

RESEARCH ARTICLE

Not by Dioscorides: On *Simples*

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Abstract

The work *Περὶ ἀπλῶν φαρμάκων* or *De simplicibus* (*Simp.*, also known as *Περὶ εὐποριστῶν*) is ascribed in the MSS to Dioscorides. This ascription, first found in Oribasius (fourth century AD), was accepted by the most recent editor of the work, Max Wellmann, and is enshrined in LSJ, but has often been questioned. This article aims to disprove Dioscoridean authorship on the grounds of two characteristics of *Simp.*: first, its use of alphabetical organization; second, its unsatisfactory treatment of material that is better handled in Dioscorides' *De materia medica* (*MM*). The use of alphabetical ordering in *Simp.* is inconsistent and frequently disrupted; furthermore, in the preface to *MM*, Dioscorides explicitly rejected alphabetization as a means of organizing lists of medications. Internal evidence shows that the author of *Simp.* made ineffectual attempts to conceal the alphabetical ordering of his material, possibly in response to Dioscorides' criticism of that method. In its treatment of material that is paralleled in *MM*, *Simp.* sometimes lacks clarity or omits important details or makes errors, failings that would be highly unlikely if Dioscorides himself were its author.

Keywords: Dioscorides; simples; Euporista; alphabetical; pharmaceutical

I. Introduction

Dioscorides was the leading authority on the medicinal use of drugs for many centuries, not only in the west but also in the Arabic-speaking world. His fame and influence rested on his five-book *Περὶ ὕλης ἰατρικῆς* or *De materia medica* (*MM*). Some 12 other works, however, are attributed to him in the MSS that contain them, or by other sources.¹ Two of these works, the *Alexipharmaka* and *Theriaka*, both discussing poisons, are actually tacked onto the *MM* in the majority of MSS, as books 6 and 7, respectively.

Most of these other works are now generally regarded as inauthentic.² There is, however, one text which is still officially, so to speak, categorized as authentic: the *Περὶ ἀπλῶν φαρμάκων* or *De simplicibus* (*Simp.*) (also known as *Περὶ εὐποριστῶν*). This is largely because Max Wellmann, the most recent editor of Dioscorides, published *Simp.* alongside *MM*, and believed strongly that they were the work of the same author; he even produced a short monograph arguing that case.³ *Simp.* is also listed in LSJ as a Dioscoridean work, under the abbreviated title *Eup.*

However, there have long been doubts about the authenticity of the work. The editors of the *editio princeps*, Johann Moibanus and Conrad Gesner, both initially surmised that it

¹ Riddle (1980) 116–42 lists these works and identifies the sources of their attribution.

² On the two toxicological works and their relationship to *MM*, see Touwaide (1983).

³ The edition is Wellmann (1907–1914); *Simp.* is in Vol. 3, which is available online at <http://cmg.bbaw.de/publ/online/wa_dioscurides_mat_med_lib_5_crat_sext_nig_simpl.php?p=156>, <<https://gallica.bnf.fr/ark:/12148/bpt6k6254651p>> and <http://archive.org/details/b21459162_0003/page/150>. The monograph is Wellmann (1914). For a general study of *Simp.* see Fitch (2022).

was the work of another author, though each eventually came to view it as Dioscoridean. Johann Albert Fabricius in his *Bibliotheca Graeca* and Julius Berendes, the German translator of *Simp.*, both regarded it as spurious. Even Wellmann, so strong an advocate of authenticity in 1914, had earlier dismissed *Simp.* as a compilation of the third or early fourth century.⁴

The ancient evidence for the authorship of *Simp.* is not strong: in essence it consists of a single attribution to Dioscorides by Oribasius in the fourth century AD. Oribasius excerpts *Simp.* frequently in his *Synopsis ad Eustathium* and in the *Libri ad Eunapium*, but at only one point does he identify the author as Dioscorides. It may well be that Oribasius, who knew *MM* well, simply assumed that *Simp.* was by the same author, because of the evident connections between the two works (connections that we shall evaluate later). Aëtius of Amida (late fifth/early sixth century AD), who also excerpts *Simp.*, attributes the work to Dioscorides several times; but since his excerpts are taken at second-hand from Oribasius, it seems probable that his attribution of the work is also borrowed from Oribasius.⁵

Scholars' judgements about authenticity have been based chiefly on individual linguistic phenomena, which are less than conclusive.⁶ My own arguments are based on two characteristics that run throughout the work: the handling of alphabetization, and the relative weakness of *Simp.* in comparison with *MM* on certain points.

II. Disrupted alphabetical order

On Simples is divided into two books: book 1 deals with external ailments, and book 2 with internal complaints. Whereas *MM* proceeds medication by medication, listing the ailments for which each is recommended, *Simp.* adopts the converse procedure, working ailment by ailment and listing the medications suitable for each in turn.

In perusing these lists of medications in *Simp.*, one notices that many of them show signs and traces of alphabetical ordering.⁷ Indeed, the list at 2.40 (medicines for tuberculosis) contains 15 items in perfect alphabetical order, except that 'frogs' (βάτραχοι) has been tacked onto the listing of 'crabs' (καρκίνοι). But the puzzling fact is that elsewhere the alphabetization is almost always compromised in some way, particularly by insertions. A typical example is 1.57 (treatments for discharge of pus); here I give just the lemma for each medication, which is usually the first word of a short phrase, and I underline the clearly non-alphabetical items.

