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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 (2<sup>nd</sup>–3<sup>th</sup> CE.) were translated into Syriac for the first time by Sergius of Rēšʿaynā (6<sup>th</sup> CE.), starting up the Hippocratic-Galenic medicine in Syriac Language. Based on these translations, there arose 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*<sup>1</sup> 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,

<sup>1</sup> *Syrian Anatomy, Pathology and Therapeutics, or, The Book of Medicines*, vol. I–II, ed. et trans. E.A.W. BUDGE, Oxford 1913 (cetera: *The Book of Medicines I–II*). For *The Book of Medicines*, cf. P. GIGNOUX, *On the Syriac Pharmacopoeia*, [in:] *The Harp*, vol. XI–XII, ed. G. PANICKER, J. THEK-EPARAMPIL, A. KALAKUDI, Boston–Berlin 2012, p. 193–202; S. BHAYRO, *Theory and Practice in the Syriac Book of Medicines*, [in:] *In the Wake of the Compendia. Infrastructural Contexts and the Licensing of Empiricism in Ancient and Medieval Mesopotamia*, ed. J. CALE JOHNSON, Boston–Berlin 2015 [= STMAC, 3], p. 147–158; D. ASADE, *La literatura farmacéutica siríaca y árabe: comparación de las recetas de El Libro de las Medicinas (siríaco) con recetas en la literatura farmacéutica árabe*, Buenos Aires 2017 (PhD dissertation); S. BHAYRO, S.M. RUDOLF, *Budge’s Syriac Book of Medicines after One*

from the book 2 of Galen's treatise *De compositione medicamentorum per genera*, where it receives the name Βάρβαρος Ἡρα (*Barbaros Hera*, ed. Kühn, 13.557–560)<sup>2</sup>, although possibly Ἄλλη ἔναιμος<sup>3</sup> Ἰουλιανοῦ 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 ἔναιμος (*Barbaros enaimos*) in *Eclogae medicamentorum*, 87, 7, 1–9 (ed. Raeder, 6.2.2.264)<sup>4</sup>, Aetius of Amida distinguishes it as Ἡρᾶ Καππάδοκος βάρβαρος (“*Barbaros Cappadocian Hera*”<sup>5</sup>) in *Iatricorum liber XV*, 14, 30–45 (ed. Zervos, p. 7–138)<sup>6</sup>, and Paul of Aegina uses the name Βαρβάρᾶ ἔναιμος (*Barbara enaimos*) in *Epitomae medicae* 7, 17, 42, 1 (ed. Heiberg, 7.358)<sup>7</sup>. 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 formulae<sup>8</sup>, which

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*Hundred Years: Problems and Prospects*, [in:] *Mesopotamian Medicine and Magic. Studies in Honor of Markham J. Geller*, ed. S.V. ΠΑΝΑΥΤΟΥ, L. VACÍN, Leiden 2018 [= AMD, 14], p. 116–130; D. ASADE, *Las recetas de El Libro de las Medicinas (siríaco) y las que figuran en la literatura farmacéutica árabe: una comparación* Do 34.2, 2018, p. 5–13.

<sup>2</sup> GALEN, *De compositione medicamentorum per genera libri VII*, [in:] *Claudii Galeni opera omnia*, vol. XIII, ed. C.G. KÜHN, Hildesheim 1965 (= Leipzig 1827) (cetera: GALEN, *De compositione medicamentorum per genera*).

<sup>3</sup> According to F. RODRÍGUEZ ADRADOS et al., *Diccionario Griego-Español*, Madrid 2020, <http://dge.cchs.csic.es/xdge/>, ἔναιμος has the medical meaning of “full of blood”. For its part, the singular neuter noun, τὸ ἔναιμον, has the meaning of “part of the body that contains blood”. The term ἔναιμος 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).

<sup>4</sup> *Oribasii Collectionum medicarum reliquiae, libri XLIX–L, libri incerti, eclogae medicamentorum*, ed. J. RAEDER, Leipzig–Berlin 1933 [= CMG, 6.2.22] (cetera: ORIBASIVS).

<sup>5</sup> Ἡρᾶ Καππάδοκος (“Cappadocian *Hera*”) could refer to the physician Heras of Cappadocia (1<sup>st</sup> century). Cf. P. KEYSER, G. IRBY, *The Encyclopedia of Ancient Natural Scientists. The Greek Tradition and its Many Heirs*, London 2012, p. 374.

<sup>6</sup> *Ἀετίου Ἀμιδηνοῦ λόγος δέκατος πέμπτος*, ed. S. ZERVOS, Aθ 21, 1909, p. 7–138 (cetera: AETIVS).

<sup>7</sup> PAULUS AEGINETA, *Libri V–VII*, ed. J.L. HEIBERG, Leipzig–Berlin 1924 [= CMG, 11.2] (cetera: PAULUS).

<sup>8</sup> Cf. S. BHAYRO, R. HAWLEY, G. KESSEL, P.E. PORMANN, *The Syriac Galen Palimpsest: Progress, Prospects and Problems*, JSS 58.1, 2013, p. 131–148; S. BHAYRO, S. BROCK, *The Syriac Galen Palimpsest and the Role of Syriac in the Transmission of Greek Medicine in the Orient*, BJRL 89.1, 2013, p. 25–43; S. BHAYRO, *Galen in Syriac: Rethinking Old Assumptions*, ASTu 15, 2017, p. 132–154. In the Sassanid Persian Empire, through the Syriac Christians who led the *Bēt mardūtā* located in Gondēšāpur and Nisibis, a scholastic tradition developed for the teaching of medicine and theology, and a center for the translation of Greek knowledge into Syriac. These schools in Gondēšāpur and Nisibis were heirs to the Edessa “School of the Persians”, and represented the Syriac tradition of receiving Greek medicine. For the School of Gondēšāpur and Nisibis, cf. G.J. REININK, *Theology and Medicine in Jundishapur: Cultural Change in the Nestorian School Tradition*, [in:] *Learned Antiquity. Scholarship and*



and other prescriptions<sup>10</sup> possibly based on Greek medical works, is a translation into Syriac of the lectures of an Alexandrian teacher<sup>11</sup> (6<sup>th</sup> century), carried out by a Syriac doctor associated with one of the great Syriac Medical Schools of the first centuries of the Christian era<sup>12</sup>. 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 6<sup>th</sup> century<sup>13</sup>, and whose work *Pandecte* was translated into Syriac by Gesios<sup>14</sup> and, from there, into Arabic by Māsarjawayh, under the name *Kunnaš*<sup>15</sup>. 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<sup>16</sup> transliterated into Syriac, and who argued that some of these prescriptions

<sup>10</sup> "Hiera of Logadios", "Hiera of Archigenes", "Hiera of Galen", "Hiera of Theodoretus", "Hiera Picra", etc. Cf. E.A.W. BUDGE, *The Book of Medicines II...*, p. 47–53.

