

The Prefaces to Pseudo-Alexander of Aphrodisias' *Medical Puzzles and Natural Problems* Books 1 and 2: Greek Text, Translation, and Interpretation

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THE COLLECTION of *Medical Puzzles and Natural Problems* (Ἱατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων) has been transmitted to us under the name of Alexander of Aphrodisias, though its authorship is today contested on grounds of both philosophical background and date.¹ The collection comprises an assortment of medical-naturalist problems, divided into two books (of 152 and 76 problems, respectively, on which see section 2 below). Finding its model in the pseudo-Aristotelian *Problemata*, the collection formed an integral

¹ See, e.g., H. Flashar, "Beiträge zu spätantiken Hippokratesdeutung," *Hermes* 90 (1962) 402–418, at 409 n.3, who rejects Alexander's authorship on the basis of the *Medical Puzzles*' "materialistische Auffassung von der Seele." For speculation about the historical authorship of the *Medical Puzzles* see R. W. Sharples, "Implications of the New Alexander of Aphrodisias Inscription," *BICS* 48 (2005) 47–56, at 53–56, who, on the basis of epigraphical evidence, suggests attributing the work (and part of the *Supplementary Problems* and the *On Fevers*) to the Commentator's father, whose name was also Alexander and who was also a philosopher. For an alternative theory, identifying the author with Alexander of Damascus (often confused with Alexander of Aphrodisias) see M. Meeusen, "Ps.-Alexander of Aphrodisias on Unsayable Properties in *Medical Puzzles and Natural Problems*," in M. Meeusen (ed.), *Ancient Greek Medicine in Questions and Answers: Diagnostics, Didactics, Dialectics* (Leiden 2020) 80–107, at 101–103.

part of a vibrant tradition of medical-naturalist *problemata* literature in the Graeco-Roman imperial era, which included works such as Plutarch's *Naturales Quaestiones*, the so-called *Supplementa Problematorum*, and the iatrosophist Cassius' *Medical Problems*.² Its significance lies not only in the testimony to the role *problemata* played to the transmission of medical and natural scientific knowledge during the Roman Empire, but also in the fact that, almost uniquely for ancient medical-naturalist *problemata*-literature, both its books are introduced by lengthy prefaces, which yield rich insights into the theory and intellectual aims of medical-naturalist *problemata* in this period. Systematic study of these prefaces has only recently begun.³ A

² On Plutarch's *Quaest.Nat.* see M. Meeusen and F. Pontani, *Plutarque, Oeuvres Morales XIII.1 Traité 59 (Questions Naturelles)* (Paris 2018); on the *Suppl.Probl.* see S. Kapetanaki and R. W. Sharples, *Pseudo-Aristoteles (pseudo-Alexander), Supplementa Problematorum* (Berlin 2006); on the iatrosophist Cassius see A. Garzya and R. Masullo, *I Problemi di Cassio Iatrosofista* (Naples 2004). For recent work on the Aristotelian *Problemata* see especially B. Centrone (ed.), *Studi sui Problemata Physica aristotelici* (Naples 2011); R. Mayhew, *Aristotle, Problems I–II* (Cambridge [Mass.] 2011); R. Mayhew (ed.), *The Aristotelian Problemata Physica: Philosophical and Scientific Investigations* (Leiden 2015).

³ See Flashar, *Hermes* 90 (1962) 402–418, focusing on parallels with the preface of the *Suppl.Probl.* (on which see K. Oikonomopoulou, “Author(s) and Reader(s) in the *Supplementary Problems (Supplementa Problematorum)*,” in *Ancient Greek Medicine in Questions and Answers* 55–79). For recent work on the text and its prefaces see M. Meeusen, “An Interpretation of the Preface to *Medical Puzzles and Natural Problems* 1 by Pseudo-Alexander of Aphrodisias in Light of Medical Education,” in P. Bouras-Vallianatos et al. (eds.), *Greek Medical Literature and its Readers. From Hippocrates to Islam and Byzantium* (London 2018) 94–109, “Unknowable Questions and Paradoxography in Pseudo-Alexander of Aphrodisias' *Medical Puzzles and Natural Questions*,” in G. Kazantzidis (ed.), *Medicine and Paradoxography in the Ancient World* (Berlin 2019) 199–214, and in *Ancient Greek Medicine in Questions and Answers* 88–107; L. Silvano, “Un'edizione da rifare: i *Problemata* dello Pseudo-Alessandro di Afrodisia,” *Philologia Antiqua* 10 (2017) 19–29, “La luna (piena?) e la decomposizione della carne: nota a Pseudo-Alessandro di Afrodisia, *Probl.* 1, 66 Ideler,” *Revue des Études Tardo-antiques* 7 (2017/8) 29–46, and “Studiare la natura per problemi: il proemio al primo libro dei *Dubbi medici e problemi fisici* dello Pseudo-Alessandro di Afrodisia,” *SemRom* N.S. 7 (2018) 89–106.

key reason for the lack of interest in them has been the absence of a reliable critical edition and translation of the work as a whole: the Greek text that we currently possess is that of the Aldine edition,⁴ republished by Ideler with very few variants, in the first volume of his *Physici et Medici Graeci Minores* (Berlin 1841; available in the on-line TLG),⁵ but it contains many mistakes and inconsistencies.

Our objective in the present article is to examine the *Medical Puzzles*' two prefaces, with a view to assessing the clues they can provide as to the aims of the collection as a whole. To this end, we discuss their relationship to each other and their role in the respective books to which they belong. Further, we shed light on their intellectual background and method of posing and solving medical problems. To facilitate the reader's access to the prefaces' content, we append an English translation to the revised Greek text, which is based on direct examination of the manuscript evidence by Luigi Silvano.⁶

1. *Greek text and English translation of the prefaces*

A complete census of the manuscript evidence is still a desideratum. The present edition is based on a fresh collation of a representative group of manuscripts, listed below with their *sigla*. They can be divided into two families: the first, and possibly closer to the archetype, has in M₁ and M₂ its most author-

⁴ [Aldus Manutius], *Theophrasti de historia plantarum [...], Alexandri Aphrodisiensis problematum, libri duo [...], Aristotelis mechanicorum [...], Eiusdem metaphysicorum [...], Theophrasti metaphysicorum liber unus* (Venice 1497; ISTC nr. ia00959000).

⁵ He purportedly had access to the preparatory notes assembled by Friedrich Reinhold Dietz, who traveled between 1826 and 1833 to various libraries in England, France, Italy, and Spain with the task of viewing and collating manuscripts that contained the works of ancient Greek and Arab doctors.

⁶ We would also like to thank Carl-Gustav Lindqvist (Ph.D. candidate at Göteborg University), who provided useful manuscript readings during an earlier version of this article. Our goal is to pursue more extensive study of the collection as a whole in the future.

itative representatives; the second includes MSS. LM₄Mu₃P₄, which share several interpolations and rephrasings. The edition tacitly corrects several misprints and omissions in Ideler's 1841 edition.

B = Bologna, Biblioteca Universitaria, 3635 (s. XIV), ff. 1^r–2^v (praef. I), 33^v–34^r (praef. II)

L = London, British Library, Harley 6295 (s. XV/2), ff. 1^r–2^r (praef. I; praef. II vacat)

M₁ = Venezia, Biblioteca Nazionale Marciana, Marc.gr. IV 58 (coll. 1206, s. XIII ex.), ff. 153^r–154^v (praef. I), 178^v–179^r (praef. II) (this was the exemplar of the Aldine edition)

M₂ = Venezia, Biblioteca Nazionale Marciana, Marc.gr. Z. 521 (coll. 316, s. XIII med.), ff. 73^v–74^r (praef. I), 84^r–^v (praef. II)

M₄ = Venezia, Biblioteca Nazionale Marciana, Marc.gr. Z. 259 (coll. 892, s. XIV med.), ff. 1^r–2^r (praef. I), 18^v–19^r (praef. II)

M₅ = Venezia, Biblioteca Nazionale Marciana, Marc.gr. Z. 260 (coll. 407, s. XV med.), ff. 1^r–3^r (praef. I), 45^r–46^r (praef. II)

Mu₂ = Modena, Biblioteca Estense Universitaria, gr. 210 Puntoni (α V 6.12, s. XVI), ff. 299^v–301^r (praef. I), 326^v–327^r (praef. II)

Mu₃ = Modena, Biblioteca Estense Universitaria, gr. 115 Puntoni (α P 5.17, s. XV), ff. 52^r–^v (praef. I), 56^v–57^r (praef. II)

P₄ = Paris, Bibliothèque nationale de France, Coislin 332 (s. XV), ff. 1^r–2^v (praef. I), 32^v–33^v (praef. II)

P₈ = Paris, Bibliothèque nationale de France, gr. 2048 (s. XV), ff. 1^r–3^r (praef. I), 40^r–41^r (praef. II)

P₁₁ = Paris, Bibliothèque nationale de France, gr. 1893 (s. XVI), ff. 153^r–154^v (praef. I), 180^r–181^r (praef. II)

V_{2b} = Città del Vaticano, Biblioteca Apostolica Vaticana, Pal.gr. 237 (s. XIV), ff. 161^r–163^r (praef. I; praef. II vacat)

Preface 1, Greek text⁷

Ἀλεξάνδρου Ἀφροδισιέως ἰατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων τὸ Α