ἀγριελαίας, ἀπαρίνης, ἀμόργη, λύκιον, ἀσφοδέλου, ἀψίνθιον, γῆς, βάτου, γῆρας, διφρυγές, ἐλαίας, σμήρνα, κισσοῦ, κρομύων, μίσυ, ἀπαρίνης, ὀμφάκιον, οὔρον, κονία, πίσσα, πολυγόνου, στυπτηρία, χάλκανθον, χολῆ.

It looks, then, as if the underlined items have been inserted, out of order, into an alphabetical list. There is no logic to their placement: myrrh (σμήρνα) has no obvious connection with the olive or ivy between which it appears. It is also telling that one insertion, ἀπαρίνης ('cleavers'), carelessly duplicates the listing of ἀπαρίνης near the start of the chapter.

Such patterns of alphabetization in *Simp.* shed much light on the author's *modus operandi*, and I shall therefore attempt to characterize them more fully. They are so varied and

⁴ Wellmann (1903) 1140. Details of these opinions are given by Riddle (1980) 134–36.

⁵ The citation with attribution by Oribasius is of *Simp.* 1.9, and it occurs in the *Synopsis* at 5.430 Raeder. On the evidence for attribution from Oribasius and Aëtius, see Wellmann (1914) 40–42.

⁶ For example, Sprengel and Berendes both noted the use at *Simp.* 2.65.1 of the term ἐξάγιον, a measure of weight which they believed to be unattested elsewhere before the time of Constantine. Wellmann in the app. crit. of his edition regarded the term, attested by two of the MSS he used, as an interpolation; see also Wellmann (1914) 38 n.1.

⁷ Surprisingly the alphabetical sequences in *Simp.* have not received any discussion in earlier scholarship, despite the fact that they are a notable feature of the text and provide important evidence about the compiler's *modus operandi*.

erratic, however, that generalizations are hazardous. One should note at the outset that in some chapters, alphabetical order is not manifest at all. Where it does occur, words starting with the same letter are sometimes grouped together with no further ordering (for example, in 2.31 ἄσφαλτος after ἀσφοδέλου, μαστίχη after μηκώνιον); elsewhere there is more precise ordering by the second letter of the word (for example, 2.107.1 ἀγαρικοῦ, ἀγχοῦσης, ἀλκονίου, ἀμώμου, ἀμύγδαλα, ἀναγαλλίδος).⁸

As a first generalization, then, alphabetical order often reveals itself in the body of a list, rather than at the start. In 2.87 a purely alphabetical sequence establishes itself halfway through §1 and runs for 19 items from γῆ Σαμία to στεμφύλων. In 2.58 an alphabetical sequence starts at the end of §2 with ἐρέβινθοι and continues through 22 items to χαμακίσσου in §5, with one clear insertion (σεύτλου in §4). In 2.119 an unusually long sequence starts at the end of §2 and continues for over 40 items; here there are two inserted terms, one of which (ἄσαρον in §5) duplicates the listing of ἄσαρον near the start of the sequence.

Some sequences of this kind cover just a slice of the alphabet. At 1.121.2 we have a run of 11 items from θαψίας to λειχήν, with θαψίας heedlessly duplicated even in so short a sequence; at 1.136, 11 items from ἐλξίνη to πυκνοκόμου; at 2.34, nine items from πίσσα to φλόμου. The lengthy chapter 2.81 actually contains two such runs, one from α to λ in §2 (10 items) and the other from κ to χ in §§4–5 (23 items with one insertion). In such cases one cannot avoid the suspicion that a longer list has been arbitrarily chopped up. It is intriguing, by the way, that several such partial lists begin or end with the letter kappa (for example, 2.23.2 καλαμίνθη, 2.49.5 κόνια, 2.51.3 κάρυα, 2.68.1 καρδάμων, 2.81 noted above, 2.82.2 κρίνου).

If we turn to the starts of individual lists, we find relatively few undisturbed alphabetical sequences of any length. True, more than half of the longer lists in *Simp.* (those containing at least 15 items) begin with an alpha item, another clear trace of alphabetization in the work. But if these longer lists contain multiple alpha items, the author breaks up the sequence, for example by promoting a beta item (1.30 ἄλφιτα, βάτου, ἀνδάχνης, ἀειζώου) or inserting something else (2.119.1 ἀκάνθης, ἀκάνθου, ἀκόρου, τριφύλλου, ἀρκτίου).⁹ It is also common to find a cluster of non-alphabetical items inserted near the start of a list, with alphabetical order resuming after them, for example, 2.36 ἀβροτόνου, ἀγαρικοῦ, ἀειζώου, ἀκάνθου, πολυγόνου, χαμαίδρυος, νάρδου, κενταυρείου,¹⁰ μολόχης, κλεονίκιον, σεσέλεως, ἄλθαίας, ἄλκεία). Or, finally, a cluster of non-alphabetical items may stand at the very beginning of a list, to be followed by an alphabetical sequence, as at 2.123.

Clusters of non-alphabetical items are common at the ends of lists, as they are at their beginnings. They tend to be tacked onto the end of an alphabetical sequence. At 2.31.7, for instance, after a list has reached its alphabetical conclusion with χαμαίδρυος, four items are appended out of order (βρωονίας, τήλεως, ἐρύσιμον, κάρδαμον). At 1.5 the appended status of the final five items is clear not only because they are non-alphabetical, but because their syntax (hanging nominatives) differs from that of the preceding alphabetical list (genitive absolute).

In sum, some of the lists in *Simp.* are not alphabetical at all; some contain both alphabetical and non-alphabetical sections; some are primarily alphabetical but with disruptions. One's general impression is that the alphabetical lists were the basis or starting point of the chapters where they appear; other items were added to them, without attention to alphabetical order, in various places, before the alphabetical list, or near its start, or

⁸ One intriguing feature of *Simp.* is that χαλβάνη ('galbanum') is alphabetized with words beginning kappa, not chi (2.31.3, 2.36.3, 2.41.4, 2.81.2, 2.82.2, 2.84, 2.132).

