<sup>13</sup> He compares his discussion of the blood vessels that descend from the head throughout the body with “the dreams of drunk people” (ἐνυπνίους μεθύοντων).<sup>14</sup> I emphasise the repeated sarcasm poured on the poor author of this description of the blood vessels not only to give an idea of the vivacity of Galen’s polemic talent, but also to highlight an incredible blunder of Galen who omitted a crucial witness: Aristotle. We have already said that Aristotle, in his *History of Animals*, quotes this entire description of blood vessels and attributes it to Polybus.<sup>15</sup> Which Polybus can this be, if not the student of Hippocrates? Thus, the entire fiction of Galen on the genesis of *The Nature of Man* collapses. This passage that Galen thinks was added by a rapacious fraudster in the Hellenistic period was already known by Aristotle, who attributed it to Polybus. Thus, the modern critic cannot believe Galen’s tale on the origin of *The Nature of Man*.

However, this fiction has influenced readings of the Hippocratic treatise to such an extent that it has left traces in modern scholarship that seem difficult to overcome. Galen’s theory of the origin of the Hippocratic treatise led editors of Hippocrates from the sixteenth century to the nineteenth century, in particular the edition of Littré (1849), to edit the two works separately, firstly *The Nature of Man*, and then *Regimen in Health*, which the manuscripts present under the single title *The Nature of Man*. Yet in so doing the editors have adopted an unfortunate division, since they divide into two what Galen divided into three, publishing under the title *The Nature of Man* both the first part, which Galen considered authentic, and the second, which he considered apocryphal and, under the title *Regimen in Health*,

<sup>13</sup> Ed. Mewaldt, p. 75,1.

<sup>14</sup> Ed. Mewaldt, p. 73,18.

<sup>15</sup> Aristotle, *History of Animals* 3.3, 512a12–513a7.

the final part on regimen that Galen attributed to Polybus. Although inspired by the division established by Galen, the editors of Hippocrates did not really appreciate the sense of this division. At any rate this separation is not justified by the manuscripts of Hippocrates, but is the application of Galen's view of the origins of the Hippocratic treatise to the editing of Hippocrates. Here is a good example of the impact of a commentary on the text that is commented on. *Regimen in Health* is a fiction that originates with Galen, but that nevertheless continues. Although this erroneous distinction had been denounced in the first critical edition published in the twentieth century by Oscar Villaret in 1911, the Loeb edition by W.H.S. Jones, published in 1931, still presented the two treatises separately, as Littré had done. Although my critical edition published in *CMG* in 1975 again denounced this distinction, the editions of Littré and Loeb still mislead many scholars who, not being specialists in the Hippocratic Corpus, need to use Hippocrates.

However, the problem of authenticity in Galen's *Commentary* does not come down solely to historical fiction. To demonstrate the authenticity of the first part of the treatise on the elements in *The Nature of Man*, Galen, who was content simply to say in his *The Authentic and Spurious Works of Hippocrates* that it agrees with Hippocrates' art, now produces a new argument based on the place of Hippocrates in the philosophical inquiry into *physis*, particularly the connections between Hippocrates and Plato. Thus from a historical novel, we pass to the third part, to Galen's view of the history of philosophy and of the place of Hippocrates' medicine in this history.

Indeed, a large part of the preamble is occupied with a discussion of what is meant by *physis*, a term that gave the title of *physikoi* to certain ancient philosophers. It seems necessary to quote the whole discussion, despite its length, before commenting on it (ed. Mewaldt, pp. 3,20–7,14):

The first thing to address is what is meant by the word *physis*, from which some of the ancient philosophers were called *physikoi*? It will become clear to you why I am saying this if you read their writings, called *Peri physedōs*. For it is clear that what they are discussing is the primary substance: the substance which they say is the ungenerated and eternal cause underlying all generated and perishable bodies, and the features that in virtue of their own particular structure constitute each generated and perishable thing. Once known, these features also lead to a knowledge of other things which are not proper to each substance. For this is what makes the teaching on the nature of each existing thing complete, even if someone explains just one or two features in some detail.

And this is what men are accustomed to say (when they want to) show something about the nature of something, just as the Poet does; for he says (*Odyssey* 10,302–304):

“As the Argus slayer, having spoken clearly, furnished a medicine, pulling it from the earth, and showed to me its *physis*.”

The poet goes on to say:

“The root was black, and the blossom resembled milk.”

Likewise, those who wrote about herbs, or about plants in general, taught about the observable nature of each of these plants (what qualities they have to someone touching, tasting, smelling or seeing them), explaining its property either internally (to the plant) or applied to the outside. For the observable nature of each existing thing lies in these qualities. However, the nature that goes beyond this is primary. This is what I was talking about above and concerning which Plato advises anyone who wishes to discuss something methodically to familiarise himself with. I will transcribe for you this passage of his (*Phaedrus* 270c–d):

“So do you think it is possible to understand the *physis* of the soul properly, apart from understanding the nature of the whole?—If Hippocrates, of the Asclepiadian family, is to be believed, not even the body can be understood other than by this method.—He is correct, my friend. Still, we need, in addition to Hippocrates, to investigate reason and see whether it is in agreement with him.—Yes.—What, then, do Hippocrates and true reasoning say concerning the inquiry into nature? For is it not necessary that the nature of anything whatsoever be understood in this way? First whether the thing concerning which we want to become experts and make others experts too is simple or complex. Then, if it is simple, to examine what power it has by nature for acting, and in respect of what, and what it has for being affected, and by what; while if it has many forms, we must list them, and then do for each of them what we did in the case of the single one, namely see what it is of a nature itself to bring about (on what), or to be affected, and by what.”

This passage from Plato’s *Phaedrus* teaches you the meaning of the term *physis* and also how one must investigate its essence methodically.

You will find all these things written in books titled *Peri physeōs* by the ancient philosophers: Empedocles, Parmenides, Melissus, Alcmaeon, and Heraclitus. Some of them wrote not just one, but several books devoted to this investigation; some, like Epicurus, even wrote a great many. He begins as do all the others, with the question of whether the thing whose nature we are attempting to discover is single and simple, or whether it is something constructed from some simple principles prior to it—principles which those who came after the Ancients tended to call *stoicheia* (‘elements’), just as with regard to speech, grammarians say that the elements are 24 in number, i.e. the simple and primary parts which cannot be divided into other parts in the way syllables can. For if you remove the first element, sigma, from the syllable

-stra-, what is left behind, the residual 'tra', is still a syllable. And so again, if you remove the first letter, -t-, from this -tra-, as a remainder from this you will still have 'ra', which is capable of being divided. However, you cannot divide the -a- nor show it to be composed of two or three sounds, as many others are. For it is one indivisible sound in itself, not simply with respect to length, as we and many other philosophers have shown elsewhere, but with respect to form alone. This, then, is also the way in which those who say that the four elements of generated and perishable bodies are air, fire, earth and water, since none of them can be cut further into more forms, posit these as primaries of *physiologia* (science of nature). There is a first method of conceiving the smallest bodies based on size; the second, in turn, is based on quality, as has been shown with elements of speech. And the *physikoi* philosophers disagreed with each other, some supposing that the elements are the smallest parts in generated and perishable bodies based on size, and some that they are the smallest based on quality. Now in the first book of *Medical Terms*,<sup>16</sup> I discussed the meaning of the term *stoicheion*, just as I did in relation to the term *physis* in the fifth book. But our present discourse is concerned not with appellations and meanings, but with the actual facts about the parts which are minimal, whether in respect of quantity or quality, from which is generated the first composition of generated bodies, which Aristotle and I call ['perceptible elements' and] 'uniform parts'. There is another, second, composition of bodies which we call organic parts: the hand, leg, and eye, the tongue and lung and heart, and liver and spleen, kidneys, stomach, womb, and other such things. For the primary nature of such organs is comprised of primary elements and uniform parts, which Plato was accustomed to call 'first-born' (*prôtogona*). The difference between these bodies has also been discussed in a certain treatise, but I will recapitulate the main points for the sake of clarity in exposition. Bone and cartilage and tendon are uniform parts, as are membrane, fat and flesh, both that which is moulded around the sinews of the muscles, which themselves are uniform parts, and that around the viscera, which Erasistratus calls *parenchuma*. And at the beginning of the treatise *On the Therapeutic Method*, in which I explained what sort of thing this method is, it was shown that it is impossible to discover by means of indication the treatment of the uniform bodies without knowing whether each of them is simple, or is composed of several elements, and whether these are mixed all the way through, or only touching each other. And it has also been shown that some doctors, including Erasistratus, are semi-dogmatics, treating diseases of organic parts theoretically, but not treating those of uniform parts, or else treating them empirically. And (it has been shown that) most of them do not know how diseases of the organic parts differ from those arising in uniform parts, just as they do not know the number of each of these two categories of disease. However, you, my friends, possess one of my treatises, *On the Differences of Diseases*, and a not insignificant treatise

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<sup>16</sup> The Greek text of this treatise is lost.

concerning remedies, which I have called *On The Therapeutic Method*. Both these and other things require that we discuss the nature of the body, which is taught in the present treatise.”

From this long discussion on the concept of nature in philosophers and doctors, the first thing to note is the breadth of Galen’s view on the history of philosophy. During his analysis of *physis*, he quotes Greek philosophers from the archaic, classical and Hellenistic periods. Amongst the pre-Socratic philosophers, whom he calls ‘the ancient philosophers’ (τῶν παλαιῶν φιλοσόφων), he alludes to a series of works by five of them, whom he quotes in the following order: Empedocles, Parmenides, Melissus, Alcmaeon and Heraclitus. The presence of Melissus of Samos in this list is not surprising, since he is quoted at the start of Hippocrates’ *The Nature of Man*, the text he is commenting on.<sup>17</sup> It is interesting to note, meanwhile, that already by Galen’s time, these philosophical treatises were known under the title of *Peri physeōs*, ‘On Nature’.

For the classical period, Galen mentions Plato and Aristotle. He points out in both philosophers the expression they use to describe the elements whose union comprises the *physis* of engendered bodies.

Plato, Galen says, tends to call these elements πρωτόγονα (‘first-borns’). As a matter of fact, this term that Galen says is usual in Plato appears only twice, in the form πρωτογενές, in his *Statesman* 288e5 and 289b1, and it does not mean the elements of engendered bodies, but rather materials such as gold, silver, cork and papyrus that Plato qualifies as the primary possession of men and exempt from composition (288 e 5 πᾶν τὸ πρωτογενές ἀνθρώποις κτῆμα καὶ ἀσύνθετον). Thus, Galen distorts reality, transposing the term from the inanimate to the living. However, we might say that Galen preserves the spirit of Plato’s text to the extent that materials such as gold, silver and cork are simple elements for the formation of instruments (ὄργανον, see *Statesman* 287 d), just as human materials such as bones and flesh serve for the formation of organs. The same Greek word ὄργανον means both instrument and organ.

From Aristotle, Galen takes two expressions, according to the text edited by Mewaldt, στοιχεῖα πρὸς αἴσθησιν, ‘the perceptible elements’, and ὁμοιομερῆ, ‘the uniform parts’.<sup>18</sup> The first expression presents a serious problem

<sup>17</sup> Hippocrates, *The Nature of Man*, ch. 1 ed. Jouanna, p. 166,11.

<sup>18</sup> Ed. Mewaldt, p. 6,15. This is not the only treatise where Galen says that he takes the term ‘uniform parts’ from Aristotle; see *De sanitate tuenda* 6.2 (6.384,4 f. K.); Koch *CMG* V, 4, 2 (1923).

because it is not Aristotelian, but Galenic, as Mewaldt highlights in his *Testimonia*. Should we think that Galen attributed his own vocabulary to Aristotle? This is what we would be tempted to think, if we accepted the text edited by Mewaldt. However, a consultation of the critical apparatus shows that *στοιχεῖα πρὸς αἴσθησιν καὶ* is a false addition in manuscript L (*Laurentianus gr.* 59, 14), as shown by the agreed omission of these words in two other manuscripts, V (*Vaticanus gr.* 282) and R (*Vaticanus Reg.* 173), and the Arabic translation.<sup>19</sup> Thus, Galen attributes only the expression *ὁμοιομερῆ* to Aristotle, which is a direct and correct reading. Aristotle uses the word to mean the elements of the living being. For example, in *On the Parts of Animals* (2.2, 647b10 ff.), Aristotle lists amongst the soft and moist uniform parts the blood, ichor, fat, marrow, semen, bile, milk and flesh, and amongst the dry and hard uniform parts, the bone, spine, nerves and blood vessels. The two lists of Aristotle and Galen are comparable, although Galen does not include the humours amongst the uniform parts.

Hellenistic philosophy is represented by a single name, Epicurus. To conclude his overview of the history of philosophy, we note that Galen distinguishes between the vocabulary of the ancient philosophers and their successors with which they designate the elements. He noted that *στοιχεῖον* was not used by ancient philosophers, whilst it became normal in their successors. Thus, we come to appreciate, thanks to the discussion of *physis* in Greek philosophy and medicine, the close attention Galen paid to the history of philosophical language and the appearance of certain terms during the development of this history of philosophy, such as *στοιχεῖον* and *ὁμοιομερῆ*.

