Stone by Stone: Building the Graeco-Arabic Edition of Galen's *On Simple Drugs*, Book IX*

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Summary

In the last two years, we have been working on a Graeco-Arabic edition of Book IX of Galen's *On Simple Drugs*, which also takes into account an abridged Syriac version. The starting point was a non-negotiable complete recension of all the manuscript witnesses. Our aim is to look for the point of contact between the Greek and the Arabic traditions, understanding the complex process that brought about the translation, and from there to reach the most ancient stage of the Galenic tradition that it is possible to attain. This approach opens new dimensions for stemmatological and editorial discussion that deserve to be cautiously explored.

Two years ago, we embarked on a joint philological enterprise aimed at producing a critical edition and English translation of the Greek and Arabic versions of Galen's *On Simple Drugs*, Book IX on minerals drugs.¹ We shall share here some aspects of the methodological approach that have oriented our work, together with the new ideas and intuitions that have emerged during our perusal of the text. Three crucial aspects of our research will be touched upon in this contribution: (1) the study of the two textual traditions in their own independent development; (2) the way in which these two traditions entered into contact and communicated with each other; (3) the selection of the variants in the larger historical context of the Graeco-Arabic textual tradition.

It is not the first time that the Greek and the Arabic tradition of a Galenic text have been considered together.² The aim of our investigation is the *constitutio textus, id est, Graeci ac Arabici textus*, the critical value of which depends upon a parallel and balanced use of both traditions.

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- The Greek text (usually referred to with the Latin title *De simplicium medicamentorum temperamentis ac facultatibus*) has no critical edition and remains available only in the nineteenth-century edition by Karl G. Kühn: Kühn 1826, XII.159–244. The Arabic text remains completely unpublished.
- 2 This is the spirit, for instance, of the dictionary of Graeco-Arabic translations compiled by Manfred Ullmann, where the Galenic text represents the main source for the lemmata: see Ullmann 2002 and 2006. For an interesting case study from Galen's *On Simple Drugs*, Book VI, see Pormann 2012.

We do not believe that an occasional and uncritical appeal to either tradition, neither of which allow for any unambiguous editorial decision, represents a productive philological practice.

Here, the problem is not only the ancillary role or subordination of one tradition to the other, but also the risks of relying on one random—sometimes simply the only available—witness (either a manuscript or an unreliable edition), which merely represents an external element that is supposed to solve, as if by magic, complex textual cases.

Thus, the starting point of our investigation was a complete *recensio* of the Greek and Arabic manuscript traditions, as the first necessary step towards their punctual comparison.³ We decided to consider the Greek and the Arabic as two distinct streams of tradition, strongly linked at the moment of the translation, but otherwise leading an independent life.

It is well known that Syriac played a paramount role (as stated in Hunayn's *Risāla*) in the translation process.⁴ Regrettably, the complete Syriac translation of Galen's *On Simple Drugs*, Book IX, is currently not available, even though our hopes are revived by the recent discovery of the Syriac Galen Palimpsest.⁵ We are, however, working on the abridged version, transmitted under the name of the Graeco-Egyptian alchemist Zosimus of Panopolis.⁶

On the other hand, in a historical perspective, the Arabic translation of Galen was not only a highly refined technical process, it represented a great intellectual operation, which the $Ris\bar{a}la$, by Ḥunayn ibn Isḥāq, tells of in detail. In addition to the application of sophisticated translation techniques—the tendency to make explicit everything that is implicit in Greek, and the use of hendiadys to render in Arabic the two main lexical spheres of a certain Greek word—one can observe a great attention to the readership in the work of Ḥunayn. This led to a re-contextualization of the Greek text into a different cultural environment. For instance, the Greek MS Vatican City, Biblioteca Apostolica Vaticana (BAV), $Urbinas\ gr.\ 67$ (see below) offers a remarkable example. It preserves a long section that discusses both the names of the Armenian earth in different languages and the toponyms of its extraction sites. Giving the spelling of the city Bagawana (Greek $\beta\alpha\gamma\alpha\upsilon\dot{\alpha}\upsilon\alpha$), Galen introduces an erudite discussion on the archaic Greek letter digamma. The Syriac and Arabic translators mention the different names of the earth (the same part

³ The methodological inspiration comes from neo-Lachmaniann philology, although this has not specifically addressed multilingual traditions. See, for instance, Pasquali 1952; Troyato 2014, 243–274.

