

## Drugs to declare. Two pharmaceutical works attributed to Galen

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**Abstract.** The article examines the transmission and contents of two pseudogalenic works on drugs, the three-hundred descriptions of simples in the *Ad Paternianum* or *The Alphabet of Galen* (preserved only in Latin), and *On substitute drugs* (in the late-antique Latin translation).

**Keywords:** Pseudo-Galen, drugs, *Alphabetum Galieni*, *De succedaneis*.

[es] Medicinas que declarar. Dos obras farmacéuticas atribuidas a Galeno.

**Resumen.** El artículo discute la transmisión de dos obras farmacéuticas pseudogalénicas en su versión latina de la tarda antigüedad, es decir el *Ad Paternianum*, conocido también con el título *Alphabetum Galieni* (que no está en la edición de C. G. Kühn; son trescientas descripciones de medicamentos simples), y el *De succedaneis* (vol. 19 de Kühn).

**Palabras clave:** Pseudogaleno, medicamentos, *Alphabetum Galieni*, *De succedaneis*.

**Contents.** 1. The Alphabet of Galen. 2. The Pseudo-Galenic *On substitute drugs*.

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When we refer to pseudo-Galenic writings, the situation is palpably different from many other instances when a work is falsely attributed to an author. Among ancient medical texts, I would surmise that no other writer can boast a similar number of treatises, long and much more often quite short, said to come from his own pen. It becomes obvious at a glance that it was not one single author who donned the garb of Galen to pass off his productions as those of the famous Pergamene, but many writings had the label ‘Galen’ stuck on, some even in Galen’s own lifetime. This was one of the reasons Galen himself gave for writing his *On my own books*. It starts with a nice little anecdote. Galen is wandering around the Sandaliarius neighbourhood past booksellers’ shops when he chances upon a lively discussion among some people whether or not a certain scroll on sale and bearing the title “The Doctor. By

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Galen” is indeed Galen’s, or not. The argument, against Galen’s authorship, is then settled on stylistic grounds.

We might think that in our day and age, computer power would make the job of deciding questions of authorship much easier, much faster and at the same time more reliable. Nevertheless, I am not aware of a single study in recent years having used this tool successfully. And the time passed between the second century AD and our first manuscript witnesses of ancient works, in many cases more than a thousand years, the fact that not seldom we have to rely not on a Greek original but on translations into Latin, or Arabic, or Syriac, further complicates matters. It is thus not surprising that *The Cambridge Companion to Galen*, in its list of works printed at the end of the volume, is occasionally in doubt and puts a question mark against a title. For more detailed information on Galenic works, we have to go back more than two hundred years, to Ackermann’s survey in the late 18th century. Ackermann is often not inclined to give reasons for his verdicts, and his brief notes obviously cannot meet present-day criteria of serious scholarship.

One could say that the interest in establishing authorship was a concern of the humanists in the Renaissance, without forgetting that one of the points raised in the late antique Alexandrian introductions was “whether the book was genuine, i.e. a true work of the author.” This *Echtheitskritik* was the main concern of scholars perhaps into the second half of the last century; starting with the Homeric question, while the focus of discussion in our own field were the genuine works of Hippocrates, not those of Galen. Doctors who were, as I must add, also competent philologists, often maintained that correct statements regarding medical facts constituted an incontrovertible proof of genuineness. This we have left behind.

We are now perhaps on the threshold of a new era in which these pseudepigraphic writings are recognised and valued as testimonies which deserve to be examined in their own right, on their own terms, irrespective of authorship, a particular which usually is still beyond our capacities to prove or to disprove with conviction. It is to be wished that this will apply to the numerous works of Pseudo-Galen, a label that will hide as many different anonymous authors as the famous statue of Artemis in Ephesus had breasts.

This research into Pseudo-Galenic works was provided with an invaluable tool by the late Gerhard Fichtner, professor of the history of medicine in Tübingen, who selflessly drew up a Galenic bibliography, different in scope from Diels’s catalogue of manuscript sources, but much easier to use; he also numbered all the works, facilitating reference to the many writings that, during the middle ages and the Renaissance, went by more than a single Latin title. In a moment, we will see an example of how much confusion multiple titles can cause.

One section of Diels’s catalogue of manuscript sources for ancient medical authors, Galen in this case, covering only the Latin evidence, was further developed by Richard J. Durling, at a time when institutes for the history of medicine in Germany would still be willing to support such research. In his case, the support for this project was provided by a former member of the *Corpus medicorum Graecorum* staff, Fridolf Kudlien. Richard Durling passed away before the material he collected had reached a format in which it could be published, and it is splendid news that a register of the Latin Galen, based on Durling’s notes but extended and revised under Stefania Fortuna’s supervision, is now online (<http://www.galenolatio.com/>).

## 1. The Alphabet of Galen

I now turn to the first of two pharmacological works transmitted under Galen's name; it starts with the heading

Incipit alphabetum galieni ad paternum

in our oldest manuscript, which is now in the Vatican Library but before that had been at least from the 13th century onwards at the famous abbey of Lorsch (near Worms) and later became part of the Palatine library in Heidelberg<sup>2</sup>. The above incipit is used for the title of Nicholas Everett's recent edition, *The Alphabet of Galen*, published in Toronto in 2012, the first printing of this text since Chartier<sup>3</sup>. It is called Alphabet<sup>4</sup> because of the alphabetical arrangement of entries, approximately 300, each of them devoted to a single item of materia medica. Alphabetical arrangement means, in antiquity and the middle ages, only the first letter<sup>5</sup> of a word, and therefore it made sense to have a list of articles right at the beginning of each letter, same as we find in the Latin Oribasius, book 2 of the *euporista*<sup>6</sup>, although Molinier did not print these lists in his edition<sup>7</sup> in every instance.

A person by the name Paternus or Paternianus<sup>8</sup> appears in the preface and the epilogue of the *Alphabet*, both transmitted only by part of the witnesses, and in the preface, he is addressed as *frater*, 'my brother.' This does not oblige us to believe that Galen, or anybody else, did have a brother called by that name, but it is hardly worth wasting time on this issue on which Everett has nothing enlightening to say. The important point is that the *Alphabet* is a pharmacological compilation containing material not preserved elsewhere (while overlapping as well with Dioscorides *mat. med.* and Pliny the Elder), and is a substantial Late Latin text bypassed, surprisingly, by all scholars in the field of Late and Vulgar Latin. I must confess that only

<sup>2</sup> The Heidelberg University website has the facsimile of this ms. and more information: [http://bibliotheca-lau-reshamensis-digital.de/bav/bav\\_pal\\_lat\\_187?sid=8c7da3483e7b9ee1b157c33ca9e1e6ea&ui\\_lang=eng](http://bibliotheca-lau-reshamensis-digital.de/bav/bav_pal_lat_187?sid=8c7da3483e7b9ee1b157c33ca9e1e6ea&ui_lang=eng).

<sup>3</sup> Chartier, vol. 13, 984-1003. Sometimes (even in Diels' catalogue), Galen. *alfab.* (this is the abbreviation used by the *Thesaurus linguae Latinae*) is confused with the pseudo-Galenic *Dynamidia*, Chartier vol. 10, 670-702 (not in Kühn, and not quoted in the *Thesaurus linguae Latinae* or *Mittellateinisches Wörterbuch*).