However, despite this sensibility to the evolution of language, Galen's synthetic way of thinking becomes manifest in his insistence on the persistence in the meaning of *physis* and, above all, in the method of the analysis of *physis*.

Concerning the word *physis*, Galen refers not only to the titles of the works of ancient philosophers, but also to Homer, of whom he quotes a passage from the *Odyssey* (10,304), which contains the first attestation in Greek literature of the word *physis*. However, Galen is concerned less with the words themselves than to the notion they refer to and, above all, to the method required to discover this notion. It is no accident that the method

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<sup>19</sup> The wording of manuscript L *στοιχεῖα πρὸς αἴσθησιν* is just a marginal gloss of *ὁμοιομερῆ* that has slipped into the text. Compare Galen, *The Best Constitution of Our Bodies* 2 (4.741,10 f. K.): τὰ ὁμοιομερῆ ... καλεῖται δ' οὕτως δηλονότι τὰ πρὸς αἴσθησιν ἀπλά.

related to the discovery of an object's *physis* is linked in this preamble to the famous passage of Plato's *Phaedrus* where Hippocrates is mentioned. Galen sees it as the clearest statement of the philosophical method of researching *physis*, i.e. the analysis into simple elements and the determination of the *dynamis* of these simple elements. However, according to Galen, although the formulation of the method is Platonic, the existence of the method predates Plato. The method is common to all the ancient *physikoi* and it was continued by those who followed them. Epicurus, from this point of view, used the same method. The only difference between the philosophers concerns their definition of the elements, some defining them by their quantity, and others by their quality. However, Galen does not dwell on these differences in the preamble, but emphasises continuity. In this context, we might be surprised not to find mention of *The Nature of Man*, to which it acts as a preamble. Yet the connection is made visible a short while later in the same preamble when Galen, in his discussion of the problem of the authenticity of the first part of the treatise, which he attributes to Hippocrates, takes the quotation from the *Phaedrus* to highlight that the research method of the *physis* of the body, which Plato attributes to Hippocrates, alludes to the start of *The Nature of Man*. Here is the passage from the preamble (ed. Mewaldt pp. 8,19–9,11):

The first part of the treatise (sc. *The Nature of Man*) constitutes, so to say, the foundation (κρηπίδα) of the whole of Hippocrates' art. This is why I have said that I am amazed that some people exclude this book as being alien to Hippocrates' thought. ... Almost all other doctors, as I said, apart from a small number, are convinced that the short work *The Nature of Man* is by Hippocrates; Plato himself knows it. Indeed, in his *Phaedrus* he writes this short passage that I quoted before, of which this is the beginning:

"Do you think it is possible to understand the *physis* of the soul properly, apart from the nature of the whole?—If Hippocrates, of the Asclepiadian family, is to be believed, not even the body can be understood other than by this method."

Those who talk random nonsense should pay attention to this passage and consider which of Hippocrates' books concerns the method praised by Plato. For it will become clear that besides the present treatise, *The Nature of Man*, in no other does Hippocrates investigate first concerning the human body whether it is simple or complex, and then each of the other topics which Plato mentioned, and which I have taught about in my work *On The Elements According to Hippocrates*, and which I will now demonstrate again, since this is what you have decided.

At the end of his linear explanation of the first part, Galen returns to the method employed by Hippocrates. This long conclusion still has at its heart

the quotation from Plato's *Phaedrus*, which Galen quotes again for the third time. Here is the conclusion (ed. Mewaldt, pp. 53,17–55,25):

Hippocrates, having set himself the task to discover the nature of our bodies in this book, used the following method for his discovery: first he has inquired whether it is simple or complex, and then, having found that it is complex, examined the substance of the simple components contained in it, i.e. what sort of substance it is, that is, what power it possesses to be affected by something and to act, and this is why he mentioned the seasons and ages of life, examining how the elements which have been discovered are related to these things. He further discovered that it is necessary to refer to these considerations in the prediction of the resolution of a disease and in its treatment. In his research into the constituting elements of our body, he has kept in mind the elements of the whole, which are truly elements. For when we are speaking loosely, we sometimes call the simple and primary parts in the articulation of any individual subject the elements of that thing, just as we speak of harmonic and rhythmic elements, and arithmetical and geometrical ones, and those of argument and speech and demonstration. Thus Plato says there are a hundred elements of a cart, as Hesiod said when he wrote:

“a hundred planks of the cart.”

For not everything which is called in this way an element in each individual case is genuinely simple and primary, but those things common to all things and which are simple and genuinely primary are properly called ‘elements’. And Hippocrates named these things after the qualities, hot and cold, wet and dry, and not things intermediate between the extremes, but the extremes themselves, namely fire and earth, water and air.

This is the method that Plato saw fit to imitate (μιμεῖσθαι) in examining the nature of the soul. For no particular thing, he says, can be exactly understood without understanding the nature of the whole. I will transcribe for you the very Platonic passage, which reads as follows:

“So do you think it is possible to understand the *physis* of the soul properly, apart from understanding the nature of the whole?—If Hippocrates, of the Asclepiadian family, is to be believed, not even the body can be understood other than by this method.—He is correct, my friend. Still, we need, in addition to Hippocrates, to investigate reason and see whether it is in agreement with him.—Yes.—What, then, do Hippocrates and true reasoning say concerning the inquiry into nature? For is it not necessary that the nature of anything whatsoever be understood in this way? First whether the thing concerning which we want to become experts and make others experts too is simple or complex. Then, if it is simple, to examine what power it has by nature for acting, and in respect of what, and what it has for being affected, and by what; while if it has many forms, we must list them, and then do for each of them what we did in the case of the single one, namely see what it is of a nature itself to bring about (on what), or to be affected, and by what.

Since Plato has written these things, let someone show us in which of Hippocrates' books other than *Nature of Man* can one find this method; or if indeed he is unable to do so, let him look for no more reputable witness than Plato to the book's authenticity. And furthermore, Plato was born very close to the time of Hippocrates' students, so that if this book were by one of them, he would have written down the name of its author. Indeed, before the kings of Alexandria and Pergamum conceived the ambition of acquiring ancient books, no writing was ever given a false attribution. But as soon as those who began to collect the works of some ancient author for them received remuneration for it, they immediately collected many and falsely attributed them. But these kings came after the death of Alexander, whereas Plato wrote these things before Alexander's reign, when attributions were not yet being forged, but each book displayed its proper author on the title-page. So Plato agrees that one must investigate the nature of the soul according to the method that Hippocrates used in the case of the body, and says that this cannot be done properly without knowing the nature of the whole. Some people are so far mistaken as to think that this wonderful method is in fact someone else's, because the one who first discovered such a great and admirable matter would not have shrunk from writing down the demonstration of it. For how is it not great and admirable to discover the elements of generated and destructible bodies? And how would they not be much better established with demonstrations? And how can these things be grasped in not even three hundred complete lines, but many fewer? For it is not likely that Hippocrates would make use of these elements in all of his therapeutic and prognostic investigations as though they had been demonstrated, and yet nowhere have actually provided the demonstration for them.

This new discussion in the conclusion of the first part of Galen's commentary resumes and develops what he had already begun in his preamble on the method of research on *physis* in *The Nature of Man* and its relationship with Plato's *Phaedrus*. However, the *The Nature of Man* acquires from now on a decisive place in Hippocrates' thought, and Hippocrates acquires a stature that the start of the commentary had not brought to light, and above all an eminent place in this history of philosophical research on *physis*.

Galen describes the place of *The Nature of Man* in the work of Hippocrates as a *κρηπίς*, 'foundation'. Further down, he goes on by saying that this treatise contains the exposition and demonstration of the method of the discovery of the elements of man, a discovery that serves as a basis for all the discoveries which Hippocrates was able to make in treatment and prognosis. Thus, Galen sees in this first part of *The Nature of Man* the foundation of Hippocrates' medical discoveries, to the extent that there we find the account of human nature and the application of the method of the determination of these elements.

Galen makes Hippocrates the inventor of the method of philosophical research on nature and sees the Plato of the *Phaedrus* as an imitator of Hippocrates. Galen uses the verb μιμεῖσθαι, ‘to imitate’, to establish the relationship between Plato’s method and that of Hippocrates. We can see here how the important role Platonic philosophy occupies in Galen (a role more important even than Aristotelian philosophy) can only be fully understood in relation to Hippocratic thought. Although it might seem paradoxical, Plato is, in Galen’s eyes, a continuator of Hippocrates, author of the start of *The Nature of Man*.<sup>20</sup>

However, if we compare this role of Hippocrates with the outline that Galen had initially made in his preamble, we cannot help but notice a most remarkable difference. In his outline, Galen insisted on the continuity of the method from the ancient philosophers to those of the Hellenistic period, even seeing in the passage from the *Odyssey* the beginning of this method, at least for research of the perceptible *physis*. The passage of Plato’s *Phaedrus* on the method of inquiry into *physis* was already central, but it did not seem to mark a decisive stage, since Galen already saw in the pre-Socratic philosophers the application of the method. However, from the moment Galen re-examines the passage of Plato’s *Phaedrus*, identifying the Hippocratic method mentioned by Plato with that of *The Nature of Man*, he qualifies Plato as an imitator and Hippocrates as the inventor of the method, even if Plato can be credited with transposing the method from the body to the soul. Thus, if Hippocrates was the first to discover this method, as Galen implies, what about the treatises of the *physikoi* who pre-date Hippocrates? Does this mean that Hippocrates was the inventor of the elements of the body only for humans? Does it mean, rather, that he is the inventor of the inquiry into *physis* in its perfected form? The answer to this question is awkward. This awkwardness comes from the fact that Galen does not match a traditional view of the history of philosophy with his vaunted view of Hippocrates, whom he sees not only as the origin of medicine, but also of philosophy. However, this view of Hippocrates as both a doctor and philosopher that comes from Galen’s commentary on *The Nature of Man* corresponds to the ideal of a philosopher-doctor that Galen promotes in his

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<sup>20</sup> Galen also connects the method of Plato in his *Phaedrus* and that of Hippocrates in his *De methodo medendi* 1.2 (10,13 f. K.). More generally, Galen thinks that Plato took his principal doctrines from Hippocrates; see *De usu partium* 18 (ed. Helmreich 1.11): “Plato was a supporter (ζηλωτής) of Hippocrates and took from him the most important of his doctrines.” These doctrines include the theory of the four humors, the tripartite division of the soul etc. On Platonism in Galen in general, see Ph. De Lacy, “Galen’s Platonism,” *AJPh* 93, 1972, pp. 27–39.

small work dating from the same time, entitled *That the Best Doctor is also a Philosopher*.<sup>21</sup> In this short work, Galen returns to the Hippocratic method of knowledge of the *physis* of the body, which he qualifies as a logical method, saying (ed. I. Mueller, p. 6,14–19):

This same method also teaches what is the nature of the body itself, that which comes from the primary elements which are totally mixed with each other, that of the secondary elements, the perceptible ones, which are also called uniform parts and, in addition to these two, the third, that which comes from the organic parts.

In this passage, Galen systematically summarises and clearly distinguishes the three levels of research on human nature obtained by the logical method. This research comes to correspond, after Galen, with two of the three parts of philosophy, logic and physics.

Galen sees in the Hippocratic treatise *The Nature of Man* the philosophical foundation of the whole of Hippocrates' medical teaching, the discussion of the method of investigation of *physis* and of the elementary theory of the human body that serves as a basis for nosology, prognosis and treatment. In this context, we now better understand the energy that Galen puts into showing that the first part of *The Nature of Man* was written by Hippocrates. In fact, the start of the treatise constitutes the very foundation of the image that Galen has of Hippocrates; it is the pedestal of Hippocrates for Galen. We do not need to point out that this Galenic reading of *The Nature of Man* hardly corresponds to a modern one. However, my purpose today was not to study the treatise *The Nature of Man* in itself, but to reconstruct, from the 'transformative' reading that Galen makes in his commentary,<sup>22</sup> his view of Hippocrates and the central place he assigns him in the history of philosophical and medical inquiry into *physis*. Although it might seem paradoxical, Hippocrates appears, in the eyes of Galen, as the brilliant precursor of the Platonic diaeresis.

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<sup>21</sup> See I. Mueller, *Scripta Minora* II, pp. 1–8; cf. also E. Wenkebach, "Der hippokratische Arzt als das Ideal Galens," in *QSGN*, Bd. 3, Heft 4, 1932–1933, p. 155 [363]–175 [383]. On this work, which should be connected with the commentary on *Airs, waters, places*, see J. Jouanna, "La lecture de l'éthique hippocratique chez Galien" (quoted in n. 1), pp. 230–241, with n. 41 (for bibliography concerning its date), also included in the present volume as ch. 13.

<sup>22</sup> On the notion of 'transformative' reading in Galen, see the thoughts of H. von Staden in the discussion of my paper at the *Entretiens de la Fondation Hardt* XLIII on "La lecture de l'éthique chez Galien" (quoted in n. 1), p. 252f.



