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THE SYRIAC CHRISTIANIZATION OF A MEDICAL GREEK RECIPE: FROM BARBAROS HERA TO THE “APOSTLES’ OINTMENT”

Abstract. During the Late antiquity, several works by Galen (2nd–3rd CE.) were translated into Syriac for the first time by Sergius of Rēšʾaynā (6th CE.), starting up the Hippocratic-Galenic medicine in Syriac Language. Based on these translations, there arouse novel versions of compound medicines in Syriac, such as the “Apostles' Ointment” which is found in The Book of Medicines, possibly from Abassid period, edited and translated by E.A.W. Budge in 1913, which contains more ancient Syriac medical prescriptions. The textual pharmaceutical study regarding the therapeutic uses and qualitative composition of the ‘Apostles’ Ointment’, and its comparison with a kind of plaster (barbaros) which appears in various Late antiquity Greek recipes (Galen, Oribasius, Aetius of Amida, and Paul of Aegina), reveal the micro-transformations suffered to a new and final Syriac Christian version which we here introduce.

Keywords: Apostles’ Ointment, The Book of Medicines, Syriac, Greek tradition

Introduction

The “Apostles’ Ointment” from the anonymous treatise known as The Book of Medicines is the Syriac version of a medical prescription of Greek origin, used as plaster to treat bleeding wounds. A Greek similar recipe appears in chapter 22,
from the book 2 of Galen’s treatise *De compositione medicamentorum per genera*, where it receives the name Βάρβαρος Ἥρα (Barbaros Hera, ed. Kühn, 13.557–560)², although possibly Ἀλλη ἕναιμος³ Ιουλιανοῦ too (“Other enaimos by Iulianus”, ed. Kühn, 13.557). Years later, the same compound appeared again in the Greek writings of renowned physicians from the Late Antiquity period, who gave it different designations, not varying considerably from the mentioned name. Oribasius calls it Βάρβαρος ἕναιμος (Barbaros enaimos) in *Eclogae medicamentorum*, 87, 7, 1–9 (ed. Raeder, 6.2.2.264)⁴, Aetius of Amida distinguishes it as Ἡρᾶ Καππάδοκος βάρβαρος (“Cappadocian Hera”) in *Iatricorum liber XV*, 14, 30–45 (ed. Zervos, p. 7–138)⁶, and Paul of Aegina uses the name Βαρβάρα ἕναιμος (Barbara enaimos) in *Epitomae medicae* 7, 17, 42, 1 (ed. Heiberg, 7.358)⁷. The author of *The Book of Medicines* also transmit a Syriac recipe (chapter 8, ed. Budge I, p. 152–153; II, p. 165–166) similar to the Greek formulae⁸, which

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3 According to F. Rodríguez Adrados et al., *Diccionario Griego-Español*, Madrid 2020, http://dige.chhs.csic.es/xdge/, ἕναιμος has the medical meaning of “full of blood”. For its part, the singular neuter noun, τὸ ἕναιμον, has the meaning of “part of the body that contains blood”. The term ἕναιμος also denotes the idea of “hemostatic, which serves to staunch the blood”, as a φάρμακον (cf. *Pedanii Dioscuridis Anazarbei de materia medica libri quinque*, 5, 13, 1, vol. I–III, ed. M. Wellmann, Berlin 1907–1914 (cetera: Dioscorides)), and of “hemostatic medicine”. Finally, its use refers to the “bleeding” and to “bleeding wounds” (cf. Dioscorides, 1, 110, 2).


retains most of the ingredients noted down by the previous authors, while adding others and radically changing the name given by the Greek texts. Instead of reflecting the exact way in which the name of the prescription is rendered in its original Greek language, the anonymous author of this work record the compound with the words: 

]+$ܫܠܝܚܐ ܬܪܥܣܪܐ ܫܡ ܥܠ ܬܪܥܣܪܬܐ ܕܡܬܩܪܐ ܐܚܪܢܐ

(“Another [plaster $ܥܨܒܐ$], which is called the “Twelve”, after the Twelve Apostles” (Fols. 73b–74a, ed. Budge I, p. 152–153), possibly reflecting the Syriac Christians as the first physicians to Christianize the name of the prescription, as can be deduced from the dating of The Book of Medicines.

From the references found in The Book of Medicines, E.A.W. Budge proposed that the Hippocratic section of this Syriac book\(^9\), containing the “Apostles’ Ointment”

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\(^9\) E.A.W. Budge, The Book of Medicines I…, p. 159–160. The Book of Medicines has three main sections: a) a section of medical prescriptions that, according to E.A.W. Budge, The Book of Medicines I…, p. 5–13, it is based on Hippocratic medicine, and is divided into XXIII chapters, missing chapters I, II and XXIV, absent in the original manuscript. For Hippocratic medicine, also called Classical or Scientific, cf. O. Temkin, Galenism. Rise and Decline of Medical Philosophy, Ithaca 1973, and V. Nutton, Ancient Medicine, London 2004; b) an astrology section, which is not within our competence, although we know that it was used to diagnose and know the right time to prescribe a medicine. This section has been studied independently. Cf. S. Rudolf, Syrische Astrologie und das syrische Medizinbuch, Berlin 2018 [= STMAC, 7]; c) a section of native medical prescriptions, which is not within our competence for our objective, since, according to our criteria, it does not have important connections with Greek medicine, and that we could classify as empirical and magical. According to E.A.W. Budge, The Book of Medicines I…, p. 167, this section was reserved for the ignorant and credulous.
and other prescriptions possibly based on Greek medical works, is a translation into Syriac of the lectures of an Alexandrian teacher (6th century), carried out by a Syriac doctor associated with one of the great Syriac Medical Schools of the first centuries of the Christian era. However, E.A.W. Budge's thesis received different opinions from later scholars. M. Meyerhof, for example, also argued that the author may have been Ahrun, a Jacobite-Christian physician and priest, who taught in Alexandria during the 6th century, and whose work Pandecte was translated into Syriac by Gesios and, from there, into Arabic by Māsarjawayh, under the name Kunnaš. Another argument in favor of placing the Syriac work in the Late Antiquity or Early Islamic period is that of P. Gignoux, who observed that, in the text, there are medical terms and names of prescriptions in the Pahlavi language transliterated into Syriac, and who argued that some of these prescriptions


11 The author of The Book of Medicines says: Now when I was in Alexandria, a certain villager was bitten by an asp in one of the fingers of his hand when he was at no very great distance from the city. Immediately he tied round the lowest joint of his finger, which was close to the palm of his hand, a strong bandage, and ran straightway to a certain physician whom he know at the gate of the city, and entreated him to cut off his finger from the lowest joint, namely that which was in the palm of his hand. He expected that if this could be done he would suffer no [further] injury, and his expectation was fulfilled as he thought it would be, for he was saved, and lived, and this only did he seek (cf. translation E.A.W. Budge, The Book of Medicines II…, p. 25). According to E.A.W. Budge, the author mentions a case of the use of the “tourniquet”, and another case of a man who was bitten by a viper, and who was saved by cutting off the joint that had been bitten, presumably in the neighbourhood of Alexandria, and it seems that he made note of these cases, as physicians do.

