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The Alexandrian Tradition
New Discoveries of Gesius' Galenic Commentaries in Syriac

Naima Afif, Peter E. Pormann, Natalia Smelova

Alexandria is rightly famous for its contribution to the history of medicine. The Ptolemies founded important institutions of learning such as the Library and Museum, and allegedly even made convicted criminals available to be vivisected for the advancement of anatomy.¹ Yet, what some have called the 'second school of Alexandria', the teaching of medicine in the amphitheatres of the iatrosophists in late antiquity, had an even greater impact on how the medical art developed during the medieval and Renaissance periods in both East and West.² Many of the protagonists of this effort to provide instruction in medicine, however, are mere names for us, and we know little if anything about their lives. Examples include Stephen of Alexandria or

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1. H. Van Staden, *Herophilus: The Art of Medicine in Early Alexandria* (Cambridge, Cambridge University Press, 1989), pp. 139–153.
 2. P. E. Pormann, 'Medical Education in Late Antiquity: From Alexandria to Montpellier', in H. F. J. Horstmannshoff in collaboration with C. R. van Tilburg (ed.), *Hippocrates and Medical Education: Selected Papers Read at the XIIth International Hippocrates Colloquium, Universiteit Leiden, 24–26 August 2005* (Leiden, Brill, 2010), pp. 419–441.

Stephen of Athens;³ various Johns, the identity of which is problematic;⁴ Palladius;⁵ and Paul of Aegina:⁶ various works attributed to them have come down to us, but we have trouble even dating them, let alone establishing any biographical details for their

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3. W. Wolska-Conus, 'Les commentaires de Stéphane d'Athènes au Prognostikon et aux Aphorismes d'Hippocrate: de Galien à la pratique scolaire alexandrine', *Revue des études byzantines*, 50 (1992), 5–86; ead. 'Stéphanos d'Athènes (d'Alexandrie) et Théophile le Prôtopathaire, commentateurs des *Aphorismes* d'Hippocrate, sont-ils indépendants l'un de l'autre?' *Revue des Études Byzantines*, 52 (1994), 5–68; ead. 'Sources des commentaires de Stéphane d'Athènes et de Théophile le Prôtopathaire aux *Aphorismes* d'Hippocrate', *Revue des Études Byzantines* 54 (1996), 5–66; ead., 'Un "Pseudo-Galien" dans le commentaire de Stéphane d'Athènes aux Aphorismes d'Hippocrate: ὁ νεώτερος ἐξηγητής', *Revue des Études Byzantines*, 56 (1998), 5–68; ead., 'Palladios — "Le Pseudo-Galien" (ὁ νεώτερος ἐξηγητής) — dans le commentaire de Stéphane d'Athènes aux *Aphorisms* d'Hippocrate', *Revue des Études Byzantines*, 58 (2000), 5–68.
 4. P. E. Pormann, 'Jean le grammarien et le *De sectis* dans la littérature médicale d'Alexandrie', in I. Garofalo, A. Roselli (eds.), *Galenismo e medicina tardoantica: fonti greche, latine e arabe* (Naples, Istituto Universitario Orientale, 2003), 233–263.
 5. P. E. Pormann, S. Barry, N. Carpentieri, E. van Dalen, K. I. Karimullah, T. Mimura, H. Obaid, 'The Enigma of Arabic and Hebrew Palladius', *Intellectual History of the Islamicate World*, 5 (2017), 252–310.
 6. P. E. Pormann, *The Oriental Tradition of Paul of Aegina's 'Pragmateia'*, *Studies in Ancient Medicine* 29 (Leiden, Brill, 2004); J. Scarborough, 'Teaching Surgery in Late Byzantine Alexandria', in H. F. J. Horstmannshoff in collaboration with C. R. van Tilburg (ed.), *Hippocrates and Medical Education: Selected Papers Read at the XIIth International Hippocrates Colloquium, Universiteit Leiden, 24–26 August 2005* (Leiden, Brill, 2010), pp. 419–441.

authors.

The most famous teacher of medicine in late antique Alexandria was arguably Gesius (ca. 450s–530s). And yet, to date, no writings by this celebrated iatrosophist have come to light. In this article, we detail the discovery of a major new source: Gesius' commentaries on two of Galen's so-called *Sixteen Books*, a collection of Galenic writings used to teach medicine in Alexandria. These commentaries by Gesius appear to survive in Syriac translation in five palimpsest manuscripts together with Syriac versions of these works. They appear to contain the Syriac translation of Galen's *Mixtures* and *Natural Faculties*, together with Gesius' commentary on these two texts. We shall first briefly review what we know about Gesius and his works, and then discuss the five palimpsest manuscripts and their source in detail. In order to formulate hypotheses about these Syriac translations, we provide a sample from *Mixtures*, first Galen's text as rendered into Syriac, and then Gesius commentary in Syriac translation. On the basis of a preliminary discussion of this sample we then draw some tentative conclusions and suggest ways in which we ought to study these new sources.

Gesius' Life and Work

Unlike other iatrosophists, we actually have a significant amount of information about Gesius, as he is mentioned repeatedly by contemporaneous and later authors.⁷ Let us begin with Gesius' name; according to the second-century grammarian Aelius Herodianus, 'Gésios is a proper name that is customary in Petra, in Arabia. It appears to be based on *Geésios* ... and becomes *Gésios* through shortening.'⁸ It derives from

7. The following sketch is partly based on E. Watts, 'The Enduring Legacy of the Iatrosophist Gessius', *Greek, Roman, and Byzantine Studies*, 49 (2009), 113–133.

8. Herodian, *On Correct Pronunciation*, ed. A. Lentz, *Herodiani Technici Reliquiae*, Gram-

Géa, a city close to Petra, according to a Glaucus, author of *History of Arabia*, about whom nothing further is known.⁹ *Géa* (today known as al-Ġī) lies some two kilometres southeast of Petra.¹⁰

This origin in the region of Petra chimes well with the fact that two Christian authors from Gaza corresponded with Gesius, namely Aeneas (late fifth century) and Procopius (ca. 465–528). The former implored Gesius to diagnose a kidney condition and offer a treatment in two letters addressed to ‘Gesius, the iatrosophist’.¹¹ The latter wrote no fewer than five extant letters to Gesius.¹² For instance, in letter 16, Procopius waxes lyrical about Gesius’ prose, saying that he ‘admired everything: the elegance and arrangement of the vocabulary, the beauty that shines through everything, and, most importantly, your character that produced the letters to us.’¹³ Two other letters (nos. 102, 125) discuss the death of Gesius’ family members, and generally speaking,

matici Graeci, vol. 3.1 (Leipzig, Teubner, 1867), p. 120, lines 16–18: ‘Γέσιος κύριον ὄνομα ἐπιχωριάζον ἐν Πέτραις Ἀραβίας. ἔοικε δὲ Γεήσιος προὔπαρχειν ... καὶ κατὰ συγκοπὴν Γέσιος.’

9. Herodian, *On Correct Pronunciation*, ed. Lentz, *Herodiani*, p. 283, lines 29–30: ‘ἔστι καὶ Γέα πόλις πλησίον Πετρῶν ἐν Ἀραβίᾳ, ὡς Γλαῦκος ἐν Ἀραβικῇ ἀρχαιολογίᾳ.’
10. *Tübinger Atlas des Vorderen Orients*, map B VI 10.
11. Letters 19–20 (‘Γεσσίῳ ἰατροσοφιστῆ’), ed. L. Massa Positano, *Enea di Gaza. Epistole*, 2nd edn., Collana di studi greci 19, (Naples, Libreria Scientifica Editrice, 1962), pp. 39–53.
12. Letters 16, 102, 122, 125, 164 (‘Γεσσίῳ ἰατροσοφιστῆ’); ed. A. Garzya and R.-J. Loenertz, *Procopii Gazaei epistolae et declamationes*, *Studia patristica et Byzantina* 9 (Ettal, Buch-Kunstverlag, 1963), pp. 3–80, at pp. 13, 54, 62–3, and 79.
13. Ed. Garzya and Loenertz, *Procopii epistolae*, p. 13, lines 4–7: ‘... πάντα θαυμάζων, τῶν ὀνομάτων τὴν ὥραν, τὴν πρὸς ἄλληλα τούτων ἀρμονίαν, τὸ διὰ πάντων κάλλος ἐπιφαινόμενον, καὶ τὸ δὴ μέγιστον, τοὺς ὑμετέρους τρόπους, ἐξ ὧν ἡμῖν προήλθε τὰ γράμματα.’