⁹ Of 104 lists in *Simp.* that contain at least 15 items, 56 begin with an alpha item, and 48 do not. The author rarely allows an uninterrupted sequence of more than four alpha items; exceptions are 1.145 (5), 2.49 (6), 2.65 (9), 2.107 (6), 2.126 (5).

¹⁰ Wellmann deletes the listing of centaur root here 'propter ea quae secuntur', by which I take him to mean its repetition in §3 in alphabetical order. But such duplication is not uncommon as a result of non-alphabetical insertions, as we have seen.

at the end, or within it. The process of addition frequently caused duplication, with an item in the alphabetical list being repeated outside it (or vice versa).

The overall effect, then, is of an unsatisfactory compromise between use of alphabetical ordering on the one hand, and a tendency to disrupt or even obliterate it on the other. The implications with regard to authorship are evident. The inconsistent and unsystematic method of listing drugs in *Simp.* stands in contrast to the precise and sophisticated ordering of drugs by their affinities in the *De materia medica*, documented by John Riddle.¹¹ The contrast is so great that the two works are unlikely to have been compiled by the same person.

Indeed, we can press this argument further. In the preface to *MM*, Dioscorides explicitly criticizes (unnamed) writers who organize their lists of medications alphabetically, on the grounds that this system separates types of materials and their properties from those closely connected with them, and consequently makes memorization difficult.¹² The implication is that Dioscorides' own system, that of organizing drugs by their affinities, aids memorization by retaining the natural and inherent relationships between the drugs. Given this reasoned critique of alphabetical ordering, it seems highly improbable that Dioscorides himself would have used it before compiling *MM* or thereafter.

III. On *Simples* and *De materia medica*

There is no doubt that the phrasing used in the *Liber de simplicibus* is close to that of *De materia medica* at certain points. Because the phrasing used in ancient pharmaceutical works is often standard and traditional, one cannot be sure that *Simp.* is drawing on *MM*, or vice versa, at any given point: they may be working from a common source or sources. It is, however, possible to examine how the two texts differ from each other on particular points, and to draw conclusions from those differences.

Here is a short list of examples of similar phrasing, which could be much expanded:

Subject	<i>MM</i>	<i>Simp.</i>
Stomach of lammergeier used to treat urinary stones	2.53: φήνης τοῦ ὀρνέου, ὃ Ῥωμαιστὶ καλοῦσιν ὀσσίφραγον, ἢ κοιλία κατ' ὀλίγον ποτιζομένη	2.117: φήνης τοῦ ὀρνέου, ὃ Ῥωμαιστὶ ὀσσίφραγον καλοῦσιν, ἢ κοιλία ξηρὰ κατ' ὀλίγον πινομένη
Roasted ass' liver as a food item for epileptics	2.40: νήστεις δὲ λαμβανέτωσαν	1.19.1: νήστεις δὲ λαμβανέτωσαν
Male fern with scammony used to expel flat intestinal worms	4.184: δεῖ δὲ προσκορδοφαγεῖν τοὺς λαμβάνοντας	2.68.1: προσκορδοφαγεῖτω δὲ ὁ μέλλων πίνειν
Iron filings used to limit the growth of girls' breasts	5.149: ἀκόνης Ναξίας τὸ ἀπότριμμα τοῦ πρὸς αὐτὴν ἀκονηθέντος σιδήρου	1.125: ἀκόνης Ναξίας τοῦ πρὸς αὐτὴν ἀκονηθέντος σιδήρου τὸ ἀπότριμμα
Silphium juice with a runny egg for a cough	3.80.5: (ὀπός) ἐν ὧῶ ῥοφητῶ διδόμενος	2.31.4: ὀπός σὺν ὧῶ ῥοφητῶ λαμβανόμενος
Grape pips used for an upset stomach	5.3.2: γίγαρτα ... φρυγέντα ἀντὶ ἀλφίτου ἐπιπασσόμενα	2.9.3: γίγαρτα φρυκτὰ ἀντὶ ἀλφίτων ἐπιπασσόμενα

¹¹ Riddle (1985) xxvi–xxvii declined to take a position on the authenticity of *Simp.* but thought that, if genuine, it must precede *MM* because it shows no awareness of the organizational scheme of that work.

¹² *Praef.* 3 ἡμαρτον δὲ καὶ περὶ τὴν τάξιν, οἱ μὲν ἀσυμφύλους δυνάμεις συγκρούσαντες, οἱ δὲ κατὰ στοιχεῖον [‘alphabetically’] καταγράφοντες, διέξουζάν <τε> τῆς ὁμογενείας τὰ τε γένη καὶ τὰς ἐνεργείας αὐτῶν, ὡς διὰ τοῦτο ἀσυμνημόνευτα γίγνεσθαι. On this passage, and on the rest of the preface, see Scarborough and Nutton (1982).