## CHAPTER SIXTEEN

### THE LEGACY OF THE HIPPOCRATIC TREATISE *THE NATURE OF MAN*: THE THEORY OF THE FOUR HUMOURS

The theory of the four humours (blood, phlegm, yellow bile, black bile) first appears in a fifth-century BC Hippocratic treatise called *The Nature of Man*, the only treatise from the Hippocratic Corpus to which we can attribute an author's name.<sup>1</sup> It is the work of Polybus, Hippocrates' student and son-in-law. Here, we see for the first time a very clear expression of the idea that the nature of man consists of four humours,<sup>2</sup> and that the properties of each of these correspond to each of the four seasons, each humour predominating in the season which shares the same nature: blood, hot and wet, predominates in spring; yellow bile, hot and dry, in summer; black bile, cold and dry, in autumn; and phlegm, cold and wet, in winter.<sup>3</sup> Good health is defined as the balance and mixture of the humours, whilst their imbalance and separation is the cause of disease.<sup>4</sup> To avoid this imbalance, the doctor recommends modifying one's regimen according to the seasons.<sup>5</sup> The predominance of the humours varies not only according to the seasons, but also according to age. However, the relationship between humours and stages of life is not discussed in any systematic way. Concerning quartan fever, attributed by the Hippocratic author to black bile, he simply says that this humour predominates in people aged between twenty five and forty two.<sup>5</sup>

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\* This paper was presented on 15th May 2004. Since my research has progressed since this date, I have highlighted new points in the footnotes, whether they were inspired by the audience of the paper (see n. 25 and 40), or resulted from my own subsequent research leading up to the original publication of this paper in June 2006 (see n. 41 and 42). It seemed necessary to preserve the chronology of the work's progress. \*[Since 2006, I have published other Greek texts hitherto unedited on the four humours, the most recent of which is "Anonyme, Sur les quatre éléments (Laur. Plut. 75. 19, fol. 26<sup>v</sup>-27<sup>r</sup>)," *Galenos* 3 (2009), 75–89. Here (p. 75, n. 2) one may find a list of all the preceding unedited texts I have published in the order of their discovery not of their publication.]

<sup>1</sup> Hipp. *De nat. hom.* 4, 1: CMG I, 1, 3, p. 172,13 f. Jouanna.

<sup>2</sup> Ibid. 7: CMG I, 1, 3, pp. 182,4–186,12.

<sup>3</sup> Ibid. 4, 2–3: CMG I, 1, 3, pp. 172,15–174,3.

<sup>4</sup> Ibid. 16 (= *De diaeta sal.* 1): CMG I, 1, 3, pp. 204,22–208,8.

<sup>5</sup> Ibid. 15, 5: CMG I, 1, 3, p. 204,16–18.

It is further important to stress that in the *The Nature of Man* the theory of the four humours is not connected to the four elements of the universe (fire, air, water, earth), and there is no trace of its development into a theory of the four temperaments or of their corresponding character types. Of course, there are some traces in the Hippocratic Corpus of a distinction between those in whom yellow or black bile predominates.<sup>6</sup> There are also elements of a theory of character types according to the mixture of elements that make up the nature of man, particularly in *Regimen*, where man, according to this Hippocratic doctor, is composed of fire and water.<sup>7</sup> There are also traces of a theory of physiognomonic character typology in *Epidemics* 2.<sup>8</sup> However, none of this is connected to the four humours. The reason is that the theory of the four humours elaborated in the Hippocratic treatise *The Nature of Man* was, in its time, just one humoral theory amongst others. There is another treatise where a theory of four humours is expounded with great clarity, *Diseases* 4, where it is said very clearly that “women and men have four kinds of moistness (ύγροϋ τέσσερα εἶδεα) in their bodies, and from these diseases originate, except for afflictions caused by force”; and the author continues: “These kinds are phlegm, blood, bile and water” (ύδρωψ). (*Diseases* 4.32.1, p. 84,4–8 Joly = 7.542,6–9 L.). Thus, the fourth humour is water, not black bile. This theory of four humours did not leave any legacy.<sup>9</sup> Only the Hippocratic theory of the four humours blood, phlegm, yellow bile and black bile had a future.<sup>10</sup>

<sup>6</sup> See the treatise *Regimen in Acute Diseases* 61 (16): 1.140,17 Kühlewein = p. 63,11 Joly = 2.358,1f. L. where it is said that vinegar’s acidity sits better in those in whom bitter bile dominates than in those in whom black bile dominates (πικροχόλοισι μάλλον ἢ μελαγχολικοῖσι).

<sup>7</sup> *Regimen* 1.35: CMG I 2, 4, pp. 150,29–156,18.

<sup>8</sup> *Epidemics* 2.6,1: V 132,16f. L., which discusses people in whom black bile dominates (μελαγχολικοί); but this is only one characteristic amongst others to define a category of individuals: those who stammer, speak quickly, are melancholic, intense, who do not blink, are quick-tempered (δέξυθομοί).

<sup>9</sup> *Diseases* 4.32,1: p. 84,4–8 Joly = 7.542,6–9 L. \* [A clear example of the disappearance of this theory in favour of the theory of *Nature of Man* can be found in the Byzantine treatise *On the Generation of Man and the Seed*. Although its source is the Hippocratic work *On Generation*, the theory of the four humours blood, phlegm, bile and water is replaced by the theory of blood, phlegm, yellow bile and black bile. See J. Jouanna, “La postérité de l’embryologie d’Hippocrate dans deux traités pseudo-hippocratiques de la médecine tardive (*Sur la formation de l’homme et Sur la génération de l’homme et la semence*)” in L. Brisson, M.-H. Congourdeau et J.-L. Solère (éd.), *L’embryon. Formation et animation*, Paris, Vrin, 2008, pp. 15–41 (pp. 30–31)].

<sup>10</sup> On the history of the four humours, the work by E. Schöner, *Das Viererschema in der antiken Humoralpathologie*, Wiesbaden 1964, remains fundamental. In the same year, the voluminous work by R. Klibansky, E. Panofsky and F. Saxl was published, *Saturn and Melancholy. Studies in the History of Natural Philosophy, Religion and Art*, London, 1964, which

However, this future was not immediate; the theory did not re-appear in the philosophical tradition of the fourth century, neither in Plato's *Timaeus*, where the nature of man is constituted of four elements (fire, water, earth and air), nor in Aristotle. The famous *Problem* 30.1, written in the Aristotelian tradition, concerning the melancholics' genius, i.e. those people in whom black bile is predominant, is not placed within a theory of the four humours.<sup>11</sup> Even in the post-Hippocratic medical tradition, the theory of the four humours was slow to triumph. Of course, in the fourth century, humoral medicine continues in Praxagoras and Diocles, but it is not certain whether the theory of the four humours had become canonical. Praxagoras, Galen says, distinguished ten humours, not including blood.<sup>12</sup> Concerning Diocles, one testimonium speaks of four humours (phlegm, yellow bile, black bile and blood), but this is from a later source, the Anonymous of Brussels, who may have interpreted Diocles within a later context.<sup>13</sup> At any rate this theory of the four humours had still not triumphed in the Hellenistic period, when the development of anatomy in Alexandria caused attention to be focused on the principal solid organs and led to a 'solidist' view of the body that replaced the Hippocratic humoral perspective. Indeed, concerning Erasistratus, one of the two great doctors of the Hellenistic period, Galen asks in his treatise on the *Natural Faculties*: "Did Erasistratus not read any of Hippocrates' works, not even his treatise *The Nature of Man*, that he was so careless as to neglect the investigation into the humours? Or rather, if he knew them, did he omit willingly the most beautiful conception of the art?"<sup>14</sup> Furthermore, the Hellenistic and Roman medical sects, whether Empiricists, Dogmatists, Methodists or Pneumatists, did not seem to place much emphasis on a theory of the four humours.

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extends beyond the ancient world to Dürer. It includes a first chapter on "Melancholy in the physiological literature of the Ancients," with clear comparisons of the texts containing the theory of the four humours. This study was quoted, praised and used by H. Flashar, *Melancholie und Melancholiker in den medizinischen Theorien der Antike*, Berlin, 1966. The work of Klibansky, Panofsky and Saxl was preceded by an earlier work of E. Panofsky and F. Saxl on *Dürers 'Melancholia I': Eine quellen- und typengeschichtliche Untersuchung*, Leipzig, 1923 (Studien der Bibliothek Warburg 2). \* [It was later revised and translated into German: *Saturn und Melancholie*, Frankfurt 1992.]

<sup>11</sup> Aristotle, *Probl.* 30.1: 953a10–955a41. The only humour related to character here is black bile. There is no discussion of the other humours. I refer to the commentary on this famous problem in the two works on melancholy mentioned in the preceding note and to *Aristote. L'homme de génie et la mélancolie: Problème XXX, 1*, trans., pres. and annot. by J. Pigeaud, Paris, 1988 (with bibliography, p. 79f.).

<sup>12</sup> Galen, *On the Natural Faculties* 2.9 (*Scr. min.* 3.203,17f. Helmr. = 2.141,5f. K.).

<sup>13</sup> Diocles, fr. 40, 2: 1, p. 78,28ff. van der Eijk.

<sup>14</sup> Galen, *On the Natural Faculties* 2.9 (*Scr. min.* 3.196,26–197,5 Helmr. = 2.132,3–8 K.).

It was Galen who, in the second century AD, gave the theory of the four humours its prestige by showing in his *Commentary on Hippocrates' The Nature of Man* that this theory was the foundation of Hippocrates' work.<sup>15</sup> Galen undoubtedly made an error of judgement by attributing to the master what was the work of one of his students. However, the Galenic reading, despite this error, was one of the important historical factors behind the survival of Hippocrates and the fortune of the theory of the four humours.

Galen himself did not make much use of the theory, since the basis of his system is the theory of the four elementary qualities hot, cold, dry and wet. For example, the classification of the mixtures in his treatise *De temperamentis* is based on the different possible mixtures of the four elementary qualities: whilst there is only one good mixture, there are eight bad mixtures, four in which a single quality is dominant, and four others in which two qualities prevail.<sup>16</sup> References to mixtures described by the predominance of a humour, although not totally absent, are rare. Galen sometimes speaks of the contrasting characteristics of phlegmatic and bilious mixtures.<sup>17</sup> However, even when he envisages the mixtures from the perspective of the humours, he does not speak of four mixtures caused by the predominance of the four humours. Significantly, melancholic mixtures are not attributed to the predominance of innate black bile, but rather result from the combustion of the blood.<sup>18</sup> Physical and moral qualities are attributed to the

<sup>15</sup> Galen, *In Hipp. De nat. hom. comm.*, 1 prooem. 11: CMG V 9, 1, p. 8, 9f. and p. 8, 19f. (where we find the image of the foundation: οἶον κρηπίδα). See J. Jouanna, 'La lecture du traité hippocratique de la *Nature de l'homme*. Les fondements de l'hippocratismes de Galien', in: *Le commentaire entre tradition et innovation: Actes du Colloque international de l'Institut des Traditions Textuelles*, Paris and Villejuif, 22–25 septembre 1999, edited by M.-O. Goulet-Cazé, Paris, 2000, pp. 273–292. See also ch. 15 in this volume.

<sup>16</sup> Galen, *De temp.* 1 1ff.: p. 1ff. Helmr. = 1,509 ff. K. Also in his *Art of Medicine* 8, pp. 295,4–299,4 Boudon (= 1.326,9–329,10 K.) physical or intellectual differences are said to derive from elemental qualities (in particular of the brain) and not from the humours.

<sup>17</sup> In particular, at the end of book 2.6 (p. 76, 11ff. Helmr. = I 630, 12ff. K.), where he shows the complexity of things that some doctors are not aware of. Galen takes as an example people who are quite phlegmatic (ἰκανῶς φλεγματοῦδεσιν ἀνθρώποις), but are wrongly considered by some to be bilious (χολώδεις φύσει), because they vomit bile. He adds: "They are soft all over, white, hairless, fat, with invisible vessels, no muscle and devoid of blood and very hot to the touch." This is clearly the description of a phlegmatic mixture. Galen continues by saying that he knows, on the other hand, people who do not vomit bile and who "are dry, hairy, black, with visible vessels and appear quite hot to the touch." This is the physical description of bilious mixtures, which is contrasted with the account of phlegmatic ones.

<sup>18</sup> See *De temp.* 2.6: p. 83,4f. Helmr. = 1.641,7f. K: γίγνονται μὲν γὰρ αἱ μελαγχολικαὶ κράσεις ἐκ συγκαύσεως αἵματος: "melancholic temperaments result from a combustion of the blood."

mixtures defined by their elementary qualities. Here is an example regarding the cold and dry temperament:

εἰ δ' ἀπ' ἀρχῆς εἶη ψυχρὸς καὶ ξηρὸς, ἢ μὲν ἕξις τοῦ σώματος τούτῳ λευκὴ καὶ μαλακὴ καὶ ψιλὴ τριχῶν, ἀφλεβὸς δὲ καὶ ἀναρθρὸς καὶ ἰσχνὴ καὶ ἀπτομένοις ψυχρὰ καὶ τὸ τῆς ψυχῆς ἦθος ἄτολμον καὶ δειλὸν καὶ δῦσθυμον, οὐ μὴν μελαγχολικά γε τὰ περιττώματα. (*De temp.* 2.6: p. 84,9–13 Helmr. = 1.643,4–9 K.)

