

Substitutes in John Archiatros's *Therapeutics*

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The topic of the present paper is a medical work from Byzantine times that has been transmitted in three main versions, two of which shall be discussed in detail.¹ For convenience, the text is referred to as the *Therapeutics* and the author as John. In terms of genre, the *Therapeutics* can be similarly labeled a simplified therapeutic text, or *iatrosophion*, which bear strong similarities to the so-called *xenonika*, medical texts or books associated with Byzantine hospitals.²

The first and earliest version of the *Therapeutics*, transmitted in a fifteenth-century manuscript, Monacensis gr. 551 actually calls the text an *iatrosophion*: ἀρχὴ σὺν θεῷ συνοπτικοῦ ἱατροσοφίου τοῦ σοφωτάτου Γαληνοῦ (“With the help of God, the beginning of the *Synoptic Iatrosophion* of the most wise Galen”). *Iatrosophia* are an amorphous group of medical

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- 1 The work is edited for the first time in B. Zipser, *John the Physician's Therapeutics: A Medical Handbook in Vernacular Greek* (Leiden–Boston, 2009). Before that edition, there were only a handful of mentions in library catalogues and secondary literature to the text, usually limited to a few lines. Discussion of John and various related texts was available in David C. Bennett, “Xenonika: Medical Texts Associated with Xenones in the Late Byzantine Period” (PhD diss., University of London, 2003). His thesis has been published in an augmented and revised form posthumously: D. Bennett, *Medicine and Pharmacy in Byzantine Hospitals* (Abingdon, 2017).
- 2 For a detailed analysis, see Bennett “Xenonika,” and idem, *Medicine and Pharmacy in Byzantine Hospitals*.

texts from the Byzantine world, ranging from basic laundry list types of compilations to well-structured medical handbooks.³ A substantial quantity of these texts survives, usually dating to the fifteenth century or later. Even though a thorough word count remains to be completed, among the total number of pages in medical texts, *iatrosophia* occupy a considerable amount of space. As most extant *iatrosophia* were written or copied toward the end of the Byzantine era and later, one can conclude that they were for some reason specific to that period, but these findings might be distorted simply because most surviving manuscripts date to this period. Within the spectrum of *iatrosophia*, the *Therapeutics* would certainly qualify as a very high-end sample.

The title of the second version examined, ω, refers to the text as *Therapeutics*, and the first sentence announces a translation and commentary, the latter being a genre with a long and proud scholarly tradition.⁴ It also stands out as it is written in the Greek vernacular, an idiom not commonly used for writing. In Byzantine medical texts, one can sometimes find single vernacular words here and there in these otherwise scholarly works.⁵ Some

3 For *iatrosophia* as such, see A. Touwaide, “Byzantine Hospital Manuals (*Iatrosophia*) as the Source for the Study of Therapeutics,” in *The Medieval Hospital and Medical Practice*, ed. B. S. Bowers (Aldershot, 2007), 147–73; A. Garzya, “Pour l’édition des *iatrosophia* démotiques,” in *Transmission et écdotique des textes médicaux grecs: Actes du IVe Colloque International Paris 17–19 mai 2001*, ed. A. Garzya and J. Jouanna (Naples, 2003), 165–71.

4 For medical commentaries, see for instance Galen, *In Hippocratis de natura hominis commentaria tria*, ed. J. Mewald, *Corpus Medicorum Graecorum* 9.1 (Leipzig, 1914), and Stephanus the Philosopher and Physician, *Commentary on Galen’s Therapeutics to Glaucou*, ed. K. Dickson (Leiden, 1998).

5 These relate mainly to plant names. In the case here, however, the analysis involves a number of problems, as it is often difficult to prove whether a synonym is a scribal addition or a genuine part of the text. For instance, in Theophanis Nonni, *Epitome de Curatione Morborum*, ed. S. Bernard (Gotha, 1795), 20, a number of manuscripts from either of the two main groups of the transmission identify the Greek word for basil, ὄκιμον, as βασιλικόν, which is a somewhat late synonym. All the manuscripts examined here use a slightly different wording. In the end, it is impossible to prove whether the synonym was part of the original text or an interlinear gloss in an early archetype that was inserted into the main text by some, but not all scribes further down the line of transmission.