12 E.A.W. Budge, The Book of Medicines I…, p. 5, 159–160, adds that those schools could have been those of Edessa (Urfa) and Amid (Diarbekir), and Nisibis. On the medical schools of Syriac tradition, cf. E.R. L’École d’Édesse, Paris 1930; A.H. Becker, Fear of God and the Beginning of Wisdom. The School of Nisibis and the Development of Scholastic Culture in Late Antique Mesopotamia, Philadelphia 2006 [= D.RLAR]; C.R. Le Coz, Les chrétiens dans la médecine arabe, Paris 2006, p. XLIIV, who suggests that the translation is from the 4th century: Selon lui, il s’agirait de la traduction des leçons d’un professeur d’Alexandrie du IVe siècle effectuée par un professeur de Nisibe […].


had circulated before Pahlavi disappeared completely\(^{17}\) during the Abbasid peri-
dod\(^{18}\). C.R. Le Coz also agrees with E.A.W. Budge’s thesis and, as M. Meyerhof does, claims that the author of *The Book of Medicines* could have been a “Jacobite” Chris-
tian\(^{19}\). S. Bhayro, on the contrary, argues forcefully against the thesis put forward by E.A.W. Budge in the early 20\(^{th}\) century. First, he considers that the work is hardly a possible translation or a Greek lesson\(^{20}\) in the following terms:

Budge is correct in that his manuscript does indeed contain much Greek science in Syriac translation. Furthermore, it is indeed likely to be a Nestorian scholarly text. But the way in which the Greek science has been received within the text, with its careful ordering of earlier known medical material in abridged form, coupled with the wealth of non-Greco-
-Roman medical lore, suggests that this is not a translation of Greek medical work or series of lectures into Syriac. Rather, it is a compendium based on a combination of Greco-Roman and Mesopotamian sources.

Then, he elaborates on the idea:

This very much contrasts with the approach of earlier translators such as the sixth-century Sergius and the ninth-century Hunayn. The need for such an easy to use, practical medical handbook may have been a major motivation in the production of the BoM, but another fac-
tor may have been the wider intellectual context of the 12\(^{th}\) century\(^{21}\) – the so-called Syriac Renaissance\(^{22}\), which saw a flourishing of Syriac intellectual activity between the 11\(^{th}\) and 13\(^{th}\) centuries\(^{23}\).

P.E. Pormann and E. Savage-Smith, on the other hand, did not dare to propose a dating and made a description of the text, which falls somewhere in between E.A.W. Budge’s and S. Bhayro’s proposals, as follows:

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\(^{19}\) C.R. Le Coz, *Les médecins…*, p. 44; IDEM, *Les chrétiens…*, p. 61, 179, where he argues that he was a “Jacobite” Christian, since these were the only ones who could study in Alexandria, implicitly ad-
mittng that the Nestorians were prohibited from entering Byzantine territory.


\(^{21}\) Cf. ibidem, p. 126.


\(^{23}\) S. Bhayro, *Theory and Practice…*, p. 156.
Much mystery surrounds it: different scholars have speculated when it might have been written, with suggestions running from the sixth to the thirteenth centuries. Whatever the moment of the final compilation, it is evident that this text contains much material dating back to the sixth and seventh centuries.

Finally, Grigory Kessel, after having consulted him about the dating of *The Book of Medicines*, concludes:

Nobody knows for sure when that text was composed. But even if it was written, let’s say, at the 9th century (one of the hypotheses) it nevertheless relies and uses material that goes back to the Greek sources of the 2nd–6th.

One part of *The Book of Medicines* deals with medical recipes and it may be an original Syriac text.

Without a univocal consensus yet, we propose a dating for the “Apostles’ Ointment” by means of a philological-comparative study, thus avoiding a single dating for all the prescriptions in *The Book of Medicines*, whose content and authorship(s) have not yet been fully studied. The philological analysis we have embraced consists of examining the term used for each simple drug appearing in the formula of our plaster, in comparison with the Syriac nomenclature of varied etymology, noted in MS BL Add 14661 by Sergius (6th century), *Syriac Lexicon* by Bar Bahlul (10th century), and *Le candélabre des sanctuaires* by Bar Hebraeus (13th century). Thus, when the terms of the prescription are traced in these works and the philo-

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26 The Syriac nomenclature used for the simple medicines present in a certain medical prescription can generally be of Semitic, Persian or Greek etymology. As Semitic terms tend to remain unchanged over time, unlike the different ways of transliterating them into Syriac from Greek, it is convenient to take the latter into account for philological analysis, since it is likely to be found in different ways depending on the dating the source.
27 This is the Syriac translation of books 6, 7 and 8 of Galen’s *De simplicium medicamentorum temperamentis ac facultatibus*. A. Merx, *Proben der syrischen Übersetzung von Galenus’ Schrift über die einfachen Heilmittel*, ZDMG 39.2, 1885, p. 237–305, edited only the alphabetical list of medicinal plants.
logical analysis is carried out on the Syriac transliterations of the signs of the Greek writing system, we observe differences in the words according to the time of representation. In the case of the drugs from the “Apostles’ Ointment” present in the three works mentioned above, the analysis of some products deriving from medicinal plants — bdellium, resin, wax, galbanum, opopanax — yields the following result:

<table>
<thead>
<tr>
<th>Greek</th>
<th>The Book of Medicines</th>
<th>MS BL Add 14661</th>
<th>Syriac Lexicon</th>
<th>Le candélabre</th>
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<td>βδελλίον⁵⁶</td>
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<td>πίσσα³⁹</td>
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<td>κηρός⁴³</td>
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<td>ܩܐܪܘܣ</td>
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30 MS BL. Add 14661 and the section “des plantes” in Grégoire Aboulfaradj dit Barhebraeus, p. 229–439, only mention herbal medicines.
36 Dioscorides, 1, 67.
37 Cf. BL Add 14661 f.4r5.
40 Cf. BL Add 14661 f.56v29.
44 Cf. BL Add 14661 f.33v3.
47 Cf. BL Add 14661 f.57r1.
51 Cf. BL Add 14661 f.60v6.
Although not all the terms appear in the three works, the comparative study from the table above leads us to suggest that the Syriac formulation of the “Apostles’ Ointment” dates from the Abbasid period\(^\text{54}\), since simple medicines are