<sup>4</sup> It was also called *Dynamidia*, cf. Fischer (2013: 686), and on *dynamidia* in general Fischer (2011: 175-181).

<sup>5</sup> Cf. Ps. Theod. Prisc. *simpl. med.* I mistrust the arrangement in Gal. *simpl.* (which appears to be strictly alphabetical) and in Orib. *coll. med.* 15.1-2 (just the first two letters of the word?). Ps. Gal. *succ.* is not alphabetized the way we read it in Kühn in at least one ms., and I suspect, in all. See the remark by Georg Harig (1966: 4 fn. 6): "Die älteren Bücher über die ἀπλᾶ waren scheinbar alle alphabetisch geordnet, Dioskurides versuchte als erster ... die Mittel nach ihrem Ursprung zu gruppieren. Da diese Aufstellung noch unglücklicher war, wurde sie sofort wieder aufgegeben. Galen kehrte zu der alphabetischen Reihenfolge zurück, und bereits in den Συναγωγαί des Oreibasios sieht man die ἀπλᾶ des Dioskurides wieder alphabetisch geordnet."

<sup>6</sup> Wickersheimer (1966: 95), on book 2 of Oribasius, *euporista*, in Par. lat. 10233 (= Molinier's ms. Aa, s. 7 ex.): "Prologue suivi ... d'une table où les médicaments simples répartis en groupes selon l'alphabet ont leur numérotation propre à l'intérieur de chaque groupe." The same applies to Par. lat. 9332 (= Molinier's ms. Ab, beginning of the 9th century), Wickersheimer (1966: 89). Continuous numbering (ending with ch. 238 *Hyssopo*) in Ps. Orib. *de simplicibus liber quartus*, p. 172-173, where the text seems to correspond to the Aa version of Oribasius.

<sup>7</sup> Neither did Everett, although he states the fact on p. 212: "Like F [= Carnot. 62] and C [= Haun. GKL 1653 4]..., V [= Vat. Palat. lat. 187] prefaces each letter-section with a numbered list of following entries ..., which it then repeats in the main text."

<sup>8</sup> Zedler (1740: s.v. Paternianus) says: "Paternianus, ein alter Griechischer Medicus, welchem Galenus sein Buch de simplicibus medicamentis zugeschrieben (i.e. dedicated). Fabricius Bibl. Graec." The name Paternianus is attested in late antiquity; there also was a saint of that name.

Everett's edition brought home to me how important this text really is, and Everett deserves sincere thanks from us, the community of scholars, for putting it firmly on our agenda.

Just to show that I was not alone in overlooking this important work<sup>9</sup>, it is enough to glance at the three volumes of *Prefazioni, prologhi, proemi di opere tecnico-scientifiche latine*, edited by Santini, Scivoletto, and Zurlì (Roma 1990-1998). The section on medical texts has comments on many even small and obscure items – a total of nearly thirty –, but the *Alphabet* is not among them, and it is likewise missing from *The Cambridge companion to Galen*.

Last in my catalogue of sinners is Carl Hosius, responsible for the relevant section (§ 1136) in *Geschichte der römischen Literatur*, 4. Teil, 2. Band, published in 1920. The name Paternus or Paternianus does not figure in the index, and Pseudo-Galen's *Alphabet* is only mentioned as book 5 of *Oribasii de simplicibus libri*, printed with the *Physica S. Hildegardis* at Straßburg/Strasbourg in 1533. Book 5, Hosius says (p. 301), is (my translation) “an unfinished account of Galen's *On simple drugs* [i.e. 11.789-12.377 Kühn] arranged alphabetically,” and draws the reader's attention to a very old ms. of the pseudo-Galenic *dynamidia* in the British Library, Harley 5792, sometime belonging to Nicholas of Cues<sup>10</sup>. Rather confusing, is it not?

It was Carmélia Opsomer's study *Un herbier médicinal du haut moyen âge: L'Alphabetum Galieni*, published in 1982 that put the *Alphabet* finally on the map. Opsomer provided a list of witnesses, among them Ps.Oribasii *de simplicibus* book 5, and tried to identify the plants. (Even if the *Alphabet* is mainly about plants, minerals and animal products are also represented, so calling it ‘un herbier’ is slightly misleading because there is a host of early medieval herbals containing only plants.) Everett based his edition on the mss. mentioned by Opsomer and on Bonardo (or perhaps the 1522 or an even later Juntine edition, since he uses the siglum *J*<sup>11</sup>, calling it a reprint of Bonardo) but, strange as it may seem, he did not use the Pseudo-Oribasius, which must be considered *codicis instar* just like Bonardo. Hosius and Opsomer had said, correctly, that book 5 of Ps.Oribasius is not complete, breaking off with figs and fennel, chapters 110 and 111 of the printing, which corresponds to roughly a third of the total<sup>12</sup>. But we must not forget that the list of chapters on pages 213-214 continues to ch. 201 *Opoponace* [sic], which also happens to be ch. 201 in Everett's edition, whereas figs and fennel are his chapters 109 and 110.

Edinburgh, National Library of Scotland, Advocates Library 18.5.16, a ms. in two parts, but both English and from the 12th century, was not known to Opsomer and Everett. It goes on a little beyond fennel and ends with the beginning of *ferula*, which is not part of the *Alphabet* in its original form but an interpolation from book 17 (*orig.* 17.9.95) of Isidore's *Etymologies*. Such interpolations are present in some of the mss., as Everett has shown<sup>13</sup>.

<sup>9</sup> To be included in a future supplement of the *Bibliographie des textes médicaux latins*; it is missing in Fischer's *Premier supplément*, Saint-Étienne 2000. Georges Dillemann (1968), in his otherwise solid article, also overlooked it.

<sup>10</sup> More on this ms. in Fischer (2011).

<sup>11</sup> Everett (2012: 117) says: “The text of *C* is closest to the printed Junta edition (*J*) ..., but *C* was not a direct source for the *editio princeps* of Bonardus in 1490, subsequently reprinted (without any noticeable changes) in *J* ...”

<sup>12</sup> Everett's *M* ends even earlier, in ch. 70 *chamaeleon*.

<sup>13</sup> Everett (2012: 133). For the unidentified entry on *Fillira* (Everett 2012: 134), see the Latin Dioscorides, p. 52 Mihăescu (Diosc. *mat. med.* 1.96 φύλρα), for the likewise unidentified *Eruscus*, Rufinus p. 127 Thorndike.

Although he says (Everett 2012: 11) that the *Alphabet*, or rather parts of it, were interpolated in their turn in the alphabetical Latin Dioscorides<sup>14</sup> and in the *Herbal of Rufinus*<sup>15</sup>, he gives no references to individual sections<sup>16</sup>, and the incunable edition of the alphabetical Dioscorides is not even in his bibliography<sup>17</sup>. Doubts must also be raised whether he consulted Simon of Genoa (available online), since he calls the *Clavis sanationis* a herbal (p. 11). Writing in 1870, the Berlin classical philologist and librarian Valentin Rose (1870: 103-128) had already mentioned the alphabetical Dioscorides in his discussion of the *Alphabet* (Rose 1870: 113), and furthermore he had said clearly that Pseudo-Oribasius book 5<sup>18</sup> was an imperfect text of the *Alphabet*.