When it comes to medicinal plants, it is not always appropriate to apply the rule that the shorter reading is most likely the correct one, as a source may very well have contained several alternative names in its original form. Moreover, some plant names were somehow more prone to being adapted to the idiom of the respective scribe, for instance pennyroyal, which is referred to as γλήχων, βλήχων, γλησχούνιν, βλησκούνιον, or something similar throughout the manuscript transmission of the *Therapeutics*. In these cases, one cannot determine the wording of the original, as all the manuscripts present a different reading regardless of their position in the stemma.

Sometimes, one also encounters names of diseases. See for instance Leo Medicus, *Conspectus medicinae* 5.5, where he mentions βλαρία as a vernacular equivalent of ἄση, indicating “depression” rather than its more common meaning, “nausea.” For

iatrosophia are, however, written in the vernacular. This version is not just of interest because of its idiom, but also because the commentary likely reflects an oral tradition of simplified medical procedures and recipes that cannot be found in any other sources.

These peculiarities of John’s work allow the examination of a side of Byzantine medicine that is not usually part of academic analysis—health care for ordinary people. In this instance, it is laid out in a medical treatise in the traditional sense of the word, or to put it differently, written by someone firmly rooted in medical practice but also educated enough to write a coherent, solid quality piece of work. The focus here is on *materia medica* and substitutes for medical ingredients mentioned by John. For this, both the κ and the ω versions of John Archiatros will be examined, and some related texts will be taken into account, in particular of Theophanes Chrysobalantes.⁶ These works share a certain amount of content, but the exact dependencies are difficult to establish.

Therapeutics was first written in learned Byzantine Greek (κ), and then someone translated it into the vernacular and added a commentary (ω).⁷ The latter version is fairly long, consisting of more than 156 pages in a modern critical edition.⁸ There is no recognizable stemma, but the transmission boils down to four essential manuscripts forming two groups.⁹ The spelling of the vernacular is not consistent across the manuscripts and is sometimes inconsistent within one manuscript. It was slightly standardized for the modern edition.

Even though ω is simple in content and style, compiling the commentary was still a massive task. The structure of each lemma is fairly consistent

an edition of Leo Medicus, see *Anecdota medica graeca*, ed. F. Z. Ermerins (Leiden, 1840). For Theophanes Chrysobalantes, see Bernard for the latest edition, and J. Sonderkamp, *Untersuchungen zur Überlieferung der Schriften des Theophanes Chrysobalantes (sog. Theophanes Nonnos)* (Bonn, 1989), for a comprehensive catalogue of the manuscript transmission.

6 Leo Medicus, whose *Synopsis* equally shares a certain amount of content with both Theophanes and John, is not of interest in this particular case, as it mainly contains descriptions of diseases rather than *materia medica*. For general information on the text and its transmission and further bibliography, see B. Zipser, “Zu Aufbau und Quellen der σύννοσις ιατρικῆς des Leo medicus,” in *Antike Fachtexte/Ancient Technical Texts*, ed. T. Fögen (Berlin and New York, 2005), 107–15.

7 References to John will be given according to Zipser, *John the Physician’s Therapeutics*.

8 See above, note 1.

9 In the sigla used in Zipser, *John the Physician’s Therapeutics*, the main manuscripts are, on one side of the transmission, A (Par. gr. 2226), B (Par. gr. 2224), and M (Monac. gr. 288), and on the other side L (Wellcome MSL 14). Wellcome MSL 14 presents a slightly different, and slightly better version of the text and was used as the *Leithandschrift*, as the stemma could not be determined.

throughout, and even though the thematic sequence of the treatise is not as elaborate as for instance in Theophanes Chrysobalantes, one should not underestimate the editorial work and the medical knowledge that was invested in this project. Overall, it follows the usual structure of ancient and late antique commentaries, in which a lemma is followed by an explanation. The explanation here, however, does not contain an interpretation of the lemma, but consists of a translation and more detailed instructions on how to prepare medications.