Among parallel passages such as these, there are several where *Simp.* lacks some useful detail that is present in *MM*. Here are a few examples:

Subject	<i>MM</i>	<i>Simp.</i>
Facial cleansing	1.84.1 recommends 'the moisture found in the seed capsules [of elm] when the leaves first bud'	1.104 this becomes simply 'the moisture in elm seed capsules'
Toothache	4.176.2 recommends coating a colocynth rind in clay and seething vinegar in it as a mouthwash	1.66.2 omits the rather important clay coating
Cleaning teeth	2.9.2 notes the use of calcined shells of land snails	<i>Simp.</i> 1.73 says 'land snails burnt with honey', not specifying that the snails' flesh should be removed
Facial colour	3.59.2 says cumin alters one's skin colour to a paler tone (τρέπει δὲ καὶ χρώτα ἐπὶ τὸ ὀχρότερον)	1.106 says it alters one's skin (χρόαν δὲ τρέπει), but not in what way

These examples illustrate a general tendency in *Simp.* towards laconic brevity, which can lead to omission of valuable information. For particular preparations, the author frequently omits to say what part of the recommended plant or creature should be used: for example, tanner's sumach 1.93.2 (Dioscorides uses the leaves, *MM* 1.108.2); evergreen honeysuckle 2.41.1 (fruit or leaves, *MM* 4.14); soapwort 2.41.2 (root, *MM* 2.163); Indian skink 2.101.2 ('the part around its kidneys', *MM* 2.66).

Sometimes the abbreviation in *Simp.* is so extreme as to produce incoherence. For the treatment of burns, both *MM* and *Simp.* recommend a plaster of trumpet shells that have been calcined with salt. *Simp.* then comments, 'for they [the shells] dry like pottery until cicatrization' (ἀποστρακοῦνται γὰρ ἄχρι ἀπουλώσεως, 1.169.2). This 'explanation' is incomprehensible until one reads the version in *MM* 2.4.1: 'One must allow the application to dry like pottery; for it falls off of its own accord once the burn has cicatrized' (εἴαν δὲ δεῖ ἀποστρακοῦσθαι τὸ φάρμακον. ἀπουλωθέντος γὰρ τοῦ κατακαύματος αὐτόματον ἀποπίπτει). In comparison with the 12 words in *MM*, *Simp.* uses just four, which cannot bear the load. There is a comparable example of Delphic obscurity at *Simp.* 2.30.4, where one of the remedies for coughing up blood is τραγάκανθα ὑποχυλιζομένη. A full version is given in *MM* 3.20.2, which recounts that the sap from tragacanth root is formed into lozenges with honey, 'and the juice is extracted when placed under the tongue' (ἀποχυλίζεται τε ὑποτεθεῖσα τῇ γλώσσῃ). All of this process is boiled down in *Simp.* to the single word ὑποχυλιζομένη, which is insufficient to convey it.

Dioscorides is precise in distinguishing varieties of a named plant, a vital matter if the varieties differ in their medicinal effects. In his discussion of henbane (ὑοσκύαμος) he notes that one type (that with white seeds) can safely be used in pharmacy; a second type (with yellow seeds) may be used with caution if the first is unavailable; and a third type (with black seeds) is absolutely to be avoided as toxic (*MM* 4.68). The author of *Simp.*, however, prescribes henbane some 19 times, without once making these distinctions. Similarly, Dioscorides distinguishes between four plants called στρύχνον ('nightshade'): two are safe pharmaceutically; one has medicinal uses but causes mental distress in an overdose; one causes madness or death (*MM* 4.70–73). But *Simp.* in some nine places prescribes στρύχνον without distinction. It is difficult to believe that the careful Dioscorides would have recommended these potentially toxic plants without specifying the type to be used.

We have now seen enough evidence to reach some conclusions. In comparing the treatment of particular points in the two texts, we often find a loss of clarity or of important information in *Simp.* in comparison with *MM*. With regard to authorship, it seems improbable that Dioscorides, who is precise in the information he provides in *MM*, would have also

produced a work that presented much of the same material but in a less precise and clear way. The evidence from phrasing, then, confirms the evidence from alphabetization that Dioscorides was not the author of *On Simples*.

IV. Errors in *On Simples*

The view that *Simp.* cannot be by Dioscorides is reinforced by places where the author of *Simp.* appears at first sight to misunderstand or misrepresent a passage in *MM*. Here I shall give just a few examples; the list makes no claim to be exhaustive.

1. According to *MM* 2.25, weasel's blood 'is a useful liniment for scrofulous swellings; it also helps epileptics'. *Simp.* 1.19 writes that 'Epileptics are helped if one rubs their scrofulous swellings up to the throat with weasel's blood'. This implies erroneously that scrofulous swellings are a standard symptom of epilepsy; it suggests that the author of *Simp.* has misunderstood or misremembered *MM* (or the source of *MM*), and conflated two distinct conditions.
2. Dioscorides distinguishes two types of Samian earth: κολλούριον, which is workable and recommended for pharmaceutical applications; and ἄστηρ, which is dense (*MM* 5.153). But his discussion is open to misunderstanding, since the next phrases 'it has properties' and 'it stops the bringing up of blood' could be taken wrongly to refer to ἄστηρ rather than Samian earth in general. *Simp.* 2.30.2 misunderstands *MM* (or *MM*'s source) in just this way, since it recommends ἄστηρ for the bringing up of blood.
3. *Simp.* 2.68.1 says the flat intestinal worms are expelled by drinking the root and bark of ὄνοχειλές aka Ἄλκιβιάδειον. This echoes *MM* 4.25, where Dioscorides claims that these worms are expelled by drinking the root of a type of ἄγχουσα. But it is actually a different type of ἄγχουσα that has the synonyms ὄνοχειλές and Ἄλκιβιάδειον in *MM* 4.24. *Simp.* has confused the two types of ἄγχουσα.
4. *MM* 4.76 reports the belief that ἀκόνιτον paralyses (παράλυσιν) scorpions and white hellebore revives them. The version of this belief in *Simp.* 2.136 appears to say absurdly that ἀκόνιτον kills (νεκροῖ) scorpions and white hellebore revives them. *Simp.* is varying the wording of *MM* (or, again, *MM*'s source), as often, but here detrimentally: only the context allows one to realize that νεκροῖ is intended to mean 'makes moribund', not 'kills'.