[1] Τῶν προβλημάτων τὰ μὲν αὐτόθεν ἐστὶ πιστὰ καὶ γνώριμα, πάσης ἀμφιβολίας καὶ ζητήσεως ἄγευστα. [2] Τίς γάρ, οἶμαι, νοῦν ἔχων ἀπορήσειε, τίνος ἕνεκεν ἡ φύσις τοῖς πτηνοῖς ἐδωρήσατο πτερὰ (πᾶς γὰρ συνετὸς εἶποι ἄν, ὅτι θάλψεως χάριν ἀνθ' ἱματίων μὲν πρῶτον περιέβαλε, δεύτερον δὲ κάλλους ἕνεκεν) πεζοῖς δὲ ζώοις τρίχας, ἔρπετοῖς δὲ φολίδας, ἐνύδροις δὲ λεπίδας, ἢ ὄστρακα, καθάπερ τὰ ὄστρακόδερμα προσαγορευόμενα; Καὶ πάλιν διὰ τί τοῖς μὲν κέρατα, τοῖς δὲ κέντρα, τοῖς δὲ ὀξεῖς ὄνυχας ἢ ράμφη ἢ τι τοιοῦτον; Πρὸς ἄμυναν τῶν ἀδικούντων ὡσπερ φυσικοῖς δόρασιν ἠσφαλίσατο ταῦτα. [3] Καρποὺς δὲ πάντας καὶ σπέρματα πρὸς γένεσιν καὶ διαδοχὴν τοῦ γένους τεκτηναμένη ἡ φύσις, λέπεσιν ἢ σώμασί τισιν ὑγροῖς ἢ ξυλώδεσιν ἢ δέρμασιν ὁμοίως ἠσφαλίσατο, καθάπερ ἐν κιβωτῷ τούτους ἀποκρύψασα πρὸς ἀποφυγὴν κρύους ἢ θάλπους ἢ ζῶων τινῶν ἀδικούντων· καὶ αὐτὸ δὲ τὸ περίβλημα παντελῶς ἀχρεῖον οὐ κατέλειπεν, ἀλλὰ πρὸς τροφὴν παρεσκεύασεν. [4] αὐτὰ δὲ τὰ φυτὰ φύλοις μὲν καὶ φλοιῷ καὶ τοῖς ὁμοίοις ἠμφίασεν ἀντὶ πτερῶν ἢ τριχῶν· προῆδει γὰρ ὡς ἄμετρος ψύξις ἢ θερμότης ἐδύνατο λυμαίνεσθαι ταῦτα· ἀκάνθαις δὲ καθώπλισεν ἀντὶ βελῶν διὰ τὴν ἀπὸ τῶν ζῶων φθοράν. [5] Ἄνθεσι δὲ ποικίλοις ἐστεφάνωσε ταῦτα κόσμου καὶ κάλλους ἕνεκεν, καὶ πάλιν ὡσπερ κήρυκας προμηνύοντας τὴν τῶν καρπῶν προκύπτουσαν γένεσιν. [6] Ὅσοι μὲν τοιαῦτα γνωστὰ καὶ σαφῆ προτείνουσιν, ἀντικρυς δέονται νοῦ· ὅσοι δὲ

⁷ We omit to record all the *variae lectiones* of the manuscripts. The most significant are discussed in the notes appended to the translation; here is a selection of some more (β means the *consensus codicum* BLM₄Mu₃P₄): *Tit.* Ἀλεξάνδρου Ἀφροδισιέως ἰατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων (*add.* τὸ Α Μ₁)] Ἀλεξάνδρου Ἀφροδισιέως ἐπὶ τισι φυσικαῖς ἀπορίαις λύσεις β (βιβλίον α^v *add.* L : προοίμιον *add.* P₄) Ἀλεξάνδρου Ἀφροδισιέως φυσικαὶ ἀπορίαι καὶ λύσεις· προοίμιον· τόμος πρῶτος Mu₃ : *om.* V_{2b}; | §6 προτείνουσιν] προτείνουσιν εἰς λύσιν β (*praeter* LM₄)Mu₂P₈V_{2b}; | §6 παραπλήσια] παραπλήσια ἀπειθοῦσι β ; | §6 ἔνοχοι] ταῦτα τοίνυν αὐτόθεν ἐστὶ γνώριμα *add.* β ; | §16 χρησάμενος] ἐπόμενος β | §16 τῆς αἰτίας *om.* β , *secl.* Sylburg.

διχοστατοῦσιν, εἰ συμφύτως τῷ πυρὶ σύνεστιν ἢ θερμότης, ἀπτικῆς αἰσθήσεώς εἰσιν ἐνδεεῖς. ὅσοι δέ, πότερον φύσις καὶ λόγος προνοητικὸς προμηθεύεται τὰ ἐν γενέσει καὶ φθορᾷ, τὴν τάξιν, τὴν κίνησιν, τὴν θέσιν, τὴν διάπλασιν, τὰς χρώας, τὰ παραπλήσια, κολάσεως τυγχάνουσιν ἔνοχοι.

[7] Τὰ δὲ ἅλυτα παντελῶς ἐστι θεῶ μόνῳ γνώριμα, τῷ καὶ τὴν τούτων οὐσίαν ὑποστήσαντι. Καὶ γὰρ ὁ τεχνίτης ἔργον τι μηχανικὸν κατασκευάσας οἶδεν αὐτοῦ πάσας τῶν ἐνεργειῶν τὰς αἰτίας, ἰδιώτης δὲ παντελῶς ἄμοιρος τῶν αἰτιῶν ἐστίν. [8] Ἄποροι δὲ ζητήσεις εἰσὶν αἱ τοιαίδε· τίνας ἔνεκεν οἱ γαργαλιζόμενοι μασχάλας ἢ πέλματα ἢ πλευράς γελῶσιν; Ἡ τίνας χάριν ἀκούοντές τινες μαρμάρων παρατριβομένων ἢ πριζομένων ἢ τρίζοντος ἢ ῥίνουμένου σιδήρου τοὺς ὀδόντας εὐθέως ναρκῶσιν; Ἡ διὰ τί τὴν ἀπὸ τῶν ψυχρῶν ὀπωρῶν προσγινομένην αἰμωδίαν τοῖς ὀδοῦσιν ἀνδράχην ψυχρὰ πεφυκυῖα θεραπεύει καὶ οὐκέτι τὰ ἐναντία τῶν ἐναντίων ἰάματα, ἀλλὰ τὰ ὅμοια; Ἡ διὰ τί λίθος ἢ μαγνήτις ἔλκει μόνον τὸν σίδηρον, ὑπὸ τε τῶν τούτου ῥινημάτων ζωοποιεῖται, ἢ λίθος ἢ τε ἤλεκτρος λεγομένη μόνα τὰ κυρήβια καὶ τὰ κάρφη συνανασπᾶ κολλωμένη τούτοις; [9] Καὶ λέων ἄλεκτρούνα δέδοικε μόνον, ὄρνις δὲ κατοικίδιος φὸν τεκοῦσα τοῖς κάρφεσιν ἑαυτὴν ἀποκαθαίρει πανταχόσε τοῦ σώματος· ὄρτυγές τε σιτοῦνται τὸν ἐλλέβορον τοῖς ἀνθρώποις δηλητήριον ὄντα· ψᾶρες δὲ τὸ κώνειον· ἀσκαμωνία δὲ μᾶλλον χολὴν ξανθὴν ἔλκει· κολοκυνθὶς δὲ καὶ ἀγαρικὸν καὶ λευκὸς ἐλλέβορος εὐφόρβιον τε καὶ κόκκος Κνίδιος φλέγμα· μέλας δὲ ἐλλέβορος καὶ ἐπίθυμον μέλαιναν χολὴν; Τινὲς δὲ ὑπὸ μὲν τῶν καθαιρόντων στεγνοῦνται τὴν κοιλίαν, ὑπὸ δὲ τῶν στελλόντων καθαίρονται μᾶλλον. [10] Καὶ ἄλλος πρὸς τήνδε πλέον ἤδεται τὴν τροφήν, ῥᾶον αὐτὴν μεταβάλλων. Οὐδεὶς δὲ καὶ τὴν θαλασσίαν νάρκην ἀγνοεῖ· πῶς διὰ τῆς μηρίνθου τὸ σῶμα ναρκοῖ, τρίγλη δὲ κρατουμένη ἀντιπαθεῖ τῇ νάρκῃ; [11] Καὶ μυρίων ἄν σοι τοιούτων προκαταβαλοῖμην κατάλογον, πείρα μόνον γινωσκομένων, ἃ παρὰ τοῖς ἰατροῖς ἰδιότητες ἄρρητοι λέγονται· τὸ γὰρ ἴδιον ἐκάστου προφερόμενον ἄρρητον ὑπάρχει πρὸς ἀπόδοσιν τῆς αἰτίας. Κακῶς γὰρ ἔνιοι λύσεις ἀθρόας τούτων παραβάλλουσι, ἀπειροτάτας δὲ καὶ ἀπιθάνους. [12] Φασὶ γὰρ τὰ καθαρτήρια θερμότητι τοὺς χυμοὺς ἔλκειν, ὅπερ ψεῦδος· ἔδει γὰρ πᾶν θερμὸν εἶναι καὶ καθαρτήριον· οὕτω γὰρ τὸ πέπερι θερμὸν ὄν οὐχ ἔλκτικόν ἐστίν, ἀλλὰ πεπτικὸν καὶ τονωτικόν, ὡσαύτως δὲ

καὶ μαστίχη καὶ ἀλόη. φαμέν δὲ μὴ ἀντιστρέφειν τὸν λόγον· πᾶν γὰρ καθαρτήριον θερμὸν μὲν τῇ κράσει, κενωτικὸν δὲ τῇ δυνάμει, οὐ πᾶν δὲ θερμὸν ἤδη καὶ τὴν δύναμιν καθαρτικόν. Λέγουσι δὲ τὸν στρουθοκάμηλον σίδηρον πέττειν, οὐκ ιδιότητι τινι, μᾶλλον δὲ θερμότητι, ὅπερ ἄτοπον· λέων γὰρ τούτου τοῦ ζώου θερμότερος ὢν οὐ πέττει τὸν σίδηρον. Οὐ μόνον δὲ παρὰ τοῖς ἰατροῖς ἐστὶν ιδιώματα μόνις, ἀλλ' ἤδη καὶ παρὰ φιλοσόφοις καὶ γραμματικοῖς, πάθη λεγόμενα καὶ σεσημειωμένα ταῖς χρήσεσι.