The *Herbal of Rufinus* was published for the first time by Lynn Thorndike in 1946 from, as the title-page says, “the Unique Manuscript”, and although it was reprinted in 1949, the book is still quite rare<sup>19</sup>. Rose can be forgiven for not mentioning Rufinus in 1870, as can Thorndike for not spotting the *Alphabet* as a source of Rufinus’s compilation, especially since Rufinus in some, perhaps even most cases gets the relevant material from Galen. *alfab.* for his compilation through the alphabetical

<sup>14</sup> Like the Munich *Mittelateinisches Wörterbuch*, I cite the first edition printed in Val di Colle 1478 (Dyasc.). Hermann Stadler (1899: 369), in the introduction to his edition of book 3 of the Late Latin translation (this is version C according to Arsenio Ferraces Rodríguez’ classification), came to the conclusion that “der Inkunabeldruck ist offenbar nach viel besseren und älteren Exemplaren hergestellt [than some mss. he consulted] ... so dass wir in dem Drucke ein getreues Abbild der benützten Handschriften haben.” The editor of book 1, H. Mihăescu (1938: VIIf.), did not agree and used one ms. of Dyasc., C, only rarely. Both clm 337 (= M), the ms. used by Auracher and Stadler, and Par. lat. 9332 (= P; parts of this ms. from book 1 are in Berne, Bern. A 91.7) may now be consulted online. Jacobsen (2010) republishes fragments from books 3 and 4 in Göttingen, Niedersächsische Staats- und Universitätsbibliothek, Hist. nat. 91. For Dyasc., Cologne, Bodmerianus 58 (Italy, 14th century) may be used.

<sup>15</sup> It is not clear whether Everett refers to passages shown as coming from the alphabetical Dioscorides by Thorndike (in Rufinus) or to passages in larger print for which Thorndike gave no source or parallel, like *Petroselinum* [sic] (Everett 2012: 233, Galen. *alfab.* 223; the section starts with *Isid. orig.* 17.11.2, an interesting detail for those interested in Rufinus’s sources), *Piretron* (Everett 2012: 239, Galen. *alfab.* 212), *Resina pina* (Everett 2012: 269, Galen. *alfab.* 228). Just for the record: The section on *amltum* in Rufinus (Thorndike 1945: 20) starts with a text attributed to Dyascorides, although Thorndike fails to provide a reference to the alphabetical Dioscorides, because it is in effect an edited version of Galen. *alfab.* 6! Dyasc. 17 is a clever combination of the old Latin translation of Dioscorides (p. 212 Stadler = *Diosc. mat. med.* 2.101) and Galen. *alfab.* For *Piretron*, Thorndike (1945: 240) says, correctly, that Dyasc. is different; it is mainly a translation of *Diosc. mat. med.* 3.73. Unless Rufinus’s copy of Dyasc. differed in this point from the printed version, he must have taken Galen. *alfab.* 212 from another source, possibly a ms. of Galen. *alfab.* It will also be necessary to check whether Rufinus may preserve some text not present in other mss. of Galen. *alfab.*, e.g. *Pumis* (= *pumex*, p. 255f.) = Galen. *alfab.* 213.

<sup>16</sup> Although Thorndike in his Introduction (xxxii) pointed out “The excerpts made by Rufinus may not infrequently be used to correct and amend the existing texts of the authorities from whom he quotes.”

<sup>17</sup> Marie Cronier (2010) tried to identify passages in the alphabetical Dioscorides as coming from translations of Dioscorides other than the Dioscorides Langobardus (version C in Arsenio Ferraces Rodríguez’ classification). In her discussion of chapters 620 (*scorion* [sic] = *scordion*) and 416 (*millefolium*) (Cronier 2010: 190-191 and 193), it did not occur to her that Galen. *alfab.* 265 and 192 might be the source. (I was present at her lecture and equally ignorant or unsuspecting.) Since, in many instances, Galen. *alfab.* and Dioscorides share material, this has to be borne in mind whenever the content of a passage in the alphabetical Dioscorides matches the Greek *Diosc. mat. med.* but not the Dioscorides Langobardus (i.e. version C of Ferraces Rodríguez). Hermann Stadler, editor of the Dioscorides Langobardus, very often draws our attention to the fact that Galen. *alfab.* was interpolated in the Latin translation. When *Diosc.* and Galen. *alfab.* are more or less identical (see Stadler’s remark in book 2 [1899: 215]: “Gal. ad Pat. der hier, wie auch im vorigen Kapitel, sich mit unserer Übersetzung ziemlich deckt”), matters become very complicated indeed.

<sup>18</sup> Ps. Orib. de simpl. V (= book 5) in Wellmann’s edition of Dioscorides.

<sup>19</sup> I just learned from Iolanda Ventura (e-mail, May 2, 2015) that two more mss., one in Naples and one in Leipzig, have been identified.



Dioscorides and in the other instances does not give his source. For the text of the *Alphabet*, however, we now have two additional mss. to consider, from Edinburgh and from Florence, Biblioteca Medicea-Laurenziana, Ashburnham 116, 14th century (for Rufinus just mentioned), as well as Ps. Oribasius book 5 and the alphabetical Dioscorides, a book possibly widely disseminated from the 11th century onwards (but more than five-hundred years after the first printing still lacking a critical edition). All these – it will not hurt to say it once more – transmit only part of the *Alphabet*, being either fragmentary or excerpted, and their relationship with the other witnesses remains to be assessed in detail.

A discussion of ms. variants is in most cases not an appropriate subject to be addressed in a lecture, and I hope you will forgive me when I do just that. Everett, in his book, did not discuss variants, but nevertheless provided a *stemma codicum* (Everett 2012: 119) of sorts. This and a glance at his *apparatus criticus* will show the seasoned practitioner that Everett had no experience of editing a Latin text and should not have tackled a medical work in Late Latin for a starter. Somebody who prints e.g. *lachrymam*, *laeuis*, *laeuigatur*, *foemina*, *coelestis*, *foenum* or *foeniculum* in keeping with Latin Renaissance spelling conventions in a text he considers as redacted in late antiquity has much to learn<sup>20</sup>.

This calls for an example so that you can judge for yourselves. Ch. 72 (Everett 2012: 200) is on camomile:

Chamaemelus herba est omnibus nota, cuius virtus (sic, oversight for *uirtus*) et efficacia est cum suauitate calefactoria et cum omni dulcedine temperata et sudorem prouocans.

which Everett translates as:

Camomile is a plant known to everyone for its property and effectiveness as a soothing calefacient, and that is blended with every type of sweetener, and causes perspiration.

I have no problem with a free and not too literal translation, but I would not say that camomile was known to everyone for its property etc., omitting *est*. “every type of sweetener” goes, however, too far and may suggest something to a person with no experience of ancient pharmacy that is not at all intended.