\(^{54}\) The Christianization of the name of the Greek recipe for Apostles’ Ointment by the Syriacs of late Antiquity is opposed to the thesis transmitted during modern times that attributes the assignment of Apostles’ Ointment to the Arabs. In Arabic it appears for the first time in the *Dispensatorium Parvum* (al-Aqrābādhīn al-saghir), ed. O. Kahl, Leiden 1994 [= IPTS.TS, 16] (9th century CE) with the name مرهم الرسل, “Apostle's Ointment”, mentioning twelve ingredients. Cf. O. Kahl, *Dispensatorium Parvum*, p. 206. SĀBŪR was a Nestorian Syriac Christian physician from southeastern Iran who was educated at the Gundishapur School and practiced medicine there, until he was appointed court physician by the ’Abbāsid caliph al-Mutawakkil. For its part, in the book known as *al-Qānūn fi al-tibb*, Bulaq, al-Matba‘ah al-‘Abbāsīya 1876 (cetera: Avicenna), AVICENNA incorporates in Arabic a recipe of Greek-Syriac origin in the eleventh century, which names مرهم الرسول: وهو دشليحا أي مرهم الحواريين ويعرف بمرهم الزهرة ومرهم منديا (Apostles ointment is that of dšlyḥ, that is, apostles ointment, and [also] known as Venus ointment, and mndyā ointment [...], AVICENNA, 5, 405). In the name of the recipe we find that the word دشليحا dšlyḥ’, which is meaningless in Arabic, is transliterated from the Syriac دشليحا, and it means ‘of the apostles’. Cf. J.P.S. Margoliouth, J.P. Payne, *A Comprehensive Syriac Dictionary. Founded upon the Thesaurus Syriacus*, Oxford 1903, p. 580. AVICENNA might not know the Syriac language, so he chooses to transliterate instead of translating الـحواريين, al-ḥawāriyīna, another Arabic term for “apostles”. Cf. دور, R.P.A. Dozy, *Supplément aux dictionnaires arabes*, vol. I, Leiden 1927. At the same time, the word منديا mndyā, which does not make sense in Arabic either, is perhaps transliterated from the Syriac منديا, which means “be dispersed” (cf. H. bar Bahlul, R. Duval, *Lexicon*..., p. 1104), a term that could be associated with an ointment. As for the complete recipe, AVICENNA indicates:

\[\text{مرهم الرسول: وهو دشليحا أي مرهم الحواريين ويعرف بمرهم الزهرة ومرهم منديا وهو مرهم يصلح بالرفق النواصير} \]


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| Although not all the terms appear in the three works, the comparative study from the table above leads us to suggest that the Syriac formulation of the “Apostles’ Ointment” dates from the Abbasid period⁵⁴, since simple medicines are

already transliterated in Syriac from Greek in the *Syriac Lexicon* (10th century) the same way that *The Book of Medicines*, while they are mentioned differently in the other two sources (when they appear). This allows us to propose that, at least during the Abbasid period, a Syriac version of the Greek prescriptions existed, with a name Christianizing for the first time. The Syriac author called this new version of the prescription Βάρβαρος Ἥρα o ἔναιμος “Apostles’ Ointment”, slightly modifying its composition and therapeutic indications. The analysis of the therapeutic uses of the Syriac prescription, in addition to its qualitative composition, in comparison with the plasters of Galen, Oribasius, Aetius of Amida and Paul of Aegina, will allow us to investigate these micro-transformations introduced by the Syriac physicians in the “Apostles’ Ointment”, as we will demonstrate in the following sections.

The “Apostles’ Ointment” from *The Book of Medicines*

In chapter 8 from *The Book of Medicines* (Fols. 53a–74a), there is a section on plasters for the therapeutic treatment of nerve injuries (Fols. 72b–74a). According to the author, when the nerves receive a strong blow or become inflamed because of an abscess, or when they are stabbed, crushed, cut or they become ill from the bite of an animal, they need warm and delicate medicines. He recommends warming by means of sweet oil without astringent properties and, especially, the application of plasters, whose therapeutic action, composition and preparation is detailed in a section about several pharmaceutical plasters, formed with fats and substances with different active principles, suitable for their application in wounds. In addition, he names a total of five prescriptions, which are detailed below: 1) “Plaster (or, liniments) of euphorbium which are good for the wounds that take place in the nerves, and for the bites of evil beasts” (Fol. 73a); 2) “Another unguent of euphorbium which is good for wounds of the nerves, and for abscesses of all kinds which are caused by colds and chills, and for wounds caused by evil beasts” (Fol. 73a); 3) “Another unguent of opopanax and vinegar which is to be used for the wounds that come in the nerves, and for the bites of a mad dog” (Fol. 73a); 4) “Another, a musk fillet” (Fol. 73b), which is used a) “for the cutting of the nerves”, b) “for injuries of the nerves even if they are cut or crushed”, c) “for the sores that are produced by breaking of bones”, d) “for the collection of water”, e) “for the constriction, and for abscesses in the anus”; 5) “Another [unguent] which is called the “Persian”, and which is used for pains” (Fol. 73b). Within this group, he includes

is the “Zwölfbotensalbe” of AVICENNA, 5, 405, *die durch die zweite Rezeptionswelle des Arabismus dem Abendland bekannt wurde*.

This method is valid assuming that the sources are complete in terms of the terminology used in the corresponding periods.

a sixth plaster, which he calls “Another [plaster حورص]\(^{57}\), which is called\(^{58}\) the “Twelve”, after the Twelve Apostles” (Fols. 73b–74a, ed. Budge I, p. 152–153; II, p. 165–166). The author does not explain why he decided to give the plaster this name. He only says it is related to the “call [of the] twelve, in reference to the Twelve Apostles”. Because of this denomination, we consider that it was possibly a popular name at the time, perhaps known prior to the annotation in The Book of Medicines and related to the “Twelve Apostles”, who were Jesus’ followers. Nor does he mention the word “plaster”, حورص; instead, he uses the term “other”, followed by a long list of therapeutic applications:

Another [plaster] which is called the Twelve, after the Twelve Apostles, and which is useful for all difficult wounds, which come in the nerves and in every member. It is emollient for hard abscesses and dense secretions of viscous pus, and dissolves scrofula, and dissipates cancers, and emollient for sores, and helps old ulcers, and pain in the ears, and boils in the nostrils, and the severe pain which comes in the womb.

He then lists the drugs in the prescription and the quantities of each drug:

litharge 30 estire\(^{59}\) gum ammoniac 7 bdellium 7 resin 16 drachms wax 16 verdigris 9 galbanum 9 myrrh 8 opopanax 8 aloes 12 frankincense 12 birthwort (long) 12 olive oil (in the summer) 1 litra\(^{60}\) olive oil (in the winter) 1,5.

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\(^{58}\) حورص, “call”, cf. Mt 1: 16.


\(^{60}\) The litra containes twenty estire (i.e. 100 drachms).
As can be observed, the Syriac prescription totals fourteen medicines, including drugs of animal, vegetable and mineral origin. He mentions wax, which is the animal excipient par excellence to give consistency to the preparation. He also adds mineral drugs, such as litharge\(^{61}\), and verdigris\(^{62}\), which chemically are lead monoxide and cupric acetate respectively, both responsible for the healing and astringent action. Herbal drugs, myrrh, aloe\(^{63}\), and frankincense\(^{64}\), serve the same function. In addition, both gum ammoniac\(^{65}\) and galbanum\(^{66}\) can absorb gum-resin, bdellium, which is an oleo-gum-resin, used as an emollient\(^{67}\), the resin is adhesive and aromatic\(^{68}\), and the opopanax, used to treat ulcers, the bite of rabid dogs and to heal various wounds\(^{69}\), is also added as an aromatic\(^{70}\). Vinegar is also included in the Syriac prescription and has a twofold action: it is part of the production process, providing an acid medium for the gums to retain their adhesive properties, and it is used to stop the bleeding\(^{71}\). Finally, olive oil, which is the vehicle or excipient, makes it possible to contain the rest of the active substances. This oily vehicle, together with the wax, besides having occlusive and emollient properties, has the purpose of dissolving pharmacologically active oily substances, while the minerals are dispersed in this vehicle until they form a paste.