Procopius mentions him in connection with other major figures from the past such as Pythagoras (no. 164), Anaxagoras (no. 125) and Socrates (no. 164). Both these authors thus held Gesius in extremely high regard.

In his *Life of Isidorus*, the head of the Academy in Athens, the philosopher Damascius (ca. 462–after 532) gives the fullest account of Gesius' life:¹⁴

Γέσιος· ἐπὶ Ζήνωνος ἦν λαμπρυνόμενος ἐπὶ τέχνῃ ἰατρικῇ, Πετραῖος τὸ γένος. καθελὼν δὲ τὸν ἑαυτοῦ διδάσκαλον Δόμνον τὸν Ἰουδαῖον καὶ τοὺς ἐταίρους πρὸς ἑαυτὸν μεταστησάμενος ὀλίγου πάντας πανταχοῦ ἐγνωρίζετο καὶ μέγα κλέος εἶχεν, οὐ μόνον ἰατρικῆς ἕνεκα παρασκευῆς, τῆς τε διδασκαλικῆς καὶ τῆς ἐργατίδος, ἀλλὰ καὶ τῆς ἄλλης ἀπάσης παιδείας. φιλότιμος γὰρ καὶ φιλόπονος ὢν ὁ ἀνὴρ ἄλλην τε πολλὴν ἐν πολλῶ χρόνῳ μελέτη καὶ οὐ φύσει προσπεριεβάλετο δοξοσοφίαν, καὶ τὴν τῶν ἰατρικῶν ἔργων τε καὶ λόγων ἀκριβεστέραν τῶν καθ' ἑαυτὸν πάντων ἰατρῶν τε καὶ ἰατροσοφιστῶν κατῶρθωσε τέχνην. βραδέως δὲ ἀρξάμενος ἐπιδεικνύναι δημοσίᾳ τὴν ἐπιστήμην ταχέως ἀνέδραμέ τε καὶ εὐθῆνησεν ἐπ' αὐτῇ, πομπικὸς ὢν καὶ ἐπιδεικτικὸς, φιλοσοφίας μὲν ἐπ' ὀλίγον ἦκων, ἰατρικῆς δὲ ἐπὶ πλείστον. ὅθεν καὶ χρημάτων μεγάλων ἐγένετο κύριος καὶ Ῥωμαϊκῶν ἔτυχεν ἀξιωματῶν οὐ τῶν τυχόντων.

Gesius: he became famous in the medical art under [the emperor] Zeno (reg. ca. 474–91); he hailed from Petra. He toppled his teacher Domnus, the Jew, and brought nearly all [his former] students on his side. He was known everywhere and enjoyed great fame, not just because of his medical training in both theory and practice, but also because of his learning in all other areas. He desired fame and worked hard [for it]. Through long effort and not through natural gifts did he acquire the reputation of being knowledgeable

14. Ed. C. Zintzen, *Damascii vitae Isidori reliquiae* (Hildesheim, Olms, 1967), p. 265, lines 6–23 (fragm. 335).

in many other fields. To the art of theoretical and practical medicine, however, he introduced greater rigour than any other contemporaneous physician or iatrosophist. Although he began slowly to demonstrate his knowledge in public, he quickly rose and flourished in it. He was a magnificent show-off with few philosophical, yet many medical achievements. The latter also allowed him to make a great deal of money and to obtain high honours in the Roman state.

So Damascius, who was a contemporary of Gesius, describes him as a great medical authority, but also as pompous, vain, and ruthless: after all, he agitated against his teacher and poached his former students.

Gesius also appears in a revised version of a dialogue by the historian Zacharias (ca. 465–after 536), who paints a similar picture of him ‘boasting to have the knowledge of Hippocrates of Cos and Galen of Pergamum, and presiding as teacher over those practising medical philosophy on the shores of the Nile.’¹⁵ To be sure, this is a fictional account, but it provides additional flavour. Moreover, Stephen of Alexandria tells the story how Gesius explained the Hippocratic aphorism 2.53, which states that it is good to be tall in youth and short in old age. Taking Gesius as an example, Stephen said that he ‘was tall and attractive in youth, but in old age his back became bent (ἐν νεότητι μακρὸς ἦν καὶ εὐπρεπῆς τοῖς ὀρώσιν, ἐν δὲ γήρᾳ κεκυφῶς ἐγένετο).’¹⁶ Gesius is also mentioned in the *Syriac Epidemics* as having met a woman suffering from painful

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15. Ed. M. Minniti Colonna, Zacaria Scolastico. Ammonio. Introduzione, testo critico, traduzione, commentario (Naples, Tipolitografia ‘La Buona Stampa’, 1973), p. 107, lines 362–4: ‘ὁς νῦν ἀρχεῖ τὴν Ἱπποκράτους τοῦ Κῶου καὶ Γαληνοῦ τοῦ ἐκ Περγάμου σοφίαν καὶ τῶν ἰατρικῆν φιλοσοφούντων διδάσκαλος παρὰ τὸν Νεῖλον προκάθηται’.
16. L. G. Westerink, *Stephanus of Athens. Commentary on Hippocrates' Aphorisms* (Berlin: Akademie Verlag, 1985), p. 256, lines 6–7.

carefully and accurately to those who studied it at the time.

This is indeed high praise. The same Sophronius goes on to describe how Gesius was humiliated in that he fell ill, was unable to cure himself, had to turn to two saints, Cyrus and John, who subsequently cured him, but only after he acknowledged that Christ is mightier than Hippocrates and Galen combined.²⁰ The historicity of this hagiographical account is, of course, doubtful, and yet it shows again how strong Gesius' reputation as the most eminent physician was.

So far, we have considered sources that dated to the sixth and seventh centuries, a period when Gesius' memory much still have been fresh. But we also have a group of important sources about Gesius that are later, namely those in the Arabic tradition. Gesius is mentioned as one of seven famous Alexandrian physicians associated with the teaching of medicine there. For instance, Ibn Buṭlān (d. 1066), a Christian physician from Baghdad, lists Gesius among these seven physicians, who are 'Stephen, Gesius, Theodosius, Archelaus, Nicolaus, Palladius, and John the Grammarian'.²¹ For the present purpose, we need not concern ourselves with who all of these 'Alexandrians' are; some of these names were also integrated into a tradition that traced medical learning 'from Alexandria to Baghdad', a tradition that is at least partially apocryphal.²²

20. See Sviatoslav Dmitriev (2017), 'Early Byzantine Public Physicians', *Byzantion* 87, pp. 207–231, on p. 229.

21. Quoted in Ibn Abī Uṣaybi'a, *Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*, ed. E. Savage-Smith, S. Swain, G. J. van Gelder (2020), *A Literary History of Medicine* (Leiden: Brill), https://doi.org/10.1163/37704_0668IbnAbiUsaibia.Tabaqatalibba.lhom-tr-eng1 and https://doi.org/10.1163/37704_0668IbnAbiUsaibia.Tabaqatalibba.lhom-ed-arar1 ; section 6.1.1.

22. See D. Gutas (1999), 'The Alexandria to Baghdad Complex of Narratives. A Contribution to the Study of Philosophical and Medical Historiography among the Arabs', *Doc-*

Yet in the Arabic tradition, Gesius must have been more than a name, for we find the physician and medical historian Ibn Abī Uṣaybi'a (d. 1270) saying the following:²³

[1] أقول: وكان هؤلاء الإسكندرانيون²⁴ يقتصرون على قراءة الكتب الستة عشر لجالينوس في موضع تعليم الطب بالإسكندرية. [2] وكانوا يقرؤونها على الترتيب، [3] ويجتمعون في كل يوم على قراءة شيء منها وتفهمه. [4] ثم صرفوها إلى الجمل والجوامع، ليسهل حفظهم لها ومعرفتهم إياها. [5] ثم انفرد كل واحد منهم بتفسير الستة عشر. [6] وأجود ما وجدت من ذلك تفسير جاسيوس للستة عشر، فإنه أبان فيها عن فضل ودراية.