Once again, because of the tralatician nature of ancient pharmaceutical texts, we cannot be certain that *Simp.* is drawing directly on *MM*; although, if there is a one-to-one relationship between the two texts at these points, the secondary text is clearly *Simp.*, not *MM*. On the issue of authenticity, however, we can be confident that Dioscorides, who did not make such errors in *MM*, would not have perpetrated them in another text.

V. The cover-up

In section II we studied the patterns of alphabetical order in *Simp.*, and the many disruptions to that order. We did not, however, tackle the question *why* the author introduced so many disruptions, of which he can hardly have been unaware, into his lists of medications.

A partial answer, at least, presents itself when we examine *Simp.* 2.113, a list of treatments for dysuria. This list, after a single initial alpha, consists of two alphabetical sequences: the first runs from π to ω, with 13 items; the second runs from α to ο and contains 29 items in alphabetical order, together with a few non-alphabetical insertions. It is clear, then, that a list running originally from α to ω has been cut arbitrarily between ο and π, and the order of the two pieces reversed.

Lest it be thought that 2.113 is a bizarre accident, we find comparable evidence of deliberate rearrangement in some other chapters: 1.99 contains three alphabetical sequences, the first from α to β , the second from μ to σ , the third from ϵ to λ (each with a single non-alphabetical insertion); here the order of the last two sequences has been deliberately reversed. Again, in 1.145 we find a run of seven items from \omicron to σ placed before a run of ten items from θ to λ . And in 1.228 a sequence from β to $\kappa\rho$ is demoted to near the end of a long list of treatments for gout and arthritis (§§8–9), while a sequence from $\kappa\omega$ to μ is separated from it in §4; here we can see exactly where a cut was made when the original list was segmented and reordered: between $\kappa\rho$ and $\kappa\omega$.

The only possible explanation of this evidence is that the author is deliberately attempting to conceal an original alphabetical order by chopping up and reordering lists in this way. The same motive would explain the disruptions we saw in section II, in particular the insertion of non-alphabetical items at or near the start of alphabetical lists, and the breaking-up of initial sequences of items beginning with alpha.

All of this leads to the more intriguing question: *why* did the author make these deliberate (albeit half-hearted and ineffectual) efforts to conceal the original alphabetical arrangement of much of his material? Three possible answers suggest themselves.

1. The author had adopted the lists from a predecessor or predecessors and wished to conceal the extent of his indebtedness.
2. The author was a member of Dioscorides' circle, or desired to be. At an early stage *Simp.* consisted of alphabetical lists, whether compiled by himself or by predecessors. But once the author realized that Dioscorides himself disapproved of such ordering, he went to considerable lengths to camouflage its presence in his work.
3. The author wished to pass off *Simp.* as a work of Dioscorides himself.¹³ Then the process would have been similar to that envisaged in hypothesis 2: the author started with alphabetical lists, but disordered them so as to avoid an obvious contradiction with Dioscorides' own anathema on alphabetization.

It will be seen that these hypotheses are not all mutually exclusive. Hypothesis 1 is not necessarily inconsistent with hypothesis 2, and the same is true of hypotheses 1 and 3.

There is another aspect to the chopping up of alphabetical lists in *Simp.* Let us examine chapter 1.198, on haemorrhages from wounds (αἰμορραγίας ... τὰς ἐκ τῶν τραυμάτων), and 1.199 on breaks in the surface of the skin (ρήξεις τὰς ἐπιπολαίους). The first of these consists of nine items beginning with alpha from αἰθιοπίδος to ἀράχνης in almost perfect alphabetical order, with one non-alphabetical insertion; the second starts with ἄστραγάλου and contains 20 items in alphabetical order, with slight variations and two insertions. In other words, the author has chopped off the head of an alphabetical list and applied it arbitrarily to haemorrhages from wounds, as distinct from breaks in the skin generally. The purpose is presumably to give an impression of greater precision.¹⁴

There is another striking example in chapters 2.79–80, which list medications that draw out the menses and the afterbirth: those in 2.79 are said to do so 'quite well' (ἐπιεικῶς),

¹³ Wellmann (1903) 1140 took this view, though not in regard to the concealment of alphabetical order, before his conversion to Dioscoridean authorship. Cf. section VII.i below.

¹⁴ Two further examples will suffice to confirm this occasional pattern. Chapter 1.188 lists medications to be used as poultices for carbuncles, while 1.189 lists those that stimulate discharge of pus and erode the edges of carbuncles. The first list contains ten items starting with α or β ; the second contains six running from κ to π ; in each there are single insertions of the familiar kind. Chapter 2.76 purports to be a list of medications taken in drink to treat 'chronic' inflammation and pain of the womb. Notably, eight of the 12 medications begin with α , β or γ . It appears, then, that the head of a longer list has been chopped off and applied somewhat arbitrarily to the category in question.

those in 2.80 ‘more effectively’ (μᾶλλον). The first list consists essentially of an alphabetical sequence from ξ to σ, and the second from α to κ, albeit both exhibit the typical insertions and disruptions which we saw above. Our author, then, is up to his familiar obfuscatory trick of chopping up an alphabetical list and reversing the order of its parts; but here he has taken advantage of the process to give an impression of greater precision, by claiming that the items from the first half of the alphabet are more effective.