[13] Χρὴ τοίνυν προβάλλειν εἰς ζήτησιν τὰ μέσσην ἔχοντα χώραν, ἀμφίβολά τε πρὸς γνῶσιν, οἷά τε πρὸς λύσιν ὑποπεσεῖν· [14] ὥσπερ γὰρ τῶν λεγομένων τὰ μὲν ἐστὶ ψευδῆ πᾶσι γνωριζόμενα, τὰ δὲ πάντη τὴν ἀλήθειαν πρὸς ἀπόδειξιν κεκτημένα, τὰ δὲ ὡς ἂν εἴποι τις ἐξ ἀμφοτέρων κεκραμένα λεγόμενα, τὸν αὐτὸν τρόπον καὶ τῶν προβαλλομένων τὰ μὲν ἐστὶν εὐδηλα πᾶσι γινωσκόμενα, τὰ δὲ πάντη κεκρυμμένα λύσιν οὐχ ὑποδεχόμενα, τὰ δὲ μέσσην ἔχοντα φύσιν, ὧν καὶ τὴν ἔκθεσιν ποιησόμεθα.

[15] Λυτέον δὲ πᾶν πρόβλημα ἀπὸ κράσεως, ἢ διαπλάσεως, ἢ ἐνεργείας, ἢ συμπαθείας τοῦ ὁμοίου ἢ χρώματος, ἢ κατὰ ἀπάτην αἰσθήσεως, ἢ κατὰ ὁμωνυμίαν, ἢ ἐκ τοῦ μᾶλλον καὶ ἥττον τῶν ἐνεργουσῶν δυνάμεων αὐτοῦ, ἢ καθὸ σκληρότερον ἢ μανώτερον ἢ μεῖζον ἢ ἔλαττον αὐτό φαμεν, ἢ ἀπὸ χρόνου καὶ ἡλικίας καὶ ἔθους, ἢ οὐσιώδους ἢ κατὰ συμβεβηκός, ἢ τῶν ὁμοίων καθὼς ἐν τοῖς προβλήμασι εὐρήσεις τὰ λεγόμενα. [16] Τούτοις οὖν τοῖς κανόσι χρῆσάμενος πᾶν ἀπορούμενον δυνήσῃ πρὸς ἀπόδειξιν τῆς αἰτίας ἀγαγεῖν. [17] Ἐπειδὴ δὲ οὐ μόνον ἀρκεῖσθαι χρὴ τῇ καθόλου μεθόδῳ, ἀλλ' ἤδη καὶ τοῖς κατὰ μέρος χειραγωγεῖν τὸν διδασκόμενον, ἀρξόμεθα τῶν λύσεων.

Preface 1, English translation

The First Book of Alexander of Aphrodisias' Medical Puzzles and Natural Problems

[1] Of problems some [yield solutions which] are straightforwardly credible and intelligible, and such that they do not admit doubt or investigation. [2] For, I think, which person in their right mind might wonder for what purpose nature gave feathers to the birds? For every sensible person would say that first of all it put feathers over them instead of clothes for the sake of warmth, and that, secondly, it did so for the sake of beauty. And [in the same way] to the animals that walk [it gave] hairs, to animals that crawl [it gave] scales, to water

animals [it gave] scales or shells, as in the case of the so-called crustaceans. And again, why [did nature give] to some horns, to others stings, to others sharp nails or some such thing? It secured them [*sc.* with these things] as if they were natural spears for the purpose of warding off those who could harm them. [3] And all the fruits and seeds that nature crafted for the sake of the generation and succession of the kind it similarly secured with husks or with some kind of wet or woody bodies, or with skins, having concealed them as if in a chest for the sake of avoiding cold or heat, or some animals that might harm them. And it did not let the cover itself be completely useless, but made it for the purpose of nourishment. [4] And the plants themselves it covered with leaves and bark and the like instead of feathers and hair. For it knew in advance that immeasurable cold or heat could destroy them. And it armed them with thorns instead of arrows to preserve them from destruction by animals. [5] And it wreathed them with colourful flowers for the sake of adornment and beauty, and (once again) like heralds foretelling the imminent birth of the fruits. [6] Those who propose investigation of such matters which are well known and clear are outright brainless. And those who dispute whether heat is innate in the fire, are deprived of the sense of touch.⁸ Those too [who dispute] whether nature and provident *logos* take care of matters pertaining to generation and corruption, the order [*sc.* of the animals' body parts], the movement, the position, the shape, the colours, and the like, require

⁸ On the ridiculousness of such questions cf., e.g., Theophr. fr.159.10–11 *FHSG* (= Procl. *In Ti.* 35A, II 120 Diehl; see Silvano, *SemRom* N.S. 7 [2018] 92 n.14): οὐδὲ ἐπὶ τῶν φυσικῶν πάντων λέγων δεῖν ἡμᾶς ἐπιζητεῖν τὸ διὰ τί γελοῖον γὰρ φησιν ἀπορεῖν, διὰ τί καίει τὸ πῦρ καὶ διὰ τί ψύχει ἡ χιών. The example that Aristotle in *Topics* 1.11 gives of problems that require perception is whether snow is white (105a7: οἱ δὲ πότερον ἡ χιών λευκὴ ἢ οὐ αἰσθήσεως [*sc.* δέονται]). Our author probably responds to (and rejects) Sceptical attitudes towards sensory perception, cf., e.g., Sext. Emp. *Math.* 7.368: οὕτω καὶ τὸ πῦρ θερμαίνειν μὲν δύναται, οὐχὶ δὲ γε καὶ ἐξ ἀνάγκης θερμὸν εἶναι (Sextus discusses the relationship between sensory perception and thought). In line with our author's intellectual allegiances (see section 3), the collocation "innate heat" is common in Aristotle and also in Galenic physiology and medicine.

punishment.⁹

[7] The problems which are totally insoluble, on the other hand, are known only to god, who laid down their substance. For the artisan too who has constructed some mechanical work knows the causes of all its actions, while a layperson is totally ignorant of the causes. [8] Things of such sort constitute investigations which are impossible to solve: why do those who are tickled in the armpits or soles or ribs laugh? Or why, when some people hear marbles being rubbed against one other, or sawed, or iron that either squeaks or is filed, do they immediately gnash their teeth? Or why is it that the irritation caused to the teeth by cold fruits is treated by applying cooled purslane, and [why is it that] opposites are not in this instance treatments for opposites, but the likes [are]? Or why does the magnetic stone attract only iron, and the stone is enlivened by iron's shards, while the so-called *elektros* [i.e. amber] draws only the husks and dry stalks, by clinging on to them? [9] And [why too is] the cock the only animal the lion fears, while the domestic chicken when she has laid an egg cleans her body completely with dry stalks? [Why do] the quails eat hellebore, which is poisonous for humans, while the starlings eat hemlock? And [why does] scammony attract yellow bile more, while the gourd and tree fungi and white hellebore and spurge and Cnidian coccus attract the phlegm? And [why do] black hellebore and *epithymon* attract black bile? Some people are dried up in their cavities by drugs that purge, and are more purged by drugs that are astringent. [10] And some other person is more pleased by this nourishment, as he converts it more easily. And there is nobody who does not know of the electric ray: how, then, does it numb the body through the fishing line?¹⁰ But when the red mullet is taken hold of it

⁹ This tricolon (*nous – aisthesis – kolasis*) is paralleled in Aristotle's *Topics* 105a3–9, see Meeusen, in *Greek Medical Literature* 98–99 with n.36, for criticism of Flashar's interpretation according to which *κόλασις* implies a correction of the phrasing of the questions, rather than a correction/punishment of those who ask such questions; according to Silvano, *SemRom* N.S. 7 (2018) 102 and n.35, both interpretations seem acceptable.

¹⁰ Cf. Angelo Poliziano's 1479 translation with the appropriate *linea*: see L. Silvano, "(Pseudo)Alexander of Aphrodisias between the Middle Ages and the Renaissance: Notes on the Fortuna of the *Medical Puzzles and Natural Problems*," in P. B. Rossi et al. (eds.), *Alexander of Aphrodisias in the Middle Ages and the Renaissance* (Turnhout 2021) 117–144, at 130 and n.46.

counteracts the electric ray. [11] I could put down for you a list of countless such things, known only through experience, which are called “unsayable properties” by doctors. For what is proclaimed to be the particular property of each is unsayable in respect of providing an account of the cause. Some wrongly accumulate heaps of solutions to these, which are moreover endless¹¹ and improbable. [12] For they say that purgative drugs draw the humors by virtue of being very warm, which is wrong. For [if this were the case] every warm substance should have been purgative as well. In this way pepper, though warm, is not capable of drawing, but is digestive and strengthening. Similarly with the mastic and the aloe. We say that the logic should not be inverted: for every purgative substance is warm in terms of its constitution, and depletive in terms of its power; but not every warm substance is also depletive in terms of its power. And they say that the ostrich concocts iron, not because of some property, but because of its heat—which is absurd; for the lion, even though it is warmer than this animal, does not concoct iron. Properties (*idiômata*) are found not just in the doctors alone, but also in the philosophers and grammarians, called “modifications in form” (*pathê*) and noted as exceptions by their usage.

[13] We must then propose for investigation problems that occupy a middle ground, are doubtful in respect of knowledge, and of such kind that can be subject to a solution. [14] For just as of the things that are said some are false and recognized by everybody as such, while all those that [possess] the truth have acquired [*sc.* this truth] through proof, and others still are called, one might say, a mixture of both, in the same manner, of the things proposed for solution, some are apparent and recognized by everybody as such, while all those that are hidden do not admit a solution, and still others occupy a middle ground, which are the precise ones on which we shall make our exposition.