The fourteen ingredients from the prescription, then, are basic substances with a broad spectrum of use in drug production. Each plaster ingredient serves a particular function as a binder, healing, astringent, absorbent, emollient, adhesive and even aromatic agent. However, the pharmaceutical art required not only knowledge of the properties of the basic substances, but also an indication of the correct elaboration process in order to obtain an effective medicine, which the Syriac prescription details in these terms:

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68 In this regard, the different resins mentioned by Dioscorides can be consulted in De materia medica, 1, 71, 3–4. On its antimicrobial activity, cf. J.A. Duke, Handbook..., p. 282.
69 Cf. Dioscorides, 3, 48.
70 Cf. Dioscorides, 3, 48.
71 Cf. Dioscorides, 5, 13.
Pound the litharge and beat it to a powder, then pour a little oil upon it, and crush it again until it becomes like a plaster, and boil it over a fire until it dissolves and becomes like honey. Then incorporate the gum ammoniac\textsuperscript{72} and myrrh and frankincense and opopanax and bdellium in vinegar, and work them up together until they are dissolved. Then grind verdigris, aloes, and birthwort and pour on the mixture, and work up and use for the pains which have been described. It will keep the wounds free from abscesses, and free from pain and disease, and will heal them.

This pharmacotechnical process is logical according to current pharmacy knowledge. The first step consists of forming a paste between a powder (litharge) and an oily element (oil). In addition, heat has the function of reducing the viscosity of the paste, facilitating its manipulation. At the same time, the gomorresins from the medicinal plants (gum ammoniac, myrrh, frankincese, opopanax and bdellium) are dissolved in vinegar. Finally, the remaining ingredients (verdigris, aloe, and birthwort) are incorporated, in a ground form, to the mixture of the first two steps. In this last part of the prescription, the author also gives some general advice regarding the relationship between the formulation, the therapeutic indications and the season of the year in which it is appropriate to treat certain pathologies, as well as recent and old wounds. Therefore, he claims it is useful for long-lasting ulcers, ear pain, infections in the nostrils and pain in the abdomen, possibly caused by some superficial infection. At the same time, he indicates its application for deep wounds, which involve nerves in different parts of the body and which can become infected.

The author ceases his exposition of the prescription “Apostles’ Ointment” here, after giving precise instructions on the composition formula of the plaster, including the drugs involved in it and their quantities, the way to elaborate it and its application. Now, the Greek medical texts of the Antiquity and Late Antiquity period refer to a plaster with characteristics similar to those mentioned in the Syriac prescription, which could be the sources of that version.

\textsuperscript{72} E.A.W. Budge, \textit{The Book of Medicines II...}, p. 165, seems not to recognize the term \textit{ܗܘܫܩ}, and transliterates \textit{hoshaq}. This is the Syriac name for gum ammoniac, cf. M. Sokoloff, C. Brockelmann, \textit{A Syriac Lexicon...}, p. 339.
The Ἀλλη ἔναμος Ἰουλιανοῦ and Βάρβαρος Ἦρα by Galen


74 Galen does not give the name of the first recipe. It only indicates its medicines and quantities: 8 litræ of pitch, 6 litræ of bees wax, 8 unciae (?), 5 litræ of pine [resin], 4 unciae (?), 4 litræ of bitumen, 1 litra of olive oil, 6 unciae (?), 24 [litrae] of litharge, white lead and verdigris, half litra of frankincense, 12 [drachmae] of liquid styrphria, 4 unciae of cleft, 12 [drachmae] of opopanax, scale [of metal], galbanum, 4 [drachmae] of aloes, opium, myrrh, 24 unciae of turpentine, 6 [drachmae] mandragora juice, 6 kotylæ of vinegar (Πίσσης λίτρας η’’. κηροῦ λί τρας στ’. οὐγγίας η’’. πτυύνης λίτρας ε’. οὐγγίας δ’. ἀσφάλτου λίτρας δ’. ἑλαίου λίτραν α’. οὐγγίας στ’. λιθαργύρου και ψιμυθίου και ιοῦ ἀνὰ κδ’. λιβανωτοῦ λίτρας ήμου, στυπτηρίας ύγρᾶς ιβ’. σχητῆς οὐγγίας δ’. ὀποτάνακος, λεπίδος, χαλβάνης ἄνα ιβ’. ἀλοίης και ὀπίου και σιφώνης ἀνὰ δ’. τερμίνθηνης οὐγγίας κδ’. μανδραγόρου χυλοῦ στ’. δέξους κοτύλας στ’). Galen also indicates a second recipe, which is the proportion of the simple barbaros
(ed. Kühn, 13.557–560), where the prescriptions “black enaimos plaster” (μέλαινα ἔμπλαστρος ἔναιμος) and “other barbaros Hera” (ἄλλη βάρβαρος “Ηρα). Of these four plasters, Ἄλλη ἔναιμος Ἰουλιανοῦ and Βάρβαρος Ἤρα contain formulas closely related to the Syriac prescription.

The “Other enaimos by Iulianus”\textsuperscript{75} (Ἀλλη ἐναιμος Ἰουλιανοῦ, ed. Kühn, 13.557) is attributed to Iulianus (of Alexandria) (ca. 140–160 CE). Galen would have met this Methodist physician sometime during his stay in Alexandria, as J. Scarborough\textsuperscript{76} infers, and passed on the drugs in his prescription, composed as follows:

50 drachmae of litharge, 50 drachmae of bitumen, 50 drachmae of bees wax, 50 drachmae of Bruttium pitch, 15 drachmae of toasted pine resin, 12 drachmae of copper flakes, 14 drachmae of incense, 8 drachmae of galbanum, 14 drachmae of copper ore, 6 aloses drachmae, 4 [drachmae] of myrrh, 4 drachmae of myrrh, 10 of litharge, 5 of white lead, 5 of vedigris, 3 of opopanax; 9 unciae of winter oil, 6 unciae of summer oil (πίσσης, κηροῦ, ῥητίνης πιτυΐνης, ῥητίνης φρυκτῆς, ἀσφάλτου τῶν εʹ. τούτων ἀνὰ λίτραν αʹ. λιθαργύρου ιʹ. ψιμυθίου εʹ. ἰοῦ εʹ. ὀποπάνακος γʹ. ἐλαίου χειμῶνος οὐγγίας θʹ. θέρους οὐγγίας στʹ). For this recipe, he indicates the following preparation: the soluble and dry are poured into a mortar to be crushed with acid vinegar (τὰ τηκτὰ κατὰ τῶν ξηρῶν καταχεῖται λελειωμένων ἐν θυείᾳ μετ’ ὄξους δριμέος). And he adds 1 of henbane juice, medium (ὅπου δὲ ἀνωδυνώτερον εἶναι βουληθῇς τὸ φάρμακον, προσμίξεις ὑοσκυάμου χυλοῦ αʹ. ἡμισ. καὶ ὀπίου αʹ).