[1] I [sc. Ibn Abī Uṣaybi'a] say that the [seven] Alexandrians focussed on reading the Sixteen Books of Galen at the place where medicine was taught in Alexandria. [2] This was done systematically: [3] each day, they would agree on a particular passage, and it was that passage that would be read and explicated that day. [4] Subsequently, they made summaries and abridgements of the books, so that they could easily be committed to memory and readily understood. [5] At a still later date, each of them composed his own commentary on the Sixteen Books. [6] The best such commentary, I found, was that by Gesius because he offers explanations without any superfluous information.

Ibn Abī Uṣaybi'a clearly took the information in paragraphs 1–3 about how the Sixteen Books of Galen are read in Alexandria from Ḥunayn ibn Isḥāq (d. ca. 873), the famous

umenti e studi sulla tradizione filosofica medievale 10: 169–74.

23. Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, section 6.1.1 (we have heavily edited the English translation given in Savage-Smith et al.); see also Overwien (2018), 268.
24. الإسكندرانيون must be the right reading, as the nominative is required here; Savage-Smith et al. report الإسكندرانيين without any variants, although earlier editions read the nominative.

translator, who says virtually the same in his *Epistle on the Translations of Galen*.²⁵ But Ibn Abī Uṣaybi'a seems to imply (§ 6) that he has personal knowledge of Gesius' commentaries on the Sixteen Books of Galen, as he thought them superior to the others. This also suggests that they were translated into Arabic, probably on the basis of Syriac intermediary translations. Ibn Abī Uṣaybi'a provides us with one additional bit of information concerning Gesius, namely that he wrote a treatise with the title *Doubts about Galen's 'Affected Parts'* (الشكوك على كتاب الأعضاء الآلمة لجالينوس), as he lists a *Resolution* (حل) by Ḥunayn among the latter's works.²⁶ Yet despite the fact that we have abundant information about Gesius' life and his writings, not a single work has been known to survive—until now, that is: for we discovered a new source that contains some of his lectures and thus gives us direct insights into his role in developing medical teaching in Alexandria.

A new source

This new source is a manuscript that was disbound, erased, and used to produce at least five Syriac palimpsest manuscripts, namely London, British Library, MS Add. 17127 (henceforth BL1), 14490 (BL2), and 14486–7 (BL3 and BL4); and Dayr al-Suryān, MS 41 (DS1). BL1 is a complete palimpsest, containing 98 folios, whereas BL2–4 and DS1 are partial palimpsests and contain 78, 3, 8 and 21 palimpsested folios respectively.²⁷

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25. Gotthelf Bergsträsser, *Ḥunain ibn Ishāq über die syrischen und arabischen Galen-Übersetzungen*, *Abhandlungen für die Kunde des Morgenlandes* 17.2 (Leipzig: Brockhaus, 1925), pp. 17–19 in the Arabic text.
26. Ed. Savage-Smith et al. (2020), 8.29.22.98; see Overwien (2018), pp. 271–2.
27. For BL1–4, see Schmidt 2009, 182–6; W. Wright, *Catalogue of Syriac Manuscripts in the*

BL2, *Gospel Lectionary*, AD 1089, selection from the colophon (fol. 175r):

ܘܠܡܢ ܗܘܝܢܢ ܩܪܝܢܢ ܕܠܘܥܢܐ ܕܡܢܝܢܢ ܕܡܝܢ ܕܢܝܪܒ ܕܡܕܢܐ
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The end of the Lectionary from the Holy Gospels of Matthew, Mark, Luke and John, read in the Holy Church through the course of the year, completely without omission. Let everyone who finds guidance and benefit in this book of life pray diligently for the humble Samuel, called ‘priest [*qašīša*’] and ‘monk [*h̄bīšāyā*]’, son of Kyriakos, son of Abraham, [both] departed, from the East, from Nrb’ near the glorious city of Ma’dan. It was written and bound by the aforesaid humble [man], in the year 1400 of the Greeks [AD 1089], on the nineteenth of the month Ēlūl, on the third day of the week [Tuesday], on a pillar within the diocese of Alexandria the Great and Cairo, in the Monastery of Mary, the Mother of God. [...]

These two colophons tell us a lot about the scribe Samuel. He was the son of Kyriakos, son of Abraham, son of Eliša³⁰ and must have been active in the late eleventh century. He came from Ma’dan (modern Maden in Eastern Turkey). He lived as a priest, monk and stylite in a location that he called himself ‘the island (*gāzartā*)’. The colophon of London, British Library, MS Add. 14679 specifies the place name Nikíou, located between the desert of Scetis (modern Wādī l-Naṭrūn), Cairo, and Alexandria. Nikíou

30. We find the strange variant ‘son of Walid’ in London, British Library, MS Add. 14679, fol. 192v.

can be identified as Coptic Pšati (ⲡⲪⲁⲧ) and present-day Zāwiyat Razīn, a city at the southern tip of the Nile Delta. Samuel's connection to the Dayr al-Suryān, the Syrian Monastery of the Virgin Mary in Wādī l-Naṭrūn, is also clear, as he was apparently under its jurisdiction.³¹ He handled a number of Syriac manuscripts belonging to this monastery, as other colophons show. The manuscripts BL₃₋₄ and DS₁ do not contain any annotations by Samuel, but can also be identified as his work on palaeographical and codicological grounds, as well as from features of the undertext.

Let us now briefly look at the codicological features of our five manuscripts. BL₁ is the only complete palimpsest and contains 92 folios in 9 quires, including fol. 1 preserved as a small fragment. The structure of the quires is fairly regular: most of them are quinions, with the exception of the eighth quire, which is a senion. All folios are folded flesh side in.

BL₂ consists of 25 quires (276 folios). The 78 folios with undertext are spread over quires 1–9 and 12–23, each of them containing either one (quires 1, 3 and 12) or two palimpsest bifolia. There is also a palimpsest fragment (fol. 276r) containing no overtext used as a fly leaf at the back cover of the codex. The quire composition is irregular throughout the codex and there are quinions, senions, and septenions.

BL₃₋₄ form the two volumes of a West Syrian Lectionary, which was originally written in AD 824 (AG 1135) in Ḥarrān and later brought to Dayr al-Suryān by monks from Tagrit (modern Tikrīt in Iraq), as we see from the colophon in BL₃ (fol. 71v).³² Samuel repaired the first quire (a quinion) of BL₃ by inserting palimpsest folios from

31. Samuel is also mentioned twice in *The History of the Patriarchs of the Egyptian Church*, ed. Atiya, al-Masih, Burmester (1959, 206 (text), 319 (translation); 234, 372; see White, *The Monasteries*, vol. 2, p. 371, 447.

32. See Wright 1870–2, 149–152.

the original manuscript, a singleton (fol. 1) and a bifolium (fol. 3-8).³³ He also repaired BL4 by adding palimpsest folios in three quinions at the beginning of the codex, two bifolia (fols. 1-8 and 2-7) in quire 1, a singleton (fol. 10) and a bifolium (fol. 14-15) in quire 2, and a singleton (fol. 30) in quire 4.

DS1, containing West Syrian liturgical book, dates to the tenth or eleventh century.³⁴ Samuel repaired it by replacing quire 25 with two quires produced exclusively of the palimpsested folios (fol. 141-161). Although the colophons of these manuscripts all point to Samuel as being involved in the production of the manuscripts, the hands in them at times differ significantly from each other. Future scholarship will need to establish the characteristic features of Samuel's hand and the reason for this variance.

Let us now turn to the codicological and palaeographical features of the original manuscript. To determine them and to transcribe the examples below, we relied on natural light images taken with a non-specialist camera as well as enhanced images in the visible and the ultra violet spectrum provided by the British Library. For the specialist digitisation we have chosen 27 pages in BL2 and 8 pages in BL1 with better readability, visible headings and, in particular, those where the undertext is laid out in two columns. On those latter folios we expected to find both the text and a commentary. For DS1, we relied solely on the reproduction in the catalogue.³⁵

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33. Here and in future references, we designate a bifolium of the secondary manuscript that forms a folio of the original manuscript by referring to the two folio numbers in the secondary manuscript, separated by a hyphen. Therefore, 'fol. 3-8' means the folio in the original manuscript that is formed of the two folios 3 and 8 in the secondary manuscript. Likewise, when referring to a page in the original manuscript, we give [**fill in example**].
34. Brock and Van Rompay, *Catalogue*, 307–308.
35. Brock and Van Rompay, *Catalogue*, 586–7.