If the individual is cold and dry from the start, the constitution of this individual's body is white, soft, hairless, without visible vessels and joints, slim and cold to the touch; and the character of his soul is retiring, cowardly and depressed; nevertheless, his residues are not melancholic.

The final remark on the absence of melancholic residues means that, for Galen, there does not necessarily exist a relationship between a cold and dry mixture and a melancholic mixture. Thus he establishes subtle differences, criticising doctors for ignoring the complexity of reality. In short, the theory of Galen's *De temperamentis* is not based on a humoral theory.

However, when commenting on the theory of the four humours he finds in the Hippocratic treatise *The Nature of Man*, Galen is more explicit about some correspondences, and he adds others as well, both in his *Commentary on Hippocrates' The Nature of Man* and in his treatise *On the Doctrines of Hippocrates and Plato*. For example, a correspondence he renders more explicit is the relationship between humours and age: the only explicit relationship in the *The Nature of Man* between black bile and age, situated between twenty five and forty two years old, as we saw, is extended by Galen to comprise the four humours and the four stages of life in a system of correspondences between humour, season and age: blood, spring, infancy; yellow bile, summer and youth; black bile, autumn and maturity; phlegm, winter and old age. Indeed, Galen says in his *On the Doctrines of Hippocrates and Plato*, having recalled the correspondence between the humours and seasons: "As for ages and the seasons, the child (παῖς) corresponds to spring, the young man (νεανίσκος) to summer, the mature man (παρακμάζων) to autumn, and the old man (γέρων) to winter."<sup>19</sup> Galen uses this new correspondence to create a relationship between the elements (fire, air, water and earth) and the humours and, above all, a relationship between the humours and character, of which there is no trace in the *Nature of Man*, but which lies at the heart of the theory of the four temperaments.<sup>20</sup>

<sup>19</sup> Galen, *De plac. Hipp. et Plat.* 8.6,17: CMG V 4, 1, 2, p. 516,11–14.

<sup>20</sup> See also the distinction between the humours, not only by colour, but also by taste: blood is sweet (γλυκύ), yellow bile is bitter (πικρόν), black bile is sour (ὄξύ), phlegm is salty (ἄλμυρόν); see Galen *In Hipp. De nat. hom. comm.* 1.32: CMG V 9, 1, p. 42,20–33.

However, this double relationship is still not fully developed in Galen. As for the relationship between the humours and the elements, blood does not correspond to the air, as will be the case in the theory after Galen, but rather is composed of the balanced mixture of the four elements, as Galen makes clear in his treatise *On the Doctrines of Hippocrates and Plato*.<sup>21</sup> As for a theory of character, although it rests on the idea, well attested in Galen, that the characteristics of the soul follow the mixtures of the body, (a topic on which we know Galen wrote a treatise),<sup>22</sup> he does not apply this idea systematically to the four Hippocratic humours, not even when he comments on *The Nature of Man*. Indeed, Galen does not believe that phlegm influences character. Here is what he says in his *On Hippocrates' The Nature of Man*: "Sharpness and intelligence (ὀξύ και συνετόν) are caused by yellow bile in the soul, perseverance and consistency (ἔδραϊον και βέβαιον) by the melancholic humour, and simplicity and naivety (ἀπλοῦν και ἡλιθιώτερον) by blood. But the nature of phlegm has no effect on the character of the soul (τοῦ δὲ φλέγματος ἡ φύσις εἰς μὲν ἡθοποιῖαν ἄχρηστος)."<sup>23</sup>

In fact, it was several centuries after Galen, in Greek medicine of late antiquity, that the theory of the four temperaments (phlegmatic, sanguine, bilious and melancholic), with all their physical and moral characteristics, would find full expression and when the theory of the four humours spread to an unprecedented extent, whether this theory was expressly linked with Hippocratic or Galenic teaching or not.

<sup>21</sup> Yellow bile corresponds to fire, black bile to earth, phlegm to water. By contrast, blood does not correspond to air but comprises an equal mixture of the four elements; see Galen *De plac. Hipp. et Plat.* 8.4, 21–23: CMG V 4, 1, 2, pp. 502,22–504,2. Galen's teaching on the four humours was relayed by Oribasius, who quotes extracts from *De elem. ex Hipp. sent.* and from *De plac. Hipp. et Plat.*; see *Coll. med. rel. lib. inc.* 1, 4–6: CMG VI 2, 2, pp. 75,17–76,5.

<sup>22</sup> Galen wrote a treatise on this subject, *That the Faculties of the Soul Follow the Mixtures of the Body* (*Quod animi mores corp. temp. sequi*: *Scr. min.* 2.32–79 Müller = 4.767–822 K.). When Galen refers to Hippocrates in this treatise, it is not to *The Nature of Man*, but to *Airs, Waters, Places*, since he sees no contradiction between these two treatises; cf. *ibid.* 8: *Scr. min.* 2.58,11–14 Müller = 4.799,5–7 K. In the whole treatise, there is only one reference to three of the four humours: an excess in the brain of yellow bile causes delirium, black bile causes melancholy and phlegm causes lethargy with the loss of memory and intelligence (*ibid.* 3: *Scr. min.* 2.39,12–17 Müller = 4.776,17–777,4 K.).

<sup>23</sup> Galen, *In Hipp. De nat. hom. comm.* 1.40: CMG V 9, 1, p. 51,9–17. Galen recalls in this passage that he had written on the fact that the faculties of the soul follow the mixtures of the body (on this treatise, see the previous note). Between these two treatises, Galen's position seems to have varied concerning the effects of phlegm on the soul. Whilst here phlegm has no effect on character, Galen connects in the *Quod animi mores* ch. 3 (see n. 22) the abundance of phlegm in the brain with disturbances of memory and intelligence (*μνήμης και συνέσεως βλάβαις*), as will be the case in the later theory of the four temperaments (see below, p. 342).

This admittedly quick sketch of the history of the theory of the four humours from the fifth century BC to late Greek medicine was a necessary preamble. We will now turn to the Golden Age of the theory of the four humours in Greek medicine after Galen, in particular the theory of the four temperaments, which will be the central point of our attention.

First, we will bring together some Greek texts that belong to different corpora and which have, until now, never been brought together, even though they present remarkable similarities in content and terminology.<sup>24</sup> We will then look at an extract from an unpublished Greek medical treatise that sheds new light on what we know about the four temperaments in the Greek tradition.

The first Greek text is a short and anonymous treatise called *On the Constitution of the Universe and of Man*, published in the mid-nineteenth century by J.L. Ideler.<sup>25</sup> I begin with this work because it is the best known text on the theory of the four temperaments linked to the theory of the four humours. It was mentioned by C. Fredrich at the end of the nineteenth century in his *Hippokratische Untersuchungen*.<sup>26</sup> This text also has the

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<sup>24</sup> Some of these Greek texts have already been considered in the studies quoted in n. 10. However, not all have been taken into account (in particular, Pseudo-John of Damascus was not known to these studies). Above all, the comparisons do not draw on the precise philological study of vocabulary that is carried out here.

<sup>25</sup> *Physici et medici Graeci minores*, ed. J.L. Ideler, vol. I, Berlin 1841, p. 303f. The original manuscript of this text is not highlighted by Ideler, who relies on the collations by F.R. Dietz. To my knowledge, the manuscript that was the basis for the collation has not yet been identified. On my part, I have found the text in two manuscripts:

- First, Ambrosianus F 23 sup. (gr. 331) from the 15th century. The text quoted here is found in fol. 135<sup>r</sup> d.l.–136<sup>r</sup>5. The variants are minimal and do not bring any great improvement. However, instead of καλλίχροοι, we find the adjective καλόχροοι (lege καλόχροοι), which is a comparable formation to ξανθόχροοι and λευκόχροοι. The existence of variants seems to exclude that this manuscript is the source of Ideler's text. However, Dietz could have consulted this manuscript since he visited the library at Milan.
- Second, Parisinus gr. 2303 from the 15th century. The text quoted here is in fol. 82<sup>v</sup>25–83<sup>r</sup>10. This manuscript has καλόχροοι.

There are certainly other manuscripts. In particular, a 15th century manuscript, Zurich C 136. See R. v. Fellenberg, *Katalogisierung der mittelalterlichen medizinischen und alchimistischen Handschriften der Zentralbibliothek Zürich, Gesnerus 2*, 1945, p. 156. I owe this reference to K.-D. Fischer, who sent me the information after hearing my paper. I have not yet been able to consult the manuscript.

<sup>26</sup> See the history of the theory of the four humours by C. Fredrich, *Hippokratische Untersuchungen*, Berlin 1899 (Philologische Untersuchungen 15), p. 49 (in his study on the Hippocratic treatise *The Nature of Man*), where he presents a very clear table summary. This table was reprinted, unchanged, by Schöner, *Viererschema*, p. 96f.

advantage of placing the theory of the four temperaments within a system of the theory of the four humours. The author of this short treatise begins by establishing a post-Galenic equivalence between the elements of the universe and the elements of man: to each of the four elements of the universe (air, fire, earth, water) corresponds in man each of the four humours (blood, yellow bile, black bile and phlegm). The text goes beyond Galen in systematicity in that it presents blood, instead of being a mixture of four elements, as equivalent to the air. The anonymous author then expounds the equivalence between the humours and the seasons, similar to what can already be found in the Hippocratic treatise *The Nature of Man*: blood predominates in the spring, yellow bile in summer, black bile in autumn and phlegm in winter. The treatise then comes to discuss the four temperaments, an innovation compared to Hippocratic theory, even when revised by Galen.

The anonymous author presents the theory of the four temperaments in the form of a response to a question about differences between characters. Here is the Greek text and a translation:

Πόθεν οἱ μὲν τῶν ἀνθρώπων εἰσι χαριεντικοὶ καὶ γελῶσι καὶ παίζουσι, οἱ δὲ εἰσι στυγνοὶ καὶ σκυθρωποὶ καὶ κατηφεῖς, οἱ δὲ ὀργίλοι καὶ πικροὶ καὶ μανιώδεις, οἱ δὲ ῥάθυμοι καὶ ὀκηροὶ καὶ ὀλιγόψυχοι; Ἡ αἰτία ἐστὶν αὕτη ἐκ τῶν δ' στοιχείων·

1. Οἱ μὲν οὖν ἐξ αἵματος καθαρωτάτου τυγχάνοντές εἰσι πάντοτε χαριεῖς καὶ παίζουσι καὶ γελῶσι καὶ σώματά εἰσι ῥοδινοὶ καὶ ὑπόπυρροι καὶ καλλίχροοι.
2. Ὅσοι δὲ ἀπὸ ξανθῆς χολῆς τυγχάνουσιν, οὗτοι εἰσιν ὀργίλοι καὶ πικροὶ καὶ εὐτολμοὶ καὶ σώματά εἰσιν ὑπαχροὶ καὶ ξανθόχροοι.
3. Ὅσοι δὲ ἀπὸ μελαίνης χολῆς τυγχάνουσιν, οὗτοι εἰσι ῥάθυμοι καὶ ὀλιγόψυχοι καὶ φιλάσθενοι, καὶ σώματά εἰσι μελανόψιοι καὶ μελάντριχοι.
4. Ὅσοι δὲ ἀπὸ φλέγματος τυγχάνουσιν, οὗτοι εἰσι λυπηροὶ καὶ ἀμνήμονες καὶ τῷ σώματι εἰσι λευκόχροοι.

How does it occur that amongst men, some are gracious, laugh and make jokes, others are sad, with a sombre air and doleful, others are quick-tempered, bitter and given to anger, others indolent, hesitant and pusillanimous? The cause is this, based on the elements:

1. Those who are composed of very pure blood are always friendly, joke and laugh; regarding their bodies, they are rose-tinted, slightly red and have pretty skin.
2. Those who are composed of yellow bile are quick-tempered, bitter, daring; regarding their bodies, they are greenish and have yellow skin.
3. Those who are composed of black bile are indolent, pusillanimous and sickly; regarding their bodies, they have black eyes and black hair.
4. Those who are composed of phlegm are despondent, forgetful; regarding their bodies, they have white hair.