75 All translations from the original Greek to English are by Paola Druille, who follows the editions specified in the notes.
76 J. Scarborough, Iulianus (of Alexandria?) (ca 140–160 CE), [in:] The Encyclopedia of Ancient Natural Scientists. The Greek Tradition and its Many Heirs, ed. P.T. Keyser, G.L. Irby, London–New York 2008, p. 448, bases its deduction on the statement it is already more than twenty years since I met him in Alexandria, since when he has written handbook upon handbook, always changing them and altering them, never content with what he has written. He also maintains that Iulianus had studied with Apollonides of Ciprus, although due to Galen’s nuanced condemnation, few remains of Iulianus’s writings remain. Against Iulianus Galen so completely demolishes Methodism’s medical logic that Tecusan simply edits and translates the entire tract to suggest the involuted and precise philosophical sarcasm applied to Methodist doctrine, also explicated by Hankinson (1991: 145–160) (J. Scarborough, Iulianus…, p. 448).
to close wounds and soothe the pain\textsuperscript{77}, and adds that the enaimos, prepared in bulk, probably was an ordinarily available plaster to treat wounds suffered by gladiators. The litharge, the copper flakes and the calcite conferred astringent properties to the skin, the Dead Sea bitumen (asphalts) constituted an occlusive layer to protect it, and the adhesive properties given by beeswax, the carefully roasted pine resin and the pine pitch from Brutcia, would have ensured the practicality of the ἔναιμος. Finally, the smaller amounts of frankincense, myrrh, two types of aristolochia and aloe latex provided the plaster with a mild analgesic and antibiotic quality, augmented with oak gall\textsuperscript{78}. Galen does not provide further information on Ἀλλη ἔναιμος Ἰουλιανοῦ. On the contrary, he quickly introduces the prescriptions of the Βάρβαρος Ἦρα (ed. Kühn, 13.557–560), whose formulations largely coincide with the plaster of Iulianus.

These prescriptions contain a considerably extensive explanation of the various applications the preparations have for the treatment of bleeding wounds and other conditions, in conjunction with the composition of two formulas and medicinal elaboration. As noted above, the first prescription is called “enaimos melaina plasters” (μέλαινα ἔμπλαστρος ἔναιμος). As in the case of Ἀλλη ἔναιμος Ἰουλιανοῦ, Galen does not justify the terms used to name this prescription\textsuperscript{79}. Instead, he adds the possible therapeutic applications (ed. Kühn, 13.557–558):

\begin{quote}
πρὸς τὰς ἁξιολόγους διαρέσεις καὶ καλύτερα πρὸς τὰς ἐν τῇ κεφαλῇ, πρὸς σύριγγας, κόλπους\textsuperscript{80}, κατάγματα. […] καὶ ἅπαντα καὶ σπληνικοῖς, ἀφλεγμάντως […] ἐπί νεύρων καὶ χόνδρων διακεκομένων καὶ ὀστῶν, ἐπέχει δὲ παραδόξως καὶ αἷμα φερόμενον […] πρὸς ὑποφορὰς καὶ κόλπους, κολλᾷ γὰρ μεγάλως καὶ ἐπὶ τῶν ἀποστημάτων κομισάμενος τὸ ὑγρὸν […] ἔστι καὶ ἴσχαιμος καλίστη μᾶλλον ἐπὶ τῶν ἀκρών ἀναγόντων. ἐμπλάσας δὲ εἰς δέρματα δύο, ἕν μὲν ἐπὶ τὰ στήθη καὶ τὰς πλευρὰς ἐπιτίθει, ἕτερον δὲ ἐπὶ τὸ μετάφερνον, παραδόξως ἐπέχει τὸ αἷμα. […] καὶ πρὸς κυνόδηκτα καὶ ἀνθρωπόδηκτα, τὸ ὅλον ἀφλέγμαντος […] λύει διὰ ἡμερῶν ἑπτὰ, θέρους διὰ εʹ. ἐὰν δὲ ἐπείγει διὰ τριών.
\end{quote}

\textsuperscript{77} J. Scraborough, Iulianus…, p. 448.
\textsuperscript{78} J. Scraborough, Iulianus…, p. 448.
\textsuperscript{79} In medicine, βάρβαρος, plural βαρβάρα, is the name of various plasters. For Galen, cf. supra notes 73 and 74.
\textsuperscript{80} Cf. LSJ, s.v. κόλπος. It has the meaning of “belly”, but also of “fistulous ulcer” that extends under the skin. Cf. Dioscorides, 1, 128.
This plethora of applications for the treatment of conditions related to bleeding wounds is due to the beneficial drugs that make up the prescription which, in the same way as the “Apostles’ Ointment”, requires pharmaceutical knowledge of the conditions that may affect its efficacy. Galen refers to the exact administration of the plaster, paying particular attention to the condition of the treated wound (ἐὰν δὲ ἐπείγῃ διὰ τριῶν, *if there is pressure*, [open] *after three days*) and to the prevailing temperature in the winter and summer seasons (λῦε χειμῶνος διὰ ἡμερῶν ἑπτὰ, θέρους διὰ εʹ, *open after seven days in winter, five days in summer*), and adds up to a total of nine ingredients (ed. Kühn, 13.558), whose precise fractionation and weight of the active ingredients and necessary excipients follow the quantities indicated in the formula specified below:

κηροῦ λίτραν μίαν, πίσσης λίτραν μίαν, ἄσφαλτου λίτραν, μίαν, πιτυίνης λίτραν μίαν, μάννης οὐγγίας στʹ. ψηφιδίου οὐγγίας δʹ. χαλκάνθης οὐγγίας δʹ. ὀποπάνακος οὐγγίας βʹ. ἐλαίου ἡμίούγγιον, οἱ μὲν ἡμίμναν, οἱ δὲ ἡμίλιτραν, ὄξους κοτύλας βʹ.

1 litra of bees wax, 1 litra of pitch, 1 litra of bitumen, 1 litra [resin?] of pine, 6 unciae of gum, 4 unciae of white lead, 4 unciae of copper sulphate, 2 unciae of opopanax, semi-uncia of oil olive, on the one hand semi-mineral, on the other semi-litra, 2 kotyle of vinegar.