Possibly the most striking feature of the original manuscript is its page layout, which has three main variations. Sometimes the text is arranged in one column some 18 cm wide running across the whole page with margins on the left and right.³⁶ At other times, we find one column on the left occupying two thirds of the page with a wide right margin; here the left column sometimes has the heading 'by Galen (ܘܠܘܠܘܟܘܢ)'.³⁷ Moreover, we also find an arrangement in two columns, each some 8 cm wide; here the left column occasionally has the heading 'by Galen (ܘܠܘܠܘܟܘܢ)' and the right column 'by Gesius (ܘܠܘܠܘܟܘܢ)'.³⁸ Finally, there are places where the arrangement in two columns or in one column turns into the text running across the whole page.³⁹ Our preliminary analysis suggest that the left column is Galen's text as rendered into Syriac, but that the right column or the text over the whole page contains Gesius' commentary in Syriac translation.

To date, we were able to identify text belonging to Galen's *Natural Faculties* and *Mixtures*. We have arranged this information in a skeleton table which will eventually help us reconstruct the original manuscript.⁴⁰ The first column gives the treatise (*Natural Faculties*, abbreviated *NF*; and *Mixtures*, abbreviated *M*), book, and chapter; the second column gives book and page number in Kühn's edition; the third page in the original manuscript, designated by the secondary manuscript and the two folio refer-

36. Hereafter the dimensions are based on Brock and Van Rompay, *Catalogue*, 307–8. E.g., BL1, fols. 35-36, 45-46; BL2, fols. 8-13, 47-50, 48v-49r, 166-167, 186-187, 235-238, 236-237, 247-248; BL3, fols. 1, 3-8; BL4, fols. 1-8, 2-7.

37. E.g., BL2, fols. 6-15, 31-38, 34-35, 60v-63r, 72-77, 74-75, 86r-91v, 88v-89r, 101-104, 134-135, 143-146, 154-157, 155-156, 165-168, 175-178, 176-177, 185-188, 216-217, 223-230, 224-229.

38. E.g., BL1, fol. 32-39; BL2, fols. 100-105, 144-145.

39. E.g., BL2, fols. 60r-63v, 196-197; DS1, fol. 152r-159v.

40. We have outlined this new method in Afif et al. (2018a).

ences within the quire that make up this original page; and finally whether it is a hair or a flesh side. Where we were unable to make positive identifications, we designate this through question marks ('?'). It is, however, likely that an unidentified recto contains text preceding the text on the verso, and vice versa.

Table 1: initial skeleton table of original manuscript

treatise	ed. Kühn	page in original MS	hair or flesh
NF 1.6	2.13–15	BL1 60r-51v	flesh
NF 1.7	2.16	BL1 60v-51r	hair
?	?	BL1 32r-39v	hair
NF 1.9	2.19–20	BL1 32v-39r	flesh
gap			
NF 2.1	2.75–76	BL2 144v-145r	flesh
?	?	BL2 144r-145v	hair
NF 2.2–3	2.79–80	BL2 196v-197r	flesh
?	?	BL2 196r-197v	hair
gap			
NF 2.6	2.103–104	BL2 34v-35r	flesh
?	?	BL2 34r-35v	hair

gap			
NF 2.9	2.130–131	BL2 72r-77v	hair
?	?	BL2 72v-77r	flesh
?	?	BL2 74r-75v	hair
	2.136–138	BL2 74v-75r	flesh
gap			
Commentary + NF 3.1	2.143–144	BL2 100r-105v	hair
NF 3.1–2	2.144–146	BL2 100v-105r	flesh
gap			
Commentary + NF 3.7	2.162–163	BL2 63v-60r	hair
NF 3.7	2.163–164	BL2 63r-60v	flesh
?	?	BL2 6v-15r	flesh
NF 3.7	2.166–167	BL2 6r-15v	hair
gap			
M 2.3	1.602–603	BL1 18v-13r	hair
?	?	BL1 18r-13v	flesh

gap			
?	?	DS1 153v-159r	
M 2.6	1.633–635	DS1 153r-159v	
M 2.6	1.636–637	BL2 206r-207v	hair
?	?	BL2 206v-207r	flesh
gap			
M 3.2	1.651	BL2 208r-205v	flesh
?	?	BL2 208v-205r	hair
M 3.2 + commentary	1.653–654	BL2 61v-62r	flesh
Commentary + M 3.2	1.654–655	BL2 61r-62v	hair

This initial table also allows us to make some assumptions about size. For one page in the original manuscript corresponds roughly to two Kühn pages. *Natural Faculties* and *Mixtures* comprise roughly 400 Kühn pages, corresponding to 200 pages or 100 folios in the original manuscript. The five secondary manuscripts together contain 110 folios of palimpsested text, corresponding to 55 folios in the original manuscript. Therefore, assuming that the original manuscript comprises both *Natural Faculties* and *Mixtures*, the extant folios would have roughly half the text (55 out of 110). The other possibility is, of course, that the Syriac translation does not contain whole Galenic works, but

only selections deemed in need of explanation. Here again, future research will have to establish the exact textual arrangements.

Gesius' commentary appears to belong to the genre of so-called lecture note or 'from the voice (of the teacher) (ἀπὸ φωνῆς)' commentaries, which reflect the teaching in the amphitheatres of Alexandria. There the curriculum consisted on the so-called four books of Hippocrates (*Aphorisms, Prognostic, etc.*) and the sixteen books of Galen.⁴¹ According to an eleventh-century Arabic source, these were divided into seven different 'levels' or 'grades', the first containing introductory works (*Sects for Beginners, Art of Medicine, Pulse for Beginners, Therapeutics to Glaucō*), and the second a group of four works on physiology, namely *Elements according to Hippocrates, Mixtures, Natural Faculties*, and the so-called *Anatomy for Beginners*, a collection of four works in five books (βιβλία) on bones, muscles, nerves, veins, and arteries. These sixteen books of Galen as well as other texts by him were not just commented upon, but also abridged in the form of the so-called *Alexandrian Summaries*.⁴² Moreover, some of their content is further simplified for mnemonic purposes into branch diagrams, for instance in the so-called *Viennese Tables*.⁴³ The passages that we have identified to date come from two Galenic texts, *Mixtures* and *Natural Faculties*, both belonging to the second grade of medical textbooks and both comprising three books (βιβλία) in terms of their length. Gesius' commentary appears to share a number of features with other late antique commentaries, as we shall see by transcribing a sample from the original manuscript.

Gesius explains Galen's notion of 'heat'

41. Iskandar (1976).

42. Pormann (2003, 2004); Overwien (2019).

43. Overwien (2019).

We wanted to present an example of the text contained in the original manuscript that could show what it potentially has to offer for our understanding of 1) the codicological aspects of the original manuscript; 2) the textual transmission of Galen's works in Syriac and Arabic; 3) the medical exegesis and teaching in late antique Alexandria; and 4) Gesius' specific place in the development of medicine. Practical exigencies dictated the choice of our example: we simply identified a section where the under-text was readable enough for us to edit it on the basis of the photographs that we were able to acquire from the British Library. Our sample contains text that is arranged in two columns: on the left is the Syriac version of Galen's *Mixtures* and on the right the Syriac version of Gesius' commentary on this text. Galen's passage deals with 1) the heating effect of drug and 2) the four faculties of the body linked to digestion. Gesius' commentary explains the first point further.

The two columns of text and commentary run in parallel on folio 62r, that is, the upper part of the original folio, and on folio 61v, the lower half, the text occupies the full page and is not separated into columns. Codicological studies in Syriac manuscripts established that the number of columns can sometimes change on the same page, but such examples are quite rare and do not occur in texts accompanied by a commentary.⁴⁴ The layout of our texts thus shows a very singular aspect within the Syriac manuscript tradition. It also differs from other lemmatic commentaries, where the text (or lemma) is marked through rubrics or other scribal devices, but not divided into columns; and from the arrangement in other types of commentaries, for instance scholia or catena commentaries, where the text is central and the commentary and

44. Borbone, Pier Giorgio and Briquel-Chatonnet, Françoise and Balicka-Witakowska, Ewa, "Syriac Codicology", in *Comparative Oriental Manuscript Studies: An Introduction*. Edited by Bausi, Alessandro. Hamburg: COMSt, 2015, pp. 258–9.

notes are arranged around it. Our hypothesis is that the physical arrangement of Galen's text and Gesius' commentary reflects the teaching methods employed in Alexandria. The reconstruction of the original manuscript with its full layout will allow us to assess its place in the development of teaching techniques.