[15] Every problem must be solved from the constitution, or the formation, or the activity, or from affinity towards something similar,

¹¹ Ideler, with M₁ and the Aldina, prints εὐφρωτάτους, which makes no sense; the MSS. of the β family read ἀσυμφόρους. Although this provides a sound sense, we prefer to opt for Sylburg’s emendation ἀπειροτάτας δέ, which we would be inclined to interpret as “impossible to search” or “open to innumerable solutions.”

or from colour, or according to the deception of our senses, or according to the same name, or from the higher or lesser degree of its active powers, or to the extent that we call it harder or looser, or greater or smaller, or from time and age and custom, or from essence or according to the accidents, or the like, as you will find what is said in the problems. [16] Having then used these rules you will be able to direct every enquiry towards the demonstration of its cause. [17] But since we must not be content with the general method alone, but also guide the pupil through individual cases, we shall now begin¹² with the solutions.

Preface 2, Greek text¹³

Ἀλεξάνδρου Ἀφροδισιέως ἰατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων τὸ β

[1] Τὸ Ἀσκληπιοῦ δῶρον πασῶν τῶν κατὰ τὸν βίον χρειῶν ὑπερ-
ηκοντίσθη κατὰ τὴν ἀξίαν. Πρὸς γὰρ ἔμψυχον σῶμα καὶ λόγου
μετέχον φέρει τὸν σκοπόν, οὗ ἡ τήρησις καὶ ἡ εὐκρατος φυλακὴ τὴν
τῶν ἄλλων πασῶν τεχνῶν ἀρχὴν ὑπεστήσατο, τὰς αἰσθήσεις μὲν
ὀξύνουσα, διαίτη δὲ τὰ μόρια ῥωννύουσα τὰ ὄργανα τῶν εὐρέσεων.
[2] Αὕτη τὰ μὲν καλῶς προμηθευθέντα φυλάσσει χρηστῶς, τὰ δὲ ἐλ-
λιπῶς κατασκευασθέντα διορθοῦται· σώματος φροντίζει, ψυχῆς οὐκ
ἀμελεῖ· φιλοσοφίας γὰρ φέρει τὰ γνωρίσματα, ἧς τὸ τέλος οἰκείαν
ἀρχὴν παρεπήξατο· τῆς φυσικῆς θεωρίας ἐκτὸς οὐκ ἔστιν, τὴν γὰρ
σύνθεσιν τῶν γεγονότων δεξαμένη οἶδε τὸ μέτρον τῶν λειπόντων. [3]
Τοῦτο ὡς ἀληθῶς θεῖον καὶ μακάριον εὔρεμα, ἔχον ἐν λόγοις τὴν
ἀκρίβειαν· διὰ τούτων καρπούσθω τὸν ἔπαινον καὶ εἰς ἐπιστήμης
ἀναγέσθω κανόνα, κὰν γὰρ τέχνην τις τολμήσειε καλεῖν, οὐ διὰ
ταῦτα, ἀλλὰ διὰ τὴν πάσχουσαν ὕλην. Οὐκοῦν αὐτὴ μὲν καθ' ἑαυ-
τὴν εἶδους μισθῶ τὸν λόγον φέρουσα τὸν πρὸς ἐπιστήμην βεβαίαν,

¹² ἀρξόμεθα: a couple of manuscripts read ἀρξόμεθα (“let us begin”), which is likely to be a *lectio facilior*.

¹³ The manuscripts have no major textual discrepancies: most of the *variae lectiones* are either erroneous or *adiaphorae*. See e.g. the following: *Tit.* Ἀλεξάνδρου Ἀφροδισιέως ἰατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων (M₁: add. [...] δεῦτερον M₂; βιβλίον δεῦτερον M₅ P₁₁) | τοῦ αὐτοῦ ἐκλογαὶ ἰατρικῶν ἀπορημάτων καὶ φυσικῶν προβλημάτων β (τόμος δεῦτερον. προσίμιον add. M_{u3} β' [...] add. P₈); | §3 διαπεφώνητο] διαπεφώνηται β M₂, post ὁ λόγος transp. M_{u2}; | §4 αἰτίου] αἰτίας β M₂M₅M_{u2}P₁₁.

ἀχθεῖσα δὲ πρὸς σῶμα, καὶ ἐνδυσσαμένη τὴν ὕλην, γίνεται τέχνη βία· ὡςπερ γὰρ ψυχὴ ὁμολογηθεῖσα μὲν τοῖς πολλοῖς τῶν φιλοσόφων ἀθάνατος διὰ τὸ ἀσῶματον καὶ αὐτοκίνητον, ἑτέροις δὲ διαπεφώνητο τοῦμπαλιν ὁ λόγος. Φασὶ γὰρ φθαρτὴν αὐτήν, τῷ πάθει βαπτίζομένην τῆς ὕλης· οὐ πάσχει δὲ ψυχὴ, ὡς δεῖξει τὸ προστιθέμενον. [4] Οὕτως ἐν σώματι ψυχὴ ὡςπερ ἐν ὕδατι καθαρωτάτῳ ἀκτὶς ἡλιακῆ· οὐκοῦν ἐὰν ἦ διαυγὲς τὸ ὕδωρ, φέρει τὸ γνώριμον τοῦ σχήματος· ἐὰν δὲ θολωθῇ ἐκ τινος αἰτίου, μεταβάλλεται μὲν αὐτὸ τῆ οὐσίᾳ, κρύπτεται δὲ τὸ φανὲν μηδὲν βλαβὲν κατ' οἰκείαν ἐνέργειαν· οὕτω πάλιν πολλάκις ἥλιος ἔκρυπεν ἀκτῖνα φαεινὴν, νέφους παρεμπεσόντος, μὴ βλαβεῖσης αὐτοῦ τῆς ἀκηράτου φύσεως. [5] Ὡςπερ οὖν ἐπὶ ψυχῆς ἔγνωμεν, οὕτω νοήσωμεν καὶ ἐπὶ τῆς ἰατρικῆς· αὐτὴ γὰρ καθ' ἑαυτὴν πρῶτως ἔχει τὸ βέβαιον, πρῶτως ἔχει τὸ ἐδραῖον καὶ ἄπτωτον, ἐπιστήμη τυγχάνουσα· κοινωνήσασα δὲ τῇ ὕλῃ καθιρέθη τοῦ ἀξιώματος, τέχνη γεγонуῖα καὶ τὸ ἀσφαλὲς ἀπωλέσασα. Ἄλλ' οὐ δεῖ πρὸς τὸ δεύτερον ἀφορᾶν τοῦ συμβεβηκότος, ἀλλὰ πρὸς τὸ πρῶτον τῆς ὑπάρξεως. [6] Καὶ ὅσον μὲν πρὸς τὴν ἡμετέραν διάνοιαν διειλήφαμεν, ἀλλ' οὐ πρὸς τὴν χρειᾶν τῶν ζητουμένων, ὀλίγα τινὰ κεφάλαια ἐξ αὐτῶν καρπωσάμενοι, συντελοῦντα δὲ τοῖς αὐτὴν μετερχομένοις. Καὶ μάλιστα τοῖς τὸν λόγον ἀσκοῦσι φέρουσι δὲ τὴν ὠφέλειαν οὐ σμικρὰν καὶ πρὸς τὴν τῶν πραγμάτων εὔρεσιν.

Preface 2, English translation

The Second Book of Alexander of Aphrodisias' Medical Puzzles and Natural Problems

[1] Of all the necessities that pertain to life, the gift of Asclepius has been made to excel in accordance to its worth. For it directs its aim to the animate body which partakes of *logos*. Its [*sc.* the body's] safeguarding and well-tempered preservation has laid down the starting-point of all the other arts, by sharpening the senses on the one hand, and by strengthening through regimen the body parts—the (very) instruments of invention¹⁴—on the other. [2] This then [*sc.*

¹⁴ According to Galen, *MM* (X 163.15 K.), the instruments of every invention are *empeiria kai logos*, thus experience coming from the senses and reason, as in our passage. Cf. also the beginning of Galen's *UP* 1.2–4 (III 2–7 K. = 68–71 M.), where the anatomy of the human hand is praised as being instrumental/organic to the expression of human ingenuity in the

medicine] effectively safeguards what has been taken care of well, and corrects what has been made in a deficient fashion. It is concerned with the body, but does not neglect the soul. For it bears the tokens of philosophy, whose end it has set as its own proper beginning: it does not lie outside naturalist contemplation, for because it has understood the composition of things that have come to be, it knows the measure of the things that remain. [3] This is a truly divine and blessed finding, as it derives its fundament from precise reasoning. For these reasons let it reap the fruit of praise, and let it be elevated to the standard of science, and should anybody venture to call it art, [let it be so] not for these reasons, but because of the matter that is acted upon. This then [*sc.* medicine], despite the fact that by itself and as a reward for its form it involves a process of thought that leads to precise science, becomes art by force, because it has been carried down to the body, and put on the garb of matter. In the same way the soul is commonly asserted by most philosophers to be immortal because it is incorporeal and self-moving, but by others the argument has been disputed from the contrary perspective. For they say that it [*sc.* the soul] is corruptible, and suffused by the affections of matter. But the soul does not suffer affection, as the following example will show. [4] Soul is in the body just as a sun-ray is in the clearest of water. If therefore the water is transparent, (the ray) carries the characteristic of its familiar appearance. If however the water is blurred by some cause, itself it changes in terms of its substance, but the ray's image is hidden, without having suffered harm in terms of its proper activity. In this way again the sun many times hides its bright ray, when some cloud has come in between, but without its pure nature having been harmed. [5] So just as we have decreed about the soul, in the same way let us consider on medicine. This by itself principally possesses certainty, principally possesses soundness and infallibility, since it happens to be a science. But because it deals with matter it has been taken down from its honourable position, having become an art and lost its certainty.¹⁵ But we must not pay attention to the secondary issue of the accident, but to the primary

form of several *technai*.