And so to the charges already levelled against the author of *Simp.* (inconsistent ordering of medications, omission of important information, misunderstanding of his source) we must now add a more serious accusation, that of dishonesty.

VI. Alphabetization in pharmaceutical texts

Despite the author’s attempts at concealment, the alphabetical lists in *Simp.* add greatly to the rather sparse evidence for the history of alphabetization in pharmaceutical texts. Wellmann believed that two works by Crateuas (*floruit* 100 BC), his substantial *Rhizotomikon* and his popular herbal, were both ordered alphabetically.¹⁵ In the latter work, descriptions of plants were replaced by coloured illustrations (Plin. *HN* 25.8), below which were recorded the plants’ properties. The fragments of ten of these accounts are preserved in the Juliana Anicia codex: the lemmata of these ten herb names all begin with alpha, but are not further alphabetized.¹⁶ The unnamed authors whom Dioscorides criticizes in the preface of *MM* for employing alphabetical order may include Crateuas and Sextius Niger. Book 27 of Pliny’s *Natural History*, a list of minor medicinal herbs, is in alphabetical order. In addition, Plin. *HN* 22.67–91 has an alphabetical list of 14 plants, all of them wild edible vegetables with medicinal properties.¹⁷ Galen 11.792K tells us that Pamphilus (*floruit* AD 100) compiled his (now lost) treatise on herbs in alphabetical order, and Galen himself follows suit in books 6–8 of his *De simplicium medicamentorum temperamentis ac facultatibus*; he uses exact alphabetization, to the second and even (though less consistently) the third or fourth letter of the word.¹⁸

In this connection, a question arises at which we have already hinted: did the author of *Simp.* compile his alphabetical lists himself, or adopt them from a predecessor or predecessors? The way in which he treats the lists inclines one to think that he had not toiled to create them himself. He chops them up with insouciance, assigns different effects to the fragments arbitrarily and inserts items with no attention to alphabetical order. Such cavalier treatment is difficult to reconcile with the patient care needed to compile the lists in the first place.

If we hypothesize that the author adopted the alphabetical lists from predecessors, it is worth bearing in mind that, as we noted earlier, two somewhat different methods of alphabetization are found in them. The more common method involves simply grouping items by their first letter, with no more precise ordering. The less common method is exact ordering to the second letter. It is possible, then, that these distinct methods point to distinct sources for the lists.

The process of compilation of the lists in itself raises a further intriguing question. Dioscorides writes in the preface to *MM* as if the alphabetizers whom he criticizes had

¹⁵ Wellmann (1897) 21.

¹⁶ One cannot tell whether this ordering is that of Crateuas himself or an excerptor. Crateuas’ fragments are edited by Wellmann (1907–1914) 3.144–46.

¹⁷ The appearance of this list in the midst of a longer non-alphabetical catalogue perhaps indicates that it has been borrowed from elsewhere. Scarborough and Nutton (1982) 213 suggest that the source is Xenocrates of Aphrodisias.

¹⁸ In this context it is worth noting that Erotian’s glossary of Hippocratic terms, which like *Simp.* is dedicated to Andromachus, is partially alphabetized.

produced a single alphabetical list of all the pharmaceuticals they discussed. (Paradoxically his own work was later to be reorganized as a single long alphabetical list, the so-called *Dioscorides alphabeticus*.)¹⁹ It is conceivable, then, that separate alphabetical lists of cures for individual ailments, such as we find in *Simp.*, were compiled from such a single alphabetical list. After all, if a compiler worked through a single long list, taking each medication in turn and entering it in individual lists for each relevant ailment, these individual lists would inevitably be alphabetical in their turn. It may well be, then, that *Simp.* provides testimony about one or more of the alphabetically organized works criticized by Dioscorides.

VII. Dating

This article is primarily concerned with the question of authenticity rather than that of dating. But these issues are closely connected, and I shall therefore discuss here three factors raised by Wellmann in his monograph of 1914.

i. Dedication to Andromachus

Simp. is dedicated to ‘the most honoured Andromachus’ (τιμιώτατε Ἀνδρόμαχε), who is familiar with the author’s toils (δι’ ἧς ἔχεις ἐμπειρίας τῶν ἡμετέρων πόνων) and has welcomed him into his circle (ἀποδεχομένῳ ἡμῶς). Two prominent physicians of that name are known: Andromachus the father, chief physician to the emperor Nero (ruled AD 54–68); and his son, also Andromachus, who wrote three books (or a work in three books) on medicine, and whose *floruit* is placed ca. AD 70–80.²⁰ The dedication, then, would set the compilation of *Simp.* in the middle or second half of the first century AD. We should, however, bear in mind in mind the possibility raised by Wellmann that the author of *Simp.* intended to pass off his work as that of Dioscorides, and that he inserted the dedication to Andromachus for the sake of verisimilitude.²¹

ii. Archigenes of Apamea

Wellmann, in his edition of *Simp.*, noted numerous parallels of content and wording between *Simp.* and the work of Archigenes of Apamea, which is quoted *in extenso* by Galen.²² Archigenes’ *floruit* is set securely in the reign of Trajan by references to him in Juvenal (6.236, 13.98, 14.252). Since Wellmann by 1914 had espoused the authenticity of *Simp.*, he took the parallels to indicate the chronological priority of *Simp.* over Archigenes, an example of circular thinking in Wellmann’s monograph. The fact that we have now ruled out Dioscorides’ authorship of *Simp.* allows us to evaluate the relationship afresh. In most of the parallel passages there are insufficient clues to establish priority. In four passages, however, one would be inclined to deduce that Archigenes is the primary text, and *Simp.* the secondary. They are the following (the Greek is given in Appendix 1).