He then lays out the process of making the prescription (13, 558–559), describing the pharmacotechnical operations of mixing, melting, grinding, sieving, cooling, as detailed below:

κηρὸν, ἄσφαλτον, ἔλαιον, ὄξος ὀλίγον […], εἰς χύτραν καὶ ἐπιβάλεται τῇ πίσσῃ καὶ τῇ ρητίνῃ λεπτοκοπήσας ἐπιμελῶς, ὅταν ἡμίεφθος ἤ, ἄρας τὴν χύτραν καὶ διαψύξας ποσῶς ἔμπασσε διηθημένον τὸ χάλκανθον λειωθὲν ὅξει, ἐκ τῶν δυὸ κοτυλῶν κατὰ μικρόν, ἵνα μὴ ὑπερζέσῃ […]. ὅταν ἀμόλυντος ἤ, ἄρας ἀπὸ τοῦ πυρὸς, ἔγχει τὸν ὀποπάνακα πρὸ μιᾶς βεβρεγμένον εἰς μέρος τοῦ ὑπολειπομένου ὄξους, ὡστε διαλυθῆναι, ἐπανασεῖσι τὸ ψηφιδίον καὶ τὴν μάνναν καταχέοντας ὑποκάθιστα ὑπολειπόμενον ὀξοῦς, ὡς ἑνωθῆναι, ἐπανασεῖσι τὸ ψηφιδίον καὶ τὴν μάνναν καταχέοντας ὑποκάθιστα ὑπολειπόμενον ὀξοῦς. Τὸ αὐτὸ ἀποθέον ὡς ἑνωθῆναι, ὡς ἑνωθῇν καταχέοντας ὑποκάθιστα ὑπολειπόμενον ὀξοῦς, ὑπὸ τοῦ πυρὸς ἐπικάμψων τὸν ὀποπάνακο καὶ τὴν μάνναν ὑπολειπόμενον ὀξοῦς, ὡς ἑνωθῆναι τὰ ἀναμαλάξατον ὑποκάθιστα ἀπὸ τοῦ πυρὸς ἐπικάμψων τὸν ὀποπάνακο καὶ τὴν μάνναν, διαλυθῶντας ὑπολειπόμενον ὀξοῦς ὑποκάθιστα ἀπὸ τοῦ πυρὸς ἐπικάμψων τὸν ὀποπάνακο καὶ τὴν μάνναν, διαλυθῶντας ὑπολειπόμενον ὀξοῦς.
Like the “Apostles’ Ointment”, the elaboration process of Galen’s compound requires a series of operations, which determine the final product. By mixing the active ingredients and excipients, and heating these components, grinding and sieving the solid drugs, and unifying all the ingredients, which also intersperses a careful cooling step, after various moments of heating the ingredients, the physician is assured of obtaining a homogeneous compound with the adequate degree of moisture and softness.

On the other hand, the second prescription included within Βάρβαρος Ἦρα is designated “another barbaros Hera” (ἄλλη βάρβαρος Ἦρα, ed. Kühn, 13.559–560). Unlike the formulation of the μέλαινα ἐμπλαστρος ἔναιμος, Galen explains the name of this prescription using these terms:

On the one hand, this single Hera was designated before the [name of the] ointment, and, on the other, I called it similarly before; however, she has been named melaina by him, and later most of the younger physician are used to calling her barbarians because of the asphalt. He himself wrote about Hera herself as the phrase says.

Galen does not indicate other data about ἄλλη βάρβαρος Ἦρα, nor does he mention the names of the physicians who call this formulation μέλαιναν or βαρβάρους. On the contrary, once the prescription is named, Galen notes down the details of the application of the ointment according to this prescription:

for fresh sores (fresh wounds), fistulous ulcers, [wounds] caused by a dog bite, human bite, inflamed callus lump (with pus), for all [diseases] in the joints […] and for gout […]

Then, he documents the active ingredients and excipients of its composition, together with their fractions and weight (13, 560):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mine of wax</td>
<td>1 mine of pitch</td>
</tr>
<tr>
<td>1 mine of toasted pine resin</td>
<td>1 mine of bitumen judaicum</td>
</tr>
<tr>
<td>10 of litharge</td>
<td>5 of white lead</td>
</tr>
<tr>
<td>50 of verdigris</td>
<td>4 of opopanax</td>
</tr>
<tr>
<td>1 kotyle of oil</td>
<td>1 cup of vinegar</td>
</tr>
</tbody>
</table>
Finally, he recommends that each of these drugs be carefully mixed, starting from the strict implementation of the steps the physician adds towards the end of his prescription:

\[\text{έψε κηρὸν πίσσαν, ἄσφαλτον, ῥητίνην ἕως τακῇ, εἶτα τὰ λοιπὰ μετὰ τοῦ ἐλαίου λελειο-}
\[\text{τριβημένα ἐμβάλλε, καὶ βαστάσας καὶ μικρὸν διαψύξας ἐκ τοῦ ὄξους κατ’ ὀλίγον ἐπίσταξε.} \]

boil the wax, the resin, the bitumen, the pine resin until it melts, then add the rest, mixing with oil, instill little by little, taking and aerating a small [quantity].

It may be noted that Galen devotes a brief space to the preparation of the prescription, the more extensive explanation of which might conform to that added in μέλαινα ἔμπλαστρος. Furthermore, its formulation follows very closely both the one indicated in the two previous prescriptions and the one repeated by the Syriac mixture, as shown in the comparative table:

<table>
<thead>
<tr>
<th>Άλλη ἐναιμος Ἰουλιανοῦ</th>
<th>μέλαινα ἔμπλαστρος</th>
<th>ἄλλη βάρβαρος Ἰρρα</th>
<th>Apostles’ Ointment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bees wax</td>
<td>wax</td>
<td>wax</td>
<td>wax</td>
</tr>
<tr>
<td>Pitch of Bruttium bitumen</td>
<td>pitch</td>
<td>pitch</td>
<td>resin</td>
</tr>
<tr>
<td>bitumen</td>
<td>bitumen</td>
<td>judaicum bitumen</td>
<td>verdigris</td>
</tr>
<tr>
<td>toasted pine resin</td>
<td>pine [resin?]</td>
<td>toasted pine resin</td>
<td>verdigris</td>
</tr>
<tr>
<td>copper flakes and calcitis</td>
<td>copper sulphate</td>
<td>verdigris</td>
<td>verdigris</td>
</tr>
<tr>
<td>frankincense</td>
<td></td>
<td>frankincense</td>
<td></td>
</tr>
<tr>
<td>myrrh</td>
<td></td>
<td>myrrh</td>
<td></td>
</tr>
<tr>
<td>galbanum</td>
<td></td>
<td>galbanum</td>
<td></td>
</tr>
<tr>
<td>aloes</td>
<td></td>
<td>bdellium</td>
<td></td>
</tr>
<tr>
<td>oak gall</td>
<td></td>
<td>aloes</td>
<td></td>
</tr>
<tr>
<td>long-birthwort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>round birthwort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>litharge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>old oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>oil olive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>oil [olive]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>oil olive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(in the summer)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>old oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(in the winter)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The prescriptions account for 14 (ᾆλλη ἔναιμος Ἰουλιανοῦ) and 10 drugs (μέλαινα ἔμπλαστρος, ἄλλη βάρβαρος ᾽Ηρα) respectively, whose main therapeutic action, as in the case of the Syriac plaster, is against sores, ulcers and fistulas, differing in their etiology “by dog bite or human bite” (κυνόδηκτα, ἀνθρωπόδηκτα). Of the fourteen drugs described in the Apostles’ Ointment, ten match ᾆλλη ἔναιμος Ἰουλιανοῦ, and seven match μέλαινα ἔμπλαστρος and ἄλλη βάρβαρος ᾽Ηρα.

