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.* 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,¹ 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.² Good health is defined as the balance and mixture of the humours, whilst their imbalance and separation is the cause of disease.³ To avoid this imbalance, the doctor recommends modifying one's regimen according to the seasons.⁴ 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.⁵

* 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^v–27^r)," *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.]

¹ Hipp. *De nat. hom.* 4, 1: CMG I, 1, 3, p. 172,13 f. Jouanna.

² Ibid. 7: CMG I, 1, 3, pp. 182,4–186,12.

³ Ibid. 4, 2–3: CMG I, 1, 3, pp. 172,15–174,3.

⁴ Ibid. 16 (= *De diaeta sal.* 1): CMG I, 1, 3, pp. 204,22–208,8.

⁵ 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.⁶ 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.⁷ There are also traces of a theory of physiognomonic character typology in *Epidemics* 2.⁸ 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 (ὕγροῦ 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” (ὕδρωψ). (*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.⁹ Only the Hippocratic theory of the four humours blood, phlegm, yellow bile and black bile had a future.¹⁰

⁶ 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).

⁷ *Regimen* 1.35: CMG I 2, 4, pp. 150,29–156,18.

⁸ *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 (δξύθυμοι).

⁹ *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)].

¹⁰ 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.¹¹ 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.¹² 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.¹³ 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?"¹⁴ 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.

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.]

¹¹ 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.).

¹² Galen, *On the Natural Faculties* 2.9 (*Scr. min.* 3.203,17f. Helmr. = 2.141,5f. K.).

¹³ Diocles, fr. 40, 2: 1, p. 78,28ff. van der Eijk.

¹⁴ 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.¹⁵ 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.¹⁶ 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.¹⁷ 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.¹⁸ Physical and moral qualities are attributed to the

¹⁵ 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.

¹⁶ 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.

¹⁷ 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 (ικανῶς φλεγματώδεσιν 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.

¹⁸ See *De temp.* 2.6: p. 83,4f. Helmr. = 1.641,7 f. 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 εἴη 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 δύσθυμον, 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."¹⁹ 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.²⁰

¹⁹ Galen, *De plac. Hipp. et Plat.* 8.6,17: CMG V 4, 1, 2, p. 516,11–14.

²⁰ 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 (ὀξύ), 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*.²¹ 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),²² 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 (ἐδραϊον 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)." ²³

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.

²¹ 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.

²² 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.).

²³ 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.²⁴ 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.²⁵ 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*.²⁶ This text also has the

²⁴ 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.

²⁵ *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^r d.l.–136^r5. The variants are minimal and do not bring any great improvement. However, instead of καλλίχροι, we find the adjective καλόχρωι (lege καλόχροι), which is a comparable formation to ξανδόχροι and λευκόχροι. 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^v25–83^r10. This manuscript has καλόχροι.

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.

²⁶ 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 εἰσὶ χαριεντικοὶ καὶ γελάωσι καὶ παίζουσι, οἱ δὲ εἰσὶ 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 γελάωσι καὶ σώματά εἰσι ῥοδινοὶ καὶ ὑπόπυρροι καὶ καλλίχροοι.
2. "Ὅσοι δὲ ἀπὸ ξανθῆς χολῆς τυγχάνουσιν, οὗτοί εἰσιν ὀργίλοι καὶ πικροὶ καὶ εὐτολμοὶ καὶ σώματά εἰσιν ὑπαχροὶ καὶ ξανθόχροοι.
3. "Ὅσοι δὲ ἀπὸ μελαίνης χολῆς τυγχάνουσιν, οὗτοί εἰσι ῥάθυμοι καὶ ὀλιγόψυχοι καὶ φιλάσθενοι, καὶ σώματά εἰσι μελανόψιοι καὶ μελάντριχοι.
4. "Ὅσοι δὲ ἀπὸ φλέγματος τυγχάνουσιν, οὗτοί 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).²⁷ 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.²⁸ 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.²⁹ Here is the passage:

Συνίσταται δὲ ἐκ τεσσάρων στοιχείων, ἧγουν ἐξ αἵματος, φλέγματος, χολῆς ξανθῆς καὶ χολῆς μελαίνης ...

²⁷ See Hipp., *De nat. hom.* 4, 1 and 5, 1: CMG I 1, 3, p. 172,13f. and 174,12–176,1.

²⁸ 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.