What is our plant’s name in Latin? Is it masculine, or neuter, or feminine? All of them are represented in the apparatus, with the feminine being in the minority, just by *W*, but also by the Edinburgh ms. Everett did not know. Being, as my distinguished colleague from Würzburg, Gundolf Keil, realised perhaps to his dismay, a pedantic person (*Erbsenzähler*), I discovered that Everett’s *M2* has *camomilla*, which does affect statistics, provided you feel that strength is in numbers. In Greek, the plant’s name is definitely neuter, as it is in Everett’s three oldest mss., *V*, *F*, and *L*. Since the neuter gender is under attack – it disappears in Romance languages –, a change from neuter to masculine is inherently more likely than the other way round, and if *V*, the oldest ms. with a very idiosyncratic approach to spelling, has

<sup>20</sup> But in Galen. *alfab.* 6 *fex* instead of *faex*. To be fair, his doctorate (Everett 2003) was in history, not in classics or medieval Latin, but nevertheless supervised by Rosamond McKitterick.

the neuter, I would certainly go for the neuter, which happens to be supported, by the way, by Ps.Oribasius book 5. The *M* ms. is missing here; it breaks off after ch. 70, although Everett's remark in the apparatus for ch. 72 "desinit *M*" would suggest otherwise.

The editor has to make one more choice in this short chapter, *temperata* or *temperatiua*. Alright, *temperatiua* seems to be the reading of just two mss., *F* and *P*. The textual critic would again ask whether it was more likely for *temperata* to be changed into *temperatiua*, or the other way round, a principle also referred to as *lectio difficilior*. Since we are all human and do make mistakes, it is usually worth going back to the mss. and check, and indeed, *V* and *L* also read *temperatiua* (*temperatiuam* *V*), as does the Edinburgh ms., *temperatiba* *M2*, while Ps.Oribasius book 5 has *temperata*. But Rufinus (Thorndike 1945: 71) also reads *temperatiua*. This may be pertinent when examining the relationship between the text of the *Alphabet* as represented by Rufinus and mss. of the *Alphabet*; it affects the sense in suggesting something active rather than passive, as does Everett's "blended."

I have not checked systematically if this negligent reporting of readings is characteristic of Everett's edition in general<sup>21</sup>, but before that is done by somebody it will be prudent to exercise caution. The exact text of *V*, of the *editio princeps* (i.e. Bonardo 1490) and of Pseudo-Oribasius can be verified on the web, and of the Lucca ms., Everett's *L*, both a transcript (with Spanish translation) and a complete facsimile have been published, and other witnesses of the *Alphabet* will probably follow before long.

I will now discuss another interesting example with many facets, because it involves Pliny's *Natural history*, the alphabetical Dioscorides, and the Greek Dioscorides at the same time.

Galen. *alfab.* 149 Everett

Laurus omnibus nota arbor est, fructus illius est quem baccam lauri appellamus.  
Quae bacca et tota arbor uires habet acriter calefacientes, euaporantes et relaxantes.

In Everett's chapter 149 (Everett 2012: 256), the text continues with *Lixiuuum eius in caustica mittitur* ..., and in n. 1 on p. 257, Everett says that „At this point all manuscripts ... begin a new entry (for *lixivium* [sic], lye) attached to the beginning of the text for #150 below ... but I follow *J* in separating at ‚lixiuua uires habent‘ ...“

*J* is Everett's siglum (see Everett 2012: 139) for the *editio princeps* of 1490. The copy available from the website in Paris he refers to (Everett 2012: 134) has

... et relaxantes. exiguum in caustica mittitur. et est ad vsum medicine ...

and thus does not support the text he allegedly prints following it,

... et relaxantes. Lixiuuum eius in caustica mittitur et est ad usum medicinae ...

<sup>21</sup> Fischer (2012) had the same impression when looking at Galen. *alfab.* 3. For the lemma of Galen. *alfab.* 10 *alosanthos*, the *apparatus criticus* says that *V* has *acionkium*; I read *alosantus*. Galen. *alfab.* 11 *alcimonium* (see [h]alcyoneum (-ium), *ThL* VI 2515,4-20 [Rubenbauer], where Everett's *alcimonium* seems to be unknown) *V* has *alcionium*, not *algimonium*.

In his apparatus, he says that his mss. *VFLBPC* omit *eius*, so one would conclude that *W* as the only ms. has it; however, Everett goes on to say in his apparatus that *W* omits *eius* – *efficacissimum*, therefore, *eius* is in none of his mss. Again, it is supposedly *J* where we find *eius*, but as we can see, this is not the case. And here, in what Everett calls a reprint, the Juntine edition of 1522 (vol. 1), the text is indeed no different from Bonardo.

But I was going a little too fast. After giving details for the 1522 edition, Everett continues (2012: 134): „I have used the sixth edition ... (Venice, 1586) ...“ These discrepancies could lead to the hypothesis that Everett used neither the 1490 nor the 1522 Galen but mainly or perhaps only the 1586 printing<sup>22</sup> (almost one hundred years after Bonardo!) which he assumed (without justification) to represent both Bonardo’s 1490 Galen and the 1522 printing faithfully. His faith, and I am afraid ours, was misplaced. I may add that the alphabetical Dioscorides, ch. 375 *De lixiuia*, supports the chapter division of the mss. and of the *editio princeps*.

At the end of the apparatus, Everett states rather cryptically “*alterum ex Lat. Diosc. in W.*” Is this supposed to mean that *W* has a different chapter on *laurus*, which Everett does not print because it does not come from Galen. *alfab.*? We will look into this later and return once more, briefly, to Everett’s lye, *lixium*, *lixium*, *lixia* in Latin. I am not aware that lye for medicinal purposes was produced from the bay tree (*laurus*); indeed, in the line following my last quotation from the Latin text of Galen. *alfab.*, we read *ex cinere quae de quercu fit*<sup>23</sup>, from the oak.

As the title of his book says, Everett’s edition comes with a commentary; Faith Wallis, who is cited on the back cover, speaks of “illuminating notes,” which is (I mean ‘notes’) nearer the truth. Everett also cites other ancient authors on the same items of materia medica, which is helpful. It would have been good, for us and for him, to include the alphabetical Dioscorides and perhaps Rufinus, also for the help they might offer (as works which made use of Galen. *alfab.*) for the text of the *Alphabet*.

But Everett’s references are neither always helpful, nor complete, as we can see in the present chapter on the bay tree. Everett refers to

Diosc. I.78, Pliny 15.127-31, 23.158, Ps.Apul. 58.10, and Isidore 17.7.2.

Let us first look at Isidore (Jacques André’s text):

<sup>22</sup> In a note on 301 *Zmyrnum* (on p. 379) he says that “the Junta edition of 1522 (*J*)” lacks the entry; I copied it from the digitized version at Bayerische Staatsbibliothek München: *Capitulum .cxcix. de zimirino. Zimirinum est assimile apio: sed folia habet latiora et subaurosa et quasi pinguia et fortiora: redolentia suauiter: vires autem habet acres et sudorem suscitantes: vnde tussientibus et suspiriosis et hydropticis prosunt: et ad serpentum morsus faciunt. P* reads *zimumum*, not *zimum*, as Everett says. In the apparatus, he says “*deest JFL*” and adds in the note on p. 379 that “unfortunately *V* is defective from #261 onwards,” without mentioning *M* and *M2*, both of which stopped long before. It would be useful, especially for a reader who only consults one chapter, to have a list of the mss. that are present, for every chapter with the apparatus. Here, these are mss. *BCPW*. *herba*, which Everett prints, is only in *P* (although Everett states “*om. BW*”), which reads *herba similis* (*simils* is a misprint). *W* has *simile*, *BC* and Bonardo (here given as “*Pinzi*” in the app.) *assimile*, a neuter that goes well with the neuter *zmyrnum* and which the *Thesaurus linguae Latinae* says occurs ‘*saepius*’ in Galen. *alfab.*, is not in Everett’s apparatus.