The discussion of the four temperaments comprises four analogous sentences, each beginning with a relative subclause that defines the nature of the temperament, followed by a main clause describing the physical and moral characteristics of the temperament concerned. From a formal point of view, the temperament is discussed using the name of the predominant humour and not by the corresponding adjectives. Where we speak of sanguine, bilious, melancholic and phlegmatic individuals, the Greek speaks of people constituted of blood, yellow bile, black bile or phlegm. This is a point that will apply to the other texts we will consider. The description presents the physical or moral qualities of each temperament by a series of adjectives, or sometimes verbs. The order of exposition of the four temperaments is: predominance firstly of blood, then yellow bile, then black bile, and finally phlegm. It is an order that we find in the other texts we will consider, but it does not correspond with the initial text, *The Nature of Man*, where the order was: blood, phlegm, yellow bile and black bile (αἷμα καὶ φλέγμα καὶ χολήν ξανθήν καὶ μέλαιναν).<sup>27</sup> Yet the order of the anonymous author does not appear to be due to chance. It corresponds to the chronological order of the predominance of the four humours according to the four stages of life discussed above.<sup>28</sup> We may add that the discussion of the physical and moral characteristics of the temperaments is followed by a discussion of the influence of the four humours on character according to age. There is clearly a correspondence between the age when a humour is predominant and the temperament when this same humour is predominant. For example, the character of infants, an age when the blood predominates, is comparable to that of sanguine temperaments: they are graceful, they play and laugh, and so on.

With this first text, *Of the Constitution of the Universe and of Man*, we can compare four other Greek texts that have already been edited. First, a fragmentary letter attributed to the theologian John of Damascus (c. 650–750) on what it is to be a human being.<sup>29</sup> Here is the passage:

Συνίσταται δὲ ἐκ τεσσάρων στοιχείων, ἤγουν ἐξ αἵματος, φλέγματος, χολῆς ξανθῆς καὶ χολῆς μελαίνης ...

<sup>27</sup> See Hipp., *De nat. hom.* 4, 1 and 5, 1: CMG I 1, 3, p. 172,13f. and 174,12–176,1.

<sup>28</sup> In the treatise, the order of exposition of the four humours is the same. It is the order adopted in correspondence with the elements of the universe and with the seasons.

<sup>29</sup> Pseudo-John of Damascus, *Quid est homo?*, PG 95, col. 244A–B. On this letter, see J. Jouanna, 'Le Pseudo-Jean Damascène: Quid est Homo?', in *Les Pères de l'Église face à la science médicale de leur temps*, ed. V. Boudon and B. Pouderon, Paris, 2005, pp. 1–27.

1. Καὶ ὅσοι μὲν ἐξ αἵματος καθαροῦ τυγχάνουσιν, οὗτοί εἰσι πάντοτε χαίροντες καὶ παίζοντες καὶ γελῶντες, καὶ εἰσιν ἀνθηροί, καὶ καλόχρωοι·
2. ὅσοι δὲ ἀπὸ χολῆς ξανθῆς τυγχάνουσιν, εἰσὶ γοργοὶ καὶ εὐτολμοὶ, ὀργίλοι καὶ πικροὶ καὶ ἀλλόχρωοι·
3. ὅσοι δὲ ἀπὸ χολῆς μελαίνης τυγχάνουσιν, εἰσὶ ῥάθυμοι καὶ ὀλιγόψυχοι, φιλάσθενοι καὶ ὀκνηροὶ καὶ δειλοί·
4. ὅσοι δὲ ἀπὸ φλέγματος τυγχάνουσιν, εἰσὶ λυπηροὶ, καὶ μὴν καὶ ψυχροὶ, ἀμνήμονες καὶ διαλελησμένοι, τὰ πολλὰ κοιμώμενοι, καὶ λευκόχρωοι.

Man is comprised of four elements, blood, phlegm, yellow bile and black bile ...

1. Those who are composed of pure blood are always joyous, joke and laugh; and they have a flowery complexion and nice skin.
2. Those who are composed of yellow bile are passionate, courageous, quick-tempered and have hair that changes colour.
3. Those who are composed of black bile are indolent, pusillanimous, sickly, hesitant and cowardly.
4. Those who are composed of phlegm are despondent and also cold, forgetful with a short memory, sleep a lot and have white skin.

Man is defined here by the four humours. This time, the order in which the humours are listed is the same as in *Nature of Man*: blood, phlegm, yellow bile, black bile. However, the discussion of the temperaments that follows is remarkably close to the previous text, and the order of exposition of the temperaments is the same: first, the temperament where blood dominates, then yellow bile, then black bile, and then phlegm. The resemblances between these two texts are such that, in both form and content, the one appears to depend on the other, or they may derive from a common model.

Regarding its content, the characteristics relating to each temperament are more or less the same. The sanguine temperament is joyful and friendly; the bilious temperament is courageous and quick-tempered; conversely, the melancholic temperament is pusillanimous, indolent and sickly; the phlegmatic temperament is despondent and forgetful. What has prompted me to compare these closely connected texts, although they come from very different corpora, is the use of the very rare Greek adjective φιλάσθενοι, 'sickly', referring to melancholic temperaments (= temperament number three) in both the anonymous *Of the Constitution of the Universe and of Man* and the letter attributed to John of Damascus.

The same adjective φιλάσθενοι suggests a third comparison because, apart from the two passages already quoted, this adjective is attested only once more in Greek literature: the long version of a pseudo-Hippocratic letter to Ptolemy, *On the Constitution of Man*. Here is the passage:

Καὶ μὴ ἀπιστήσης τοῦτο, ὅθεν οἱ μὲν τῶν ἀνθρώπων γελῶσι πάντη, οἱ δὲ στυγνιώσι· τῶν στοιχείων δὲ λέγομεν τὴν αἰτίαν εἶναι.

1. ὅσοι γὰρ αἵματος καθαροῦ τυγχάνουσιν, οὗτοι πάντη γελῶσι καὶ ἀνθηροὶ τῇ ὄψει καὶ τῷ σώματί εἰσι πάντοθε καλόχροοι.
2. οἱ δὲ ξανθῆς χολῆς ὄντες γίνονται (...)
3. οἱ δὲ μελαίνης χολῆς ὄντες γίνονται) ῥάθυμοι, ὀλιγόψυχοι, δειλοί, φιλάσθενοι·
4. οἱ δὲ φλεγματικοὶ γίνονται ὀκνηροὶ ψυχροί.

There is no doubt about why it occurs that amongst men, some are always laughing, whilst others are sad. We say that the elements are the cause.

1. Those who are composed of pure blood always laugh and have a flowery complexion; their whole body has nice skin.
2. Those who are composed of yellow bile (...)
3. Those who are composed of black bile) are indolent, pusillanimous, cowardly, sickly.
4. Phlegmatics are hesitant, cold.

The subject of this passage is the same: it is a discussion of the four temperaments. The order is the same as in the two preceding texts. A small quirk is the description of those in whom phlegm dominates, not by the usual periphrasis, but by the adjective φλεγματικοί, 'phlegmatic'.<sup>30</sup> However, the comparison immediately reveals a gap in the description of the temperaments in the *Letter to Ptolemy*, which has not been noted before. In the letter as we read it in the manuscripts, the description of the physical and moral aspects of bilious people and the presentation of the melancholic temperament are missing (currently lost), but we can easily reconstruct these on the basis of the context. The adjective φιλάσθενοι, 'sickly', which is used to describe bilious people in the manuscripts, finds the same function as in the two other texts: it describes melancholics. This correspondence is all the more clear since the three texts offer the same sequence of three adjectives describing melancholics: they are sickly (φιλάσθενοι), indolent (ῥάθυμοι) and pusillanimous (ὀλιγόψυχοι). Thus, between these three Greek texts and their discussion of the four temperaments, the resemblance is evident, not only in their content but also in their vocabulary, since these three texts present the only three attestations of the same adjective (φιλάσθενος) and, moreover, in the same context, that of the melancholic temperament.

To these three Greek texts, which exhibit great similarities between them, we must add two other Greek texts, again coming from very different

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<sup>30</sup> However, there is no widespread use of adjectives to describe the four temperaments in any Greek text that discusses them.

collections, but presenting two parallel versions of the effect of the predominance of each of the four humours on the soul: a passage from the treatise *Nature of Man* by Meletius the monk, and another passage from a treatise by pseudo-Galen *On the Humours*. These two treatises also provide a post-Galenic version of the theory of the four humours.<sup>31</sup>

The treatise by Meletius the monk, written after the sixth/seventh century, is one of the most important representatives of the post-Galenic theory of the four humours in the Christian tradition.<sup>32</sup> It declares that man is composed of four humours (blood, phlegm, yellow bile and black bile),<sup>33</sup> which correspond to the four elements (air, water, fire, earth),<sup>34</sup> and which predominate according to the four seasons and the four ages.<sup>35</sup> The nourishment created from the four elements is transformed in man into the four humours.<sup>36</sup> The treatise also discusses the influence of the four humours on the soul, which corresponds to the theory of the temperaments in the preceding texts. Here is the passage (Cramer [n. 33], p. 133, 22–25):

1. ἰλαρωτέραν δὲ τὴν ψυχὴν τοῦτο (sc. τὸ αἷμα) ἐργάζεται, ἐν οἷς πλεονάζει·
2. ἢ δὲ ξανθὴ χολή, γοργοτέραν ἢ θρασυτέραν·
3. ἢ δὲ μέλαινα, σεμνοτέραν καὶ εὐσθενεστέραν·
4. τὸ δὲ φλέγμα, ἀργωδεστέραν καὶ σκληρωδεστέραν·

1. Blood makes the soul more joyous, amongst those in whom it predominates.
2. When yellow bile dominates, it makes the soul more vehement and bold.
3. When it is black bile, it makes the soul more majestic and vigorous.
4. When it is phlegm, it makes the soul lazier and harsher.

The treatise *On the Humours*, found within the Galenic corpus, likewise declares that the constitutional humours of living beings and man are bile, blood, phlegm and black bile. It also establishes a correspondence between the humours, the constituent elements of the world and the seasons. In this respect, the pseudo-Galenic character of the treatise is marked already by the fact that blood, hot and moist, corresponds to the air and not, as we

<sup>31</sup> There exists another pseudo-Galenic treatise offering an elaborated theory of the four humours, but without the theory of the four temperaments: *Introduction or Doctor (Introductio sive medicus)*. See below, n. 53.

<sup>32</sup> On the medical sources of the *De natura hominis* of Meletius the monk, see A.M. Ieraci Bio, 'Fonti alessandrine del *De natura hominis* di Melezio', *Quaderni medievali* 55, 2003, pp. 25–44. However, there is no discussion here of the four humours.

<sup>33</sup> Meletius, *De natura hominis*, in *Anecdota Graeca e codd. manuscriptorum bibliothecarum Oxoniensium*, ed. J.A. Cramer, vol. III, Oxford, 1836 (reprinted Amsterdam 1963), p. 12,12–14.

<sup>34</sup> Cramer (n. 33), p. 12,14–17.

<sup>35</sup> Cramer (n. 33), p. 13,3–10.

<sup>36</sup> Cramer (n. 33), p. 14,12–14.

have seen in Galen, to a mixture of all the elements.<sup>37</sup> The pseudo-Galenic character is also highlighted particularly by the existence of a discussion on the influence of the four humours on the soul:<sup>38</sup>

ἡθοποιούσι γὰρ οἱ χυμοὶ καὶ ταύτην (sc. τὴν ψυχὴν).

1. καὶ τὸ μὲν αἷμα ἰλαρωτέραν (sc. τὴν ψυχὴν) ἀπεργάζεται,
2. ἡ δὲ ξανθὴ ὀργιλωτέραν ἢ θρασυτέραν ἢ γοργοτέραν ἢ καὶ ἀμφοτέρα,
4. τὸ δὲ φλέγμα ἀργότεραν καὶ ἡλιθιωδεστέραν,
3. ἡ δὲ μέλαινα ὀργιλωτέραν καὶ ἰταμωτέραν.

The humours also determine the customs of the soul.

1. Blood makes the soul more joyous.
2. Yellow bile makes the soul quicker-tempered, bolder or more impudent, or both.
4. Phlegm makes the soul lazier and more foolish.
3. Black bile makes the soul quicker-tempered and cheekier.

These two passages on the temperaments, in Meletius the monk's *Nature of Man* and in the pseudo-Galenic *On the Humours*, are shorter than the three preceding texts. Each of the four temperaments is described by just one or two adjectives. Although they are not identical, there are some evident similarities between the two texts. Blood makes the soul joyful; the same adjective ἰλαρωτέραν is used. Yellow bile renders the soul bold or daring; here again the two adjectives are identical (γοργοτέραν and θρασυτέραν). These two adjectives are not found anywhere else in Greek literature, apart from lexicography. Phlegm renders the soul lazy; the adjective is not the same in the two texts, but it is comparable (ἀργωδεστέραν and ἀργότεραν). In the pseudo-Galenic treatise *On the Humours*, these brief indications on character are complemented by a preceding discussion on the varieties in behaviour according to differences of age,<sup>39</sup> and by a discussion that follows on the varieties in behaviour according to different diseases. The reference to behaviour according to different ages reminds us of what we found in the text that serves as a basis for our collection, the anonymous *Of the*

<sup>37</sup> The equivalence between the elements and the humours is the same in the anonymous *On the Constitution of the Universe and of Man* and *On the nature of man* by Meletius the monk. The comparison between the two compared treatises here should be extended to other discussions: the predominance of the four humours according to the seasons and ages, the place where each of the humours are born and remain and the places through which they pass.

<sup>38</sup> [Galen], *De hum.* 9: pp. 11,16–12,5 Schmidt = 19.492,15–493,1 K.