Galen's Greek source text and the Syriac and Arabic target texts

Let us first quote the Greek source text of our passage according to the critical edition produced by Helmreich and provide our own translation (we have added selected variant readings that will be discussed below):⁴⁵

[1] [...] ὥστε βραχείας τῆς ἔξωθεν ἐπικουρίας δεῖσθαι πρὸς τὸ κρατῆσαι [sc. ἕκαστον τῶν δυνάμει θερμῶν], [2] καὶ ταύτην αὐτῷ ποτε μὲν ἢ τρίψις ἱκανὴ παρασχεῖν ἔστι, ποτὲ δ' ἦτοι τὸ πῦρ ἢ τι τῶν φύσει θερμῶν σωμάτων ἀπτόμενον τούτου⁴⁶. [3] οὐδὲν οὖν θαυμαστὸν οὐδὲ διὰ τί⁴⁷ τὰ μὲν εὐθύς ἅμα τῷ ψαῦσαι τοῦ σώματος ἡμῶν ἀντιθερμαίνειν αὐτὸ πέφυκε, τὰ δ' ἐν πλείονι χρόνῳ δρᾶ⁴⁸ τοῦτο. [4] καὶ γὰρ καὶ τῶν πλησιαζόντων τῷ πυρὶ τὰ μὲν εὐθύς ἐξάπτεται, καθάπερ ἢ θρυαλλίς καὶ ἡ δᾶς ἢ λεπτή⁴⁹ ἢ τε πίττα⁵⁰, καὶ ὁ κάλαμος ὁ ξηρός, [5] τὰ δ' εἰ μὴ πολλῷ χρόνῳ πλησιάσειεν, οὐ νικάται, καθάπερ τὸ ξύλον τὸ χλωρόν. [6] ἀλλὰ

45. Galen, *Mixtures* ed. Kühn vol. 1, p. 653, line 9–p. 654, line 9; ed. Helmrich (1904), p. 90, line 17–p. 91, line 5; Peter Singer (2018, p. 160, line 18–p. 161, line 6) has produced an annotated translation of this text.

46. τούτου] L T τούτων M.

47. οὐδὲν οὖν θαυμαστὸν οὐδὲ διὰ τί] M οὐκοῦν οὐδὲ θαυμαστὸν ἔστιν εἰπεῖν οὐτὲ διότι L T.

48. δρᾶ] L M δρᾶν T.

49. ἢ λεπτή] L M om. T.

50. ἢ τε πίττα] L T om. M.

μᾶλλον ἐκεῖνο διελέσθαι δικαιότερον, οὐ τὴν μὲν ἀπόδειξιν ἐν τοῖς Περὶ φυσικῶν
δυνάμεων ἐροῦμεν, [7] ἐξ ὑποθέσεως δ' ἄν⁵¹ ἕνεκα τῶν παρόντων καὶ νῦν αὐτῷ
χρησαίμεθα⁵², τέσσαρας μὲν εἶναι παντὸς σώματος δυνάμεις⁵³, [8] ἐλκτικὴν μὲν
τῶν οἰκείων μίαν, [9] ἐτέραν δὲ τὴν τῶν αὐτῶν καθεκτικὴν [10] καὶ τρίτην <τὴν>
ἀλλοιωτικὴν [11] καὶ τετάρτην ἐπ' αὐταῖς τὴν τῶν ἀλλοτρίων ἀποκριτικὴν, [...]

[1] [...] so that [each of the things that are warm in capacity] only requires a
small amount of external help to become dominant. [2] Sometimes a mas-
sage can provide this [help], at other times fire or [another] naturally hot
body, when one comes in contact with it. [3] One certainly does not need to
wonder why some [things] heat our body in their turn as soon as they come
in contact with it, whereas others do so over a longer period of time. [4] For
there are bodies that when they come close to fire are immediately set alight,
such as a wick, thin [pieces of] firewood, and dry reeds; [5] and there are
others that unless they come close to it [sc. the fire] for a long time are not
vanquished by it, such as fresh wood. [6] Yet, we should make the following
distinction (and I shall give a full argument about it in the book *On Natural
Faculties*): [7] for the present purpose, we can for now assume that each
body possesses four [kinds of] innate capacities: [8] first the attractive [ca-
pacity] that [acts on] innate things; [9] second the retentive [capacity] that
[acts on] them; [10] third the transformative [capacity]; [11] and, in addition
to them, fourth the expulsive capacity that [acts on] foreign things, [...]

This passage can be divided into two parts: paragraphs 1–5 contain the end of a dis-
cussion of how potentially warm substances become actually warm, a topic that is im-

51. ἄν] Helmreich αὐ Kühn.

52. χρησαίμεθα L T χρησόμεθα M.

53. δυνάμεις] L T δυνάμεις οἰκείας M.

ܘܕܡܠܚܳܩܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ [10] ܗܝܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ [9]. ܘܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ [11] ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ ܕܥܳܘܳܢܳܐ.

And here is a provisional edition of the Arabic translation attributed to Ḥunayn ibn Ishāq:⁵⁵

[1] [...] فإنما يحتاج [أي: كل واحد من الأشياء التي هي بالقوة حارة] إلى معونة يسيرة من خارج حتى تغلب. [2] وربما اكتفى في هذه المعونة بالدلك، وربما نال تلك المعونة من النار أو من شيء من الأجسام التي هي في طبيعتها حارة بعد أن تلقاها. [3] فليس بعجب أن يكون بعض الأشياء حين تلقى أبداننا من شأنها أن تسخنها وبعضها تفعل ذلك في مدة أطول. [4] وذلك أن الأشياء التي تدني من النار بعضها تشعل سريعا مثل الفتيلة والخشبة الدقيقة من خشب الصنوبر الدسم والقصبه الدقيقة، [5] وبعضها إن لم تجاور النار مدة طويلة لم تحترق مثل الخشب الرطبة. [...] [6] والأولى أن نلخص الأمر الذي سنقيم عليه البرهان في كتابنا «في القوى الطبيعية»، [7] ونحن مزعمون الآن على أن نصفه وصفا صالحا لحاجتنا إليه فيما نحن نعرضه، وهو أن في كل جسم من الأجسام أربع قوى: [8] واحدة منها القوة الجاذبة لما شاكلها؛ [9] والأخرى قوة ماسكة لذلك الشيء المشاكل؛ [10] والثالثة القوة المغيرة؛ [11] والرابعة القوة الدافعة لما يخالفه وينافره.

Some Greek textual problems

The Greek text of *Mixtures* survives in a number of manuscripts from the fourteenth century onwards. The three most significant are these:⁵⁶

T = Milan, Biblioteca Trivulziana, MS 685 (fourteenth century)

L = Florence, Biblioteca Medicea Laurenziana, MS Plut. 74, 5 (fourteenth

55. Paris, Bibliothèque nationale de France, MS 2847 fonds arabe, fol. 91r, line 17–91v, line 4 and lines 8–12.

56. The following sketch is based on Helmreich (1904), iii–ix.

century)⁵⁷

M = Venice, Biblioteca Marciana, MS 275

Helmreich argued that these manuscripts are not derived from each other, although L and T have a tendency to go together. Other later manuscripts rarely offer correct readings according to Helmreich, but on occasion he does adduce significant readings from them. Helmreich did not produce a stemma, perhaps because he suspected a significant amount of contamination. Our purpose here is to establish how the Syriac translation, and to a lesser extent the Arabic translation, relate to the Greek manuscript tradition. Ivan Garofalo offered a very short first appreciation of how the Arabic translation relates to the Greek, but given that he based his conclusions on a very small sample of readings and without adducing the Arabic evidence directly, Garofalo himself regarded them as preliminary.⁵⁸ He maintains that L forms a group apart in the tradition, whereas the other manuscripts somehow relate to each other. Moreover, he provides examples that show that the Arabic tradition sometimes sides with L and M; sometimes with L against M and T; and sometimes with L and T against M. To our mind, it is not clear how Garofalo arrives at his main conclusion about L. Be that as it may, we are going to look in detail at the Greek passage quoted above, and this allows us to formulate our own hypotheses about the relation of the Syriac and Arabic versions to the Greek manuscript tradition.