¹⁵ So it is now a stochastic art (like navigation, etc.), cf. K. Ierodiakonou, "Alexander of Aphrodisias on Medicine as a Stochastic Art," *Clio Medica* 28 (1995) 473–485.

issue of the existence. [6] And we have interspersed [*sc.* in our book] a great many problems for the sake of [exercising] our intellectual capacity and not for the practical usefulness of enquiries, having gathered only a few characteristic examples from the latter kind. These [latter problems] should however suffice for those who pursue it [*sc.* the practical usefulness of enquiries]. And especially for those who intend to train their theoretical faculty they [*sc.* the few practical problems] provide no little benefit for the invention of things.¹⁶

2. *Content and placement of the two prefaces*

The preface to Book 1 is methodological in character. It argues that one must be able to distinguish between three kinds of problems: those whose solutions are straightforwardly credible and intelligible (πιστὰ καὶ γνώριμα, §1); those that are wholly insoluble (ἄλυτα παντελῶς, §7), which, the preface states, are known only to god (ἔστι θεῷ μόνῳ γνώριμα, §7); and, finally, those that occupy a middle ground (τὰ μέσην ἔχοντα χώραν, §13), whose solutions are ambiguous (ἀμφίβολα ... πρὸς γνώσιν, §13). At first sight this distinction seems to apply to problems in general (it begins with the statement: Τῶν προβλημάτων..., §1), yet the context and abundant examples that are provided for each category make it clear that the author has specifically medical-naturalist problems in mind. Only the third kind of problem is deemed suitable for investigation, so the preface concludes by issuing some general guidelines for its solution (§§15–16). The problems that follow (in the collection's first book) are intended to demonstrate the general method advocated in the preface.

The principal concern of the second preface is to defend medicine (which is characterised as “the gift of Asclepius,” τὸ Ἀσκληπιοῦ δῶρον, §1) as a science. In the first instance medicine's value is defended in terms of its contribution to the overall preservation of the animate (ἔμψυχον, §1) body and its

¹⁶ For the Empiricists' concept of εὔρεσις relating to the discovery of remedies by an analogical method based on practice and experience, see H. von Staden, “Experiment and Experience in Hellenistic Medicine,” *BICS* 22 (1975) 178–199, at 191–192. See also n.14 above.

parts, thanks to which all the arts can be practiced.¹⁷ Secondly, the preface argues that the soul too falls within medicine's domain, insofar as medicine "bears the tokens of philosophy" (φιλοσοφίας γὰρ φέρει τὰ γνωρίσματα, §2). As the preface goes on to explain, medicine has been downgraded from the status of a science to that of an art, owing to its preoccupation with changeable matter, but is in fact a science, whose *logos* principally (πρώτως, §5) has exactitude, certainty, and infallibility. This point is illustrated through the use of an elaborate analogy with the sun's ray passing through water (according to which the water's blurriness or clarity affects the ray's visibility, but does not change its essence): in just the same way, the soul's essence is thought to remain unaffected by matter (the body), and, similarly, medicine retains its credentials as a science, even if these credentials can be "blurred" by its preoccupation with matter (§§4–5). The preface concludes by urging the reader to keep this aspect of medicine's essence in mind, and by saying that the book offers a selection of medical-naturalist problems that are considered useful for intellectual exercise, though not wholly devoid of practical use as well (§6).¹⁸

The first question the two prefaces pose concerns their relationship to the content of the respective books of problems to which they belong. Thus, Book 1 contains a blend of medical-biological and naturalist problems, which are concerned with topics such as the causes of various physiological phenomena (such as laughter, sweating, paleness, tremor, yawning, vision); differences in physical constitution, depending on age, or gender; parallel investigations of animals and humans, in terms of their physiological traits; the body's humors; or the physical properties and efficacy of nutritional and other medicinal substances (such as wine, water, oil, mustard, and pepper). In this

¹⁷ Cf. Galen *UP* 1.4 (III 8–9 K. = 71 M.) for the parallel idea that human *logos* (not medicine as such) allowed us to practice the arts.

¹⁸ Practical instructions can be found e.g. in *Probl.* 2.9 (εἰκότως οὖν δεῖ τρέφειν, ἵνα ῥώσαντες τοὺς μῦς ἐξαναστήσωμεν πρὸς ἄμυναν τοῦ λυποῦντος); 2.10 (δὸς δὲ τὴν ὕλην ἀφθονον καὶ ὄψει τὸν παροξυσμὸν ἀνευδεῆ); etc.

context, a preface on the method of solving such problems seems appropriate. However, the possibility that it was a later annexation cannot be excluded. Book 2, next, contains medical problems that are, for a considerable part, concerned with specific diseases (for example, probl. 1, kidney disease; probl. 2, 4, 8, 9, περιπνευμονία; probl. 3, wasting; there are also frequent references to different types of fevers, as well as to bruises and wounds). But it also includes other topics on physics (e.g. probl. 86, on air currents; probl. 89, on the sun; or probl. 119 and 132, on ice and mirrors). In this context, the preface's focus on medicine and its credentials as a science is apposite, because it underscores the author's perception of medical problems, however specialist in kind, as constituting a sub-category of naturalist problems. Still, given that the preface makes no direct reference to the book's contents (and vice versa), it is possible that it too was initially composed as a stand-alone piece which was annexed only later.¹⁹ The relationship of the collection's two books to each other is also an open issue, given their variable contents. More systematic investigation is required, which is beyond the scope and goals of the present study (we defer it to the future).

3. *Intellectual background and aims*

It is quite clear that the threefold distinction of problems that is proposed in the preface to Book 1 has its intellectual basis in Aristotle's *Topics* 1.10–11. There Aristotle, in discussing the definitions of the dialectical proposition and the dialectical problem, stresses that “nobody in their right mind would issue a proposition out of what nobody holds, or propose for solution what is apparent to all, or to most people. For the latter admits no doubt, while to the former nobody would agree” (οὐδείς γὰρ ἂν προτείνειε νοῦν ἔχων τὸ μηδενὶ δοκοῦν οὐδὲ προβάλοι τὸ πᾶσι φανερόν ἢ τοῖς πλείστοις· τὰ μὲν γὰρ οὐκ ἔχει ἀπορίαν, τὰ δ' οὐδείς ἂν θεΐη, 104a5–8). In our text, this corresponds to the first

¹⁹ Interestingly, some MSS. (L and V_{2b}) completely omit the second preface.

category of problems, namely, those that are *πιστὰ καὶ γνώριμα* (§1), and are therefore not amenable to investigation. The third category of problems too, namely, those that occupy a “middle ground” (*μέσσην ἔχοντα χώραν*, §13), in the sense that they are uncertain or ambiguous in respect of their solution, echoes *Topics* 1.11 (104b1–5, 12–17). The second type of problem (namely, problems whose solutions are known only to god, §7) does not correspond to any known formal classification of problems that we possess. Yet many of the examples that are listed are also considered typically insoluble in other sources.²⁰ On the whole, the preface is in tune with evidence from other Graeco-Roman authors as well (namely, Alexander of Aphrodisias)²¹ showing that, during the imperial era, there was systematic engagement with Aristotle’s theory of problem-posing and problem-solving, as articulated in the dialectical works, towards developing a method of solving medical-naturalist problems in particular.

Secondly, the wealth of examples the author provides in order to illustrate each respective category of problems that he distinguishes offer helpful clues as to the relationship of his text with wider *problemata*-literature, as well as with other traditions in which such subject-matter may have featured as a topic. Thus, the plentiful examples that he lists for problems that are credible and intelligible (§1) further affirm his knowledge of Aristotle’s zoological writings, both because of the terminology

²⁰ For the text’s connection with the paradoxographical tradition more generally, see Meeusen, in *Medicine and Paradoxography* 199–214.

²¹ See *In Top.* 62.30–63.19, where Alexander distinguishes between physical problems (which are not dialectical), and dialectical problems on physical (besides ethical and logical) topics. See J. Mansfeld, “*Physikai doxai* and *Problemata physika* from Aristotle to Aëtius (and Beyond),” in W. W. Fortenbaugh et al. (eds.), *Theophrastus: His Psychological, Doxographical, and Scientific Writings* (London 1992) 63–111 = J. Mansfeld, “*Physikai doxai* and *Problemata physika* in Philosophy and Rhetoric: From Aristotle to Aëtius (and Beyond),” in J. Mansfeld et al. (eds.), *Aëtiana III Studies in the Doxographical Traditions of Ancient Philosophy* (Leiden 2010) 33–97; Meeusen, in *Greek Medical Literature* 105 n.33.

that he uses (e.g. terms such as ὄστρακόδερμα, §2), and because of the overall teleological mindset, wherein the body parts listed are taken to serve a certain goal. However, the explanations that he provides for the different functions of the parts in question only on occasion echo Aristotle. For example, the explanation that feathers exist for warmth in the first instance (by way of clothes), and for beauty in the second, finds no parallel in Aristotle, for whom feathers (along with wings) exist in birds on account of the fact that they serve their need to fly.²²

By far the most intriguing list of examples that is provided concerns the problems that the author considers as “totally insoluble” (§7). These enquire after phenomena such as the link between tickling and laughter,²³ hearing marbles being rubbed or iron being filed and gnashing of one’s teeth, the ability of certain stones (the magnetic stone²⁴ and the stone called *elektros*)²⁵ to attract other objects, the peculiar behaviour of certain animals,²⁶ and, finally, the healing or purgative effects of various substances.²⁷ The Stoic concepts of sympathy and

²² *Part.An.* 694a1–5, with J. G. Lennox, *Aristotle: On the Parts of Animals* (Oxford 2001) ad loc. On the other hand, the explanation that horns and nails exist for the sake of protection echoes 655b1–7, 687b22–24; cf. also *Suppl.Probl.* 2.158.

²³ Cf. Arist. *Part.An.* 673a3–10; ps.-Arist. *Probl.* 35.2, 8 (964b30–32, 965a11–32, respectively).