<sup>39</sup> In the treatise of Meletius the monk, the four humours are said to predominate according to the four ages (Cramer [n. 33], p. 13,3–5), but there is no discussion of behaviour.

*Constitution of the Universe and of Man*. In particular, the character of the infant, an age where the blood dominates, is very similar: it is friendly and playful.

Here, then, are five published Greek texts which present a post-Galenic stage of the theory of the four humours, and which include a theory of the four temperaments. Although these texts derive from very different collections, either medical corpora associated with Hippocrates or Galen, or religious corpora, they exhibit resemblances not only in their content, but also in their order of exposition (which is identical in all cases) and in vocabulary (with the use of very rare words in identical contexts). This collection of Greek texts attesting the development of the theory of the four humours and the four temperaments in late Greek medicine is probably just the start of a harvest that may be further enriched with other Greek texts that have been preserved but are as yet unpublished. Of course, there are also translations in other languages (Latin, Arabic, Armenian, Hebrew etc.), some of which are well-known, but not all.<sup>40</sup>

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<sup>40</sup> For the Latin texts, see the Letter of Vindician to his young son Pentadius (*infra*, p. 350f.), Pseudo-Soranus (see *infra*, n. 44), and the other texts mentioned by Schöner, Viererschema, p. 97, and by Klibansky, Panofsky and Saxl (n. 10), pp. 62–63, where there is, in tabular form, a comparison of intellectual and moral qualities defining each of the four temperaments in two Greek texts (the pseudo-Galenic *On Humours*, and the anonymous *On the Constitution of the Universe and of Man*), and in five Latin texts (Pseudo-Soranus, Vindician, *Sapientia artis medicinae*, Isidore of Seville and Bede the Venerable).

To the Latin texts, we must add an Armenian text (see *infra*, p. 355) and a Hebrew treatise. On the Hebrew treatise, which K.D. Fischer brought to my attention (see above, n. 25), see E. Peyser, *Eine hebräische medizinische Handschrift. Beitrag zur Komplexionenlehre*, Thèse Bâle 1944, pp. 31–33. The treatise is found in part of the Basil Codex (Nr. RIV, 7). Peyser gives a German translation of the treatise. The four chapters relating to the four humours (c. 1–4) concern the humours in a different order from that which is found in the texts collected here. First, there is phlegm, then blood, yellow bile and black bile. Each chapter is structured according to the same plan: place of the humour in the body; diseases resulting from this; physical and moral temperament; recommended regimen. The section on temperament is short. Here is the passage referring to each temperament:

1. Phlegm: “Das Fleisch von Leuten, die der Schleim drückt, ist geschmeidig, sie ergrauen früh, sind leichtsinnig, oft auch geizig.”
2. Blood: empty (probably due to a lacuna).
3. Yellow bile: “Die Meister der Medizin haben gesagt, dass der Körper eines jeden, dem die rote Galle Beschwerden verursacht, trocken und mager ist, denn die rote Galle ist trocken und warm wie die Natur des Feuers. Daher zürnen die Leute mit der roten Galle schnell.”
4. Black bile: “Die Meister der Medizin haben gesagt, dass der Körper von Leuten mit schwarzer Galle kalt und trocken sei wie die Erde, dass ihr Herz und ihre Gedanken in steter Angst schweben vor Dingen, bei denen man keine Angst zu haben braucht.”

To come back to the Greek, I would like to present a new, unpublished, testimonium:<sup>41</sup> a passage on the four temperaments taken from an unpublished treatise that is attributed to Hippocrates entitled *On the Formation of Man*, found in a 15th century manuscript kept in the National Library of France.<sup>42</sup> It is a medical treatise of Christian origin, since man is defined at the start as ‘a god on earth’ (θεός ... ἐπίγειος), ‘as an image of God created by him’ (εἰκῶν ... τοῦ πλάσαντος αὐτὸν θεοῦ). At the start it is said that man

<sup>41</sup> After presenting this paper, I found a second unpublished Greek text which discusses the theory of the four temperaments. It is the text listed in the catalogue of Diels, *Handschriften I*, p. 47, under the title *Hippocratis ad Galenum discipulum liber de pulsibus et de temperamentis corporis humani*. I discuss this unpublished piece in the article: ‘Un traité pseudo-hippocratique inédit sur les quatre humeurs (Sur le pouls et sur le tempérament humain)’ in *Κορυφαῖο ἀνδρῖ: Mélanges offerts à André Hurst*. Textes réunis par A. Kolde, A. Lukinovich and A.-L. Rey, Geneva, 2005 (Recherches et rencontres 22), pp. 449–461. The text is edited provisionally on the basis of two manuscripts (a manuscript known to Diels, loc. cit., the Paris., Suppl. grec. 1254 [siglum P], and a manuscript not known to Diels, the Ambrosianus gr. 331 [F 23 sup; siglum A] from the 15th century). This treatise is historically important because it seems to be the principal Greek source of both Vindician’s *Letter* and the discussion of the humours in Pseudo-Soranus (see n. 44). Here are the passages concerning the four temperaments, adding a third manuscript not highlighted by Diels, the Par. gr. 2494 from the 15th century (siglum B), which adds some very important variants compared to the two others:

1. τὸ μὲν (μὲν om. B) αἶμα ποιεῖ τὸν ἄνθρωπον ὄλον καλὸν τῷ εἶδει αὐτοῦ (ὄλον—αὐτοῦ om. B), ἀπλοῦν, ἰλαρόν, χαριεντικόν (χαριέντα P), παίζοντα, γελῶντα (παίζοντας καὶ γελῶντας B), ἀεὶ εὐσώματον (scripsi : ἀεὶ εὐσωμάτους P: om. AB).
2. ἡ δὲ ξανθὴ χολὴ ποιεῖ τὸν ἄνθρωπον (ποιεῖ—ἄνθρωπον om. B) ὄλον πικρόν, ὀργίλον, κρατοῦντα μῆνιν (κρατοῦντα μῆνιν om. B : κακόχροον, μνησικάκον A) ὀξείς, ἐλαφροὺς τῇ φύσει, πολλὰ ἐσθιοντας καὶ ταχέως πέττοντας (ὀξείς—πέττοντας om. AP).
3. ἡ δὲ (δὲ om. AP) μέλαινα χολὴ ποιεῖ τὸν ἄνθρωπον ὄλον (ποιεῖ—ὄλον om. B) ἐπίβουλον, φθονερόν, πολυμέριμον, θλιβόμενον (φθονερόν—θλιβόμενον] ἀπλόψυχον μετ ὀργῆς, ἀπληστα φοβουμένη B) καὶ πολλὸν κοιμώμενον (πολλὰ κοιμώμενους B)· καὶ ὡς ἐπὶ τὸ πλείστον νοτῖδα ἔχοντας ἐν τοῖς ποσὶν αὐτῶν· τὰ μὲν ἄνω ἔχοντες θερμότερα, τὰ δὲ κάτω τοῦ ζώσματος ψυχρότερα (καὶ ὡς—ψυχρότερα om. AP).
4. τὸ δὲ (δὲ om. AP) φλέγμα ποιεῖ τὸν ἄνθρωπον ὄλον (ὄλον om. AP) καλὸν (κακὸν A) τῷ εἶδει αὐτοῦ (τὸ εἶδος αὐτοῦ B), ἐγρήγορον (γρήγορον P) καὶ ἀνυπερήφανον (ἀπερήφανον BP) καὶ ταχέως πολιοῦντα (πολιὰς ἐκβάλλοντα B), ἐν ἑαυτῷ σκεπτόμενον, ἐλάττω (ἐν ἑαυτῷ—ἐλάττω om. AP).

This text, reconstructed from three manuscripts, with relatively important variants, should be compared to that of the unpublished text *On the Formation of Man*, and above all to Vindician’s *Letter* (and to Pseudo-Soranus).

<sup>42</sup> Parisinus gr. 985, fol. 302<sup>v</sup>3–305<sup>v</sup>17. This unpublished treatise is given by Diels, *Handschriften I*, p. 43, n. 79a (under the title: Hippocratis et Galeni philosophia de natura hominis). After presenting this paper, I presented an edited version of the treatise in a paper at the V<sup>e</sup> colloque international sur l’ecdotique des textes médicaux (Naples 1–2 oct, 2004) called ‘Un traité inédit attribué à Hippocrate, Sur la formation de l’homme: editio princeps, in: *Ecdotica e ricezione dei testi medici greci*, Naples, 2006, pp. 273–319. This edition gives a detailed manuscript tradition, as well as the Greek text and French translation of the entire treatise.

is composed of four humours: blood, phlegm, yellow bile and black bile.<sup>43</sup> We will see that this treatise shows connections with the other texts I have assembled, particularly on the theory of the four temperaments. However, I would like to begin by highlighting an aspect of the theory that is not found in the other Greek medical texts already published.

In the treatise, the predominance of each of the four humours varies not according to (or not only to?) the seasons of the year, as is traditional following the Hippocratic theory, but according to the hours of the day and night. During the twelve hours of the day and of the night, one of the four humours predominates every three hours. During the first three hours of the day and night, blood predominates; during the fourth, fifth and sixth, yellow bile; during the seventh, eighth and ninth, black bile; and during the tenth, eleventh and twelfth, phlegm.

However, this variation of humours according to the hours is also attested in Vindician's *Letter to his young child Pentadius*, which is a Latin translation of a Greek text similar to those collected here and which claims to go back to Hippocrates.<sup>44</sup> This letter presents both the theory of the four humours,

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<sup>43</sup> The order of enumeration of the humours is the same as in Hippocrates' *The Nature of Man*.

<sup>44</sup> For the edition of this letter, see *Theodori Prisciani Euporiston libri III, cum physicorum fragmento ...* ed. V. Rose, Leipzig, 1894, pp. 485–492 (with the addition of a new manuscript from Dresden that gives a different recension, by R. Fuchs, 'Anecdota Hippocratica', *Philologus* 58, 1899, pp. 407–421). On the translation from Greek into Latin and the reference to Hippocrates, see Rose (loc. cit.), p. 485, 5s: "ex libris medicinalibus Hippocratis intima latini." We should compare Vindician's *Letter* with the treatise attributed to pseudo-Soranus, called *Isagoge saluberrima*, which presents in its fifth chapter the paragraph *De humoribus (Medici Antiqui omnes. Qui latinis literis diversorum ... commodo consulatur, Venetiis 1547, fol. 159<sup>v</sup>–160<sup>r</sup>; editio princeps of Albanus Torinus 1528 consulted in Mainz)* a passage comprising the following seven discussions: 1.) the place of the humours; 2.) the nature of the humours; 3.) their predominance according to the hours of the day and night; 4.) the places of the body where the humours are exhaled (Klibansky, Panofsky and Saxl [above, n. 10], p. 182, n. 170, give erroneous information when they say that Pseudo-Soranus says nothing about the exit orifices; these are discussed for the first time in Vindician and in the *Περί κατασκευῆς*; 5.) the variation of the humours according to age; 6.) the four temperaments; 7.) the pulse corresponding to each of the four humours. All these discussions are identical, apart from some variants or omissions. We can show that Vindician is the source of pseudo-Soranus from the section on the humours; see J. Jouanna, 'La théorie des quatre humeurs et des quatre tempéraments dans la tradition latine (Vindicien, Pseudo-Soranos) et une source grecque retrouvée', *Revue des Etudes Grecques* 118, 2005, pp. 138–167. The timetable presented for the predominance of the humours according to day and night is identical. On the sources and parallels of the *Isagoge* of Pseudo-Soranus, see K.-D. Fischer, 'The *Isagoge* of Pseudo-Soranus. An analysis of the contents of a medieval introduction to the art of medicine', *Medizinhistorisches Journal* 35, 2000, pp. 3–30 (p. 21 for the connection between Vindician and pseudo-Soranus concerning the chapter on humours).

varying according to the seasons and ages, and the theory of the four temperaments, but it adds that the humours vary also according to the hours of the day and night. I give here the extracts relevant to the comparison of the predominance of the humours according to the hour, and also the theory of the four temperaments (*Epist. Vindic. ad Pent.*: pp. 486, 5–7; 487, 10–16; 488, 8–489, 2 Rose):

corpus igitur hominis ex quattuor umoribus constat. Namque habet in se sanguinem choleram rubeam choleram nigram et flegma ...

hi quattuor umores partiuntur sibi diem et noctem. sanguis dominatur horis sex id est ab hora noctis nona usque in horam diei tertiam. exinde dominatur cholera rubea ab hora diei tertia usque in horam diei nonam. cholera autem nigra dominatur ab hora diei nona usque in horam noctis tertiam. flegma autem dominatur ex hora noctis tertia usque in horam noctis nonam ...

praeterea hi quattuor umores faciunt hominibus tales mores.

1. sanguis facit homines boni voti simplices moderatos blandos euchymos seu (suci) plenos.
2. cholera rubea facit homines iracundos ingeniosos acutos leves macilentos plurimum comedentes et cito digerentes.
3. cholera nigra facit homines subdolos cum iracundia, avaros timidos tristes somniculosos invidiosos, frequenter habentes cicatrices nigras in pedibus.
4. flegma facit homines corpore compositos, vigilantes, intra se cogitantes, cito adferentes canos in capite, minus audaces.