To study the relationship between the Greek source text and the Arabic target

57. Available online at <http://mss.bmlonline.it/s.aspx?Id=AWOMPqHoI1A4r7GxM-SEk&c=III.%20Eiusdem%20%5bGalen%5d%20De%20temperamentis%20libri%20III#/oro/43>.

58. Ivan Garofalo, 'La traduzione araba del de temperamentis del de optima constitutione e del de bono habitu', *Ecdotica e ricezione dei testi medici greci: atti del V Convegno internazionale, Napoli, 1-2 ottobre 2004* (M. D'Auria, Naples 2006), 125-136.

text for Galen's *Affected Part*, Ğum'a, Ḥamid, and Pormann used the following methodology: they identified variants in the Greek text that are significant enough to be traceable in the Arabic version, and then determined with which branch of the stemma the Arabic version sides.⁵⁹ We shall apply this approach to our small sample. Often, however, it is not possible to say with which Greek variant the Arabic translation agrees. To give two such instances from our passage, at the end of paragraph 3, there is a discrepancy in the Greek between the finite verb $\delta\rho\acute{\alpha}$ in L and M, and the infinitive $\delta\rho\acute{\alpha}\nu$ in T; both are grammatically correct, either as the finite verb of the sentence or the infinitive that would still depend on $\pi\acute{\epsilon}\phi\nu\kappa\epsilon$. The Syriac has an active participle (*sā'rin* 'they do') and the Arabic a finite verb (*taf'alu* 'they do'), so at first glance it would appear that both translations side with the Greek reading $\delta\rho\acute{\alpha}$ in L and M, but this is by no means certain, as translators often vary the syntax. Likewise in paragraph 7, the question is whether we should read the aorist subjunctive form $\acute{\alpha}\nu \dots \chi\rho\eta\sigma\acute{\alpha}\iota\mu\epsilon\theta\alpha$ (we may use) with L and T, or the future indicative $\acute{\alpha}\delta\acute{\iota} \dots \chi\rho\eta\sigma\acute{o}\mu\epsilon\theta\alpha$ (again ... we shall use) with M.⁶⁰ The Syriac text is difficult to read here, and the Arabic gives the expression *wa-naḥnu muz'imūna an* ('we resolve to, we determine to'), which is too free a translation to allow us to decide either way.

Yet in this short passage, we also have four instances where we can with some confidence say with what part of the Greek textual tradition the Syriac and Arabic versions side. Let us analyse them in turn. The first at the beginning of § 3 concerns the presence of the word $\epsilon\acute{\iota}\pi\epsilon\acute{\iota}\nu$ (to say) in L and T, and its absence in M; it is also missing

59. Nashwa Ğum'a, Iman M. Hamed, Peter E. Pormann (2020), 'Arabic Translation of Galen's *On the Affected Parts* and the Greek Textual Tradition', *Classical Quarterly* 70, 397–409.

60. We surmise that M must read $\acute{\alpha}\delta\acute{\iota}$, also printed in Kühn, because $\acute{\alpha}\nu$ would be ungrammatical with the future indicative; Helmreich, however, does not report this reading.

from both the Syriac and the Arabic translations. Second is the qualification 'ἡ λεπτή (thin, light)' in paragraph 4 missing from T but present in L and M, as well as the Syriac (*qaṭīna* 'light') and the Arabic (*al-daḡīqa* 'thin'). Third, in the same paragraph, we find the addition of 'ἡ τε πῖττα (and pitch)' in L and T, but it is present neither in M nor in the Syriac and Arabic versions. Fourth, manuscripts L and T simply speak of 'δυνάμεις (faculties, capacities)' at the end of paragraph 7 as does the Arabic translation (*quwan* 'faculties'), whereas M has the reading 'δυνάμεις οἰκείας (faculties belonging to one's house, one's own faculties)', which also underlies the Syriac version, *ḥaylē baytīyē*; it is striking that the Syriac adjective appears to be a calque on the Greek, as *baytīyā* is derived from *bayt* ('house') just as *οἰκείος* is derived from *οἶκος* ('house').

This initial analysis suggests that the Syriac translation is closely related to the Greek branch of the stemma represented by M; in all four cases, it sides with M against other manuscripts. The Arabic translation, too, appears to be closely related to M, although in the last, fourth example, it appears to go against M. This anomaly could be the result of the Greek exemplar from which the Arabic version is produced not having the addition of 'οἰκείας'; or it could be that the translator chose not to render it for other reasons. These results must clearly be preliminary; they can only be hypotheses that need to be tested on the basis of a much larger textual sample, but they are intriguing nonetheless.

Interpretation of the Greek text in light of the Syriac and Arabic evidence

The Syriac and Arabic translations can not only help us to reconstruct the Greek text, but also to understand it better. We would like to provide five examples from our passage. First, in paragraph 4, Peter Singer translated 'καθάπερ ἡ θρυαλλίς', which we understood to mean 'such as a wick', as 'such as plantain'. To the modern English reader,

this could seem bizarre, as ‘plantain’ nowadays mostly refers to a type of banana in common parlance, yet here, a certain plant, *Plantago crassifolia*, is meant, the leaves of which are used to make wicks. Yet, the Greek word θρυαλλίς can also refer to a ‘wick’ itself, and that seems to be a better translation; any wick, whether made from plantain or not, is easily inflammable, and this is also how the Syriac and Arabic translators understood the text (rendering it as *paṭiltā* and *fatīla*, both meaning ‘wick’, respectively). Second, the expression ‘ἡ δάξ ἡ λεπτή (thin firewood)’ is rendered as ‘light pinewood’ by Singer, whereas the Syriac has ‘*qaysā qaṭīnā d-arzā* (thin cedar wood)’ and the Arabic ‘*al-ḥašaba al-daḡīqa min ḥašab al-šanawbar al-dasim* (thin, resinous pinewood)’. The Greek term ‘δάξ (firebrand, torch, firewood)’ is etymologically related to ‘δαίω (to burn)’, but since torches were mostly made of pinewood, δάξ has also been given this meaning for instance in the lexicon by Liddell, Scott, and Jones, but not in the new *Cambridge Greek Lexicon*. Be that as it may, we can see that the Syriac and Arabic translators understood it differently and the Arabic translator also added the idea of the pinewood being ‘resinous (*dasim*)’. At first this seems to point to a difference in the Syriac and Arabic versions, but this might not be so, as the famous Syriac glossographer, Bar Bahlūl, equate Syriac *arzā* with Arabic *šanawbar*.⁶¹

Third, the Greek aorist middle infinitive διελέσθαι in paragraph 6 is rendered by Singer as ‘to adopt the ... distinction’, whereas both the Syriac (*da-nparraš*) and the Arabic (*an nulaḥḥiṣa*)⁶² take it to mean ‘to explain’ rather than ‘to divide’. The fourth example concerns the expression ‘ἐξ ὑποθέσεως’ at the beginning of paragraph 7. Singer

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61. R. Duval, *Lexicon Syriacum auctore Hassano Bar Bahlule*, 2 vols (Paris, 1901), col. 286, line 7; the Greek term ‘πέυκη (pine tree)’ is also rendered as both *arzā* in Syriac (col. 1492, lines 13–15) and *šanawbar* in Arabic (col. 1521, line 4).
62. In classical Arabic, *lahḥaṣa* does not just mean ‘to abbreviate’, but also ‘to explain’; see Ullmann, *WKAS*, s.v.

rendered it 'as an assumption' and explains it as follows:⁶³

The term *hypothesis* refers literally (like, indeed, its Latin equivalent 'supposition') to something 'placed below', as the foundation on which an argument may be built. That foundation, Galen is saying, could be justified, but for present purposes we will take that justification for granted.