Archigenes in Galen 12.864 (extraction of a painful tooth)

It could be removed without trouble with the following very suitable medication.

After pickling pellitory in very sharp vinegar for 40 days, pound it and set it aside.

At need, after covering the other teeth with wax and safeguarding them, clean the

¹⁹ On this recension see, for example, Collins (2000) 33 with further references.

²⁰ They are Andromachos 17 and Andromachos 18 respectively in PW; see also Touwaide (2008a and 2008b) on both. Wellmann (1914) 42 n.1 argued that the dedicatee could not be Andromachus junior, since he made use of MM in his work Φαρμάκων σκευασία and is therefore post-Dioscoridean. But this argument relies on the assumption that *Simp.* is by Dioscorides, and is therefore circular.

²¹ Wellmann (1903) 1140.

²² Wellmann (1914) 46–50, and *passim*. For these parallels see also Mavroudis 2000.

painful tooth and plaster it with the medication; then after waiting for an hour loosen it with the fingers or lift it with a stylus. Or plaster on melanterite with very sharp vinegar for many days, and it will fall out.

Simp. 1.70

You will remove a tooth without trouble, if you ... pickle pellitory in vinegar for 40 days and plaster it on (after protecting the other teeth with wax), or grind up melanterite in vinegar.

Here it appears that *Simp.* is abbreviating and omitting useful details: how long to wait after applying pellitory, how to remove the tooth, how long to use melanterite and what the result will be.

Archigenes in Galen 12.856 (mouthwashes for toothache)

... or boil dried roses in white wine, until one-third of the wine is left.

Simp. 1.66.3

... dried roses boiled down to one-third in wine.

Simp. is less precise, since it omits the colour of the wine, and less accurate, since the wine is reduced, not the roses. This and 1.70 look like slipshod abbreviations, comparable to *Simp.*'s unhelpful curtailments of *MM* (or its source) noted above.

Archigenes in Galen 12.790 fin. (eyes starting to suffer from flux)

They should rinse *the face frequently, first* with plenty of cold water, *then* with the addition of *a little* vinegar.

Simp. 1.29

[The flux] is checked by rinsing with plenty of cold water, sometimes with the addition of vinegar, particularly in summer.

Simp.'s version is woolly, losing several precise details that I have italicized in Archigenes. On the other hand, *Simp.* has a detail (summer) not present in Archigenes.

Archigenes in Galen 13.172 (stomach ailments)

For those who produce black bile and have stomach distension, apply to the stomach, and especially during increased distension (*ἐν ταῖς ἐπιτάσεσι*), sponges steeped in very sharp warmed vinegar. After these, if [the symptoms] should remain, make up moist alum with ground-up copper sulphate solution in honey and apply, or make up these ingredients and mix an equal amount of aloe with them and with myrtle cerate, and apply; or poultice with ivy leaves boiled in wine, or with plantain pounded with salt, or with dried dung of field cattle seethed in wine, or with horehound combined with bread and rose unguent, or with red tassel hyacinth bulbs with an equal amount of alum.

Simp. 2.4

Those who produce black bile, with inflation of the stomach and intestines, are helped by drinking the decoction or infusion of pennyroyal, and water heated by hot iron. Also appropriate are sponges with vinegar as poultices, <and> especially for inflation of the entrails and for mental derangement. If the condition persists, lay on moist

alum with <ground-up> copper sulphate solution and aloe and honey, after mixing them with cerate; or plaster on cooked ivy leaves with wine, or ground plantain with salt; or [use?] dried cow dung boiled in wine, or horehound with bread and rose unguent; or tassel hyacinth bulbs ground up with alum.

Again *Simp.* seems to be the secondary text: it appears to misunderstand ἐν ταῖς ἐπιτάσει as meaning, or including, mental derangement; it combines two alternative but similar poultices (the first alum without aloe and cerate, the second alum with those additives) into one; it omits to specify the colour of tassel hyacinth bulb (for the colour distinction, see *MM* 2.170.1, Plin. *HN* 20.103–05); and the author switches ungrammatically from his own construction (κατάπλασσειν + acc. for ivy leaves and plantain) to Archigenes' construction (κατάπλασσειν + dat. for cow dung, etc.).

Although these instances are striking, they are perhaps not a sufficient foundation in themselves for dating *Simp.* later than Archigenes, since there is always the possibility that both texts are using a common source. In addition, there may be passages where the apparent priority is reversed. One such is this:

Simp. 1.39

Cases of staphyloma are dealt with by wiping on the moist part of a fresh blister beetle that has been crushed, or the beetle itself.

Archigenes in Galen 12.801

You deal with cases of staphyloma by wiping on the juice of blister beetles.

Here is it *Simp.* that appears to be the more precise of the two texts.

iii. Linguistic criteria

Wellmann in his monograph showed that *Simp.* has some close similarities of linguistic usage with *MM*. For example, Dioscorides likes verbal compounds with two prepositions, such as συμπεριφέρεται and προαπολεπισθείς, and this liking is shared by the author of *Simp.*²³ A striking example of linguistic similarity is provided by Wellmann's study of the relative frequency of the words μέχρι, ἄχρι and ἕως.²⁴ Other medical writers of the first century AD make little use of ἄχρι, preferring μέχρι and ἕως, whereas in Dioscorides' *MM* and in *Simp.*, ἄχρι is notably more common than either μέχρι or ἕως. For Wellmann, such similarities indicated that *Simp.* and *MM* were by the same author. While that possibility has now been ruled out, we can accept that these linguistic similarities tend to place the author of *Simp.* close to Dioscorides chronologically, and to suggest that he too hailed from Asia Minor, and perhaps from the same region as Dioscorides himself. This evidence is somewhat in conflict with the evidence just discussed from Archigenes of Apamea, and I therefore remain agnostic about the precise date of *Simp.*

²³ Wellmann (1914) 43 n.2.