⁴ Ullmann 2002, 28–32; for a new edition and English translation see Lamoreaux 2016, 66–67

⁵ See Bhayro-Hawley-Kessel-Pormann 2013; Hawley 2014.

⁶ MS Cambridge Mm. 6.29. See Martelli 2010 and 2014, 208–211.

included in the Byzantine medical encyclopaedias as well), but they omit all the linguistic remarks on the *digamma*, which would have meant very little to an Arabic reader. Other traces of this attitude can be detected in the text, such as the choice to translate *oi Ellēnes* (oi Έλληνες, 'the Greeks') with *al-nās* (ι), 'the people'), meant as an inclusive nod to the new readership of the Arabic translation.

A survey of the manuscript traditions

Galen's treatise *On Simple Drugs* includes eleven books, and has been divided into two main blocks: the first includes Books I–V, which is the theoretical section of the treatise; while the second contains Books VI–XI, which represent its more practical part. Both the Greek and the Arabic manuscript traditions mirror this twofold structure of the work.⁸

As far as the Greek tradition is concerned, the earliest Byzantine codices transmit Book IX along with other books from the second part. The earliest manuscript, Vatican City, BAV, gr. 284 (*Vaticanus gr.* 284), dates to the tenth century CE, and it hands down a compendium of Galen's *On Simple Drugs* (Books VI–XI), in which an abridged version of Galen is combined with relevant passages from Dioscorides' *De materia medica*.

The earliest manuscript preserving the complete text of Galen's Book IX is Munich, Bayerische Staatsbibliothek, gr. 469 (*Monacensis gr.* 469, ff. 60r–89r; late twelfth or early thirteenth century). The book has no title, but the *pinax* is introduced with the sentence: In this book the properties of the substances from mines and of any earthy substance are described as follows (ἐν τούτω τῷ βιβλίω τῆς ἐκ τῶν μετάλλων ὕλης καὶ πάσης τῆς γεώδους αἱ δυνάμεις λέγονται κατὰ τὴν ὑπογεγραμμένην τάξιν).

Another complete manuscript is *Urbinas gr.* 67 (late thirteenth to early fourteenth century), where the book on minerals (ff. 233v-248v) is introduced with the title: 'Beginning of book IV' (ἀρχὴ τοῦ τετάρτου λόγου). Book IX, in fact, is the fourth book of the second and practical part of the treatise, which gives a description of simple drugs one by one.

The fourth manuscript is Vatican City, BAV, *Palatinus gr.* 31 (fourteenth century), where Book IX (ff. 138r–157r) is introduced by the same title at-

⁷ Martelli 2012.

⁸ Petit 2010.

⁹ According to the research carried out so far, there are four manuscripts that can be singled out as carriers of the tradition. We can count, however, more than 20 *descripti*. Their number gives an idea of the diffusion and the success of the work. For a more detailed description of the four main Greek manuscripts, see Martelli 2012, 131–133 (with further bibliography).

¹⁰ The date of this manuscript is controversial: I follow Mondrain 1998, 36.

tested in the Monacensis (ἐν τούτῳ τῷ βιβλίῳ τῆς ἐκ τῶν μετάλλων ὕλης καὶ πάσης τῆς γεώδους αἱ δυνάμεις λέγονται κατὰ τὴν ὑπογεγραμμένην τάξιν; then, after the pinax, a second heading reads: Γαληνοῦ περὶ ἁπλῶν φαρμάκων δυνάμεως βίβλος θ΄).

Regarding the Arabic, it counts four witnesses, all of Andalusian origins, probably produced between the thirteenth and the fourteenth century: MSS Escurial, Ar. 793, Ar. 794, Istanbul, Saray Ahmet III 2083, Florence, Biblioteca Medicea Laurenziana (BML), Or. 193.¹¹ Excerpts from Book IX—selections of pharmacological prescriptions freed from theoretical passages—are also preserved in two abridgements, one from al-Andalus too (MS Escurial, Ar. 802), the other from the East (Paris, Bibliothèque nationale de France, Arabe 2857).¹²

Stemmatological issues

The logical step following the *recensio* is an attempt to define possible relations among the witnesses of the Greek and the Arabic tradition considered separately.