<sup>23</sup> Everett deletes [*quae de*].



Isid. *orig.* 17.7.2 *Laurus a uerbo laudis dicta; hac enim cum laudibus uictorum capita coronabantur. Apud antiquos autem laudea nominabatur; postea D littera sublata et subrogata R dicta est laurus; ut in auriculis, quae initio audiculae dictae sunt, et medidies, quae nunc meridies dicitur. Hanc arborem Graeci daphnen uocant, quod numquam deponat uiriditatem; inde illa potius uictores coronantur. Sola quoque haec arbor uulgo fulminari minime creditur.*

Isidore has usually a little to say on the plant or tree, maybe offers even a passing remark on its use in medicine, but in this entry, there is no overlap with the *Alphabet* or any botanical or medical interest at all, so the average reader for once on par with Shakespeare – little Latin, less Greek – will be disappointed when he has struggled to look up all these Latin words in his dictionary.<sup>24</sup>

The same applies to Everett's reference to Pseudo-Apuleius' herbal, because here it is to a list of synonyms for the plant, where *dafne Alexandrina* and *laurus Alexandrinus* are mentioned, alongside many others. The Alexandria in this case, by the way, is the place in the Troas, today Dalyanköy in Turkey, not the Egyptian Alexandria.

Pliny gives a full account of a number of different kinds of the laurel or bay tree in book 15 of the *naturalis historia*, and has more to say on its use in medicine than even Dioscorides; only, 23.158 as quoted by Everett is the tail end of the section, which began in 23.152.

The reference to Dioscorides is correct. Wellmann, in his edition of the Greek text, notes parallels in Pliny, starting with 23.152, which he says comes from Sextius Niger, and of course Galen, *De simplicium medicamentorum temperamentis ac facultatibus* 6.4.4-5 (11.863 Kühn), which in turn is taken up by Oribasius (*coll. med.* 15.4.5-7 and *eup.* 2 Δ 3-5<sup>25</sup>), by Aëtius (1.89), and by Paul of Aegina (7.3 Δ). It seems remarkable that the plant is missing from Pseudo-Apuleius and some later herbals<sup>26</sup>.

## 2. The Pseudo-Galenic *On substitute drugs*

What do you do if you are in need of a certain drug but cannot lay your hands on it? This apparently fairly common problem gave rise to a genre of pharmaceutical

<sup>24</sup> This is one case of many. For 13 *Argemone* (Everett 2012: 154), Everett cites Cels. 5.27.10; I quote from W. G. Spencer's translation: "Against them (= snakes in Italy) sufficient remedies are betony or convolvulus or centaury or agrimony or germander or burdock or sea parsnip; ..." While Everett identifies his own *argemone* with *Papaver argemone* L., the plant in Celsus may well be *Agrimonia eupatoria* L. Still different is the plant for which Everett refers to Plin. *nat.* 24.176, dog-bur, and Plin. *nat.* 26.92, which Jacques André (1985; an item also in Everett's bibliography on p. 387), 24 (*argemonion*) and 131 (*inguinalis*), identifies with *Aster amellus* L. For Galen. *alfab.* 214, *Pulegium*, there is a reference to Isidore *orig.* 17.9.29 and 59: 17.9.29 is the *puleium Martis* = *dictamnium*, i.e. another plant, 59 says (my translation) "In India, pennyroyal is more precious than pepper;" Lindsay deletes *apud Indos pipere pretiosius est*, while Jacques André (the last editor, Paris 1981) is in doubt. So again, a wild goose chase yielding no useful information. For *aphroselinum* (Galen. *alfab.* 12, Everett 2012: 154), there is a reference to "Ps. Apul. 80.45 (rosmarinum)." Ps. Apul. *herb.* 80 is indeed on *rosmarinum*, a plant, and has nothing to do with the mineral; 80.45 does not even contain the word *ros* or *rosmarinum*. Others may just be printing errors, like Pliny 20.245-6 (fennel, Everett 2012: 230) for Plin. *nat.* 20.254-257.

<sup>25</sup> Orib. *eup.* has more on medical uses than *coll. med.*, a difference that may be worth looking into.

<sup>26</sup> E.g. the St Gall *botanicus* edited by Monica Niederer (and by Ernst Landgraf before her).

works that, in the later middle ages<sup>27</sup>, was called *Quid pro quo*. The Greek title of such a work attributed to Galen was Περὶ ἀντεμβαλλομένων<sup>28</sup>, ‘On substitute drugs’ (or drug substitutions). When it was first printed, in 1498, in a Latin translation by Iohannes Petrus Valla, it was called *De succedaneis*<sup>29</sup>. I know of no earlier manuscript evidence for his translation.

Another translation into Latin, this time by Iulianus Martianus Rota, was published some fifty years later in Paris in 1546, under the title *De substitutis medicinis*.

Very likely neither of them realised that a Latin version from Late Antiquity also existed. But it was not present in the 1490 edition of the Latin Galen and was never, to my knowledge, published.

Replacing drugs became commonplace, probably in early modern times, with the rise of apothecaries, and eventually was strictly prohibited, for reasons we can imagine: failure of the substitutes to show the same results as the drugs they replaced, and the use of cheaper alternatives, thus increasing the chemist’s profit. The change in composite drugs in current use may have been another reason for the eventual disappearance of these lists of substitutions after the early years of the 17th century.

For the pseudo-Galenic *De succedaneis*; the Paris IRHT Pinakes data base lists 17 Greek mss. Its earliest witness, Paris, BNF, suppl. gr. 1297, is said to date from the 10th century<sup>30</sup>, but most are of course from the 15th and 16th centuries. Diels’ catalogue of Greek medical writers (and it is a great shame that Latin medical authors were never covered), now easily searchable through the Washington, D. C. Greek Medical Manuscripts database provided by Alain Touwaide, runs to 20 mss. Like at the Pinakes site, there is no information on any Latin mss. of this work. This has been remedied by Stefania Fortuna’s online catalogue ([www.galenolatino.com](http://www.galenolatino.com)) based on the late Richard Durling’s collected notes. Surprisingly, the Paris Pinakes site lists not a single ms. from the Vatican – there are two in Diels –, and neither cat-

<sup>27</sup> Cf. Ullmann (1970: 292-294) on treatises on this subject in Arabic. The remark in Plin. *nat.* 24.102 *Herba Sabina, brathy appellata a Graecis ... in medicamentis uero duplicato pondere eosdem effectus habere quos cinnamum traditur* shows awareness of the problem, although it does not prove the existence of an independent treatise dedicated to the subject. Penicher (1696: 41): *De Succedaneis seu substitutis et Characteribus. Indignus Pharmacopoeo Parisiensi succedaneorum seu substitutorum usus, quae Graeci ἀντιβαλλόμενα (sic), myropola vulgo quid pro quo nominant, quippe qui ut Deo et hominibus faciat satis, ex omnibus mundi partibus, totis suis viribus et sumptibus simplicia medicamenta quantum in se est comparare debet: quae si talia non inveniuntur, ea saltem eligantur, quae in multis non discrepant ab illis modo, sed quibus qualitates eorum augeantur, viribus enim specie et genere consentire ea debent, quae substituuntur. Talia sunt in primis Acacia, pro quibus sumuntur Hypocistis, Carpobalsamum – Grana Juniperi vel semen Citri ...*