Although we cannot affirm that the Syriac author used one of Galen’s prescriptions for his ointment, or a combination of the three prescriptions based on the best therapeutic efficacy of the drugs that compose them, according to his experience, we can observe that both the therapeutic indications and the qualitative formulation of Galen’s prescriptions are related to the Syriac prescription, beyond the differences in the proper name of the prescription and in the amount of drugs in its formulation. This relationship becomes even more feasible when we observe that other late-antique physicians, who wrote in Greek and may have kept the formulation in force throughout the centuries, replicated the formulations transmitted by Galen with some modifications.

The Βάρβαρος ἔναιμος by Oribasius, Ὅρα Καππάδοκος βάρβαρος by Aetius and Βαρβάρα ἔναιμος by Paul

In the medical treatises by Oribasius, Aetius of Amidas and Paul of Aegina, mention is made of the plaster for bleeding wounds, with indications similar to those mentioned in Galen’s prescriptions. In Eclogae medicamentorum 87 (ed. Raeder, 6.2.2.263–266), Oribasius incorporates a section called Ἐμπλαστροὶ ἐναιμοὶ πρὸς νευροτρώτους- αἱ δ’ αὐταὶ ποιοῦσι καὶ πρὸς τὰς περιθλάσεις τῶν νεύρων (“Plasters for bleeding wounds from tendon/muscle injuries, which are also made for nerve contusions” 87 tl. (ed. Raeder, 6.2.2.263). This section contains a total of sixteen plaster formulations81, where Oribasius prescribes a particular plaster,  

81 Oribasius includes a total of sixteen plasters. These are as follows: “[Plaster] kissinon for tendon wounds and injuries” (Τὸ κίσσινον πρὸς νευροτρώτους καὶ νύγματα, 87, 1), “[Plaster] Indē”
which he calls Βάρβαρος ἔναιμος 87, 7 (ed. Raeder, 6.2.2.264) and which he recommends for the following cases:

πρὸς τὰς ἀξιολόγους διαιρέσεις, μάλιστα ἐν κεφαλῇ, ὀστέα διακεκομμένα, χόνδρους, ἡπατικοὺς, σπληνικοὺς, αἷμα ἀνάγοντας, πρὸς τε κυνόδηκτα, ἀνθρωπόδηκτα, κόλπους for considerable injury, especially in the head, bone fissures, cartilage, liver diseases, splenic, outgoing blood; also for (wounds) caused by a dog bite, human bite, fistulous ulcers.

After the therapeutic applications, he documents the types of single drugs and their quantities:

Κηροῦ, πίσσης ξηρᾶς, ἀσφάλτου, πιτυίνης ἀνὰ <α>, μάννης <ϛ>, ψιμυθίου, χαλκάνθου ἀνὰ <δ>, ὀποπάνακος <β>, ἐλαίου <ε>, ὀξοῦ <β>.


While he devotes the final part of his prescription to writing the instructions for the preparation of the plaster:

τα τηκτα τῆς ἐπάρας τε ἀπὸ τοῦ πυρὸς ἔνσταζε τὸν χάλκανθον διειμένον ὀξεὶ καὶ ἐπίστησε, εἰτ’ ἐπάρας πάλιν ἐπίβαλε τὸ ψιμύθιον λελειωμένον ὀξεὶ καὶ πάλιν ἐπίβαλε, ἐπὶ τέλει δὲ μάνναν καὶ ὀποπάνακα, καὶ εὐθέως περισπάθιζε, ἐως ψυγῇ, καὶ χρώ

Instill the dissolved copper sulfate in vinegar after melting and stirring the soluble ones in the fire and boiling; after stirring again, add the white lead, emulsified with vinegar and boil again and, finally, [add] the powder of frankincense and opopanax hispidus; cool (until) dawn, and use.

(Ἡ Ἰνδή, 87, 2), “[Plaster] gray or orange of Galen” (Ἡ φαιὰ Γαληνοῦ ἤτοι κιρρά, 87, 3), “[Plaster] sallow for injuries (on tendons), injuries on tendons and all (other) bleeding wounds” (Τὸ μελάχρω- ρον νύγμασι, νευροτρώτοις καὶ πάσι τοῖς ἐναίμοις, 87, 4), “[Plaster] with a mixture of vinegar and oil” (Ἡ δι’ ὀξελαίου, 87, 5), “[Plaster] Catagmatic saitis, bleeding wound, headache, fistulous ulcer fluency” (Ἡ Σαίτης καταγματική, ἐναίμος, κεφαλική, κόλπων κολλητική, 87, 6), “[Plaster] Athēna” (Ἡ Ἀθηνᾶ, 87, 8), “[Plaster] with willow/Salix” (Ἡ δι’ ἴτεῶν, 87, 9), “[Plaster] also applied in bruised in the sinews as Galen’s systematic preparation of tendon wounds” (Ἀποχύματος σκευασία, 87, 13), “Plaster aichmalōtos” (Ἡ αἰχμάλωτος, 87, 16).
Oribasius then mentions a prescription similar to those by Galen, called “plaster for bleeding wounds” (Βάρβαρος ἔναιμος). However, Oribasius does not incorporate litharge and replaces verdigris with copper sulfate, present in Galen’s μέλαινα ἔμπλαστρος. The remaining drugs from Oribasius’ Βάρβαρος ἔναιμος remain unchanged in relation to Galen’s formulation, totaling ten drugs.

In *Iatricorum liber* XV, 14, 20–46 (ed. Zervos, p. 7–138) by Aetius, on the other hand, mention is made of a prescription called “Barbaros Cappadocian Hera”, which they simply call “plaster” (Ἡρᾶ Καππάδοκος βάρβαρος, ἥντινες ἄφραν καλούσιν), and it is stated that it is a “melaine plasters” (Μέλαινα ἔμπλαστρος). Aetius recommends using this prescription:

απεσπάσται τὰς ἄξιολόγους διαθέσεις καὶ μάλιστα πρὸς τὰς ἐν τῇ κεφαλῇ, πρὸς σύριγγας, κόλλους κατάμαθη ἀφλέγματας κολλώσα, [...] ἐπὶ νεύρων καὶ χόνδρων διακεκομένων καὶ ὀστῶν· ποιεῖ πρὸς ὑποφοράς, κόλλους κολλά μεγάλους καὶ ἐπὶ τῶν ἀποστημάτων διελώσα, [...] ἐπὶ νεύρων καὶ χόνδρων διακεκομένων καὶ ὀστῶν· ποιεῖ πρὸς ἑπατικοῖς καὶ σπληνικοῖς· [...] ἐπὶ τῶν αἷμα ἀναγόντων. Ἐμπλάσας εἰς δέρματα δύο, ἓν μὲν ἐπὶ τὸ στῆθος καὶ τὰς πλευρὰς ἐπιτίθει, ἕτερον δ’ ἐπὶ τὸ μετάφρενον, παραδόξως γὰρ ἐπέχει τὸ αἷμα· ποιεῖ καὶ πρὸς κυνοδήκτους καὶ ἀνθρωποδήκτους· ἔστι γὰρ καθόλου ἀφλέγμαντος [...] for important conditions and especially for those in the head, for fistulous abscess, fistulous ulcer, fracture united free from inflammation, [...] for tendons, broken cartilage and bones, for drainage, large fractures that joins quickly united, divided abscesses, and fluid removed [...] [affections] liver and splenic [...] especially [for wounds] with blood and outgoing blood. It is plastered on two parts of the skin, one is applied on the chest and [area of] the ribs, another on the back, it is applied in the opposite direction to the outgoing blood [...] also for bites caused by a dog and by a human and, in general, it is anti-inflammatory [...]}