Starting with the Greek, the relation of MS *Vaticanus* with the other three manuscripts is very difficult to assess, since the transmitted text is a collage of writings stemming from different traditions.

The *Monacensis* and *Palatinus* manuscripts seem to belong to the same branch of the manuscript tradition, and could stem from a common sub-archetype. However, in some cases, *Palatinus* seems to have better readings, which are in contrast with all the three other manuscripts, usually in agreement with the Arabic tradition (see example 1).

Finally, the *Urbinas* manuscript seems to belong to a second branch of the manuscript tradition. In some instances, it offers a more complete text, as in the context of the *digamma* discussion (see above). A marginal note from the hand of the copyist stresses the completeness of the passage, casting the shadow of contamination already on the Greek tradition. In fact, in the margin of the passage on the different names of the Armenian earth (only preserved by the *Urbinas* manuscript among the four witnesses mentioned above), the copyist noted 'it is complete' (ὅλον ἐστί; see fig. 1). He could probably compare different codices, some of which did not include this portion of text.

The Arabic tradition, on the other hand, does not appear to be organized in a coherent net of genealogical relations. The manuscript witnesses show signs of extensive contamination. The MS BML Or. 193, for instance, carries

¹¹ Ullmann 2002, 24–28; for the Escurial MSS see Derenbourg 1884, II.2, 3–4. For the manuscript preserved in the Biblioteca Medicea Laurenziana, see Assemani 1742, 361; Garofalo 1985; and Arvide Cambra 1992.

¹² Ullmann 2002, 26–27; Derenbourg II.2, 15–17; De Slane 1883, 514.

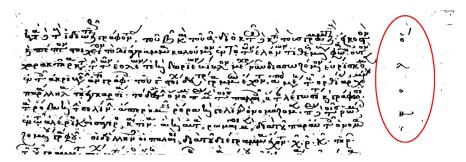


Fig. 1. MS Vatican City, Biblioteca Apostolica Vaticana, *Urbinas gr.* 67, f. 241v. Galen's discussion on the Armenian earth: marginal note ('it is complete').

traces of at least four different hands that annotated and corrected the text on the basis of other copies. Moreover, the manuscripts BML Or. 193 and Escurial Ar. 794 are endowed with collation notes that offer a glimpse of the complex intellectual history and scholarly approach connected to the Galenic tradition.13

The collation note in the MS BML Or. 193 states that the copy in question originated from the manuscript that belonged to the Banū Zuhr family, adding that the forefather of this prestigious



Fig. 2: MS Escurial, Ar. 794, f. 1r. Frontispiece of the second tome of Galen's *Kitāb al-adwiya al-mufrada*, collation note under the title.

¹³ Ullmann 2002, 25-27.

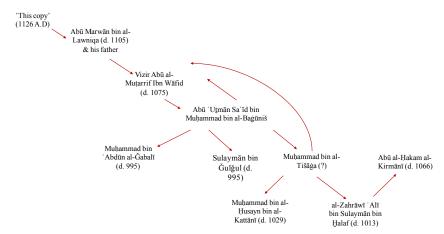


Fig. 3: Diagram of the crossed-collations carried out in al-Andalus in the tenth to eleventh century, as related by the collation note in MS Escurial, Ar. 794, f. 1r.

lineage of physicians copied the text in Egypt from the autograph leaves of Hunayn himself.¹⁴

The collation note in MS Escurial Ar. 794 (fig. 2) delineates a complex network of the most prestigious Andalusian physicians and pharmacologists from the eleventh to the thirteenth century, who apparently used to crosscheck the version of the text in their possession against other prestigious copies (fig. 3).¹⁵

In this perspective, the working hypothesis of contamination becomes quite solid: it is a technical and intrinsic aspect of the manuscript tradition, and not a dismissive solution in the evaluation of the witnesses.