<sup>11</sup> 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 "tour- niquet", 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.

<sup>12</sup> 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. XLIV, who suggests that the translation is from the 4<sup>th</sup> century: *Selon lui, il s'agirait de la traduction des leçons d'un professeur d'Alexandrie du IV<sup>e</sup> siècle effectuée par un professeur de Nisibe [...]*.

<sup>13</sup> M. MEYERHOF, *Die Augenheilkunde in der von Budge herausgegebenen syrischen ärztlichen Handschrift*, DI 6, 1916, p. 257–268. According to K. SAMIR, *Ahrun Ibn A'yan Al-Qass*, vol. I, New York 1991, Ahrun would have lived in the 6<sup>th</sup> century, or the late 7<sup>th</sup> and early 8<sup>th</sup> centuries. Both the Greek text and its Syriac translation were lost, although some extracts survived in al-Razi's medical encyclopedia (865–925) entitled *al-Hawi*. On the Jacobites, cf. C. SÉLIS, *Les Syriens Orthodoxes et Catholiques*, Belgique 1988, and on the Nestorians, cf. H.G.B. TEULE, *Les Assyro-Chaldéens. Chrétiens d'Irak, d'Iran et de Turquie*, Turnhout 2008.

<sup>14</sup> Gesios was a native of Petra, of a Jacobite Christian religious denomination (late 5<sup>th</sup> and early 6<sup>th</sup> centuries). Cf. C.R. LE COZ, *Les chrétiens...*, p. 59–61.

<sup>15</sup> C.R. LE COZ, *Les médecins nestoriens au Moyen-Âge. Les maîtres des Arabes (Comprendre le Moyen-Orient)*, Paris 2004, p. 80; K. SAMIR, *Ahrun Ibn A'yan Al-Qass...*, doubts who made the Arabic translation.

<sup>16</sup> P. GIGNOUX, *Le traité syriaque anonyme sur les medications*, [in:] *Symposium Syriacum VII: Uppsala University, Department of Asian and African Languages, 11–14 August 1996*, ed. R. LAVENANT, Rome

had circulated before Pahlavi disappeared completely<sup>17</sup> during the Abbasid period<sup>18</sup>. 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" Christian<sup>19</sup>. S. Bhayro, on the contrary, argues forcefully against the thesis put forward by E.A.W. Budge in the early 20<sup>th</sup> century. First, he considers that the work is hardly a possible translation or a Greek lesson<sup>20</sup> 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 factor may have been the wider intellectual context of the 12<sup>th</sup> century<sup>21</sup> – the so-called Syriac Renaissance<sup>22</sup>, which saw a flourishing of Syriac intellectual activity between the 11<sup>th</sup> and 13<sup>th</sup> centuries<sup>23</sup>.

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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1998 [= OCA, 256], p. 727. The name of the recipe in Syriac character *gwgršn šhryr'n* is meaningless. However, if those same characters are read in the Pahlavi language as *gugārišn šahryārān*, can be translated as "real digestive". The Pahlavi language, also called Middle Persian, was the official language of the Sassanid Empire (226–651), but it survived until the 9<sup>th</sup> century.

<sup>17</sup> P. GIGNOUX, *Lexique des termes de la pharmacopée Syriaque*, Paris 2011, p. 7–8.

<sup>18</sup> On the Abbasid period (ca. 750–1259), especially the Translation Movement, cf. D. GUTAS, *Greek Thought, Arabic Culture. The Graeco-Arabic Translation Movement in Baghdad and Early 'Abbāsīd Society (2<sup>nd</sup>–4<sup>th</sup>/8<sup>th</sup>–10<sup>th</sup> Centuries)*, London 1998.

<sup>19</sup> 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 admitting that the Nestorians were prohibited from entering Byzantine territory.

<sup>20</sup> S. BHAYRO, *The Reception of Galen's Art of Medicine in the Syriac Book of Medicines*, [in:] *Medical Books in the Byzantine World*, ed. B. ZIPSER, Bologna 2013, p. 127.

<sup>21</sup> Cf. *ibidem*, p. 126.

<sup>22</sup> On the so-called Syriac Renaissance, cf. H.G.B. TEULE, C. FOTESCU TAUWINKL, R.B. TER HAAR ROMENY, J.J. VAN GINKEL, *The Syriac Renaissance*, Leuven–Walpole 2010 [= ECS, 9].

<sup>23</sup> 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<sup>24</sup>.

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 9<sup>th</sup> century (one of the hypothesis) it nevertheless relies and uses material that goes back to the Greek sources of the 2<sup>nd</sup>–6<sup>th</sup>.

One part of *The Book of Medicines* deals with medical recipes and it may be an original Syriac text<sup>25</sup>.

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<sup>26</sup>, noted in MS BL Add 14661 by Sergius (6<sup>th</sup> century)<sup>27</sup>, *Syriac Lexicon* by Bar Bahlul (10<sup>th</sup> century)<sup>28</sup>, and *Le candélabre des sanctuaires* by Bar Hebraeus (13<sup>th</sup> century)<sup>29</sup>. Thus, when the terms of the prescription are traced in these works and the philo-

<sup>24</sup> P.E. PORMANN, E. SAVAGE-SMITH, *Medieval Islamic Medicine*, Washington D.C. 2007, p. 19.