He immediately lists the drugs in the compound, without further information regarding quantities, except for some particular drugs:

Κηροῦ, πίσσης, ἀσφάλτου, πιτυίνης, ἀνὰ λίτραν α, μάνης οὐγγίας ἕξ, ψιμμυθίου, χαλκόνθου ἀνὰ οὐγγίας τέσσαρας, ὀποπάνακος οὐγγίας δύο, ἐλαιοῦ, δέξου, ἀνὰ λίτραν α· 1 litra of wax, pitch, bitumen, pine resin, 6 unciae of powder of frankincense, white lead, 4 unciae of copper sulfate, 2 unciae of opopanax, oil (olive), vinegar, 1 litra.

At the same time, he indicates a long and careful elaboration process, which combines the different substances previously dosed:
From the name of plaster appearing in Iatricorum liber XV, 14, we can deduce that it would probably be the most popular plaster of the 6th century CE, due to the large number of therapeutic applications that its use covers. In comparison with the prescriptions by Galen and Oribasius, the qualitative formulation of the “Barbaros Cappadocian Hera” (Ἡρᾶ Καππάδοκος βάρβαρος) is identical to that of Oribasius.

Finally, in Epitomae medicae libri septem, 7, 17 (ed. Heiberg, 7.358) by Paul, there is a section about medical formulations “On plasters, and things to be added to the boiling, from the works of Antilus, and on the proportion of wax to oil” (Περὶ ἐμπλάστρων καὶ ἐμβαλλομένων εἰς τὰς ἑψήσεις αὐτῶν, ἐκ τῶν Ἀντύλλου- καὶ περὶ συμμετρίας κηροῦ πρὸς ἔλαιον, 7, 17, t1), intended for the treatment of various conditions. According to Paul, some of these plasters are for wounds and are called plasters for bleeding [wounds], binders and fracture plasters, which must be composed of desiccants (αὐτῶν δὲ τῶν ἐμπλάστρων αἱ μέν εἰσι τραυματικαί, ἕκ τῶν ἐμπλάστρων αἱ κολλητικαὶ καὶ καταγματικαὶ καλοῦμεν, διὰ τῶν ἔξηραινόν). These desiccants are willow, oak, cypress, pine bark and pitch, myrrh, rosemary, bitumen, aloe, motherwort, vine wood ashes, ceruse, litharge and most metals82.

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82 Epitomae medicae libri septem, 7, 17, Paul advises boiling such desiccants until they do not stain. He claims that healing plasters are also made up of desiccants, but more than binders. Such are burnt copper, aeris and ferri scale, verdigris, calcitis, burnt copper flower, alum, gall, molybdenum, calamine, pumice, and shells. Regarding the discutients, he affirms that they are formed from heating
He also maintains that it is necessary to apply the plasters for bleeding [wounds] when the injuries or fractures are recent, and to open after three days (ἀφεῖν τε διὰ τρίτης, 7, 17, 1). Among the plasters with these characteristics, Paul includes the “plaster for bleeding wounds, which is prescribed for fractured bones” (Βαρβάρα ἔναμος- καὶ πώρους καταγμάτων δείκνυσιν, 7, 17, 42), naming the plaster as Oribasius does, although he does not elaborate on its etiology. He only specifies its most important application, “for fractured bones” (πώρους καταγμάτων δείκνυσιν), the drugs in the prescription and their quantities:

1 litra of judaicum bitumen, solid pitch, wax, pine resin, 2 of terebinth, 1 of litharge, 1 of white lead, 2 of powder of frankincense, 2 of opopanax, 2 of myrrh, 3 of oil (olive), whatever is strictly necessary to vinegar.

In addition, Paul does not provide further instructions for preparing the prescription, apart from the recommendation that a sparing amount of vinegar should be used during the process. With respect to the formulation, he is the only Greek physician analyzed in our study who counts twelve medicines in total. Of these, Paul resumes the use of litharge from Galen’s formulation and, as the other Greek authors do, uses white lead and hydrocarbons (pitch and bitumen), discarded by the Syriac prescription. Finally, we observed that Paul incorporates drugs, such as myrrh (which also appears in the Galenic and Syriac plasters) and terebinth, but does not add verdigris or copper sulfate. Summarizing, of the fourteen drugs described in the Apostles’ Ointment, seven match the last Greek recipes described.

Conclusion

The “Apostles’ Ointment” from The Book of Medicines is the Syriac version of a compound medicine of Greek origin, possibly Christianized by Syriac physicians. While it is difficult to determine the Greek antecedents of the Syriac...
prescription, and even more so the origin of the name given by the Syriac physicians to the Greek ointment, our analysis of the prescriptions by Galen, Oribasius, Aetius and Paul gave us evidences that any of them or all could constitute the sources of the Apostles’ Ointment, and then the author of this Syriac recipe felt free to modify it when mix different drugs from different sources. Another clue about the origin of this recipe could be in the content of the Syriac translation of *De compositione medicamentorum per genera*, which unfortunately is not preserved83. The Greek authors that we have studied called Βάρβαρος Ἤρα (Galen, ed. Kühn, 13.557–560) or Ἄλλη ἕναιμος Ἰουλιανοῦ (Galen, ed. Kühn, 13.557), Βάρβαρος ἕναιμος (Oribasius, ed. Raeder, 6.2.2.264), Ἡρᾶ Καππάδοκος βάρβαρος (Aetius, ed. Zervos, p. 7–138), and Βαρβάρα ἕναιμος (Paul, ed. Heiberg, 7.358), with the subsequent perception of a noticeable change in the denomination of the prescription in *The Book of Medicines*. The Syriacs give the name “[plaster حب] which is called the Twelve, after the Twelve Apostles” to the prescription of Greek origin, incorporating the plaster into the Syriac-Christian pharmaceutical literature, sometime during the Abbasid Islamic period, as we have been able to ascertain through our philological dating. We also suggest that the name would have been popularized earlier, probably after Paul, since he was the first to formulate this medicine with twelve drugs instead of ten; but unfortunately there is no evidences for this. The Syriac prescription mentions fourteen drugs and incorporates some innovation, by both discarding white lead and hydrocarbons (pitch and bitumen) and adding bdellium. Although it is difficult to justify the name of the Apostles’ Ointment from the number of ingredients, we can observe that, after Paul, the prescription would appear Christianized in the Syriac pharmaceutical literature, making the Syriac physicians who may Christianized the name of the Greek prescription, surviving with this name during the Arabic84 and Latin85 period.

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