The body of man is composed of four humours. For he has in him blood, yellow bile, black bile and phlegm ...

These four humours are divided amongst each other day and night. Blood dominates for six hours, i.e. after the ninth hour of the night until the third hour of the day; then yellow bile dominates after the third hour until the ninth hour. Black bile dominates after the ninth hour of the day until the third hour of the night. Phlegm dominates after the third hour of the night until the ninth hour of the night ...

Moreover, these four humours give men the following characters:

1. Blood makes men well-intentioned, direct, moderate, attractive, of good humour (or full of moisture).
2. Yellow bile makes men quick-tempered, intelligent, shrewd, light-spirited, thin, they eat a lot and digest quickly.
3. Black bile makes men deceitful, angry, miserly, fearful, sombre, sleepy, jealous, and frequently having black scars on their feet.
4. Phlegm gives men well-formed bodies, stimulated, reflective, quickly growing white hairs on their head, much less bold.

Concerning the enumeration of the hours when each humour predominates, there is a difference between the unpublished text and Vindician. In

Vindician's *Letter*, the humours predominate every six hours over a cycle of twenty-four hours, and not alternatively over three hours each day and night, following twelve hour cycles, as in the unpublished passage. Thus, we find something new in the unpublished Greek passage compared to Vindician's *Letter* on the variation of the humours according to the hours. However, following the hourly variation, the unpublished Greek version introduces a new factor concerning the formation of the temperaments according to the hour of conception. If conception takes place in the hours where a humour predominates, a child will be born whose temperament corresponds to that humour. Such considerations are absent from Vindician's *Letter* to Pentadius.

It is in the context of this theory of generation that the author of *On the Formation of Man* gives a physical and moral description of each of the four temperaments. The order of exposition is the same as the other texts collected here. This traditional order finds a new justification in the new theory: it corresponds to the order of prevalence of the humours from the first to the last hours of the day or night.

The discussions of each temperament are much longer in the unpublished text than in the other texts collected here. To give an example, here is the first discussion, of blood:

1. Καὶ ἐὰν τῇ πρώτῃ ὥρᾳ καὶ δευτέρᾳ καὶ τρίτῃ τῆς ἡμέρας καὶ τῆς νυκτὸς συλληφθῆ ὁ σπόρος ἐν τῇ μήτρᾳ καὶ προ(σ)θήσῃ τὴν διαίρεσιν τῶν τριῶν ὥρῶν τούτων ἐπὶ τῇ μεταμορφώσει αὐτοῦ, οὕτως ἔσται καὶ ὁ συγκερασμὸς αὐτοῦ θερμὸς καὶ ὑγρὸς, διότι αὐταὶ αἱ τρεῖς ὥραι τῆς ἡμέρας καὶ τῆς νυκτὸς ἐξουσία ἐστὶ τοῦ αἵματος τὸ γὰρ αἷμα πληθύνεται ἐν αὐταῖς ταῖς τρισὶν ὥραις·
2. καὶ ἔσται τὸ γεννώμενον βρέφος ὅλον αἱματώδες καὶ ὑπόπυρ(ρ)ον· αἱ τρίχες τῆς κεφαλῆς αὐτοῦ ἐρυθραὶ καὶ πυρ(ρ)αί· καὶ πάσαι αἱ φλέβες αὐτοῦ παχέαι καὶ αἷματος γέμουσαι· καὶ τὰ βλέφαρα αὐτοῦ παχέα καὶ βαρέα· καὶ αἱ φλέβες τῶν μυλίγγων αὐτοῦ παχέαι καὶ αἷματος γέμουσαι· καὶ οἱ ὀφθαλμοὶ αὐτοῦ θαμβοὶ καὶ θολεροί· καὶ αἱ φλέβες τῶν ὀφθαλμῶν αὐτοῦ πεπληρωμέναι αἷματος· καὶ τὸ σῶμα αὐτοῦ τρυφερὸν καὶ ὑπόπυρ(ρ)ον· ὁμοίως καὶ τὰ χεῖλη· καὶ ὅλον τὸ σῶμα αὐτοῦ αἱματώδες καὶ ὑπόπυρ(ρ)ον· καὶ πληθύνεται ἐν αὐτῷ τὸ αἷμα· τὸ δὲ αἷμα ποιεῖ τὸν ἄνθρωπον ὅλον κάλλιστον, καλόν, καλλίφωνον, ἀπλοῦν, ἰλαρόν, χαριεντικόν, παίζοντα καὶ γελῶντα.
3. Πάσαι δὲ αἱ ἀσθένειαι αὐτοῦ ἀπὸ τῆς κεφαλῆς ἔσσονται· κτλ.

1. And if it is at the first, second or third hour of the day or night that the seed is retained in the womb and it uses the division of these three hours for its transformation, in these conditions, the mixture formed is hot and moist, because these three hours of the day and night are such themselves. There is a predominance of blood, because blood becomes abundant in these three hours.
2. And the child formed will be full of blood and reddish. The hairs on his head will be red and ginger. And all his vessels are thin and filled with blood. And

his eyelids are thin and heavy. And the vessels of his lips are thin and full of blood. And his eyes are surprised and troubled. And the vessels of his eyes are filled with blood. And his body is frail and reddish. The same goes for his lips; and his whole body is sanguine and reddish. There is an abundance of blood in him. Blood makes man very beautiful, beautiful, with a nice voice, direct, joyous, gracious, cheerful and laughing.

3. All afflictions in him come from the head, etc.

This discussion comprises three parts: the first discusses the formation of the individual according to the hour of conception; the second describes the physical and moral characteristics; the third, only the beginning of which is quoted here, is concerned with diseases caused by the predominance of the humour.<sup>45</sup> The discussions of the three other humours have exactly the same structure. It is the second part that is comparable to the other passages on temperament already discussed. A quick look shows that it is much more developed. There is more discussion of physical signs, with precise indications not only of the colour of the whole body, but also of the parts of the body such as the hair, blood vessels, the eyes, eyelids or the lips. By contrast, the moral signs are comparable in length: they are placed in the final sentence preceding the discussion of the illnesses associated with the temperament. I quote here some sentences from each of the four sections to give an overview:

1. τὸ δὲ αἷμα ποιεῖ τὸν ἄνθρωπον ὄλον κάλλιστον, καλόν, καλλίφωνον, ἀπλοῦν, ἰλαρόν, χαριεντικόν, παίζοντα καὶ γελῶντα (Blood makes man very beautiful, beautiful, with a nice voice, direct, joyous, gracious, joking and laughing).
2. Ἡ δὲ ξανθὴ χολή ποιεῖ τὸν ἄνθρωπον ὄλον πικρόν καὶ ὀργίλον, θυμώδη καὶ ἐπίμονον, ἀλλόχροον τῇ φύσει καὶ κρατοῦντα μῆνιν· πολύτροφον δέ, τὴν τροφήν δὲ ταχέως χωνεύοντα (Yellow bile makes man irritable and quick-tempered, quick to anger and stubborn; his hair colour changes naturally; he lets anger get the better of him; he eats a lot and quickly swallows food).
3. Ἡ μέλαινα χολή, ἥτις ποιεῖ τὸν ἄνθρωπον ἐπίβουλον καὶ πικρόν καὶ φοβερικόμενον, καὶ θλιβόμενον, φιλόπνον, φθονερόν (Black bile makes man a traitor, irritable, timid, worried, sleepy, jealous).
4. τὸ δὲ φλέγμα ποιεῖ τὸν ἄνθρωπον ὄλον καλόν τῷ εἶδει, γρήγορον, ἀνυπερήφανον, ταχέως πολιοῦντα καὶ αἰεὶ αὐτὸν θλιβόμενον καὶ μεριμνοῦντα (Phlegm makes man truly beautiful to behold, stimulated, without pride, quickly whitening and always worried and anxious).

These descriptions of the temperaments present similarities with the other texts collected above. Let us take the first case, that of sanguine temperaments. In this sentence, the adjective ἰλαρός, 'joyful', recalls the use of the

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<sup>45</sup> Readers should refer to the edition (n. 42) for the remainder of the discussion of diseases caused by a predominance of the blood.

same adjective to refer to the same temperament in Meletius the monk and Pseudo-Galen's *On the Humours*. However, it is above all the final part of the sentence which recalls very closely the Greek text serving as a basis for our collection, *Of the Constitution of the Universe and of Man*. The anonymous author spoke at the start about the category of men who are 'joyful, laugh and joke' (χαριεντικοὶ καὶ γελῶσι καὶ παίζουσι); and by this he meant the sanguine temperament. The comparison is all the less accidental since the adjective χαριεντικός was a *hapax* before the discovery of the unpublished manuscript. The new attestation of the adjective χαριεντικός in the unpublished passage reinforces the links between these texts and confirms the hypothesis of a lost common source.<sup>46</sup>

There are other connections, particularly with Vindician's *Letter*. Concerning bilious temperaments, it is said that they are big eaters and digest rapidly (unpublished passage: πολύτροφον δέ, τὴν τροφήν δὲ ταχέως χωνεύοντα; Vindician's *Letter*: *plurimum comedentes et cito digerentes*). Concerning phlegmatics, it is said that their hair whitens quickly (unpublished passage: ταχέως πολιοῦντα; Vindician's *Letter*: *cito adferentes canos in capite*).<sup>47</sup>

However, compared to *The Constitution of the Universe and of Man*, the pseudo-Hippocratic *The Formation of Man*, uses another adjective to describe a man of sanguine temperament: καλλίφωνον, 'of beautiful voice'. This adjective, which is not found in the Greek texts on the temperaments,<sup>48</sup> finds a correspondence in an Armenian medical anthology translated directly from the Greek that was recently presented to the academic community.<sup>49</sup> In a discussion of the four temperaments, which is comparable to those we have studied, it uses, for the sanguine temperament, an

<sup>46</sup> The adjective χαριεντικός also appears in the unpublished treatise *On the Pulse and on the Human Temperament*, quoted in n. 41.

<sup>47</sup> These two connections are also valid for the unpublished treatise *On the Pulse and on the Human Temperament*, quoted in n. 41.

<sup>48</sup> However, a man who has a sanguine temperament is described as *cantans* in part of the Latin tradition, apparently later than the source of Vindician's *Letter* or Pseudo-Soranus. See, for example, W. Seyfert, 'Ein Komplexionentext einer Leipziger Inkunabel (angeblich eines Johann von Neuhaus) und seine handschriftliche Herleitung aus der Zeit nach 1300', *Archiv für Geschichte der Medizin* 20, 1928, pp. 272–299 (p. 289); we identify the sanguine temperament by the following signs: *Si est laetus, semper cantans, largus, amabilis, rubeus in colore* etc. See also the School of Salerno in the 12th century, where the *Flos medicinae* (or *Flores diaetarum*) has the same participle *cantans* in the last two verses describing the sanguine temperament: "*Largus, amans, hilaris, ridens, rubeique coloris/cantans, carnosus, satis audax atque benignus*" (see *Collectio Salernitana* I, ed. S. de Renzi, Naples, 1852, reprinted 2001, p. 484).

<sup>49</sup> J. Jounna and J.P. Mahé, 'Une anthologie arménienne et ses parallèles grecs', *Compte rendu de l'Académie des Inscriptions et Belles Lettres*, April-June, 2004, pp. 549–598.

adjective that has the same meaning: the sanguine temperament “loves the voice of singers.” Here is the text (based on the translation of the Armenian by Jean-Pierre Mahé):

1. He who has too much blood, his face is white and red, his hair is blond, he sleeps too much, he has a heavy head and a sweet mouth when he wakes from his sleep. He is quick to anger and quick to calm down. He loves the voice of singers.
2. He who has too much yellow bile lacks flesh and stout. He is talkative and quick to anger. He has a bitter mouth and yellow complexion. His thought spreads frequently from one object to the other. He is (combative) at court and war.
3. He who has too much black bile, his face is black and puffy with fat. He is very irascible and greatly loves solitude and silence. He is very restless and holds grudges, and has fits of cruelty.
4. He who is phlegmatic, his face is white; he has too much flesh and is slightly fat. He is rarely angry and speaks little. Intelligence and his mind are lacking.

Thus, we can place the unpublished Greek pseudo-Hippocratic text *On the Formation of Man* with the collection of the five Greek texts already discussed, as well as Latin or Armenian translations.<sup>50</sup> These texts all show a post-Galenic theory of the four temperaments, founded on the predominance of the four humours (blood, yellow bile, black bile and phlegm), characterised by comparable moral and physical qualities. Although these texts belong to heterogeneous corpora, the relationships between them are sufficiently close, even in vocabulary, to postulate the existence of an elaborated theory that was diffused with more or less important variants<sup>51</sup> in more or less developed Greek versions and translations in various languages.