The commentary version mentions some 1,000 pharmacological ingredients,¹⁰ the original version fewer than half that number. Of these, several could be synonymous items, as far as it is possible to determine from a modern point of view.¹¹ Equally, these could be words that describe a very similar, but not identical item. Overall, the *materia medica* mentioned in ω is fairly simple, despite their large number, as are the instruments used in the application or preparation of the medicines. Sponges and cloths appear frequently throughout the text, along with vessels of unclear description. Reference is also made to a frying pan.¹²

Common ingredients include wine, vinegar, oil, several types of flour, honey, and salt,¹³ all of which would presumably be available in an average household. At least two types of pomegranates receive mention, ordinary and sour,¹⁴ in addition to multiple varieties of peppermint and a number of vegetables. Overall, the vast majority of ingredients would have been locally available, either in one's garden or in the countryside, for free. Others would have been imported and purchased, such as for instance pepper, which is frequently mentioned. Pepper is not native to the Mediterranean, and there is nothing to suggest that substitutes could be used. The commentary version explicitly states that pepper was commonly used in food.¹⁵ More

- 10 Establishing the total amount of ingredients mentioned has proved to be difficult. Certainly, one would count water, seawater, and rainwater as separate entities, but if for instance the leaves, flowers, and fruits of a certain plant are concerned, it could be disputed whether these should count as three items or one, as they are part of the same plant. In my estimate, leaves, seeds, and so on were counted as separate entities, just as raspberry leaves and raspberries themselves would be seen and sold as different items.
- 11 A few items can be identified as synonyms with absolute certainty, for instance, νερόν and ὕδωρ, which both clearly stand for “water.” As far as plant names are concerned, one often cannot be certain if a dialectal word referred to the same plant, a different variety of a plant, or something else altogether.
- 12 The frying pan occurs in ω 12.1.
- 13 These can be found on almost every page of the text.
- 14 Contemporary Greek shops still stock both sweet and sour pomegranates. In John, ordinary pomegranates can be found on almost any page. Sour pomegranates are mentioned in the beginning of ω 5.
- 15 Chapter ω 152.2 states εὐρίσκεται τοιοῦτον ἄσπρον πέπερι εἰς τὸ πέπερι ὃν τρώγωμεν (“this white pepper can be found in the pepper that we eat”). The sentence describes

exotic and unusual ingredients, for instance ivory, also appear.¹⁶ Ivory is an addition to ω , not found in the original version that served as the source for the commentary.¹⁷ Even though there is an undeniable trend of simplifying in the process of commenting on the text, one also finds the opposite in isolated cases.

The instances in which substitutes are mentioned do not necessarily imply a simplification, and only one passage suggests that a more expensive ingredient could be swapped for a more affordable one. Both versions of the text contain this passage, but it is not extant in Theophanes Chrysobalantes. κ 115.2 gives the following discreet advice: ὕστερον δὲ ἀφ' οὗτου βράσσουν βάλε καὶ μαστίχην καὶ σάχαρ, εἰ δὲ μὴ μέλι ὀλίγον (“Later on, once it has come to the boil, add also mustard and sugar, if not a bit of honey”). In ω 141 the commentator phrases it more clearly: ὕστερον δὲ ἀφ' οὗτου βράσση, βάλε μαστίχην καὶ σάχαρ. Εἰ δὲ οὐκ ἔχει σάχαρ, βάλε μέλι ὀλίγον (“Later on, once it has come to the boil, add mustard and sugar. If there is no sugar, add a bit of honey”).