<sup>25</sup> G. KESSEL bases his answer on R. DEGEN, *Ein Corpus Medicorum Syriacorum*, Mjou 7.1–2, 1972, p. 114–122, esp. at p. 118 n. 21. Another survey can be found in S. Rudolf, *Syrische Astrologie...*, p. 107–108.

<sup>26</sup> 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.

<sup>27</sup> 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 Uebersetzung von Galenus' Schrift über die einfachen Heilmittel*, ZDMG 39.2, 1885, p. 237–305, edited only the alphabetical list of medicinal plants.

<sup>28</sup> H. BAR BAHLUL, R. DUVAL, *Lexicon Syriacum*, Paris 1901.

<sup>29</sup> It has a list of medicinal plants, *A List of Plants and their Properties from the Menârath kudhsê of Gregorius Bar 'Ebhârâya*, ed. R.J.H. GOTTHEIL, [s.l.] 1886, edited from ms. Sachau 81, later corrected, R.J.H. GOTTHEIL, *Berichtungen und Zusätze zu "A List of Plants"*, ZDMG 43, 1889, p. 121–127. The first critical edition is *Le candélabre des Sanctuaires de Grégoire Aboulfaradj dit Barhebraeus*, ed. et trans. J. BAKOŠ, Paris 1933 [= PO, 24] (cetera: GRÉGOIRE ABOULFARADJ DIT BARHEBRAEUS), p. 229–439. Finally, this pharmaceutical list was studied by H. TAKAHASHI within the framework of the European project Floriental (ERC-2010- StG-263783, Floriental, dir. R. HAWLEY), cf. S. BHAYRO, R. HAWLEY, *La littérature botanique et pharmaceutique en langue syriaque*, [in:] *Les sciences en syriaque*, ed. E. VILLEY, Paris 2014 [= ESyr, 11], p. 285–318.



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<sup>30</sup> – bdellium<sup>31</sup>, resin<sup>32</sup>, wax<sup>33</sup>, galbanum<sup>34</sup>, opopanax<sup>35</sup> – yields the following result:

Greek	The Book of Medicines	MS BL Add 14661	Syriac Lexicon	Le candélabre
βδέλλιον <sup>36</sup>	ܒܕܠܝܘܢ	<sup>37</sup> ܒܕܠܝܘܢ	<sup>38</sup> ܒܕܠܝܘܢ	Not found
πίσσα <sup>39</sup>	ܦܝܫܫܐ	<sup>40</sup> ܦܝܫܫܐ	<sup>41</sup> ܦܝܫܫܐ	<sup>42</sup> ܦܝܫܫܐ
κηρός <sup>43</sup>	ܟܗܪܘܫ	<sup>44</sup> ܟܗܪܘܫ	<sup>45</sup> ܟܗܪܘܫ	Not found

<sup>30</sup> MS BL Add 14661 and the section “des plantes” in GRÉGOIRE ABOULFARADJ DIT BARHEBRAEUS, p. 229–439, only mention herbal medicines.

<sup>31</sup> ܒܕܠܝܘܢ, cf. E.A.W. BUDGE, *The Book of Medicines I...*, p. 152, 18.

<sup>32</sup> ܦܝܫܫܐ, cf. E.A.W. BUDGE, *The Book of Medicines I...*, p. 152, 18.

<sup>33</sup> ܟܗܪܘܫ cf. E.A.W. BUDGE, *The Book of Medicines I...*, p. 152, 18.

<sup>34</sup> ܟܗܪܘܫ cf. E.A.W. BUDGE, *The Book of Medicines I...*, p. 152, 19.

<sup>35</sup> ܟܗܪܘܫ, cf. E.A.W. BUDGE, *The Book of Medicines I...*, p. 152, 20.

<sup>36</sup> DIOSCORIDES, 1, 67.

<sup>37</sup> Cf. BL Add 14661 f.4r5.

<sup>38</sup> Cf. H. BAR BAHLUL, R. DUVAL, *Lexicon...*, p. 358.

<sup>39</sup> GALEN, *De compositione medicamentorum per genera*, VII, 2, 22 (ed. KÜHN, 13.557–561); ORIBASIOS, 87, 7, 1–9 (ed. RAEDER, 6.2.2.264); AETIUS, XV, 14, 20–46 (ed. ZERVOS, p. 7–138); PAULUS, 7.17 (ed. HEIBERG, 7.358).

<sup>40</sup> Cf. BL Add 14661 f.56v29.

<sup>41</sup> Cf. H. BAR BAHLUL, R. DUVAL, *Lexicon...*, p. 1877.

<sup>42</sup> Cf. GRÉGOIRE ABOULFARADJ DIT BARHEBRAEUS, p. 346.

<sup>43</sup> GALEN, *De compositione medicamentorum per genera*, VII, 2, 22 (ed. KÜHN, 13.557–561); ORIBASIOS, 87, 7, 1–9 (ed. RAEDER, 6.2.2.264); AETIUS, XV, 14, 20–46 (ed. ZERVOS, p. 7–138); PAULUS, 7.17 (ed. HEIBERG, 7.358).

<sup>44</sup> Cf. BL Add 14661 f.33v3.

<sup>45</sup> Cf. H. BAR BAHLUL, R. DUVAL, *Lexicon...*, p. 1838.

<sup>46</sup> GALEN, *De compositione medicamentorum per genera*, VII, 2, 22 (ed. KÜHN, 13.557–561); ORIBASIOS, 87, 7, 1–9 (ed. RAEDER, 6.2.2.264).

<sup>47</sup> Cf. BL Add 14661 f.57r1.

<sup>48</sup> Cf. H. BAR BAHLUL, R. DUVAL, *Lexicon...*, p. 894.

<sup>49</sup> Cf. GRÉGOIRE ABOULFARADJ DIT BARHEBRAEUS, p. 336.