²⁴ Arist. fr.112 Gigon (= Alex. Aphr. *In Top.* 63.2); Theophr. *De lap.* 4; Galen *Loc.Aff.* VIII 66, 422 K., *SMT XI* 612 K., *Ther.Pis.* XIV 225 K. (providing the cause).

²⁵ Cf. Theophr. *De lap.* 28 (citing Diocles: fr.239a van der Eijk); Clem. Alex. *Strom.* 2.6.26.2.

²⁶ Lion fearing the cock: cf. Aesop *Fab.* 84; Sextus Emp. *Pyrrh.Hypot.* 1.58; Aelian *NA* 3.31, 8.28, 9.1. Chicken cleaning itself after laying an egg: Theophr. fr.362A *FHSG* (mentioning it as an example of those things we cannot give the reason for, see also n.37 below). Quails feeding on hellebore, and starlings on hemlock: Galen *Temp.* I 684 K., *Alim.Fac.* VI 567 K., *SMT XI* 382, 551–552, 600–601, 612 K., *Ther.Pis.* XIV 227 K., *Hipp.Epid.* VI XVIIb 307 K.

²⁷ On purslane as a cure for irritated teeth: ps.-Arist. *Probl.* 863b11–18,

antipathy seem to be central to most of them, concerned as they are with the power of beings, objects, or substances to attract or repel other beings, objects, or substances. The concepts are well-attested in the pseudo-Aristotelian *Problemata*, which devotes an entire book (Book 7, 886a23–887b7) to the investigation of “Problems arising from Sympathy” (“Ὅσα ἐκ συμπαθείας”). We also find them in imperial authors such as Plutarch and Aelian; Aelian especially (whose outlook, as Smith has demonstrated, is Stoic)²⁸ widely employs them in order to explain natural enmities or friendships between animals.

The author’s metaphorical language provides an important clue to his background and didactic aims. It is thus noteworthy that he compares “problems which are known only to god” (§7) to the mechanical creations of an artisan: both god and the artisan possess knowledge of hidden causes (i.e. of the precise mechanism behind the working of a device, and the mechanism behind certain physiological or natural phenomena, respectively) which are not accessible to a layperson. God as an artisan is a concept that goes back to Plato’s *Timaeus* (27D–29D); in a similar vein, Aristotle in *Metaphysics* 7 compares the creations of nature to those of art (1032a20–1034a24). Con-

887b1–7; Galen *SI* I 75 K., *Alim.Fac.* VI 634 K., *Comp.Med.Loc.* XII 874 K. On its coldness see esp. Galen *Temp.* I 679 K., *SMT* XI 830–831 K. On κολοκυνθίς attracting phlegm, Galen *Comp.Med.Loc.* XII 857 K.; on ἀγαρικόν attracting phlegm, Aëtius *Iatricorum* 3.40; Oribasius *Synops.* 1.17; on hellebore attracting phlegm, Galen *Comp.Med.Loc.* XII 383 K., [*Int.*] XIV 757 K.; on hellebore used as a purgative when there is a lot of phlegm, Hippocratic corpus *Aff.* 20 (VI 230 L.), *Mul.* 16 (VIII 54 L.); Aëtius *Iatricorum* 3.54 (on εὐφόρβιον); on coccus Cnidius, Hippocratic corpus *Fist.* 7 (VI 454 L.), *Int.* 38, 51 (VII 260, 296 L.), *Mul.* 80 (VIII 200 L.); Galen *Nat.Fac.* II 42 K., *Loc.Aff.* VIII 153 K., *SMT* XI 610–612 K., *Ther.Pis.* XIV 223 K. On *epithymon* and black hellebore’s power to clear black bile: Galen *At.Bil.* V 132 K.; *Comp.Med.Loc.* XII 383 K. On scammony’s ability to attract yellow bile, Galen *Ther.Pis.* XIV 223 K., *Comp.Med. Loc.* XII 382 K.; on the electric ray’s (νάρκη) ability to cause numbness to the body, Aelian *NA* 1.36, 9.14.

²⁸ S. Smith, *Man and Animal in Severan Rome: The Literary Imagination of Claudius Aelianus* (Cambridge 2014) 100–120.

ceptually the metaphor also ties in closely with the idea, expressed in the Aristotelian *Problemata Mechanica* (848a37), that “Craftsmen construct a machine concealing the principle so that only the marvel of the mechanical device is visible, while the cause is unknown.” No specific examples of mechanical devices are provided, presumably because the reader can easily bring them to mind from everyday experience. When it comes to insoluble problems, on the other hand, abundant examples are cited. In this way the limits of causal investigation, when it comes to phenomena within the remit of natural science and medicine, become clearer.

Analogy is also helpful to the author’s attempt to illustrate goal-oriented causation. He assimilates the animals’ horns, nails, and beaks to natural spears, the external hard parts of their bodies (scales and hides) to protective chests, the thorns of plants to arrows, and the flowers of plants to heralds who announce the birth of fruits. These similes clarify his teleological reasoning (τίνοϛ ἔνεκεν, §2), and, at the same time, instill in his readers the Stoic notion of provident nature. The author wants his readers to take this notion for granted, as is evident from his dismissal of enquiries that seek to establish whether god or nature designed the parts of animals (§6). His use of similes from the realm of human experience, however, suggests that he does not presume familiarity with teleological reasoning on their part.

Last but not least, analogy illustrates the author’s concept of “unsayable properties” (ιδιότητες ἄρρητοι, §11): as he proposes, the phrase is akin to the term *ιδιώματα*, used by philosophers and grammarians (§12). The term *ιδίωμα* denotes the special, or distinctive uses and meanings of grammatical terms. It can also refer to grammatical forms which are exceptions to standard grammatical rules (what we call anomalous forms), or to idiosyncrasies of style.²⁹ The author’s point is that, just as

²⁹ See LSJ s.v.; also Apoll. Dysc. *De constr.* 2.123 (221.7–10 U., τὴν φύσει κτητικὴν ἀνωθυμίαν, ιδιώματα ἔχουσαν τὸ κτήμα), and Dion. Hal. *Dem.* 50.70 (τρίτον ἔτι καὶ τέταρτον ιδίωμα τῆς συνθέσεως τοῦ ῥήτορος ἦν τό τε ἐξαλλάτ-

grammarians are in certain cases content to note exceptions in standard linguistic usage, without attempting to explain them, so the doctor should note certain phenomena as exceptional, in the sense that, in their case, standard explanations (such as those that attribute the purgative power of certain drugs to heat) prove to be inadequate or logically fallacious.³⁰

The phrase “unsayable properties,” *ἰδιότητες ἄρρητοι*, is Stoic in origin. As Reinhardt demonstrates, it is attested in Galen, who only briefly mentions it (especially in his writings on the pulse), but never offers a definition or typology for it. This suggests it was familiar to his audience.³¹ In contrast, the effort our text takes to explain the concept suggests that it does not presume any familiarity with it. It is also worth noting that the concept is akin to the way Aelian uses the adjective *ἀπόρητος* (which usually has the stronger meaning of “secret,” but is etymologically linked to *ἄρρητος*, in that it refers to something that cannot or should not be expressed)³² in his zoological miscellany *On the Characteristics of Animals*. Aelian makes frequent use of the term to refer to phenomena and animal characteristics or behaviour for which an explanation is elusive:³³ for example, he regularly attributes inexplicable phenomena to a “secret nature” (*φύσις ἀπόρητος*) that animals possess. Often in his text the term *ἀπόρητος* appears next to the adjective *θαυμαστός*. As Meeusen has argued, our text’s use of the adjective *ἄρρητος* seems to align with paradoxographical attitudes to nature as a source of wondrous and often inexplicable phenomena (as seen in Aelian). The attitude stems from (and builds on)

τειν παντοδαπῶς καὶ τὸ σχηματίζειν ποικίλως τὰ κῶλα καὶ τὰς περιόδους).

³⁰ On medical uses of the term *ἰδίωμα* see Galen *Comp. Med. Loc.* XIII 784 K. (*ἰδίωμα δὲ τοῦ φαρμάκου ἐπίπαγον ῥυπώδη ποιεῖν*).

³¹ T. Reinhardt, “Galen on Unsayable Properties,” *OSAPh* 40 (2011) 297–317. See also Meeusen, in *Ancient Greek Medicine in Questions and Answers* 98–99.

³² See LSJ s.v. *ἀπόρητος* II.2 (“not to be spoken, secret,” used mostly for sacred things) and III (*ἀπορρήτως*: “ineffably, inexpressibly”).

³³ E.g. 1.18, 1.35, 2.22, 2.48, 4.10, 4.29, 4.41, 5.33, 5.40, 5.49, 6.60, 9.17.

statements found in both Aristotle and Theophrastus that the investigation of nature inspires wonder in the scientist.³⁴

The hypothesis of a Galenic backdrop (and therefore of a post-Galenic date) is supported by the fact that, especially for the pharmacological substances that are listed under the same category, most parallels can be found in Galen's pharmacological and dietetical treatises (*On Simple Drugs* and *On the Composition of Drugs according to Places*). Galen might well have been the direct source for these examples, even though he himself never groups these substances under the concept of the "unsayable properties" (this is a unique connection made by our text). At any rate, the preface criticises the solutions of those who do attempt to solve such problems as "endless" (ἀπειροτάτας, §11)³⁵ and "improbable" (ἀπιθάνους, §11), and attacks the logical fallacy that typically underpins them (for example, the fact that they presume that drugs can purge by virtue of being warm, when in fact warmth does not necessitate the power to purge, as in the example of pepper and other substances). It is not clear what sorts of adversaries the author might have in mind: the many parallels found in other ancient texts suggest that such problems constituted common subjects of enquiry across various kinds of medical-naturalist literature. It is however likely that his criticism may in part be directed against Peripatetic, or Peripatetic-inspired, *problemata*-writing, as some types of problems that he cites occur in texts such as the pseudo-Aristotelian collection of *Problemata*. *Problema* 35.8 is such an example: it seeks to explain why we laugh especially when we are scratched in the armpits; according to the answer, this is caused by a sudden exit of breath, a result, in turn, of heating in the region scratched. Similarly, Alexander of Aphrodisias, in his commentary on Aristotle's *Topics*, cites the problem "Why

³⁴ See Meeusen, in *Medicine and Paradoxography* 205–206. On nature as a source of wonder cf. Arist. *Part.An.* 645a17–25; Theophr. *Caus.Pl.* 2.17.1; ps.-Arist. *Virt. et vit.* 1250b29–32; and the pseudo-Aristotelian paradoxographical collection of *Mir. (passim)*.