Both the Syriac and Arabic translators chose to render it differently, however. The Syriac uses the adverb *mettawdiyā'ūt*, meaning something like 'declaringly', 'by declaration', whereas the Arabic employs the inner accusative *wasfan ṣālihan*, which could be rendered as 'in a sound way'. The former emphasises the fact that something is merely stated or declared here, whereas the latter highlights the fact that this is a sound or valid theory, again to be explained fully elsewhere. Our fifth and last example contains another discrepancy between the Syriac and the Arabic rendering and concerns the expression 'ὁ κάλαμος ὁ ξηρός (*dry reed*)' at the end of paragraph 4, translated into Syriac as '*qanyā yabīšā* (*dry reed*)', but as '*al-qaṣba al-daḡīqa* (*thin reed*)' into Arabic. Does this suggest that the Arabic translator had a different Greek text, possible reading 'ὁ κάλαμος ὁ λεπτός (*thin reed*)'? Or should we assume that he rendered the Greek source text in a freer way? Or could we possibly have a scribal error here in the Arabic transmission of the text?

So how do these examples help us understand the Greek text? In the first case, we think that Singer should probably have opted for the translation 'such as a wick', as did both the Syriac and the Arabic translations. The second case illustrates a phenomenon known in translation studies *explicitation*: the translators make something explicit in the target text that is only implied in the source text, here the nature of the firewood; and the Arabic translator even added the resinous quality to make the example more suggestive. Likewise in the last three examples, the Syriac and Arabic

63. Singer (2018), 161n31.

translations do not so much offer an improvement on Singer's translation as a fresh perspective on how the text can be interpreted, and this is especially true for the third example where διελέσθαι probably implies the notion of explaining.

Relationship of the Syriac version to the Greek source

Before we explore the how Gesius explains Galen's passage in his commentary, let us consider the character of the Syriac translation, how it relates to the Greek source text and the later Arabic version, and broach the question of who the translators were. The Syriac is in some instances source-oriented and shows a tendency to render the source text very literally, translating the Greek word by word. Two examples will illustrate this point. First, the phrase *ba-zḅan man šūyāfā sāpēq d-nettel* (§2) matches the Greek word order exactly, as one can see from this literal rendering: 'sometime (ποτέ) therefore (μέν) massaging (ἡ τρίψις) suffices (ικανῆ) to-give (παρέχειν)'. In our second example, the word order is not exactly the same, but every close: *d-ʾt̄ bzabnā nagīra sārīn hānā* (§3) literally means 'there-is (τὰ δ') in-time long (ἐν πλείονι χρόνῳ) they-make (δραῖ) it (τοῦτο)'. Moreover, in our first example we have already seen that the translator uses the Syriac loan *man* of the Greek particle μέν to render it. Likewise, other Greek particles and conjunctions are often rendered systematically by Syriac cognates such as *gēr* for γάρ in general, or the expression *καὶ γὰρ καὶ* at the beginning of paragraph 4 is translated as '*āp gēr wa-*', literally 'also therefore and'. At other times, however, the word order is changed, as in the following example (§ 7): *āp hāššā methašḥīnān bāh lwāt šarbā d-qā'em* literally means 'also now we-use it towards the-question that-is', where the Greek begins with the 'the-question that-is (δ' ἂν ἔνεκα τῶν παρόντων)' and then has 'also now we-use it (καὶ νῦν αὐτῷ χρῆσαιμεθα)'.

This brief excerpt thus shows us that the translation often followed the Greek

quite closely, even to the point where the Greek word order and vocabulary is reproduced in Syriac, and this can lead to the semitic character of the Syriac being drowned out. Obviously such a small sample does not allow us to answer the question of who produced the Syriac version, but we can at least broach it. The famous translator Ḥunayn ibn Ishāq (d. ca. 873) provides the following information about how *Mixtures* was rendered into Syriac and Arabic:⁶⁴

وقد كان ترجم هذا الكتاب سرجس. وترجمته إلى السريانية مع كتاب الأركان، ثم ترجمته بعد ذلك إلى العربية لإسحق بن سليمان.

Sergius [of Rēš 'Ayna] previously translated this book. Then I rendered it into Syriac, together with *Elements* [according to Hippocrates]. Afterwards, I translated it into Arabic for Ishāq ibn Sulaymān.

We therefore would like to explore briefly whether we can find parallels to the language use by Sergius of Rēš 'Ayna (d. 536) and Ḥunayn in their Syriac translations. At first glance, the vocabulary in our passage differs from that employed by Sergius in his translation of books 6–8 of Galen's *Simple Drugs*. First, the adverb 'εὐθύς (immediately)' which Sergius always renders as *bar-šā'tēh* is translated here twice by as *mehḥdā*. Second, Sergius usually translates the temporal adverb 'ἄμα (at the same time)' as *akḥdā*, but our translator uses the verb *hpaḥ* followed by another verb in the imperfect to express an iterative meaning 'again'. The same phrase occurs in Ḥunayn's Syriac version of *Questions on Medicine* (*Al-Masā'il fī l-ṭibb*) in a passage discussing the reasons why some substances are easily inflammable but do not heat the body:⁶⁵

64. Bergsträsser (1925), p. 10, lines 14–15 (Arabic); J. C. Lamoreaux, *Ḥunayn Ibn Ishāq on His Galen Translations*, Eastern Christian Texts 3 (Provo: Brigham Young University Press, 2016), p. 22 (with modifications).

65. E. J. Wilson E. J. and S. Dinkha, *Hunayn Ibn Ishaq's "Questions on Medicine for Stu-*

ܠܗܡܢ ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ .
ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ ܕܡܢ ܗܘܘܢܐ .

For all the things which warm the body are changed first by the heat which they need, so as to heat it [i. e. the body] again (*d-nahp̄k̄ān neḥammūnē(h)ī*).

We also have parallels for the four qualities mentioned in paragraphs 8–11 in Ḥunayn's *Questions*. In our extract, they are 1) attractive (*nātōp̄ā*), 2) retentive (*ʾāḥōdā*), 3) transformative (*mšahlp̄ānā*), and expulsive (*mnappšānā*). We find the same terminology for the first three of the four qualities in Ḥunayn's work, with only the last being different, namely *dahōyā* from the verb *dhā* 'to repel, to reject'.⁶⁶ But the situation is further complicated by the fact the Sergius uses two of these Syriac adjectives in his translation of *Simple Drugs*. There *dahōyā* translates 'ἀποκρουστικός (able to dispel, repulsive)' and *mnappšānā* is attested 7 times the adjective 'καθαρτικός (purging)' and forms of the verb 'καθαίρειν (to purge)'.⁶⁷

Such similarities in the vocabulary do not necessarily mean that the Syriac translation of *Mixtures* is by Ḥunayn. This technical terminology may have been introduced and established by an earlier Syriac translator, who in the light of the above, is more likely not Sergius. These mixed results, based on such a small sample, cannot lead to any conclusions. Only a much wider study of the translation will reveal whether it was produced by Sergius or Ḥunayn—or perhaps someone else.

Relationship of the Syriac version to the Arabic translation

dents". *Transcription and Translation of the Oldest Extant Syriac Version* (Vat. Syr. 192), Studi e testi 459 (Città del Vaticano: Biblioteca Apostolica Vaticana, 2010), p. 202, line 14–p. 204, line 2.

66. E. J. Wilson E. J. and S. Dinkha, p. 440.

67. [references, please.]

So far, we have considered the relationship between the Greek source and the Syriac target text, but it is also interesting to see what the relationship between the Syriac version and the Arabic translation attributed to Ḥunayn is. The textual examples discussed above already show that the Arabic translation differs from the Syriac one on a number of occasions. Yet the greatest difference between the two versions is undoubtedly the fact that the Arabic one is much more idiomatic and reader-oriented, whereas the Syriac version often stays much closer to the source text. To illustrate this, we would like to take one sentence and compare the Syriac and Arabic translations. To do so, we give the two translations in transcription, and render each word-for-word into English:

w-hānā ta'dīra ba-zḥan man šūyāfā sāpeq d-nettel ba-zḥan dēn nūrā 'ō med-dem men gušmē d-ḥamīmēn ba-kyānā kaḍ gāšep b-hālēn.

And this help sometime on-the-one-hand massaging [is] sufficient to give sometimes on-the-other-hand fire or something of the bodies that are warmed by nature whilst touching them.

wa-rubbamā ktafā fī hādīhi l-ma'ūnati bi-l-daliki wa-rubbamā nāla tilka l-ma'ūnata mina l-nāri aw šay'in mina l-ʾaḡsāmi llatī hiya fī ṭabī'atihā ḥārratun ba'da an talqāhu.