<sup>50</sup> GALEN, *De compositione medicamentorum per genera*, VII, 2, 22 (ed. KÜHN, 13.557–561); ORIBASIOS, 87, 7, 1–9 (ed. RAEDER, 6.2.2.264); AETIUS, XV, 14, 20–46 (ed. ZERVOS, p. 7–138); PAULUS, 7.17 (ed. HEIBERG, 7.358).

<sup>51</sup> Cf. BL Add 14661 f.60v6.

<sup>52</sup> Cf. H. BAR BAHLUL, R. DUVAL, *Lexicon...*, p. 894.

<sup>53</sup> Cf. GRÉGOIRE ABOULFARADJ DIT BARHEBRAEUS, p. 335–336.





already transliterated in Syriac from Greek in the *Syriac Lexicon* (10<sup>th</sup> century) the same way that *The Book of Medicines*, while they are mentioned differently in the other two sources<sup>55</sup> (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 Ἡρα ὁ ἔναμος* “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)<sup>56</sup>. 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

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

<sup>55</sup> This method is valid assuming that the sources are complete in terms of the terminology used in the corresponding periods.

<sup>56</sup> E.A.W. BUDGE, *The Book of Medicines I...*, p. 152–153.



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<sup>61</sup>, and verdigris<sup>62</sup>, which chemically are lead monoxide and cupric acetate respectively, both responsible for the healing and astringent action. Herbal drugs, myrrh, aloe<sup>63</sup>, and frankincense<sup>64</sup>, serve the same function. In addition, both gum ammoniac<sup>65</sup> and galbanum<sup>66</sup> can absorb gum-resin, bdellium, which is an oleo-gum-resin, used as an emollient<sup>67</sup>, the resin is adhesive and aromatic<sup>68</sup>, and the opopanax, used to treat ulcers, the bite of rabid dogs and to heal various wounds<sup>69</sup>, is also added as an aromatic<sup>70</sup>. 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<sup>71</sup>. 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:

<sup>61</sup> Cf. λιθάργυρος, DIOSCORIDES, 5, 87. On the toxicity of its absorption, cf. J.B. LEIKIN, F.P. PALOUCZEK, *Poisoning and Toxicology Handbook*, Boca Raton 2008, p. 807.

<sup>62</sup> Cf. DIOSCORIDES, 5, 88. On its irritant capacity for the skin, cf. J.B. LEIKIN, F.P. PALOUCZEK, *Poisoning and Toxicology...*, p. 779.

<sup>63</sup> Cf. DIOSCORIDES, 3, 22. On its antiseptic properties, cf. J.A. DUKE, *Handbook of Medicinal Herbs*, Boca Raton 2002, p. 15.

<sup>64</sup> Cf. DIOSCORIDES, 1, 68. On its anti-inflammatory properties, J.A. DUKE, *Handbook...*, p. 15.

<sup>65</sup> Cf. DIOSCORIDES, 3, 84. Cf. W.C. EVANS, G.E. TREASE, D. EVANS, *Trease and Evans' Pharmacognosy*, Edinburgh 2002, p. 31.

<sup>66</sup> Cf. DIOSCORIDES, 3, 83. Cf. W.C. EVANS, G.E. TREASE, D. EVANS, *Trease and...*, p. 31.

<sup>67</sup> Cf. DIOSCORIDES, 1, 67. Cf. J.A. DUKE, *Handbook...*, p. 360.

<sup>68</sup> 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.

<sup>69</sup> Cf. DIOSCORIDES, 3, 48.

<sup>70</sup> Cf. DIOSCORIDES, 3, 48.

<sup>71</sup> Cf. DIOSCORIDES, 5, 13.



## The Ἄλλη ἔναμος Ἰουλιανοῦ and Βάρβαρος Ἦρα by Galen

In chapter 22 (ed. Kühn, 13.555–561), from the book 2 of Galen's treatise *De compositione medicamentorum per genera* (ed. Kühn, 13.458–561), which integrates Galen's treatise *De compositione medicamentorum per genera libri VII*, four plasters are included: 1) Αἱ δι' ἀσφάλτου βάρβαροι (ed. Kühn, 13.555–556), containing five prescriptions<sup>73</sup>; 2) Βάρβαρος Γαληνοῦ (ed. Kühn, 13.560–561), including two prescriptions<sup>74</sup>; 3) Ἄλλη ἔναμος Ἰουλιανοῦ (ed. Kühn, 13.557); and 4) Βάρβαρος Ἦρα