In this environment of contamination, all the manuscript witnesses are equally useful in the reconstruction of the text. In spite of the concrete differences among the copyists and their working style, none of them can be assigned the role of the most representative carrier of the Arabic tradition.

Editorial output, selection of the variants, visibility of errors.

Understanding the two manuscript traditions at the moment of their direct contact, i.e. the Abbasid translation, is crucial for defining the relation between Greek and Arabic. This answers the theoretical question that floats in the air above the stemmatic field: what is the *Ur-Text* that each one of us

¹⁴ MS BML Or. 193, f. 218v.

¹⁵ MS Escurial Ar. 794, see Ullmann 2002, 26. From this collation note, one can infer that, between the twelfth and the thirteenth century, at least ten copies were circulating in al-Andalus.

is aiming to reconstruct? And how does the close communication between Greek and Arabic work?

The historical textual layer that we are trying to reconstruct is the one circulating at the moment of the translation from Greek into Arabic, via Syriac (that is, the actual moment of contact between the two traditions). If, for the Arabic, this stage represents the pristine core (the Arabic text, in fact, simply did not exist before the translation), for the Greek, this textual layer is the platform from which the philologist can attempt the leap towards the reconstruction of more ancient strata of the Galenic text. We will now provide a few examples of how the historical reconstruction of the textual transmission allowed us to zoom in on specific and particularly meaningful variant readings that would otherwise appear less relevant or difficult to interpret. ¹⁶

a) An invisible error in Greek

In some cases, the advantage of the Graeco-Arabic approach is particularly striking. The comparison of the two traditions brings to the surface mistakes and variants that would be hardly detectable in the context of a single tradition. This may concern palaeographic errors as well, which have no occasion to be produced and sit in the frame of a different script. For instance, in the course of a detailed discussion about the differences between astringent (στύφοντα φάρμακα) and pungent drugs (δριμέα φάρμακα), Galen contrasts the properties of the two groups in general terms (Κühn XII.161): the latter are vasodilators that warm the body, whereas the former are vasoconstrictors that contract and cool down the body. What seems to be the correct reading (ψύχειν, 'to cool down') is only preserved in the *Palatinus* manuscript, whereas the rest of the tradition reads στύφειν ('to be astringent').

The Arabic translator seems to have read ψύχειν ('to cool down') in the Greek (translated with υ, suggesting that this variant is probably much earlier than the fourteenth century, when the *Palatinus* was produced. Looking at the Greek tradition in isolation, this reading may seem a late error, since it occurs in only one testimony of one branch of the tradition. The comparison with the Arabic, however, leads to a completely different evaluation of this variant's weight: the Arabic strongly suggests that this reading was already attested in the layer of the Greek tradition used as basis for the translation into Arabic.

¹⁶ The Greek and the Arabic texts of the examples are taken from our work in progress on the edition, the apparatus is slightly simplified and only given with reference to the core elements of the example. For the Greek, the Kühn edition provided the starting text, which has been amended (words in bold) according to the results of our complete recension.

Kühn XII.161,15-17 τὰ στύφοντα δ' ἀποκρουόμενα τὸ περιεχόμενον ἐν αὐτοῖς τῷ ψύχειν τε καὶ συνάγειν καὶ πιλεῖν πέφυκεν

ψύχειν Palatinus : στύφειν Monacensis, Urbinas

On the contrary, astringent medicines naturally drive away (the blood) contained in these parts by cooling down, bringing together, and closing up.

As for the astringent drugs, they are found to hold and leave the blood collected in the part on which they are applied, because it is part of their character to cool, bring together, and firmly tie the substance of the part.

b) Combinatory variants

In less extreme cases, the comparison with the Arabic orients the choice of the variant readings towards one branch of the tradition rather than another.

For instance, in the passage in which the Armenian earth is compared to lime, only the *Urbinas* manuscript specifies that the lime is ground. The Arabic and the Syriac (in this case available) support the choice of this reading. which could otherwise only be solved ope ingenii.

Kühn XII.189,11-12 άλλὰ καὶ ὥσπερ ἐκείνης λειουμένης οὐδὲν έμφέρεται ψαμμῶδες, ούτως οὐδὲ τῆς Άρμενίας.