To what period does this theory go back or when did this theory originate? Of course, the relationship between the four humours (blood, phlegm, yellow bile and black bile) with the four elements (air, fire, earth and water) is already attested in the fourth century in the work *On the Nature of Man* of

<sup>50</sup> Also the second unpublished Greek text, quoted in n. 41.

<sup>51</sup> It is not possible to examine in detail the variants in the humoral theory or in the physical or mental description of the temperaments. Concerning the humoral theory, there are variations in the place of the body where the humours are found, particularly phlegm, traditionally situated in the head, but sometimes in the chest; this is the case in the two unpublished texts *On the Formation of Man* and *On the Pulse and the Nature of Man*. For more details, see Jouanna (n. 42). On the variations in the different types of character, the remarks made by Klibansky, Panofsky and Saxl should be re-examined (n. 10), pp. 62–63 ff., by adding the new witnesses and taking into account that quite appreciable variants can be found in the different manuscripts that transmit the same text and sometimes present different redactions.

Nemesius of Emesa.<sup>52</sup> It appears there as a theory that is already well established, and there are other examples in pseudo-Galenic treatises.<sup>53</sup> However, what about the theory of the four physical and mental temperaments based on the predominance of the four humours?<sup>54</sup> At what moment was this the-

<sup>52</sup> Nemesii Emeseni *De natura hominis*, ed. M. Morani, Leipzig 1987, p. 44,24f.; 45,4–6. Blooded animals are made up of the four humours (blood, phlegm, yellow bile and black bile) ... Earth is associated to black bile, water to phlegm, air to blood and fire to yellow bile.

<sup>53</sup> The theory of the four humours constituting man and varying according to age is clearly formulated in the pseudo-Galenic *Medical Definitions* 65 (19,363,14–364, 3 K.) and 104 (ibid., 374, 2–9); cf. also 462 (ibid. 457, 13–16), where the theory of the four humours is attributed to Hippocrates. However, it is not connected to the elements of the universe. Conversely, it is attested in a much more elaborate form in the pseudo-Galenic *Introductio sive medicus* 9 (14,695,8–696, 13 K.): man is composed of the primary elements of the universe (fire, air, water, earth) in the form of four qualities, and of four second elements (blood, phlegm, yellow bile and black bile). These four humours exist from the formation of the foetus, in the semen and the maternal blood. Ch. 13 (ibid. 726,2–6; 727,10–14; 730,17–731,1 K.): the four humours are mixed with each other and spread throughout the body. Each humour has its place: blood in the heart; phlegm in the head; yellow bile in the liver and black bile in the spleen. Good health comes from the equilibrium of the primary and secondary elements. Acute diseases all come from the blood and yellow bile; chronic diseases come from phlegm and black bile. However, there is no theory of the four temperaments.

<sup>54</sup> There are substantial doubts amongst scholars on the date of the emergence of this theory. Schöner, *Viererschema*, is fuzzy. He speaks of the pseudo-Galenic treatises (*On the Humours*), p. 94f., but says nothing of their date. In another brief chapter entitled 'VII. Ausgehendes Altertum' (pp. 96–98), he mentions other texts related to the treatise *Of the Constitution of the Universe and of Man*, and then lists a series of pseudo-letters: in Greek, the Letter of Hippocrates to Ptolemy; in Latin, several others (Vindician's Letter), as well as Pseudo-Soranus, adding to this group the *Sapientia artis medicinae* ("wahrscheinlich aus dem 6. Jahrhundert"). This is the only clear indication of the date of the quoted texts, but no arguments are provided. Schöner takes the position of the text's editor, M. Wlaschky, 'Sapientia artis medicinae. Ein frühmittelalterliches Kompendium der Medizin', *Kyklos* 1, 1928, p. 113: "Zeitlich möchte ich den Text etwa in das 6. Jahrhundert verlegen." By contrast, Klibansky, Panofsky and Saxl (n. 10), p. 58, give a peremptory statement on the date: during the second or later in the third century AD, we observe the emergence of a complete schema of the four temperaments as types of physical and moral constitution. Which texts allow these authors to posit with such certainty this early date? In their argument that follows (p. 60), they quote Pseudo-Soranus' *Isagoge*, "possibly dating from the third century AD." Their conclusion is drawn from this rather doubtful assertion, for which no justification is provided. For criticism of this early date, see Fischer (n. 44), p. 19f. and n. 44; Fischer thinks that in its complete form, the *Isagoge* served as an introduction to medicine after the Carolingian period. Elsewhere, when it comes to the details of the chronology, certain statements in the discussion of the work of Klibansky, Panofsky and Saxl (n. 10) do not pass the muster. Thus they say, loc. cit., p. 61, that it can be proven that the Περὶ χυμῶν was already known by Meletius the monk, who wrote in the ninth century; the reader, returned to p. 99, n. 98, reads that Meletius the monk "also transmitted a humoral theory of character based essentially on the Περὶ χυμῶν, as witnessed by the use of expressions rare outside the two works." It is perfectly true that the two texts present evident connections of expressions or pairs of rare expressions (see above, p. 346f.). However, neither the absolute chronology nor

ory formulated explicitly?<sup>55</sup> Does it, too, go back to the fourth century, if we can rely on the date of a letter attributed to Vindician that indisputably expounded the theory? The response to this question depends on that to another: is the letter authentic or not? If this letter is not authentic, as I have been tempted to believe,<sup>56</sup> we may think that it belongs to a slightly later

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the relative chronology of pseudo-Galen and Meletius the monk are certain. Pseudo-Galen, dated to the sixth century by Klibansky and, following him, by Flashar (n. 10), is dated later to the ninth or tenth century by P. Demont, 'L'édition Vigoreus (1555) du traité hippocratique *De humoribus* et d'un "commentaire de Galien" à ce traité (= [Galien], *De humoribus*, 19.485–496 Kühn), avec la traduction du *De humoribus galénique*', in *Lire les médecins grecs à la Renaissance: aux origines de l'édition médicale*. Actes du Colloque international de Paris, 19–20 septembre 2003, ed. V. Boudon-Millot and G. Cobolet, Paris, 2004, p. 53. Moreover, in these texts that share the same theory, the similarity could be explained by a common source. In addition, our knowledge of new texts changes our perspective of these singularities. The unpublished *On the Formation of Man*, as we saw, used the adjective ἰλαρός to describe a sanguine temperament, as does the pseudo-Galenic *On the humours* and the *De natura hominis* of Meletius the monk. I would add, in addition to my paper (cf. n. 41), that the unpublished *On the Pulse and the Human Temperament* also uses this same adjective in the same context. Thus, whilst we previously knew just two Greek texts on the theory of the temperaments with the word ἰλαρός, the total is now doubled thanks to the two unpublished treatises.

<sup>55</sup> We should certainly take account of the testimonium of Sextus Empiricus, *Outlines of Pyrrhonism* 1.51, highlighted by Klibansky, Panofsky and Saxl (n. 10), p. 56, n. 155; see also Flashar (n. 10), p. 111f. The passage stands in a context where differences in perception, in this case of smell, are shown to vary from one living being to another. We are affected in one way when we are subject to cold and when there is an excessive amount of phlegm in us, and in another way when our head is filled with an excess of blood, and we are averse to smells which seem pleasant to everyone else; likewise, some living beings are moist by nature and phlegmatic, others very full of blood, others having yellow bile or black bile as the dominant humour. Because of this, it is normal that the sensations of things are different to each living being. It is incontestable, according to this passage, that the theory of the four humours is applied here to classify all living beings, and not only humans, into four categories, following the four humours, and that these differences between the four categories are used, amongst other arguments, by sceptics to demonstrate the differences between sensations amongst living beings. However, there is no trace in this passage of an explicit theory of physical and moral variations in man according to the natural predominance of the humours.

<sup>56</sup> In this regard, there is an important difference of opinion between scholars. Schönner, *Viererschema*, p. 97, speaks of the "sog. Brief des Vindician," which implies that it is not authentic. By contrast, neither Klibansky, Panofsky and Saxl (n. 10), p. 60, nor Flashar (n. 10), p. 112, question its authenticity. Flashar sees in Vindician's *Letter* (who was a friend of Augustine, which means that it dates from the mid-fourth-century) the oldest testimonium of the theory of the four temperaments. However, the question of its authenticity cannot be avoided. There are other letters that set out the theory of the four humours and the four temperaments that are clearly inauthentic, such as that of Hippocrates to Ptolemy, or that of Pseudo-John of Damascus. Why should this one by Vindician be any more authentic? What is sure is that the Greek model found in the *Letter* (see *supra*, n. 41) belongs to the same

timeframe, during the second renaissance of Greek medicine in the fifth and sixth centuries AD at Alexandria, where the teaching of selected works of Galen and Hippocrates (sixteen of Galen, four of Hippocrates) formed part of a medical curriculum,<sup>57</sup> and where commentators such as Stephanus or Palladius wrote new commentaries on Hippocrates and Galen. Although the Hippocratic treatise *The Nature of Man*, which as we saw was the origin of the theory of the four humours, was not part of the Alexandrian canon,<sup>58</sup> it was known to everyone, as Galen says, and its reading was expressly recommended by an Alexandrian commentator on Hippocrates, Stephanus, to those who wanted to know the elements of man.<sup>59</sup> Thus, it is possible that the Hippocratic theory of the four humours, re-interpreted and systematised by Galen, was re-elaborated in an Alexandrian context, particularly by the development of a systematic theory of the four temperaments, a re-elaboration that was to be relayed and developed further by Byzantine and medieval Latin medicine,<sup>60</sup> before the western Renaissance. Its existence in the West in its elaborated form of a discussion according to the four temperaments possesses, in any case, a certain *terminus ante quem* at the start of the eighth century, thanks to the Latin adaption of the Venerable Bede, whose death can be fixed to 735.<sup>61</sup>

It is likely that the unpublished pseudo-Hippocratic treatise presented here belongs to Byzantine medicine. To refer to the mixture, it uses a word that is neither *μίξις* nor *κράσις*, nor the composite intensives *σύμμιξις* and *σύγκρασις*, but a composite of the same family as *κράσις: συγκερασμός*. This term, which appears once in the extract quoted on the temperaments, and

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pseudo-Hippocratic literature as the unpublished *On the Formation of Man*. The attribution to Vindician is no more probable than the attribution to Soranus of the *Isagoge*, being a parallel discussion to the *Letter* (see n. 44).

<sup>57</sup> On the curriculum of medical studies in the school of Alexandria, see A.Z. Iskandar, 'An attempted reconstruction of the late Alexandrian medical curriculum', *Medical History* 20, 1976, pp. 235–258.

<sup>58</sup> It was also known indirectly through the intermediary of Galen's treatise *On the Elements according to Hippocrates*, which formed part of the Alexandrian canon.

<sup>59</sup> Stephanus, *In Hipp. Progn. comm.* 1 praef.: CMG XI 1, 2, p. 32, 3s.

<sup>60</sup> On the Latin Middle Ages, see Klibansky, Panofsky and Saxl (n. 10), pp. 55–66 ("Melancholy in the System of the Four Temperaments").

<sup>61</sup> Bede, *The Reckoning of Time* 35, 1, 21–37 (Beda *Venerabilis Opera*, vol. VI: *Opera didascalica* 2, transcripta ... cura et studio C.W. Jones, Turnhout 1977, Corpus Christianorum, Series Latina 123B= PG 90, col. 459), with notes pp. 368–370. It is one of the merits of the work of Klibansky, Panofsky and Saxl (n. 10) that they compared in a clear table (pp. 62–63) the passages of Bede on the four temperaments with other Greek or Latin texts. They also include Isidore of Seville in this table, who pre-dates Bede, but in Isidore there is no systematic discussion of the four temperaments as there is in Bede.

three times in the whole discussion on the temperaments, is attested in LSJ only once, as a gloss taken from the *Corpus Glossariorum Latinorum*. It is, in fact, attested twice elsewhere in later Greek literature, particularly in the Byzantine historian Nicetas Choniates in the twelfth century, in the expression “the mixture of colours” (τῶ τῶν χρωμάτων συγκερασμῶ). Is this a sign of the date of the unpublished pseudo-Hippocratic text? The unpublished text has, in any case, the advantage of more than doubling the attestations of the word συγκερασμός, referring to the mixture, and attesting its use in medical language.

Of course, the date of the appearance of the theory of the four humours, systematised in its post-Galenic form with an exact correspondence between the humours of man and the elements of the universe, remains an object of debate, as well as the theory of the four temperaments. However, it is clear that the theory of the four temperaments underwent an unprecedented expansion in the East in Greek medical literature of the Late Antique and Byzantine periods, as attested not only by all the edited Greek texts collected here, but also the unpublished text *On the Formation of Man* (see n. 42 above) to which we can add the unpublished *On the Pulse and the Human Temperament* (see n. 41 above) We note that this Byzantine medicine often appeals to the authority of Hippocrates, who remains the doctor par excellence, Galen being his student. This diffusion can also be measured by the number of translations. Its diffusion was hitherto known above all in the West, by means of Latin translations, particularly Pseudo-Vindician and Pseudo-Soranus. To this we can add its diffusion in the East through the intermediary of the unpublished Armenian translation.



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