<sup>73</sup> The first is attributed to Andromachus. It is made up of the following medicines: 6 [drachmae] of bees wax, 6 [drachmae] of pitch, 6 [drachmae] of pine resin, 6 [drachmae] of bitumen, 24 [drachmae] of frankincense-tree, 1 [drachma] of olive oil (κηροῦ ζ'. πίσης ζ'. ῥητίνης ζ'. ἀσφάλτου ζ'. λιβάνου κδ'. ἐλαίου κοτύλην α'. ἄλλη). The second, simply called ἄλλη, is made up of 2 litra of pitch, 1 litra of bitumen, 1 litra of bees wax, 6 of aromatic ammoniac, 6 litra of gum, 3 litra of white lead, kotyle of olive oil, 4 kotylae of vinegar (πίσης λίτρας β'. ἀσφάλτου λίτραν α'. κηροῦ λίτραν α'. ἀμμωνιακοῦ θυμιάματος γο στ'. μάννης γο στ'. ψιμθίου γο γ'. ἐλαίου κοτύλης δ'. ὄξους κοτύλας δ'). The third is called "other melaina" (μέλαινα ἄλλη). It is prepared with 1 litra of dry pitch, 1 litra of dry pine resin, 1 litra of bitumen, 6 litra of white lead, 3 unciae of gum, solution of blue vitriol, copper sulphate, striped verdigris, half kotyle of olive oil, half kotyke of vinegar (πίσης ξηρᾶς λίτραν α'. ῥητίνης ξηρᾶς λίτραν α'. ἀσφάλτου λίτραν α'. ψιμθίου γο στ'. μάννης, χαλκάνθης, ἰοῦ ἔυστου ἀνά οὐγγίας γ'. ἐλαίου κοτύλης ἥμισυ, ὄξους κοτύλης ἥμισυ). The fourth has the name "other by Gaius" (ἄλλη ἐκ τῶν Γάλλου). It contains 30 [drachmae] of goat fat, eight [drachmae] of verdigris, 50 [drachmae] of bees wax, 25 of aristolochia, 24 of bitumen, 25 [drachmae] of pitch, 12 [drachmas] of aromatic ammoniac, 12 [drachmae] of galbanum, medium (?), 8 [drachmae] of *Ferula tingitana*, 20 [drachmae] of another (?), 12 [drachmae] of gum (στέατος αἰγείου λ'. ἰοῦ η'. κηροῦ ν'. ἀριστολοχίας κε'. ἀσφάλτου κε'. πίσης κε'. ἀμμωνιακοῦ θυμιάματος ιβ'. χαλβάνης ιβ'. ἥμισυ, σιλφίου η'. ἄλλ. κ'. μάννης ιβ'. σκευάζε). The fifth is "otra llamada aniketos" (ἄλλη ἢ καλουμένη ἀνίκητος). Its formula is 100 [drachmae] bees wax, 30 [drachmae] of cow fat, 24 [drachmae] of bitumen, 25 [drachmae] of pitch, 25 [drachmae] of turpentine, 22 [drachmae] of sodium carbonate, medium (?), 12 [drachmae] of aristolochia, 8 [drachmae] of galbanum, 18 drachmae of myrrh, 12 [drachmae] of incense, medium (?), 8 [drachmae] of ammoniac, 8 [drachmae] of Nepaul cardamom, 12 [drachmae] of cardamum, 8 drachmae of opopanax, 15 [drachmae] of deer fat, 12 [drachmae] of verdigris, 8 drachmae of aloe, 16 [drachmae] of bdellium, 2 kotylae of olive oil, I also add 12 drachmae of bee-glue (κηροῦ ρ'. στέατος ταυρείου λ'. ἀσφάλτου κε'. πίσης κε'. τερμινθίνης κε'. νίτρου κβ'. ἥμισυ, ἀριστολοχίας ιβ'. χαλβάνης η'. Σμύρνης δραχμὰς ιη'. λιβάνου ιβ'. ἥμισυ, ἀμμωνιακοῦ δραχμὰς η'. ἀμώμου δραχμὰς η'. καρδαμώμου ιβ'. ὀποπάνακος δραχμὰς η'. μυελοῦ ἐλαφείου ιε'. ἰοῦ ιβ'. ἀλόης δραχμὰς η'. βδελλίου ιστ'. ἐλαίου κοτύλας β'. ἐγὼ δὲ ἔβαλλον προπόλεως δραχμὰς ιβ').

<sup>74</sup> Galen does not give the name of the first recipe. It only indicates its medicines and quantities: 8 litrae of pitch, 6 litrae of bees wax, 8 unciae (?), 5 litrae of pine [resin], 4 unciae (?), 4 litrae 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 stypteria, 4 unciae of cleft, 12 [drachmae] of opopanax, scale [of metal], galbanum, 4 [drachmae] of aloe, opium, myrrh, 24 unciae of turpentine, 6 [drachmae] mandragora juice, 6 kotylae of vinegar (Πίσης λίτρας η'. κηροῦ λίτρας στ'. οὐγγίας η'. πιτυίνης λίτρας ε'. οὐγγίας δ'. ἀσφάλτου λίτρας δ'. ἐλαίου λίτραν α'. οὐγγίας στ'. λιθαργύρου καὶ ψιμθίου καὶ ἰοῦ ἀνά κδ'. λιβανωτοῦ λίτρας ἥμισυ, στυπτηρίας ὑγρᾶς ιβ'. σχιστῆς οὐγγίας δ'. ὀποπάνακος, λεπίδος, χαλβάνης ἀνά ιβ'. ἀλόης καὶ ὀπίου καὶ σμύρνης ἀνά δ'. τερμινθίνης οὐγγίας κδ'. μανδραγόρου χυλοῦ στ'. ὄξους 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 Ἥρα). Of these four plasters, Ἄλλη ἔναιμος Ἰουλιανοῦ and Βάρβαρος Ἥρα contain formulas closely related to the Syriac prescription.

The “Other *enaimos* by Iulianus”<sup>75</sup> (Ἄλλη ἔναιμος 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<sup>76</sup> infers, and passed on the drugs in his prescription, composed as follows:

λιθαργύρου ν'. ἀσφάλτου δραχμᾶς ν'. κηροῦ ν'. πίσσης βρυτίας δραχμᾶς ν'. ῥητίνης φρυκτῆς ιε'. λεπίδος χαλκοῦ ιβ'. λιβάνου δραχμᾶς ιδ'. χαλβάνης η'. χαλκίτεως δραχμᾶς δ'. ἀλόης στ'. κηκίδος δ'. σμύρνης δραχμᾶς δ'. ἀριστολοχίας μακρᾶς στ'. ἀριστολοχίας στρογγύλης δραχμᾶς δ'. ἐλαίου παλαιοῦ κοτύλας δ'. ἐγὼ δὲ ἐλαίου κοτύλας γ'.

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 aloes drachmae, 4 [drachmae] oak gall, 4 drachmae of myrrh, 6 long-born aristolochia, 4 drachmae of round-born aristolochia, 4 kotylae of old oil; but I [add] 3 kotylae of oil.

Galen lists here the active ingredients and excipients necessary for the mixture of fifteen drugs in total, without an explanation of their therapeutic application. However, J. Scarborough considers that this plaster would have been used

*with the combination* [of the medicines] (ἡ δὲ τῆς ἀπλουστέρας βαρβάρου συμμετρία τῇ συνθέσει), and is prepared with 5 [drachmae] of pitch, bees wax, pine resin, toasted resin, bitumen, 1 litera of these, 10 of litharge, 5 of white lead, 5 of vedigris, 3 of oropanax; 9 unciae of winter oil, 6 unciae of summer (πίσσης, κηροῦ, ῥητίνης πιτυϊνης, ῥητίνης φρυκτῆς, ἀσφάλτου τῶν ε'. τούτων ἀνὰ λίτραν α'. λιθαργύρου ι'. ψιμυθίου ε'. ἰοῦ ε'. ὀποπάνακος γ'. ἐλαίου χειμῶνος οὐγγίας θ'. θέρους οὐγγίας στ'). 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 θυεῖα μετ' ὄξους δριμέος). And he adds 1 of henbane juice, medium (?), and one of opium (ἐὰν δὲ ἀνωδυνώτερον εἶναι βουληθῆς τὸ φάρμακον, προσμιξεῖς ὑοσκυάμου χυλοῦ α'. ἡμισυ. καὶ ὀπίου α').