Sugar is mentioned in some Byzantine medical texts,¹⁸ but one would not call it a common ingredient. Honey, on the other hand, is frequently found in almost every therapeutic text and would also be easy to come by. Therefore, it makes sense to switch one for the other. It may come as a surprise, however, that all other items to be substituted are actually not that unusual or difficult to find. For instance, κ 133.4 gives the following instructions: ἀντλεῖ δὲ τὸ αἰδοῖον πρῶτον μετὰ ὕδατος θαλασσίου (“But first wash the crotch with sea water”).¹⁹ The commentator changes the phrase into the following instructions: ἀντλεῖ δὲ τὸ αἰδοῖον πρῶτον νερόν κρύον θαλάσσιον. Εἰ δὲ οὐκ ἔνι θαλάσσιον, βάλε ἄλας καὶ νερόν (“Wash the crotch first with cold sea water. If you do not have sea water, add salt and water”). The mention of “cold” in ω does not have any bearing here, as its omission in κ is almost certainly caused by a scribal error.²⁰ At the time, most of the

white pepper as the inner part of black pepper corncobs. These remarks are not extant in the corresponding chapter of the original version and are therefore an addition by the commentator. On the different types of pepper used in ancient medicine, see for instance Dioscorides 2.159, *Pedanius Dioscoridis Anazarbei de materia medica libri quinque*, ed. M. Wellmann, 3 vols. (Berlin 1907–1914).

- 16 Ivory is mentioned only once, in chapter ω 73.4. It is not found in Theophanes Chrysobalantes.
- 17 The corresponding chapter in the original version is 63.
- 18 See for instance, *Hippiatrica, Exc. Lugd. 5: Corpus hippiatricorum Graecorum*, ed. K. Hoppe and E. Oder (Leipzig, 1927). Also see Symeon Seth's *Syntagma: Simeonis Simeoi Syntagma de alimentorum facultatibus*, ed. B. Langkavel (Leipzig, 1868).
- 19 This reading is confirmed by Monac. gr. 551, fol. 347v.
- 20 This chapter is also extant in Theophanes Chrysobalantes, ed. Bernard, 196, where the corresponding passage reads, κατάντλεῖ δὲ θάλασσαν ψυχράν (“Wash with cold sea water”). This proves that somewhere down the line of transmission of κ , the word *cold* was dropped, most likely by mistake. The commentator had access to



Fig. 1 London, Wellcome Library MSL 14, p. 125 and 126
 (photo: courtesy of Wellcome Library, London)

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Greek-speaking population lived reasonably close to a seashore, and one would assume that a common ingredient such as seawater—it is mentioned five more times in the commentary version and is frequently found in other medical texts—could be either locally sourced or imported by a fish monger or pharmacist. The most obvious reason why importing it would not be necessary may be that it could perfectly well be replaced by a mixture of salt and water.²¹

Two other passages mentioning substitutes also concern ordinary goods. In ω 95.5, the commentator advises to replace “nice old wine” with “true astringent or white wine.”²² Any of these types of wine could easily be purchased in the Greek-speaking part of the world, as wine consumption was part of everyday life, but “nice old wine” may have been the more expensive option. Similarly, in chapter 52.7 the commentator advises to eat “stone fish,” and in case it is not available, any type of cooked pale meat. Fish would have been widely available at little expense. The same applies to κ 110.2 and ω 133.4, in which the commentator unanimously recommends eating a specific amount of bitter almonds, and if there are none, normal almonds, and if there are none of those, then dates. All of these items would be widely available in the Greek-speaking world.

A whole sequence of potential substitutions is offered in ω 156.5. As a treatment for indigestion, the author recommends sleeping next to a young, well-nourished child, or if no child is available, next to a fat puppy, or if there is no puppy,²³ next to a full-figured virgin, and in case no virgin can be found, next to a married woman. One should, however, take care that he does not have sex with the virgin, as this would exacerbate the indigestion. If the patient is a woman, the instructions specify that she sleep next to a child, a virgin, or a puppy. In this case, the problem would rather appear to lie in the availability, or willingness, of the person or animal required.