And sometimes he is content in this help with massaging and sometimes he obtains this help from fire or something of the bodies that are in their nature warm after they encounter him.

We have already seen above that the Syriac follows the Greek word order extremely closely here, and even uses the Greek particles μέν ... δέ, rendered as *man ... dēn*. The Arabic translator, however, uses the expression *rubbamā* twice to bring out the ποτε μέν ... ποτέ δ'. In the Syriac, 'the massaging (*šūyāfā*)' is the subject and '[is] sufficient

(*sāpēq*)' the verb, just as in the Greek, whereas the Arabic translator departs completely from this syntactical structure and introduces a new subject, a vague 'he', to be understood to be the patient or person in question. Moreover, the Arabic translator also changes verbs where the Greek and Syriac just have the adjective 'sufficient': he first uses the construction '*iktafā bi-šay'in* (to be content with something)' and then employs '*nāla šay'an* (to take something)'. Then there is an interpretative problem in the Greek at the end: what is the antecedent of 'τούτου (this)' in the phrase 'ἀπτόμενον τούτου (whilst touching this)'. The reading τούτου is found in manuscripts L and T, but M has 'τούτων (these [things])'. There is a chance that this was the underlying reading of the Syriac version, '*kaḏ gāšep b-hālēn* (whilst touching *them*)', because it also has the plural, and there is no immediate antecedent for this masculine plural demonstrative pronoun, as '*gušmē* (bodies)' would make no sense ('whilst some of the bodies touch the bodies'). The Arabic translator has a rather elegant solution by using the anonymous 'him' again; but he also interprets the temporal sequence differently, not rendering the Greek participle with 'whilst', but 'after (*ba'da*)'. Pormann cautioned against facile conclusions about translation style and the identity of Syriac and Arabic translators when conducting a preliminary study on the various Syriac and Arabic versions of *Simple Drugs*.⁶⁸ Therefore, although we can distinguish certain characteristics of our two versions already on the basis of this brief sample, it is far too early to guess who produced them.

Gesius' Commentary

Let us now turn to how Gesius explained this Galenic passage; he says this:⁶⁹

68. Pormann (2012).

69. BL2, fol. 62r col. B-61v.

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 ܕܡܫܠܐ [34].

[1] [...] bodies [*gušmē*] that are actually warm. [2] I say 'bodies (*paḡrīn*)'. [3]
 Without hesitation it is in [...]. [4] If the bodies heat the drugs and transfer to
 them the effect of the heat, [5] it is clear that they do not produce a heating
 effect on the drugs that is greater than their own heat. [6] For something can
 only give to something else the degree of its own power, [7] and only most of
 it, but not all of it.

[8] How do the drugs heat us? [9] By taking the heat from us, [10] but it is
 [only] possible that they [sc. the drugs] convey the effect of heat from us
 when we are [actually] warm. [11] [...] shortly afterwards he begins to say [12]
 that what changes in us is twofold: [13] [it is] either the simple quality of the
 heat or the essence which is composed of warm, cold, wet and dry. [14] If
 something is changed and increased in terms of essence, then they are warm
 in essence, namely in quantity. [15] If there is a fiery heat in us, something is
 changed only because of it. [16] Because of this when fire is multiplied and
 increased in our bodies, our bodies are warm in quality, not in quantity. [17]
 To put it differently, whenever a drug does not actually possess heat, its heat

71. There are roughly twelve words which we were unable to read on the basis of the current images.

does not move⁷². [18] For that which is potentially warm does not spread⁷³, [19] only that which is actually [warm] does. [20] When the heat is actualised, then it moves completely. [21] What moves completely becomes stronger and grows. [22] Therefore [...] is actualised and moves, it becomes stronger and grows; [23] in particular, it receives help towards this from the essence through which it exists.

[24] If it is thin and subtle in its parts, as we have said above, then [...] [25] [...] to say, that which is potentially warm. [26] Therefore, it is potentially and not actually warm, [27] insofar as there is something obstructing its heat from passing into actuality. [28] When the heat comes into contact with it, the obstruction comes to an end, [29] so that, again, its heat becomes actualised. [30] In order to understand this word [mentioned] earlier, we ought to start little [by little]. [31] In order to explain the word, we adduce two generally accepted kinds [of explanation]: [32] first, to consider the small essence in which there is strong quality; [33] and [second], to consider the large essence in which there is little quality.

The first point in paragraphs 1 and 2 appears to be about what term to use for body in Syriac: *gušmā* or *paḡrā*; this could well be a note by the translator hesitating on how to render this term. In Syriac, there seems to be little difference between the two terms, and both can be used to translate Greek *σῶμα* (body). Paragraph 3 is difficult to understand; Gesius then (§§ 4–7) explains that heat is transferred from the human body to the drug, and that the amount that can be transferred is limited by the amount

72. In the sense of 'potential heat cannot be transferred from the drug to the patient or elsewhere.'

73. In the sense of 'a drug with potential heat does not proceed to have an effect; only a drug with actual heat is effective.'

within the human body. Gesius next (§ 8) asks a question, which is typical for the lecture context from which this commentary is derived, and then answers it himself: when the human body is actually warm, it can give some of its heat to the drug (§§ 9–10). Gesius next explains that Galen makes a twofold distinction in the change that we undergo (§ 12): it can be simple or compound (§13). Gesius goes on to explain that the change can be in quality or quantity, and seems to say quantitative change can lead to qualitative change: a large quantity of heat changes the quality of the body to warm (§§ 14–16). He rephrases his point, saying that only actual heat moves in the sense that it can be transferred, and this movement or transfer also increases the heat (§§17–21). In the next paragraph (§ 22) we have a female noun that we cannot decipher that is the subject of what comes next; perhaps it is the ‘heat of the drug (ܠܘܫܢܐ ܡܗܘܢܐ)’, which when actualised and moving becomes stronger, and in this is helped by its essence (§23). The next two paragraphs (§§ 24–25) are again very difficult to understand, owing to our inability to decipher part of the text. In paragraphs 26–27, Gesius talks about heat being blocked from passing from potentiality to actuality, and physical contact can lift this obstruction (§§ 28–29). Finally Gesius makes a new point about a term mentioned earlier, correlating a small essence to a strong quality and a large essence to a weak quality (§§ 30–33).

This short summary shows that Gesius' commentary shares many of the features with other such lecture notes from late antiquity. Gesius expands on what Galen said by adding details such as the fact that there are limits to the heat transfer during actualisation (§§ 4–7) or that a blockage can occur (§§ 28–29). He resorts to catechism-style teaching (§ 8) and uses division (*dihairesis*) to make his points (§§ 12–13). He rephrases Galen's language in order to make it more palatable for the student (§§17–21). And, importantly, he introduces concepts from other Galenic treatises in order to explain the text in question, as he does when talking about weak and strong essences

placed emphasis on training students in philosophy, with fundamental works from the *Organon* such as *Categories* and *Interpretation* being a prerequisite to study medicine. Here, too, we can see echoes of this in our passage, as Gesius applies categories such as quality, quantity and essence to the discussion of how drugs heat the body, as we have seen.

Conclusions

Although we know quite a bit about Gesius' life, until today, we had no direct evidence for any of his medical writings. The five palimpsests that we identified change this situation significantly, as they preserve the Syriac versions of two of Galen's *Sixteen Books* as well as Gesius' commentaries on them. Our initial analysis offered hypotheses (to be tested by future research) as to how the Greek text of Galen relates to the Syriac and Arabic translations; how the Syriac text was produced and by whom; and how Gesius explained Galen's works. We were able to identify certain traits in Gesius' teaching that are reflected in other late antique teaching tools, such as the *Alexandrian Summaries* and the *Viennese Tables*. They include a catechism-like approach to teaching and the use of division (or *dihairesis*), and the mixing of philosophy and medicine.

The original manuscript is *sui generis*: we know of no other commentary that is in this way at times divided into columns and at times runs across the page. Our preliminary research suggest that this unique layout is linked to the pedagogical methods of late antique Alexandria, but again, future research will need to establish how. But this manuscript illustrates how important the link between form and content is, and we hope to be able to decipher it, so as to reveal its secrets and shed new light on this crucial period in the development of medicine between East and West.