³⁵ If we adopt this reading of branch β of the MSS.

does the so-called magnetic stone attract iron?” as an example of a “physical problem whose cause is unknown,” according to a definition of φυσικὰ προβλήματα purportedly offered by Aristotle’s now lost [Περὶ] Προβλημάτων (fr.112 Gigon).³⁶ If so, this further underscores our text’s independent approach to solving medical-naturalist problems. However, its claim about causal unknowability may also have more general methodological implications, serving as a direct criticism of people in general (not just Peripetetics) who set no formal limits to their research agenda, since they do not acknowledge their intellectual limitations, in comparison to god. Notably, some problems were considered insoluble also by the early Peripetetics (for instance, Theophrastus mentions the chicken cleaning itself after laying an egg as an example of “those things we cannot give the reason for”).³⁷

Finally, as regards the category of medical-naturalist problems that the author believes are ambiguous in terms of their solution (§13), the preface first seeks to define them and subsequently offers specific guidelines for their solution. Analogies once more prove helpful: problems which are self-evident are like false words: in both cases, everybody recognises them as such; problems which are insoluble are like true words (§14). This at first glance awkward analogy is best understood by focusing on the use of πάντη: according to the author, what is considered true is something that has been proven “in every respect”; in a similar fashion (in fact, through antithetical reasoning), insoluble problems are hidden “in every respect.” Finally, those problems which occupy the middle ground, as it were, are akin to words which contain a blend of truth and falsity. It is this category of problems that our author is concerned with. Specifically, he recommends that the solutions of such problems be based on aspects such as the constitution,

³⁶ See also n.24 above.

³⁷ Fr.362A.20 *FHSG*: ὄν οὐκ ἔχομεν λόγον ἀποδοῦναι. See Meecusen, in *Medicine and Paradoxography* 209.

form, activity, affinity (σμπάθεια), colour, deception caused by our senses, or equivocality (ὁμωνυμία), the greater or lesser degree of a body's (or substance's) active powers, or its texture (harder or looser), other attributes such as quantity, age, or custom, and, finally, on whether a body changes or is affected in terms of its essence, or accidents (§15). The meaning of all is straightforward,³⁸ and all pertain to the doctors' method of knowing things through their senses and intellect.

Platonism appears to be an important intellectual influence in the second preface, with its strong emphasis on the bipartition of body and soul. Especially the analogy that is constructed between the purity of the soul and the clear ray of light that penetrates water or is (temporarily, but not essentially) obscured by a cloud (§4) hints at a Neoplatonic background. The closest parallel is found in the fifth *Ennead* of Plotinus, also in the form of an analogy: as Plotinus points out, “As the rays of the sun light up a dark cloud and give it a golden look, so soul entering into a body of heaven gives it life and gives it immortality and wakes what lies inert”³⁹ (οἶον σκοτεινὸν νέφος ἡλίου βολαὶ φωτίσασαι λάμπειν ποιούσι χρυσοειδῆ ὄψιν διδοῦσαι, οὕτω τοι καὶ ψυχὴ ἐλθοῦσα εἰς σῶμα οὐρανοῦ ἔδωκε μὲν ζωὴν, ἔδωκε δὲ ἀθανασίαν, ἤγειρε δὲ κείμενον, 5.1.2). The imagery of the sun recurs throughout the *Enneads*, particularly in the second (cosmological) one. There, Plotinus stresses that the “pure soul” (ψυχὴ καθαρὰ) partakes of the sun (which itself has a dual nature, like the material and pure soul).⁴⁰

³⁸ Equivocality (ὁμωνυμία) is perhaps the least straightforward among them, yet well-attested in Galen, who uses it to refer to doctors' confusing use of a single name (such as “the hot,” τὸ θερμόν) to refer to different things (elements, qualities, powers, or even concrete objects, or bodies); see *Hipp. Elem.* I 457 ff. K. On Galen's views on semantic ambiguity and their intellectual backdrop see R. Blair Edlow, *Galen on Language and Ambiguity* (Leiden 1977) 9–68; B. Morrison, “Logic,” in R. J. Hankinson (ed.), *The Cambridge Companion to Galen* (Cambridge 2008) 66–115.

³⁹ Transl. A. H. Armstrong, *Plotinus V* (Cambridge [Mass.] 1984).

⁴⁰ *Enn.* 2.3.9; cf. 2.1.7, commenting on Pl. *Ti.* 39B. See K. Corrigan,

The second preface's approach to the relationship between soul and matter (body) should be compared to Galen's views on the question, as expressed particularly in the treatise *The Soul's Traits Depend on Bodily Temperament* (*QAM* IV 767–821 K.). There, Galen enquires how far the different parts of the soul depend on and suffer changes according to the humoral mixtures (κράσεις) of the body. His answer to this question is positive, and supported by critical doxography which cites Plato, Aristotle, Hippocratic treatises, and Stoic positions. Galen is however sceptical about the Platonic position that the soul is distinct from the body, in terms of its substance (775–779). He remains undecided on the question of what substance the soul consists of, but his personal observations convince him that, whatever the case, “it is itself a slave to the *krasias* [*sic*] of the body” (779).⁴¹ The second preface's outright rejection of the views of those who believe that the soul is “corruptible, and suffused by the affections of matter” (§3) may well have Galen's views in mind.⁴² If so, this provides an argument for a post-Galenic date in this instance as well.

The author's aim in the second preface is to rehabilitate medicine as a science. The phrasing used speaks of a clear perception in the author's mind of a distinction between *techné* and *epistémé*. This author clearly draws on a Peripatetic background, in attempting to establish medicine's status as a science: the claim that medicine is akin to philosophy, whose end it has set as its own proper beginning (φιλοσοφίας γὰρ φέρει τὰ γνῶρισμα-

“Essence and Existence in the *Enneads*,” in L. Gerson (ed.), *The Cambridge Companion to Plotinus* (Cambridge 1996) 105–129; J. Wilberding, *Plotinus' Cosmology: A Study of Ennead II.1 (40)* (Oxford 2006) 70, 214–218.

⁴¹ Transl. I. Johnston, *Galen: On Temperaments. On Non-Uniform Distemperment. The Soul's Traits Depend on Bodily Temperament* (Cambridge [Mass.] 2020).

⁴² By contrast, cf. *Probl.* 1.26 for “a grossly materialistic conception of the soul”: Sharples, *BICS* 48 (2005) 54. Cf. Flashar, *Hermes* 90 (1962) 409 n.3 (see also n.1 above). Our author does not/no longer uphold(s) this materialistic view in the second preface, which may indicate either his philosophical ambivalence/inconsistency on the matter or the detachedness of the second preface from the actual collection of problems.

τα, ἥς τὸ τέλος οἰκείαν ἀρχὴν παρεπήξατο, §2), followed up by the assertion that it “does not lie outside naturalist contemplation” (τῆς φυσικῆς θεωρίας ἐκτὸς οὐκ ἔστιν, §2), is likely an allusion to Aristotle’s *Parva Naturalia*, where Aristotle claims that naturalist investigation and medicine overlap up to a certain extent, with medicine beginning where philosophy left off, and philosophy concluding with the principles of natural science.⁴³ Further, the author’s agenda of rehabilitating medical problems by treating them as integral parts of philosophical enquiry probably also looks back to the pseudo-Aristotelian collection of *Problemata*, whose own blend of naturalist and medical subject-matter has been interpreted in terms of a similar concern (even though this is not openly proclaimed).⁴⁴

The author’s approach finds parallels in Galen’s treatise *On the Constitution of the Art of Medicine*, addressed to Patrophilus. There, Galen explains that medicine is a productive art (ποιητικὴ τέχνη), in the sense that “you can in fact show the result of the art when the practice of it stops” (I 229 K.):⁴⁵ unlike other productive arts (such as building), however, it cannot build a body from scratch, but only deals with the restoration of a body that already exists. Like all other classes of art, and in accor-

⁴³ *Sens.* 1, 436a20–b2; *Resp.* 480b22–31. See K. Oikonomopoulou, “The *Problemata*’s Medical Books: Structural and Methodological Aspects,” in *The Aristotelian Problemata Physica* 61–78, at 64–65.

⁴⁴ The medical penchant of the Aristotelian *Probl.* is clear, especially in the first book (entitled “Ὅσα ἰατρικά”). See A. Ulacco, “Malattia e alterazione del calore naturale: medicina ippocratica e fisiologia aristotelica negli *hosa iatrika* e in altri *Problemata* pseudo-aristotelici,” in *Studi sui Problemata Physica aristotelici* 59–88; R. Mayhew, “Aristotle on Fever in *Problemata* I,” *Apeiron* 48 (2015) 176–194; Oikonomopoulou, in *The Aristotelian Problemata Physica* 61–78; M. Meeusen, ““Why Do Massages Produce Flesh?”: A Case of Textual Reuse in the Aristotelian *Natural Problems* (37.3),” in V. Nutton et al. (eds.), *Ancient Medicine, Behind and Beyond Hippocrates: Essays in Honour of Elizabeth Craik = Technai* 11 (2020) 203–216.