The next and final passage that mentions a use-A-for-B scenario is a bit more complex, as it also contains another mode of substitution. Chapter

a manuscript of κ that contained the full text. I am currently preparing an edition of Theophanes' *De curatione* and checked the transmission of this passage in the relevant manuscripts. For convenience, Bernard's chapter numbering is used in this article.

- 21 Salt water was often called ἄλμη and is a common medical ingredient. It is sometimes difficult to identify whether its use meant a homemade mixture of water and salt or genuine seawater. Most likely, it was ambiguous. In κ 141.5 and ω 176.9, respectively, ἄλμη θαλασσία is mentioned, i.e., “sea salt water.”
- 22 Chapter ω 95.5: κρασίν παλαιὸν καλόν. Εἰ δὲ οὐκ ἔχεις παλαιὸν βάλε στυφὸν ἀληθινὸν ἢ ἄσπρον.
- 23 Puppies are also mentioned as a treatment for stomach problems in Aetius Amidenus, 2.179, indicating that this is not an idiosyncratic invention of John: *Aëtii Amideni libri medicinales i–iv*, ed. A. Olivieri, *Corpus Medicorum Graecorum* 8.1 (Leipzig, 1935).

ω 138.3 gives the following instructions: θέτε εἰς τὸν θώρακα τοῦ ἀρρώστου ἦτοι εἰς τὸ στήθος κερωτῆν τὴν λεγομένην πηγανερὰν ἦτοι βάλε κηρὸν καὶ ἄς λυθῆ. Ὑστερον δὲ βάλε χήνειον ἀξούγγιν ἢ ὄρνιθος ἢ ἐλάφιον μυελόν. Ἀντι χρηστελαίου βάλε πηγανέλαιον μάλαξον καὶ τάραξον αὐτὰ ἔστ' ἂν λυθῶσιν ὄλα. Ἐὰν δὲ οὐκ ἔχῃς πηγανέλαιον, βάλε τὸ λεγόμενον κυπρινέλαιον ἢ χρηστέλαιον (“Put *kerotē* [wax like remedy]²⁴ that is called *pēganera* [rue-] on the thorax of the patient, that is on the chest, that is put wax [presumably in some sort of vessel] and let it dissolve. Then add goose fat or fat of a bird or deer marrow. Instead of table oil add rue oil mix and stir it until it is fully dissolved. If you don't have rue oil, take henna oil or table oil”).

The corresponding text in the original version, κ 113.3, does not make the text easier to understand: τίθει εἰς τὸ στήθος τὴν πηγανερὰν ἦτις καὶ ἔχει οὕτως. Κηρίον καὶ χήνειον ἀξούγγιν καὶ μυελὸν ἐλάφιον ἀναλύσας τίθει (“Put *pēganera* [rue-] on the chest, which is like this: Dissolve wax and goose fat and deer marrow and put [on the chest]”). The instructions are rather enigmatic in both versions. The original refers to a rue remedy of some sort, but only offers a recipe that does not actually contain rue.²⁵ Instead, it only gives instructions on how to prepare the base for this type of thick, wax-like medication, but not how to add the active ingredient.

The commentator on the other hand wants the reader to add rue oil instead of table oil to his recipe, with the catch that table oil had not previously been mentioned. What seems to have happened here is that both versions contain instructions for an audience that was familiar with basic pharmacology. For a modern reader, these incomplete instructions are difficult to follow. What the commentator probably meant was that table oil was a mere placeholder in a generic recipe for *kerotē*. Here, rue oil should be used in its place, and if it was not available, then substitute henna oil or simply table oil. The author of κ probably took it for granted that his audience would know that the active ingredient mentioned in the name of the medication would have to be added to the base recipe. The ingredients for these recipes are fairly basic—rue is native to the eastern Mediterranean, as is henna—with deer marrow being the only one that could potentially be difficult to find. Therefore, it is probably not an accident that the commentator turned this particular item from a prerequisite into an option. Goose or bird fat would be far easier to acquire.