λειουμένης Urbinas: omittit Monacensis, Palatinus

But, as no sandy residue As nothing sandy is Like in the lime, there is no is contained in this (rock) when pounded, likewise in the Armenian earth.

Cambridge Mm. 6.29 اه/حودل وحو محملس ححمل الا صعارت ده صرم وسح

وكما ان النورة اذا شُحقت لم يوجد فيها شيء رمليٌ كذلك لا يوجد في هذا الطين الارميني شيء من الرملية

found in lime, when sandy component, if pounded, pounded, likewise in likewise there is no sandy comthis earth from Armenia. ponent in this Armenian earth.

c) Proper names and heavy corruption

As for the Arabic tradition, the variant readings are often adiaphorae, and only a very careful application of the usus scribendi criterion may be of some help here, but it does not offer a universal solution.

For instance, transliterated names from the Greek cultural context tend to a quick and dramatic degeneration in the process of copying. In these cases, the Greek text guides the reconstruction of the reading, which is often diffracted in absentia.¹⁷ A representative case is the quotation of some verses

¹⁷ Contini 1986, 102–103; Trovato 2014, 119–124.

from the *Theriaca* composed by the Hellenistic poet Nicander, that refer to a river in Thrace (Nic. *Th.* 45–49). Both the name of the poet and the toponyms (Thrace and Pontos) can be safely reconstructed on the basis of the Greek.

Kühn XII.204,1-7

ἔστι δὲ καὶ ἄλλη τις λίθος, ἦς καὶ Νίκανδρος μέμνηται γράφων οὕτως.

'Ηὲ σύ γε Θρήϊσσαν ἐνιφλέξαις πυρὶ λᾶαν· ή θ' ὕδατι ῥανθεῖσα σελάσσεται, ἔσβεσε δ' αὐγὴν τυτθὸν ὅτ' ὀσμήσηται ἐπιρῥανθέντος ἐλαίου, τὴν ἀπὸ Θρηϊκίου νομέες ποταμοῖο φέρουσιν, ὃν Πόντον καλέουσιν.

There is also another stone that Nicander mentioned, writing as follows (Nic. *Th.* 45–49): or you could kindle in the fire the Thracian stone, which glows when sprinkled with water, yet quenches its

brightness at the least smell of drop of oil. Herdsmen gather it from the river of Thrace, which they call Pontus. وقد ذكره نقاندروس في كتابه حيث قال انه يطردُ الهوام اذا احرق بالنار وهو الحجر الذي اذا رش عليه الماء اشتغل واذا صُب عليه قليل من الزيت انطفا والرعاة ياتون بماذا الحجر من النهر الذي ثرافيا يقال له بنطس

Esc. 793, Esc. 794, Saray Ahmet III 2083 : سعاندروس : BML. Or. 193

BML. Or. 193 عراقي [ثراقيا Esc. 793, Esc. 794 عراقي [ثراقيا 12083] BML. Or. 193 براقلي : Esc. 794 براقلي : Esc. 794 نيطش : Esc. 793 نيطش [بنطس Saray Ahmet III 2083, BML. Or. 193

And here also another stone that Nicander mentioned in his writings, in which he says that it chases vermin off, if it is burnt with fire. This is the stone that lights up if some water is spattered on it, if instead some oil is poured on it, then it extinguishes. The shepherds bring this stone from the river that in Thrace is called Pontos.

Concluding remarks

As Varvaro reminds us, in its own peculiar way, any edition is a scientific compromise between the editor's scholarly *desiderata* and the readership he wants to address. This idea implies a number of technical choices (e.g. inclusivity of the critical apparatus, layout, extension of the comment) whose definition is in progress. However, it clearly emerges from the examples that our understanding of both Greek and Arabic traditions profits from the thorough comparison that has been carried out so far. In terms of methodology, this consists of the non-mechanical selection of variant readings in their context. The Galenic text that we would like to offer to the readers is intended to mirror the complexity of this multilingual textual tradition and, at the same time, constitute a reliable and easily accessible source for any further interpretation.

¹⁸ Varvaro 2012, 42-47.

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