<sup>28</sup> This supplements the remarks on *De succ.* in Fischer 2013. For a short definition, see Wolfgang Schneider, *Succedanea*, in Schneider 1985: 264, who says that such lists were current until the 17th century. Also pertinent is Dilg 1988. Conrad Gesner published a *Succiduorum Medicaminum Tabula: quorum usus habetur reciprocos, Graecè & Latine; eadem e Galeni, Dioscoridis, Aëtij, & Pauli Aeginetae libris passim excerpta, & in unum diligenter conscripta, nuncque primum in lucem edita, Basileae 1540*, which I have not seen yet. *succidua* as a translation of ἀντεμβαλλόμενα is not known to me from other sources, but *quorum usus habetur reciprocos* is quite an elegant way of expressing ‘substitute’. See Gesner’s discussion of how to render ἀντεμβαλλόμενα in Latin, p. 88f. Danielle Gourevitch discusses *De succ.* briefly (at Gourevitch 2016: 257f.) and translates the preface. She was not aware of Touwaide 2012.

<sup>29</sup> Raschieri (2012:131) lists *De succidaneis* [sic] among the translations of Galenic works done by Giorgio Valla; the attribution, I would surmise, is a careless error, just as when *febre terzana* is given, in n. 11, as equivalent for malaria in Q. Serenus’ poem; Serenus, however, used *hemitritaeos* (semi-tertian fever), claiming that Latin had no word for it (Ser. med. 932-934). Words fail me, too ...

<sup>30</sup> s. 11 in Touwaide’s database, according to Diels’ catalogue. I have not yet been able to consult Touwaide 2016, covering the same ground as the catalogue edited by Diels (perhaps without the translations into Latin and Arabic).

alogue mentions the fragment in Vat. graec. 1595, fol. 200, supposedly 9th century, about which Hermann Schöne had published a brief note in 1902.

Like Schöne's Vatican ms., some mss. are fragmentary or incomplete, or may have disappeared altogether in the meantime. As the pseudo-Galenic *De succedaneis* is not found in Bonardo's comprehensive collection of Galenic works in Latin, Venice 1490, one might suspect that it did not form part of the mainstream transmission of Galen in Latin or, as we shall see, in Greek.

In the first complete Greek edition of Galen, published in Venice in 1525, we read the abbreviated version transmitted as the penultimate chapter (7.25) in Paul of Aegina, under the title *Περὶ ἀντεμβαλλομένων, ἐκ τῶν Γαληνοῦ*<sup>31</sup>. There, the 369 substitution pairs found in Kühn's text of *De succedaneis* (which were copied probably verbatim from volume 13 of Chartier's edition), are reduced to 228, and the pseudo-Galenic preface is likewise severely curtailed, being cut from 31 albeit shorter lines in Kühn to a mere five. It is only in the Basel edition of 1544 that we can finally read the full Greek text of *De succedaneis* as we know it from Kühn, vol. 19.

I had discussed various aspects of *De succedaneis* at the Sirolo conference in June, 2012, and will not repeat everything I said then<sup>32</sup>. In the meantime, I collated two Greek ms. witnesses, one of them completely. I started with Florence, Biblioteca Medicea-Laurenziana plut. 75.10, because it was available online; the date given for it in Pinakes is the 13th cent. It has only 176 entries, usually overlapping with those in Paul of Aegina. It lacks a preface. The title is *Ἀρχὴ σὺν θεῷ ἀγίῳ. περὶ τῶν ἀντιβαλλομένων. ἤτοι τῶν σινονίμων κατὰ αὐτοῦ τοῦ σοφωτάτου γαληνοῦ*, and it seems noteworthy that 'Synonyms' is here given as an alternative title, even if it is a factual error. The ms. in the Biblioteca Marciana in Venice, gr. Z 295 (coll. 0729), fol. 179-186v, written in 1470, of which Christina Savino kindly provided photographs, transmits the preface as it is printed in Kühn, with very few minor variations and an omission of 8 words near the beginning<sup>33</sup>. In both mss., there are fewer entries than there are in Kühn, and they are not in strict alphabetical order, i.e. respecting just the first letter of the word.

The two Renaissance Latin translations of *De succedaneis*, by Valla and Martianus Rota, both come with a preface, but we do not know which Greek mss. the translators used. Valla follows in his arrangement of the main body of the text – alphabetical, but only as far as the first letter of a word is concerned – his Greek manuscript, rearranging items whenever the Latin translation makes it necessary, placing e.g. *pumex* under p, whereas the Greek equivalent *κίσηρις* had been in kappa (κ), a letter rarely used in Latin and certainly not in this list. Martianus Rota, on the other

<sup>31</sup> Transmitted separately also e.g. in Dresden, Sächsische Landesbibliothek, Da.5, written in 1519, 176v-181v, and in ms. F = Laurentianus plut. 74.23, s. 14, of Dioscorides, see vol. 2 p. IX of Wellmann's edition. I do not think that the editor of the Aldina drew attention to the fact that he printed the text of Paul of Aegina. This, however, may reflect the way the work was presented in the ms. he used. The Basel 1538 edition of the Greek Galen again gives us Paul of Aegina's short introduction. Two years later and again in Basel, Gesner (above, n. 27), 5-16, prints a Greek text with the title *Ἀντιβαλλομένων πίναξ ἀδήλου τινός*, which closely resembles Paul of Aegina. However, here the list of substitutions begins with *Ἀντι ἀκανθίου σπέρματος, λυχνίδα/ Ἀλόης* (for *ἀγαλόχου* in the Aldina and the 1538 Basel Galen), *κενταύριον/ Ἀρμένου, μέλαν ἰνδικόν*. He discusses some of the equivalents, critically, under the heading *Explicatio superiorum aliquot*, 17-21. Pseudo-Galen *succ.* follows, *ibidem* 21-38, in Latin translation. A Latin index of the *materia medica* (p. 90 ff.) concludes the little volume. Evidently, some more work needs to be done.

<sup>32</sup> See Fischer 2013: 678-683.

<sup>33</sup> 19.721.4-5 Kühn *ἀντεμβαλλόμενα καλοῦμεν τὰ ἀντι τῶν ἄλλων ἐμβαλλόμενα φάρμακα*.

hand, ordered the entries strictly alphabetically, and therefore starts with the lemma *abrotonum, absinthium, acacia*.

*De succedaneis* is a text where, surprisingly, the preface does matter. It helps us to distinguish the two Latin Renaissance translations by Valla (1498) and Martianus Rota (1546), and the Greek witnesses as well. In the appendix to Fischer 2013, the Latin preface of *De succ.* was printed from three Latin mss., Copenhagen, Gamle Kongelige Samling 1653 4<sup>o</sup>, an 11th-century Beneventan ms., Paris, BNF, lat. 11219, mid-9th century, and Florence, Biblioteca Medicea-Laurenziana, Aedil. 165, written in 1433<sup>34</sup>. In each of these<sup>35</sup>, as part of Galen's recounting the illness of a woman in Alexandria whose life he saved with an ersatz drug, we hear that Galen's patient suffered from a serious diarrhoic condition and on top of this a nosebleed, which Galen alleges was beneficial. This particular recurs in Valla's translation, but it is missing from that by Martianus Rota<sup>36</sup>, and likewise from the 1544 Basel Greek text published with Froben, nor do we find it in the Greek text in Chartier (vol. 13) or in Kühn<sup>37</sup>. So far, I have not seen a corresponding phrase in Greek, but will keep looking. Undoubtedly, it will turn up sooner or later.