<sup>75</sup> All translations from the original Greek to English are by Paola DRUILLE, who follows the editions specified in the notes.

<sup>76</sup> 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 Cyprus, 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 pain<sup>77</sup>, 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<sup>78</sup>. Galen does not provide further information on Ἄλλη ἔναιμος Ἰουλιανοῦ. On the contrary, he quickly introduces the prescriptions of the Βάρβαρος Ἴηρα (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 Ἄλλη ἔναιμος Ἰουλιανοῦ, Galen does not justify the terms used to name this prescription<sup>79</sup>. Instead, he adds the possible therapeutic applications (ed. Kühn, 13.557–558):

πρὸς τὰς ἀξιολόγους διαιρέσεις καὶ μάλιστα πρὸς τὰς ἐν τῇ κεφαλῇ, πρὸς σύριγγας, κόλπους<sup>80</sup>, κατάγματα. [...] καὶ ἡπατικοῖς καὶ σπληνικοῖς, ἀφλεγμάντως [...]. ἐπὶ νεύρων καὶ χόνδρων διακεκομμένων καὶ ὀστέων, ἐπέχει δὲ παραδόξως καὶ αἷμα φερόμενον [...] πρὸς ὑποφοράς καὶ κόλπους, κολλᾷ γὰρ μεγάλως καὶ ἐπὶ τῶν ἀποστημάτων κομισάμενος τὸ ὑγρὸν [...] ἔστι καὶ ἴσχυαιμος καλλίστη μάλιστα ἐπὶ τῶν αἵμα ἀναγόντων. ἐμπλάσας δὲ εἰς δέρματα δύο, ἐν μὲν ἐπὶ τὰ στήθη καὶ τὰς πλευρὰς ἐπιτίθει, ἕτερον δὲ ἐπὶ τὸ μέταφρενον, παραδόξως ἐπέχει τὸ αἷμα. [...] καὶ πρὸς κυνόδηκτα καὶ ἀνθρωπόδηκτα, τὸ ὅλον ἀφλέγματος [...] λῦε χειμῶνος δι’ ἡμερῶν ἑπτὰ, θέρους διὰ ε’. ἐὰν δὲ ἐπέιγη διὰ τριῶν.

for major wounds and especially for those of the head, for fistulous abscesses, fistulous ulcers, fractures; [...] to those who suffer from liver and splenic disease, without inflammation [...]; for nerves, broken cartilage and bones, place in the opposite direction to the outgoing blood [...]. Also as a drainage for fistulous ulcers, which coalesces to a great extent and carries fluids towards abscesses [...]; it is very good for getting stagnant blood moving. Plaster on two parts of the skin, one is applied on the chest and [area of] the ribs, another on the back, applied in the opposite direction to the outgoing blood [...]. For dog and human bites, all without inflammation [...]. It wash (the wounds) after seven days in winter, five days in summer. If there is pressure, [open] it after three days.

<sup>77</sup> J. SCARBOROUGH, *Iulianus...*, p. 448.

<sup>78</sup> J. SCARBOROUGH, *Iulianus...*, p. 448.

<sup>79</sup> In medicine, βάρβαρος, plural βαρβάρια, is the name of various plasters. For Galen, cf. *supra* notes 73 and 74.

<sup>80</sup> 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 ἐπίγειη διὰ τριῶν, *if there is pressure*, [open] *after three days*) and to the prevailing temperature in the winter and summer seasons (λῦε χειμῶνος δι’ ἡμερῶν ἑπτὰ, θέρους διὰ ε’, *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, ἀσφάλτου λίτραν, μίαν, πιτυϊνης λίτραν μίαν, μάννης οὐγγίας στ’. ψιμυθίου οὐγγίας δ’. χαλκάνθης οὐγγίας δ’. ὀποπάνακος οὐγγίας β’. ἐλαίου ἡμιούγγιον, οἱ μὲν ἡμίμναν, οἱ δὲ ἡμίλιτραν, ὄξους κοτύλας β’.

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 kotylae 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 καινὴν βαλὼν τῆκε, εἶτα ἐπίβαλλε τὴν πίσσαν καὶ τὴν ῥητίνην λεπτοκοπήσας ἐπιμελῶς. ὅταν ἡμίεφθος ᾖ, ἄρας τὴν χύτραν καὶ διαψύξας ποσῶς ἔμπασσε διηθημένον τὸ χάλκανθον λειωθὲν ὄξει, ἐκ τῶν δύο κοτυλῶν κατὰ μικρὸν, ἵνα μὴ ὑπερζέση [...] ὅταν ἀμόλυντος ᾖ, ἄρας ἀπὸ τοῦ πυρὸς, ἔγχει τὸν ὀποπάνακα πρὸ μιᾶς βεβρεγμένον εἰς μέρος τοῦ ὑπολειπομένου ὄξους, ὥστε διαλυθῆναι, εἶτα ἔμπασον τὸ ψιμύθιον καὶ τὴν μάνναν ὁμοῦ ἐπιμελῶς λελειωμένα [...], ὡς ἐνωθῆναι φυλασσόμενος μὴ προσκαῆ ὀποπάναξ καὶ ἡ μάννα, κατὰχει εἰς θυεῖαν καὶ ἐάσας συγγῆναι, ἀναμαλάξας ἀπόθου καὶ χρώ.

throw bees wax, bitumen, olive oil, a little vinegar [...], melt it in a new pot. Then pitch and fine minced resin are carefully poured on top. When it is half boiled, when removing the pot and cooling it for a certain time, sprinkle the filtered solution of copper sulphate emulsifying with vinegar, with two kotylae little by little, so that it does not boil (completely) [...]. When it does not stain, remove from the heat, pour the opopanax for a maceration in a part of old vinegar, as it dissolves, then sprinkle together the carefully crushed white lead and gum [...], to unify the reserved opopanax that did not boil and the gum, is poured into the glass and allowed to cool, after collecting by rubbing, place and use.