²⁹ 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 γελώντες, καὶ εἰσιν ἀνθηροί, καὶ καλόχρωι·
2. ὅσοι δὲ ἀπὸ χολῆς ξανθῆς τυγχάνουσιν, εἰσὶ γοργοὶ καὶ εὐτολμοὶ, ὀργίλοι καὶ πικροὶ καὶ ἀλλόχρωι·
3. ὅσοι δὲ ἀπὸ χολῆς μελαίνης τυγχάνουσιν, εἰσὶ ῥάθυμοι καὶ ὀλιγόψυχοι, φιλάσθενοι καὶ ὀκνηροὶ καὶ δειλοί·
4. ὅσοι δὲ ἀπὸ φλέγματος τυγχάνουσιν, εἰσὶ λυπηροί, καὶ μὴν καὶ ψυχροί, 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 στυγνῶσι· τῶν στοιχείων δὲ λέγουμεν τὴν αἰτίαν εἶναι.

1. ὅσοι γὰρ αἵματος καθαροῦ τυγχάνουσιν, οὗτοι πάντη γελῶσι καὶ ἀνθηροὶ τῇ ὄψει καὶ τῷ σώματί εἰσι πάντοθε καλὸχροοί.
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'.³⁰ 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

³⁰ 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.³¹

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.³² It declares that man is composed of four humours (blood, phlegm, yellow bile and black bile),³³ which correspond to the four elements (air, water, fire, earth),³⁴ and which predominate according to the four seasons and the four ages.³⁵ The nourishment created from the four elements is transformed in man into the four humours.³⁶ 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 εὐσθeneστέραν·
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

³¹ 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.

³² 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.

³³ Meletius, *De natura hominis*, in *Anecdota Graeca e codd. manuscriptis bibliothecarum Oxoniensium*, ed. J.A. Cramer, vol. III, Oxford, 1836 (reprinted Amsterdam 1963), p. 12,12–14.

³⁴ Cramer (n. 33), p. 12,14–17.

³⁵ Cramer (n. 33), p. 13,3–10.

³⁶ Cramer (n. 33), p. 14,12–14.

have seen in Galen, to a mixture of all the elements.³⁷ The pseudo-Galenic character is also highlighted particularly by the existence of a discussion on the influence of the four humours on the soul:³⁸

ἡθοποιούσι γὰρ οἱ χυμοὶ καὶ ταύτην (sc. τὴν ψυχὴν).

1. καὶ τὸ μὲν αἷμα ἱλαρωτέραν (sc. τὴν ψυχὴν) ἀπεργάζεται,
2. ἡ δὲ ξανθὴ ὀργιλωτέραν ἢ θρασυτέραν ἢ γοργοτέραν ἢ καὶ ἀμφοτέρα,
4. τὸ δὲ φλέγμα ἀργοτέραν 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 ἱλαρωτέραν 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 ἀργοτέραν). 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,³⁹ 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*

³⁷ 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.

³⁸ [Galen], *De hum.* 9: pp. 11,16–12,5 Schmidt = 19.492,15–493,1 K.

³⁹ 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.⁴⁰

⁴⁰ 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 hebraische 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:⁴¹ 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.⁴² 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' (εἰκὼν ... τοῦ πλάσαντος αὐτὸν θεοῦ). At the start it is said that man

⁴¹ 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 *Κορυφαῖω ἀνδρί: 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) αἷμα ποιεῖ τὸν ἄνθρωπον ὅλον καλὸν τῷ εἶδει αὐτοῦ (ὅλον—αὐτοῦ om. B), ἀπλοῦν, ἰλαρὸν, χαριεντικὸν (χαριέντα P), παίζοντα, γελῶντα (παίζοντας καὶ γελώντας B), ἀεὶ εὐσώματον (scripsi : ἀεὶ εὐσωμάτων P: om. AB).
2. ἡ δὲ ξανθὴ χολὴ ποιεῖ τὸν ἄνθρωπον (ποιεῖ—ἄνθρωπον om. B) ὅλον πικρὸν, ὀργίλον, κρατοῦντα μῆνιν (κρατοῦντα μῆνιν om. B : κακόχροον, μνησικάκον A) ὀξεῖς, ἐλαφροὺς τῇ φύσει, πολλὰ ἐσθίωντας καὶ ταχέως πέττοντας (ὀξεῖς—πέττοντας om. AP).
3. ἡ δὲ (δὲ om. AP) μέλαινα χολὴ ποιεῖ τὸν ἄνθρωπον ὅλον (ποιεῖ—ὅλον om. B) ἐπίβουλον, φθονερὸν, πολυμέριμον, θλιβόμενον (φθονερὸν—θλιβόμενον] ἀπλόψυχον μετ' ὀργῆς, ἀπληστα φοβούμενη B) καὶ πολλὸν κοιμώμενον (πολλὰ κοιμώμενους B)· καὶ ὡς ἐπὶ τὸ πλεῖστον 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 ὅλον (ὅλον om. AP) καλὸν (κακὸν A) τῷ εἶδει αὐτοῦ (τὸ εἶδος αὐτοῦ B), ἐγρήγορον (γρήγορον P) καὶ ἀνυπερήφανον (ἀπερήφανον BP) καὶ ταχέως πολιοῦντα (πολίως ἐκβάλλοντα B), ἐν αὐτῷ σκεπτόμενον, ἐλάττω (ἐν αὐτῷ—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).