In a different way, the preface is also perhaps the best and quickest indicator for ordering our Greek witnesses. While a number of them I managed to check quickly name Galen as the author, they then continue with the shortened version of the preface known from Paul of Aegina, which starts (vol. 2 p. 401,6 Heiberg) Ἐν Ἀλεξανδρείᾳ and finishes ... ἐπὶ τήνδε τὴν τῶν ἀντεμβαλλομένων ἥλθον ἔκθεσιν κατὰ στοιχείον ἐξ αὐτοῦ τούτου τὴν ἀρχὴν ποιησάμενος. My (provisional) conclusion is that all texts with this version of the preface probably derive from Paul of Aegina. Thus the situation here is no different from the Greek *editio princeps* of 1525, which had also borrowed its text of *De succedaneis* from Paul. This means that what Diels' catalogue has to say about Greek witnesses of the pseudo-Galenic *De succedaneis* must be taken with more than just one pinch of salt.

At least some of Diels' witnesses for *De succ.* lack a preface altogether, as does the Florence pluteus 75.10 ms. I collated. Some mss., by the way, afterwards continue with shortish treatises on weights and measures, similar to the items following in Kühn's vol. 19. (The last chapter in Paul of Aegina, 7.26, is also Περὶ σταθμῶν καὶ μέτρων.)

Let us now take a closer look at the Latin witnesses of this treatise, preceding, as often is the case, our Greek mss. by centuries. The most interesting among these is no. 96 in the Hunterian Collection at Glasgow University Library, a ms. originating from a Visigothic milieu in Northern Spain or Southern France, and the quirky style of writing it presents makes palaeographers hesitate whether to attribute it to the late

<sup>34</sup> I have just become aware that this old preface surfaces in the second edition of Galen's *Opera omnia* by Surianus (1502), at the end of Ps. Galen *de dynamidiis* book 2. It has no separate title and thus was missed e.g. by Durling. The list of substitutions in three columns begins with *Pro aristologia rotunda: longa* and ends, on the same page, with *Pro zinzibero: mittis piretrum. Pro ypericon: mittis aneti semen. Pro inante: mitte flores sipie*. A search for the incipit in the electronic Thorndike-Kibre on May 18th, 2015, produced no match.

<sup>35</sup> This also applies to Bethesda, NLM 8, ca. 1150, fol. 168<sup>th</sup>.

<sup>36</sup> Also missing from the preface of the 2nd copy of *De succ.* in Vat. Reg. lat. 1260 fol. 178<sup>o</sup>.

<sup>37</sup> Touwaide 2012: 19 translates part of the preface in Kühn. I do not agree with his translation of ὡς δ' εὐρέθη τὸ ἀνάλογον τῆ λυχνίδι ... "Since *akanthion* was found to be *analogon* to *luchnis*, ..."; should it not be: "Since the analogue of *lychnis* could be found, ..."? The Latin translation in Kühn (*Verum ut repertum est lychnidi analogum succedaneum, ...*) likewise points this way.

8th or to the early 9th century. It also stands out because it offers three separate texts on substitute drugs following each other. The first two are anonymous, but the third is attributed jointly to Hippocrates and Galen. All three lack a preface. The first text has no obvious arrangement of entries, but the other two are arranged alphabetically, meaning by the first letter of a word. In text no. 3, each letter is even repeated at the beginning of a section to make it easier to use, like the ms. in the Marciana, by the way.

How are these three texts on substitute drugs connected? Are they connected at all? These are questions I cannot answer, at least at the present moment, but the material contained in all three is largely the same as is found in the pseudo-Galenic *De succedaneis*. Disentangling the strands will take some time and effort.

In his catalogue, Augusto Beccaria<sup>38</sup> distinguished three versions of ‚On substitute drugs‘ attributed to Galen, and a further anonymous tract *De succedaneis*. One of his versions begins with the entry that also is the first in Kühn’s text (19.723.8), *acantha*, the item Galen had been looking for and could not find. The next version starts with *aloe* (19.724.11), and no. 3 with *aromatica* (19.725.11). As for content, this seems to be identical with Kühn’s Greek text, broadly speaking, as far as one can tell without having done a full collation, which I have not. But do they all derive from a common Latin ancestor? It may appear hopeless to answer this question if one accepts that for practical purposes, words and definitions may have been changed, and nowhere can this be done more easily than in a list of this kind. But I believe I have found a way to classify the Latin witnesses of *De succ.* with the help of just one entry, the Greek word for starch, ἄμυλον<sup>39</sup>. It seems that Latin perhaps had no word of its own, and thus adopted the Greek word in the form *amulum*. If you are sufficiently curious, you may want to try the instructions for manufacturing *amulum* provided by Cato the Elder (Cato *agr.* 87). But we also find another slightly different recipe for it in *The Alphabet of Galen* (Galen. *alfab.* 6<sup>40</sup>), in Dioscorides *mat. med.* 2.101, and in Plin. *nat.* 18.76-77.

It seems that in antiquity, at least at the time when Isidore of Seville was composing his *Eymologies* in the early 7th century, there was another product likewise called *amylum*, because according to him (*orig.* 20.2.19 Lindsay, 20.1.22 Guillaumin),

Amulum flos farinae, tenuissimum, prae leuitate de mola eiectum; unde et appellatum, quasi a mola.<sup>41</sup>

‚Amulum is the choicest meal, very fine, which flies from the mill because it is so light, whence it got its name, viz. *a mola* ‚from the mill.‘“

<sup>38</sup> Beccaria 1956: 456 and 487.

<sup>39</sup> I fail to see why *OLD* s.v. *amylum* also says ‘gruel.’

<sup>40</sup> Read σῆτανίαις (σιτανίαις) (cf. also with *OLD* s.v. *setanius*, known only from Plin. *nat.*) instead of σῆτανίος in Everett’s note (Everett 2012: 149). The Latin word recurs in the Latin Dioscorides, p. 212,6 Stadler (*ex tridico sitanio*), not in Souter but in Arnaldi s.v. *sitanius*; the explanation there (*De farina, munda*) should perhaps be corrected according to what *LSJ* says. Cf. Frisk s.v. τῆτες ‚heuer, in diesem Jahr‘.

<sup>41</sup> Cf. Baader’s article *Amylum amidum amido, onis* in *Mittellateinisches Wörterbuch*, Band 1, 602,3-19, which cites Gloss. III 469,23 St.-S. *amolu, id est flos farinae melestupe* (modern German Mehlstaub ‘flour dust’). Soran. append. (i.e. Mustio) 10 specifies *amylum quod de tritico infuso conficitur*, which may indicate that there were two kinds of *amylum* when the text was written. I wonder if this is also called *uolatice* in texts like the Latin Oribasius, see Adams 2007: 477.