⁴⁵ Transl. I. Johnston, *Galen. On the Constitution of the Art of Medicine. The Art of Medicine. A Method of Medicine to Glaucon* (Cambridge [Mass.] 2016).

dance with philosophical definitions of what an art is (227),⁴⁶ medicine has an end result (τέλος), and this is no other than the maintenance of the body's health (229–230). For this to be achieved, the doctor must have precise knowledge (ἀκριβῶς γνῶναι, 231) of the functions of all individual body parts, just as the practitioners of other productive arts such as building know precisely the parts that a house consists of. The second preface too defines the σκοπός of medicine as directed to the ensouled body (§1), and stresses the importance of ἀκρίβεια in medicine's method (§3). Its statements that “medicine does not neglect the soul” (§2) and that “it partakes of philosophy's goal” (τέλος, §2) are moreover consistent with Galenic positions, as attested in his psychological works and in his treatise *The Best Doctor is also a Philosopher*. Where it departs from Galen's classification of the arts in this treatise at least⁴⁷ is in its insistence that medicine is related to natural science (τῆς φυσικῆς θεωρίας ἐκτὸς οὐκ ἔστιν). As we saw above, this hints at a Peripatetic approach to medicine's relationship to natural philosophy.

This blend of a Platonist theological background with a Peripatetic approach to medicine as a discipline which overlaps with natural science makes this preface stand out.

4. *Rhetorical texture*

Both prefaces are rhetorically polished compositions. They explain their terms, illustrate them with examples and gloss them with metaphors and similes (on which see above, section 3). Moreover, they put emphasis on key points through the clever use of rhetorical tropes such as rhetorical questions (1.1–2), polysyndeton (note the repetition of δέ... in 1.1–4 and 1.9;

⁴⁶ As Johnston, *Galen. On the Constitution of the Art of Medicine* 19 n.5, notes, Galen probably has Aristotle *Met.* 2, 994b9–996a24, in mind.

⁴⁷ But cf. Galen's statement (*Opt.Med.* I 61 K.) that the best doctor has knowledge of all parts of philosophy: “the logical, the physical and the ethical” (πάντα δὴ τῆς φιλοσοφίας ἔχει τὰ μέρη, τὸ τε λογικὸν καὶ τὸ φυσικὸν καὶ τὸ ἠθικόν), transl. P. Singer, *Galen: Selected Works* (Oxford 1997). Galen's reference to the “natural part” (τὸ φυσικὸν) implies that medicine relies (at least in part) on natural science.

or the repetition of ἤ...-questions in 1.8 and of the disjunctive ἢ in 1.15), anaphora (note the repetition of πρώτως in 2.5: αὐτὴ γὰρ καθ' ἑαυτὴν πρώτως ἔχει τὸ βέβαιον, πρώτως ἔχει τὸ ἐδραῖον καὶ ἄπτωτον), isocolon and paronomasia (πάντη ... κεκτημένα, πάντη ... κεκρυμμένα, 1.14). Furthermore, antithesis plays a significant role in the rhetorical layout of the first preface, built upon the contraposition between problems that are too easy to solve (§1) and too difficult (§7). To this end, the preface also uses the tricolon (πεζοῖς δὲ ζώοις τρίχας, ἔρπετοῖς δὲ φολίδας, ἐνύδροις δὲ λεπίδας, ἢ ὄστρακα, καθάπερ τὰ ὄστρακόδερμα προσ-αγορευόμενα, §2). Other examples of antithesis include, again with tricolon, 1.6 (ὄσοι μὲν ... ὄσοι δέ ... ὄσοι δέ), with *enumeratio* (τὴν τάξι, τὴν κίνησιν, τὴν θέσιν, τὴν διάπλασιν, τὰς χρώας); or the parallelisms in 1.14 (ὥσπερ γὰρ τῶν λεγομένων ... τὸν αὐτὸν τρόπον καὶ τῶν προβαλλομένων), with symmetrical collocation of the participles at the end of each colon (τὰ μὲν ... πᾶσι γνωριζόμενα, τὰ δὲ πάντη ... κεκτημένα, τὰ δὲ ... κεκραμένα λεγόμενα—note also the etymological *figura* with *variatio* πᾶσι/πάντη). The second preface too makes ample use of antithesis, by employing the contrastives μὲν/δὲ (τὰ μὲν καλῶς προμηθευθέντα φυλάσσει χρηστῶς, τὰ δὲ ἐλλιπῶς κατασκευασθέντα διορθοῦται, §3), and also by drawing stark contrasts between the human and divine dimension, the (immaterial) soul and the (material) body.

Both prefaces contain vivid natural imagery, appealing to the reader's senses: the first preface's abundant examples (§§2–5, 8–10) invite the reader to imagine the colours, shapes, sounds, tastes, and textures of the animals, plants, or inanimate objects that are found in nature, towards understanding what natural philosophy and medicine can contribute to their investigation; in the second preface too, the striking images of the sun's ray that immerses itself in water and of the sun's brilliance that is hidden behind a cloud (§4) exploit the reader's visual faculty in order to make a philosophical point about the soul's purity (and, by analogy, about medicine's 'purity' as a science).

Last but not least, both prefaces build a communicative framework which is pedagogical on the one hand and polemical on the other. As regards their pedagogy, it is notable that in

the first preface the author switches from the first person singular at the beginning of his text to the first person plural towards its end. His use of οἶμαι in §1, followed by his direct address to his intended reader in §11 (μυρίων ἄν σοι τοιοῦτον προκαταβαλοίμην κατάλογον) underscores his authoritative role as a teacher-instructor of medicine and a natural scientist, who undertakes the task of introducing his recipient to his recommended method of solving medical and naturalist problems. Once he has expounded this method, his use of the first person plural in §13 (ὦν καὶ τὴν ἔκθεσιν ποιησόμεθα) and §17 (ἀρξόμεθα τῶν λύσεων) serves as a marker of his gradual transition to the main body of his text, which, as he makes clear, will be concerned with problems which occupy the middle ground. The reader has by now received sufficient instruction so as to actively engage with the individual problems that are to follow, so the use of the first person plural may well signal the joint effort (of author and reader) that will be involved in their solution. The author of the second preface, on the other hand, uses the first person plural exclusively: first in the context of urging that “we think about medicine in the same way as we have decreed about the soul” (ὥσπερ οὖν ἐπὶ ψυχῆς ἔγνωμεν, οὕτω νοήσωμεν καὶ ἐπὶ τῆς ἰατρικῆς, §5); and, later on, in his transition to the main body of problems that will comprise the second book of the *Medical Puzzles*, explaining that he has [“we have”] gathered problems mainly for the purpose of theoretical enquiry, and secondarily for practical benefit (§6). Both uses may once again be interpreted as an invitation to his readers to share his conclusions (about the status of medicine as a science) and treat the problems that will follow as suitable training-ground for their own theoretical study of medicine. This is made clear through the author’s reference, using the third person, to those who will gain a theoretical benefit from the study of medicine.

The first preface frequently refers to “those who [believe/attempt]...” (ἔσοι...), using the third person (§§6, 11–12). The judgmental tone of such references is part of the author’s polemical strategy, which criticises other approaches to posing and solving natural and medical problems on the one hand, and defends his own methodology on the other. As expected,

his criticism is directed particularly at those who attempt to solve the first two classes of problems. He characterises those who attempt to solve problems which are well-known as devoid of reason or sense perception. In even starker terms, those who put the very existence of natural providence into question are deemed worthy of punishment. Even though he does not name these opponents, as we saw above (section 3) they may well include natural philosophers and doctors belonging to the Peripatetic tradition, but the criticism may also be directed more generally at people who do not delimit their research project. In similarly dismissive terms, the solutions of those who pose insoluble problems are criticised as fanciful or absurd (ἀπειροτάτας, ἀπιθάνους, ἄτοπον, §§11–12). In a comparable fashion, the second preface forestalls objections to its author’s defence of medicine as an exact science: “should anybody venture to call it [*sc.* medicine] art” (§3), they may only do so insofar as they refer to the matter with which medicine is concerned (and not to medicine’s essence). This position is predicated on the author’s alignment with “most philosophers” (πολλοῖς τῶν φιλοσόφων, §3) who treat the soul as immortal (as opposed to those who claim the opposite, φασί, §3).

Taken together, these aspects point to both prefaces’ links to an oral context of medical problem-posing and problem-solving. As Nutton has pointed out, we have epigraphical evidence from Ephesus that the πρόβλημα was a distinct discipline in the medical competitions held in the city during the festival of Asclepius in the imperial period (the other disciplines being σύνταγμα, ὄργανον, χειρουργία).⁴⁸ An agonistic setting of similar type may explain the prefaces’ polemic tone and defence of medicine’s credentials and distinctive method of problem-solving. Their didacticism builds on this background, developing a method of medical problem-solving that has already been presented (and defended) in a public agonistic setting.

⁴⁸ V. Nutton, *Ancient Medicine* (London 2013 [2004]) 216 n.72, citing *I.Ephesos* 1161–1169. Cf. Meeusen, in *Ancient Greek Medicine in Questions and Answers* 100–101.

5. *Conclusions*

The prefaces to the two books present considerable similarities in intellectual outlook, even though we cannot be certain that they were written by a single author. Both exhibit knowledge of Platonic theological thought, acquaintance with Stoic concepts and Peripatetic dialectic, and familiarity with Galen's pharmacological works and Aristotle's zoological treatises. In addition, both take into account a wide range of naturalist writings, including *problemata*-literature. Together, they offer a well-developed theory of problem-posing and problem-solving specifically tailored for medical-naturalist problems, as well as a self-conscious agenda of rehabilitating medicine as a science. The prefaces seek to promote study of medical-naturalist problems as a subject worthy of intellectual exercise, but also with a practical value. Judging by the abundance of examples and language, they are directed at pupils of medicine, who might require illustration when it comes to concepts such as teleological causation, and seek to instill in them fundamental principles, such as the division of body and soul, and the notion of the provident god. They thus illustrate how valuable medical-naturalist *problemata*-literature was deemed to be in the imperial era as a tool for instilling basic intellectual principles as well as a sense of professional identity in the pupils of medicine, as practitioners of a science proper.

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