⁴² Parisinus gr. 985, fol. 302^v3–305^v17. 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^e 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.⁴³ 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.⁴⁴ This letter presents both the theory of the four humours,

⁴³ The order of enumeration of the humours is the same as in Hippocrates' *The Nature of Man*.

⁴⁴ 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^v–160^r; *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 κατασκευής*; 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 cholera rubeam cholera 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 συλληφθῇ 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 παχεῖαι καὶ αἷματος γέμουσαι· καὶ τὰ βλέφαρα αὐτοῦ παχέα καὶ βαρέα· καὶ αἱ φλέβες τῶν μυλίσγων αὐτοῦ παχεῖαι καὶ αἷματος γέμουσαι· καὶ οἱ ὀφθαλμοὶ αὐτοῦ θαμβοὶ καὶ θολεροί· καὶ αἱ φλέβες τῶν ὀφθαλμῶν αὐτοῦ πεπληρωμέναι αἵματος· 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, ἱλαρόν, χαριεντικόν, παίζοντα καὶ γελῶντα.
3. Πᾶσαι 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.⁴⁵ 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 ὅλον κάλλιστον, καλόν, καλλίφωνον, ἀπλοῦν, ἱλαρόν, χαριεντικόν, παίζοντα καὶ γελῶντα (Blood makes man very beautiful, beautiful, with a nice voice, direct, joyous, gracious, joking and laughing).
2. Ἡ δὲ ξανθὴ χολὴ ποιεῖ τὸν ἄνθρωπον ὅλον 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 φοβερίζομενον, καὶ θλιβόμενον, φιλόπνουν, φθονερόν (Black bile makes man a traitor, irritable, timid, worried, sleepy, jealous).
4. τὸ δὲ φλέγμα ποιεῖ τὸν ἄνθρωπον ὅλον καλὸν 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 ἱλαρός, 'joyful', recalls the use of the

⁴⁵ 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.⁴⁶

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*).⁴⁷

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,⁴⁸ finds a correspondence in an Armenian medical anthology translated directly from the Greek that was recently presented to the academic community.⁴⁹ In a discussion of the four temperaments, which is comparable to those we have studied, it uses, for the sanguine temperament, an

⁴⁶ The adjective χαριεντικός also appears in the unpublished treatise *On the Pulse and on the Human Temperament*, quoted in n. 41.

⁴⁷ These two connections are also valid for the unpublished treatise *On the Pulse and on the Human Temperament*, quoted in n. 41.

⁴⁸ 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).

⁴⁹ J. Jouanna 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.⁵⁰ 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 variants⁵¹ 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

⁵⁰ Also the second unpublished Greek text, quoted in n. 41.

⁵¹ 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.⁵² It appears there as a theory that is already well established, and there are other examples in pseudo-Galenic treatises.⁵³ However, what about the theory of the four physical and mental temperaments based on the predominance of the four humours?⁵⁴ At what moment was this the-

⁵² 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.

⁵³ 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.

⁵⁴ 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 Περί 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 Περί 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?⁵⁵ 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,⁵⁶ we may think that it belongs to a slightly later

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 ἰαρός 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 ἰαρός, the total is now doubled thanks to the two unpublished treatises.

⁵⁵ 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.

⁵⁶ In this regard, there is an important difference of opinion between scholars. Schönerr, *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,⁵⁷ 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,⁵⁸ 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.⁵⁹ 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,⁶⁰ 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 735.⁶¹

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 *κρᾶσις*, nor the composite intensives *σύμμιξις* and *σύγκρᾶσις*, but a composite of the same family as *κρᾶσις: συγκερασμός*. This term, which appears once in the extract quoted on the temperaments, and

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).

⁵⁷ 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.

⁵⁸ 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.

⁵⁹ Stephanus, *In Hipp. Progn. comm.* 1 praef.: CMG XI 1, 2, p. 32, 38.

⁶⁰ On the Latin Middle Ages, see Klibansky, Panofsky and Saxl (n. 10), pp. 55–66 ('Melancholy in the System of the Four Temperaments').

⁶¹ 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” (τῷ τῶν χρωμάτων συγκερασμῷ). 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.