²⁴ Wellman, (1914) 70–74.

Appendix

I give here the Greek texts of the passages in *Simp.* and in Archigenes of Apamea compared above in section VII.ii.

Archigenes *ap. Gal.* 12.864

ἀπόνως ἀρθείη φαρμάκῳ συμφωνοῦντι λίαν τῷδε. πύρεθρον δριμυτάτῳ ὄξει ἐφ' ἡμέρας μ' ταριχεύσας τριῖπον καὶ ἀπόθου. ἐπὶ δὲ τῆς χρείας τοὺς λοιποὺς κηρώσας καὶ ἀσφαλισάμενος αὐτόν τε τὸν ἀλγοῦντα περικαθάρως περίπλασσον τῷ φαρμάκῳ, εἶτα διαστήσας ὥραν ἔκλυσον τοῖς δακτύλοις ἢ γραφείῳ ἀνάλαβε, ἢ σῶρυ μετ' ὄξους δριμυτάτου ἐπὶ πολλὰς ἡμέρας κατάπλασσε, καὶ ἐκπεσεῖται.

Simp. 1.70

ἀρείς δὲ ἀπόνως, ἂν ... πύρεθρον ὄξει ταριχεύσας ἐπὶ ἡμέρας μ' περιπλάσης, κηρῷ τοὺς ἄλλους ἀσφαλισάμενος, ἢ σῶρι μετ' ὄξους λειώσας.

Archigenes *ap. Gal.* 12.856

... ἢ ῥόδα ξηρὰ ἔψε ἐν οἴνῳ λευκῷ, μέχρι τὸ τρίτον τοῦ οἴνου λειφθῆ.

Simp. 1.66.3

... ῥόδα ξηρὰ ἐν οἴνῳ ἐψηθέντα ἄχρι τρίτου.

Archigenes *ap. Gal.* 12.790 fin.

πολλῷ ψυχρῷ τὸ πρῶτον, εἶτα καὶ ὀλίγου μιγέντος ὄξους, συνεχῶς τὸ πρόσωπον προσκλυζέσθωσαν.

Simp. 1.29

ἐφίστησιν πολλοῦ ψυχροῦ κατάντλησις, ἐνίστε καὶ ὄξους μιγέντος, καὶ μάλιστα θέρους.

Archigenes *ap. Gal.* 13.172

ἐπὶ δὲ τῶν χολῆν μέλαιναν γεννώντων καὶ φουσωμένων τὸν στόμαχον ἐπιτίθει τῷ στομάχῳ, καὶ μάλιστα ἐν ταῖς ἐπιτάσεσι, σπόγγους ὄξει δριμυτάτῳ θερμῷ βεβρεγμένους. μετὰ δὲ τούτους εἰ ἐπιμένειεν, στυπτηρίαν ὑγρὰν μετὰ χαλκάνθου λείου μέλιτι ἀναλαβῶν ἐπιτίθει, ἢ ταῦτα καὶ ἀλόην ἴσην μίξας αὐτοῖς κηρωτῆ μωρσίην ἀναλαβῶν ἐπιτίθει, ἢ κισσοῦ φύλλοις ἐφθοῖς ἐν οἴνῳ κατάπλασσε, ἢ ἀρνογλώσσου μετὰ ἁλῶν τριβέντα, ἢ ἀγελαίας βοδὸς βόλβιτον ξηρὸν ἐψημένον ἐν οἴνῳ, ἢ πρασίῳ μετὰ ἄρτου καὶ ῥοδίνου φουραθέντι, ἢ βολβοῖς πυρροῖς καὶ στυπτηρίας ἴσης.

Simp. 2.4

χολῆν <δὲ> γεννῶντας μέλαιναν καὶ ἐμφουσωμένους στόμαχον καὶ ἔντερα ὠφελεῖ γλήχωνος ἀπόζεμα ἢ ἀπόβρεγμα πινόμενον, καὶ ὕδωρ τὸ ἀπὸ τοῦ πεπυρωμένου σιδήρου. ἀρμόζουσι δὲ καὶ σπόγγοι ἐξ ὄξους ἐπιτιθέμενοι, <καὶ> μάλιστα κατὰ τὴν ἐμφύσησιν τῶν ἐντέρων καὶ τῆς διανοίας τὴν παρατροπήν. εἰ δ' ἐπιμένει, στυπτηρίαν ὑγρὰν μετὰ χαλκάνθου <λείου> καὶ ἀλόης καὶ μέλιτος ἐπιτίθει κηρωτῆ μείξας. ἢ κισσοῦ φύλλα ἐφθὰ σὺν οἴνῳ κατάπλασσε, ἢ ἀρνογλώσσου λείον σὺν ἁλσίν. ἢ βοδὸς ἀγελαίας βολβίτῳ ξηρῷ ἐν οἴνῳ ἠψημένῳ, ἢ πρασίῳ μετ' ἄρτου καὶ ῥοδίνου, ἢ βολβοῖς μετὰ στυπτηρίας λείοις.

Simp. 1.39

σταφυλώματα δὲ αἶρει κανθαρίδος προσφάτου θλασθείσης ἐγχριόμενον τὸ ὑγρὸν ἢ αὐτή.

Archigenes *ap. Gal.* 12.801

σταφυλώματα αἶρεις κανθαρίδων χυλὸν ἐναλείφων.

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