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 Ἡρα is designated “another *barbaros Hera*” (ἄλλη βάρβαρος Ἡρα, ed. Kühn, 13.559–560). Unlike the formulation of the μέλαινα ἔμπλαστρος ἔναιμος, Galen explains the name of this prescription using these terms:

ὁ μὲν Ἡρας ταύτης μόνης προῦγραψε τὸ βάρβαρος. ἐγὼ δὲ καὶ τὴν ἔμπροσθεν ὁμοίως ὠνόμασα, καίτοι μέλαιναν ὑπ’ αὐτοῦ κεκλημένην, ἐπειδὴ τὰς δι’ ἀσφάλτου βαρβάρους εἰώθασι καλεῖν οἱ πλείστοι τῶν νεωτέρων ἰατρῶν. αὐτὸς δὲ ὁ Ἡρας οὕτως περὶ αὐτῆς ἔγραψε κατὰ λέξιν (ed. Kühn 13.559–560).

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 Ἡρα, 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:

πρὸς τὰ νεότερωτα, κόλπους, κυνόδηκτα, ἀνθρωπόδηκτα, κονδυλώματα φλεγμαίνοντα, πρὸς τὰ ἐν ἄρθροις πάντα [...] καὶ πρὸς ποδάγραν.

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):

κηροῦ μνᾶν α'. πίσης μνᾶν α'. ῥήτινης φρυκτῆς μνᾶν α'. ἀσφάλτου Ἰουδαϊκῆς μνᾶν α'. λιθαργύρου ι'. ψιμυθίου ε'. ἰοῦ ν'. ὀποπάνακος δ'. ἐλαίου κοτύλην α'. δξους κύαθον α'.

1 mine of wax, 1 mine of pitch, 1 mine of toasted pine resin, 1 mine of bitumen *judaicum*, 10 of litharge, 5 of white lead, 50 of verdigris, 4 of opopanax, 1 kotyle of oil [olive], 1 cup of vinegar.

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:

ἔψε κηρὸν πίσσαν, ἄσφαλτον, ῥητίνην ἕως τακῆ, εἶτα τὰ λοιπὰ μετὰ τοῦ ἐλαίου λελειοτριβημένα ἔμβαλλε, καὶ βαστάσας καὶ μικρὸν διαψύξας ἐκ τοῦ ὄξους κατ' ὀλίγον ἐπίσταζε.

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:

Ἄλλη ἔναιμος Ἰουλιανοῦ	μέλαινα ἔμπλαστρος	ἄλλη βάρβαρος Ἡρα	Apostles' Ointment
Bees wax	wax	wax	wax
Pitch of Bruttium	pitch	pitch	
bitumen	bitumen	<i>judaicum</i> bitumen	
toasted pine resin	pine [resin?]	toasted pine resin	resin
copper flakes and calcitis	copper sulphate	verdigris	verdigris
frankincense			frankincense
myrrh			myrrh
galbanum			galbanum
			bdellium
aloes			aloes
oak gall			
long-birthwort			birthwort (long)
round birthwort			
litharge		litharge	litharge
oil	oil olive	oil [olive]	olive oil (in the summer)
old oil			olive oil (in the winter)

Ἄλλη ἔναιμος Ἰουλιανοῦ	μέλαινα ἔμπλαστρος	ἄλλη βάρβαρος Ἦρα	Apostles' Ointment
	gum white lead opopanax vinegar	white lead opopanax vinegar	gum ammoniac  opopanax vinegar

The prescriptions account for 14 (Ἄλλη ἔναιμος Ἰουλιανοῦ) and 10 drugs (μέλαινα ἔμπλαστρος, ἄλλη βάρβαρος Ἦρα) 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 Ἄλλη ἔναιμος Ἰουλιανοῦ, and seven match μέλαινα ἔμπλαστρος and ἄλλη βάρβαρος Ἦρα.

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, Ἦρᾶ Καππάδοκος βάρβαρος by Aetius and Βαρβάρᾳ 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 ἔναιμοι 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 formulations<sup>81</sup>, where Oribasius prescribes a particular plaster,

<sup>81</sup> ORIBASIIUS includes a total of sixteen plasters. These are as follows: “[Plaster] kíssinon for tendon wounds and injuries” (Τὸ κίσινον 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, ὅστέα διακεκομμένα, χόνδρους, ἥπατικούς, σπληνικούς, αἶμα 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, πίσηςς ξηρᾶς, ἀσφάλτου, πιτυϊνης ἀνά <α>, μάννης <ς>, ψιμυθίου, χαλκάνθου ἀνά <δ>, ὀποπάνακος <β>, ἐλαίου <ε>, ὄξους <β>.

1 [drachma] of wax, solid pitch, bitumen, pine resin, 6 [drachmae] of powder of frankincense, white lead, 4 [drachmae] of copper sulfate, 2 [drachmae] of opopanax, 5 [kotylae] of oil [olive], 2 [kotylae] of vinegar.