24 This word, and others in ω do not follow the Classical Greek spelling and pronunciation. I did not adjust these words to the classical form, preferring instead to preserve the vernacular idiom.

25 *Pēganera*, or rather its variant spelling, *pēganēra*, is described in two late antique medical handbooks: Aetius Amidenus, 15.40, and Paulus Aegineta, 7.17, 70: *Paulus Aegineta: Pars altera. Libri v–vii*, ed. I. Heiberg, *Corpus Medicorum Graecorum* 9.2 (Leipzig–Berlin, 1924). Both recipes indeed contain rue. The assumption that John may have mistakenly assumed that *pēganera* derives from the verb πήγνυμι (*pēgnumi*) “to make solid” is far-fetched, and in particular as rue was commonly used in ancient and Byzantine medicine.

There are several more passages where the commentator seems to assume that the audience would be familiar with the modalities of preparing a medication. Passages 53.4, 142.1, 144.2, 144.4, 145.4 and 146.1 are similar to the rue recipe described above. They contain instructions that make a generic recipe more expensive, as they advise adding fig broth instead of water, bay oil instead of table oil, or sugar instead of honey to a medication.

If one looks at these references, it catches the eye that all except one can be found in close proximity to each other. After all, ω consists of 253 chapters, and most of the samples can be found within a block of nine of these. It is quite striking that this part of the work describes the treatment of fever, which certainly was a commonly encountered disorder. Perhaps this might be why the commentator refers to the recipes in this manner. He was familiar with the modalities of treating fevers, and he assumed that his audience had the same level of knowledge.

Overall, there appears to be little organization or standardization regarding the use of substitutes or the availability of *materia medica* as such. In chapter ω 111 the commentator adds “if you have it” to the instruction to “put goose or bird fat on the eyes,” as in κ 92.²⁶ However, various products derived from geese, including goose fat, are mentioned frequently in both ω and κ without any further caveat.

The way in which substitutes are mentioned by the commentator raises a number of important questions. First and foremost, one is left wondering why the author sometimes mentions substitutes for a given substance and sometimes why not. Here, it may be best to leave mechanistic reasoning behind and instead accept that the author may not have intended to compile a consistent system of substitutes. Rather, his intentions may have changed during his work, depending on the content of the respective passage on which he was working.

Looking at his work, it is quite clear that the main aim was to translate the text. The next priority was adding commentary where necessary, that is, to expand on the text of the original version. This is evident given that all lemmata are translations, but some lemmata do not contain added information.²⁷ For this aim, the commentator followed the usual philological conventions on how to structure a commentary. The next priority was to add any content he thought to be relevant. This is manifest from a few chapters extant in ω but cannot be found in the original version, and a very

26 These instructions also appear in ω 110 in two manuscripts, M and B, in a slightly rephrased form. As they are not extant in L, A, κ , or Theophanes Chrysobalantes, ed. Bernard, 49, they must have been inserted by a scribe copying the archetype of M and B.

27 For instance, chapters ω 14–16, 18, and 23 do not contain any significant amount of new content.

substantial amount of recipes that were added to a lemma, even though they were strictly speaking not part of the commentary.

Some of these added recipes appear to have come from a written tradition. For example, ω 101, a chapter on headaches caused by a cold influence, adds in paragraph 3 a recipe that can also be found in Theophanes in a chapter on how to stop sneezing.²⁸ As the disorders are often associated, it is not difficult to imagine how this recipe consisting of pigeon dung, cress seed, and vinegar could have found its way into these chapters.

Other recipes and descriptions clearly originate from the environment in which the commentator worked and lived. Some of these are longer passages, for instance ω 68.3, which describes dung beetles rolling manure in the street, while others consist of just a few words. In the majority of cases, however, it is impossible to tell whether added content was written by the commentator himself or taken from another written source.