By contrast, Cato's *amulum* had had nothing to do with a mill. Whether Isidore's Greek was not quite up to the job, or we have to accept a second, different sense for *amulum*, is not absolutely clear. At least Dioscorides had said ἄμυλον ὠνόμασται διὰ τὸ χωρὶς μύλου κατασκευάζεσθαι, *amylon* is named for being prepared without a mill', which was also Pliny's opinion<sup>42</sup>.

But we can proceed without settling this question and go straight to the Greek entry in *De succ.*:

Ἀντὶ ἀμύλου, γῆρις ξηρά ,Instead of starch, the finest meal<sup>43</sup>, dry'

How was this rendered in Latin? We start with Hunter 96. The first text on substitute drugs in this ms. has, for γῆρις ξηρά, *farina candida* 'white flour', the second *sicce (ficce trad.) pulueris*, and the third *puluere de mola*. While I have not found any more examples for *farina candida* or *puluere de mola* (but I have not yet been able to search all Latin witnesses), *sicce pulueris* obviously fits with Par. lat. 12999 *Pro amilo sicce puluer* and Cass. 69 *Pro amulo mittis sicce pulueres*.

Did *sicca* have a special meaning which eludes us? Did the translator read γῆρις but gave up in despair? Even if we cannot, at present, answer these questions, the value of the common wording for the relationship of mss. of *De succ.* is clear. The Paris ms. lat. 12999 is dated to the 12th century, Monte Cassino 69 to the late 9th century, thus we have one ms. before and one after the rise of the School of Salerno. More or less precisely mid-12th century is Bethesda, National Library of Medicine 8, and there, we read

Pro amilo. 'yris sicca.

How can dried sword-lily or iris be a substitute for starch<sup>44</sup>? And this substitution is supported by witnesses from the same time as the NLM ms. or, later, Bamb. med. 8<sup>45</sup> (Southern France, around 1300), fol. 43rd-43vd: *Pro amido uel amilo quod idem est succus prassii uel brance ursine uel iris*, and the very similar Erfurt Amplon. 4<sup>o</sup> 185 (1st text), dated in Schum's catalogue to approximately the same time: *Pro amido uel amilo quod idem est succus prassii uel brance ursine uel yris*. And then we meet the iris again in the Quid-pro-quo treatise printed with the 1471 *editio princeps* of the *Antidotarium Nicolai*:

Pro Amilo: yris illyrica<sup>46</sup>

<sup>42</sup> Plin. *nat.* 18.76 *est appellatum ab eo quod sine mola fiat* (Its name is Greek and means 'made without milling', H. Rackam's translation in the Loeb.) Cf. also Caper gramm. VII 107,13 *amolium, non amulum, quod non molatur*, and the Latin translation of Dioscorides *sine mola fit*.

<sup>43</sup> Orib. *syn.* 9 add. p. 384,12 Mol. *gyreos id est pollines tenuissimas tridiceas*.

<sup>44</sup> In the discussion of this paper during the London Pseudo-Galen conference organised by Caroline Petit and Charles Burnett on Friday, May 15th, 2015, Laurence Totelin pointed out (correctly) that the iris rhizome contains starch and *yris* as substitute for *amylum* in *De succ.* might be explained that way. Unless our sources say something about starch really being produced from it – iris had a number of other uses in medicine –, I prefer to assume an error of transmission.

<sup>45</sup> Not listed in Th-K 1274.1.

<sup>46</sup> *Pro amilo: yrisistrica* in the 1502 edition of Galen by Surianus is just a corruption of this. This quid-pro-quo attached to the *Antidotarium Nicolai* and the list of synonyms following it is found in a number of reprints of the *Antidotarium Nicolai*.

In fact, a ms. written in Monte Cassino in the late 11th century, Copenhagen, Gamle Kgl. Samling 1653 4<sup>o</sup>, fol. 148r, more or less four centuries earlier, already offering the same reading

Pro amilu yris iliric[t]a

shows that the corruption must be quite old. It also proves that if the Copenhagen ms. was indeed written at Monte Cassino – and there is not reason to doubt Francis Newton’s expertise –, the text of *De succ.* (in Carolingian minuscule) was not copied from the other Monte Cassino ms., 69, mentioned earlier.

This miraculous change from γῦρις to *yris* looks somewhat suspicious and will make us even warier of what the chemist hands over the counter. At least the philologist will be able to come up with a hypothesis how this amazing metamorphosis of flour into flower came about: either, the first letter of γῦρις disappeared, be it in Greek or in Latin, because it was to be written in coloured ink but then omitted by mistake, or the pronunciation of the word, again in Greek or in Vulgar Latin, was such that the difference between *gyris* and *yris* was negligible<sup>47</sup>.

To conclude, we look at some more mss., two from Paris, one from Vienna and one from Florence. They all share the translation for γῦρις:

fauilla de farina delicata<sup>48</sup> ‘dust of fine flour’, or ‘fine flour dust’,

which is perhaps the most clever way of rendering γῦρις. I take *fauilla* here to mean ‘dust’ rather than the more usual ‘ashes’ or ‘cinder’, like the anonymous German who glossed *amolun* as *melestupe*, *Mehlstaub* in present-day German; *dies ire, dies illa, soluet seclum in fauilla* may or may not be the medieval version of the ancient ἐκπύρωσις or final inferno by burning: it seems possible that the author merely intended to convey that the world is reduced to dust, not to ashes.

The mss. transmitting this translation extend over a time span of more or less six-hundred years. The earliest dates from the first or second quarter of the 9th century and was written in South Western France (Par. lat. 6882A); the next from the mid-9th century and is attributed to the scriptorium at Saint-Denis (Par. lat. 11219); the Vienna codex was penned in the late 11th or early 12th century (Vindob. 10), and finally the Florence ms. comes with an exact date: 1433 (Flor. Aedil. 165), less than a generation prior to the invention of printing with moveable type. But that is more or less where we started.<sup>49</sup>

<sup>47</sup> Orib. syn. 9 add. p. 368,9 Mol. *de gyreos*, where Par. lat. 9332, fol. 131<sup>ra</sup>, line 7 has *di yreos*; the parallel Greek text in Paul. Aeg. 3.64.2 p. 280,21 Heiberg μετά δὲ τὴν πέμπτην καταπλαστέον γύρει confirms *gyreos*. Ps.Theod. simpl. 135 *Xyris herba, quae ab aliis appellatur iris* may also be relevant; Rose, the first and only editor of the text so far, thought that it was based on Gal. simpl.

<sup>48</sup> Gloss. III 469,23 Steinmeyer-Sievers *amolu, id est flos farinae melestupe*. = Corpus glossariorum Latinorum III 549,39 (from Sang. 751, probably written in Northern Italy in the second half of the 9th cent.; the hand writing this German gloss on top is younger). That the ms. (p. 2, second column) has *amolu* and not *amolus* is stated correctly by Steinmeyer-Sievers and can now be checked easily through e-codices.ch. (The German gloss is not listed in Friedrich Vollmer’s article *amylun* in the *ThlL*, and Gerhard Baader’s article in *Mittelateinisches Wörterbuch* 1, 602,3-19 cites Steinmeyer-Sievers without saying that *melestupe* comes from the text cited as *Gloss.* by the *Thesaurus*.)

<sup>49</sup> This study forms part of the project FFI2013-42904-P (Ministerio Español de Economía y Competividad) directed by María Teresa Santamaría Hernández, University of Castilla-La Mancha at Albacete.

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