Except for the final chapters of κ , which were almost certainly added at a later point in time,²⁹ almost all the content of κ is extant in ω . This indicates that the commentator also aimed to preserve content, even if the medicine described in these chapters was impracticable for an ordinary practitioner. Altogether, these principles led to a work that mentions rare and expensive ingredients, such as leopard fat,³⁰ alongside common garden plants, vegetables, imported spices (such as at least three types of pepper, ginger, and cinnamon),³¹ various types of dung, ground marble,³² specialist

28 Theophanes 20, ed. Bernard. This recipe is missing in one main group of the transmission of Theophanes and also in two manuscripts of the other group. Moreover, it contains some grammatical errors, which altogether suggests that it was interpolated. The exact dependencies between Theophanes and John Archiatros are opaque. It is quite clear that they share a considerable amount of content, but sometimes another source seems to come into play. The findings somewhat remind of the overlaps between the synoptic Gospels and Q.

29 The chapters from κ 184 onward are not extant in the commentary version. They are also written in a different style than the preceding text, with a tendency to form longer and more polished sentences, and they contain more detail in the descriptive parts of the text. It was common for scribes to add content from other sources to the end of a medical work, and this is most likely what happened here.

30 Oddly, leopard fat is mentioned in ω 171.7, but not in the corresponding chapter of the original version, which somehow mirrors the mention of ivory, ω 73.4, as discussed above. Ivory would be an expensive good, but it would probably be possible to buy it, either as a medical ingredient or as a work of art, in a metropolitan context. The chances are lower with leopard fat, so one is left wondering whether it might be a chiffré for an alchemical or magical substance.

31 Ordinary pepper is mentioned frequently throughout the text. Long pepper and white pepper are mentioned in ω 133.5 and 152.2. References to ginger and cinnamon can be found throughout the text, in the case of ginger in two varieties. Unfortunately, these are not described, so it is not possible to determine their identity.

32 See ω 167.4.

products (such as arsenic, antimony, or sulfur),³³ Black Sea rhubarb,³⁴ a hedgehog,³⁵ and more.

As noted, it would have required a considerable amount of time, money, focus, and philological training to compose a work like this, in particular as there was no standardized spelling system on which to rely. Everything would have to be defined by the commentator himself beforehand. In addition, he clearly had medical training, and a substantial amount of practical experience both in medicine and basic pharmacology, but not in a particularly wealthy setting. These data paint a picture that appears somewhat contradictory, as they exhibit attributes of both a higher and a lower economic status—education versus vernacular, time and money versus a focus on locally sourced goods.

In actual fact, it is probably the perception of medical historians that is biased. The vast majority of Greek medical works that have been edited, or studied for this matter, were written by antiquity's intellectual elite. The date appears to be of particular importance. Even highly sophisticated works by the likes of Symeon Seth and John Aktouarios receive little attention, as they are post-classical. The ω version, in contrast to Galen's work, does in fact appear to be of rather low quality.

Within the context of Byzantine medicine, however, John would be somewhere in the middle. His would not only be compared to the extremely polished works of Myrepsos, but also to chaotic and sometimes obscure compilations, such as the second part of Wellcome MSL 14 or the scholia that can frequently be found on the flyleaves of medical manuscripts. These texts bear witness to people who were able to read and write and who engaged with medicine at a far lower level of sophistication than John. Moreover, it is safe to assume that a number of quacks and charlatans were also active at the time, about whom there may be no written evidence.

The same applies to the economic status of John and his audience. The vast majority of ingredients he cites could be sourced from a vegetable plot, food market or the surrounding countryside, but this still implies that the audience at least had the means to grow a variety of foodstuff and purchase imported spices, such as ginger or pepper. This again puts this stratum of society firmly in the middle. Altogether, these findings require some rethinking about the way medical history is described and additional research on non-medical sources to further contextualize this source.

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33 Sulfur is mentioned in ω 210.8, antimony in ω 26.23, and arsenic in ω 12.1.

34 See ω 175.6.

35 See ω 47.2.