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

τὰ τηκτὰ τήξας ἐπάρας τε ἀπὸ τοῦ πυρὸς ἔσταζε τὸν χάλκανθον διειμένον ὄξει καὶ ἐπιστήσας ἔψε, εἴτ' ἐπάρας πάλιν ἐπίβαλε τὸ ψιμύθιον λελειωμένον ὄξει καὶ πάλιν ἔψε, ἐπὶ τέλει δὲ μάνναν καὶ ὀποπάνακα, καὶ εὐθέως περισπάθιζε, ἕως ψυγῆ, καὶ χρῶ

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 φαῖα Γαληνοῦ ἦτοι κίρρα*, 87, 3), “[Plaster] sallow for injuries (on tendons), injuries on tendons and all (other) bleeding wounds” (*Τὸ μελάγχλωρον νύγμασι, νευροτρώτοις καὶ πᾶσι 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 Σαῖτις καταγματική, ἔναιμος, κεφαλική, κόλπων κολλητική*, 87, 6), “[Plaster] Athēna” (*Ἡ Ἀθηνᾶ*, 87, 8), “[Plaster] with willow/Salix” (*Ἡ δι' ἰτεῶν*, 87, 9), “[Plaster] also applied in bruised in the sinews as Galen's systematic preparation of tendon wounds” (*Νευροτρώτων ἐμμέθοδος θεραπεία ἐκ τῶν Γαληνοῦ ἢ καὶ τοῖς νευροθλάστοις ἀρμόζουσα*, 87, 10), “[Plaster] for special apostasis in tendon wounds” (*Πρὸς μερικές ἀποστάσεις ἐπὶ νευροτρώτων*, 87, 11), “Enaimos plaster for boxers” (*Ἐναιμος κολλητική πυκτική*, 87, 12), “Preparation [of the plaster] Apochymatos” (*Ἀποχύματος σκευασία*, 87, 13), “[Plaster] xystikon” (*Ξυστικόν*, 87, 14), “Emollient plaster” (*Μαλακτική ἐπισπαστική*, 87, 15), “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, ἦντινες ἄφραν καλοῦσιν), and it is stated that it is a “melaine plasters” (Μέλαινα ἔμπλαστρος). Aetius recommends using this prescription:

πρὸς τὰς ἀξιολόγους διαθέσεις καὶ μάλιστα πρὸς τὰς ἐν τῇ κεφαλῇ, πρὸς σύριγγας, κόλπους, κατάγματα ἀφλεγμάντως κολλῶσα, [...] ἐπὶ νεύρων καὶ χόνδρων διακεκομμένων καὶ ὀστέων· ποιεῖ πρὸς ὑποφοράς, κόλπους κολλᾷ μεγάλους καὶ ἐπὶ τῶν ἀποστημάτων διελῶν καὶ κομισάμενος τὸ ὑγρὸν [...] καὶ ἥπατικοῖς καὶ σπληνικοῖς; [...] δὲ καὶ ἔναιμος καλλίστη καὶ ἐπὶ τῶν αἵμα ἀναγόντων. Ἐμπλάσας εἰς δέρματα δύο, ἐν μὲν ἐπὶ τὸ στήθος καὶ τὰς πλευρὰς ἐπιτίθει, ἕτερον δ’ ἐπὶ τὸ μετὰφρενον, παραδόξως γὰρ ἐπέχει τὸ αἷμα· ποιεῖ καὶ πρὸς κυνοδήκτους καὶ ἀνθρωποδήκτους· ἔστι γὰρ καθόλου ἀφλέγμα- ντος [...]

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, πίσης, ἀσφάλτου, πιτυίνης, ἀνὰ λίτραν α, μάννης οὐγγίας ἕξ, ψιμυθίου, χαλκάνθου ἀνὰ οὐγγίας τέσσαρας, ὀποπάνακος οὐγγίας δύο, ἐλαίου, ὄξους, ἀνὰ λίτ. α·

1 litra of wax, pitch, bitumen, pine resin, 6 unctiae of powder of frankincense, white lead, 4 unctiae of copper sulfate, 2 unctiae 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:

τὸν κηρὸν καὶ τὴν ἄσφαλτον λεπτομερῶς κεκομμένην, τὸ ἔλαιον καὶ τὸ ὄξος εἰς χύτραν βαλὼν καινὴν, ὀλίγον τοῦ ὄξους καταλιπὼν τῆκε κινῶν· τακέντων δ' ἐπίβαλλε πίσσαν, πιτυῖνην, λεπτοκοπήσας· τακείσων δὲ καὶ αὐτῶν, διήθει καὶ πάλιν ἔψε· ὅταν δὲ ἡμίεφθος γένηται, ἄρας τὴν χύτραν ἀπὸ τοῦ πυρός, ἐπίβαλλε χάλκανθον λειωθὲν σὺν ὄξει ὀλίγῳ κατὰ μικρὸν δέ, ἵνα μὴ ἀναζέση, καὶ ἔψε πάλιν μαλακωτάτῳ πυρὶ· ὅταν δὲ ἀμόλυτον γένηται, ἄρας τὴν χύτραν ἀπὸ τοῦ πυρός, ἐπίβαλλε τὸν ὀποπάνακα προλειωθέντα τῷ ὑπολοίπῳ ὄξει· εἶτα ἔμπασσε ψιμμύθιον καὶ μάνναν λειότατα γενόμενα ξηρά· καὶ μικρὸν χλιάνας, ὡς ἐνωθῆναι μόνον, φυλασσόμενος μὴ προσκαῆ ὁ ὀποπάναξ καὶ ἡ μάννα, κατάχεε ἐν θυῖα, καὶ ἔασας ψυγῆναι, ἀναμαλάξας, ἀπόθου καὶ χρῶ, ὡς προεῖρηται. [...] τὰς τραυματικὰς πάσας ἐνίκησεν, ὡς ἡ πείρα δέδειχε· καὶ λῦε χειμῶνος μὲν δι' ἡμερῶν ἑπτὰ, θέρους δὲ διὰ τριῶν.

Placing the oil and vinegar in a new pot dissolves the finely cut wax and bitumen, a bit of reserved vinegar, to stir; the melted pitch is placed, finely chopped; after dissolving them, filter and boil again; When it is half-boiling, put the pot on the fire, gradually place emulsified copper sulfate with a little vinegar, so that it does not boil (to a boil), and boil again over a very low heat; taking care that it does not stick, putting the pot on the fire, place crushed opopanax with the remaining vinegar; then sprinkle with dry white lead and powder of frankincense; once warm, as unified, the opopanax and the stored powder of frankincense that does not burn, pour into a mortar, and let it dry, softening completely, store and use, as prescribed [...] all wounds prevail, as experience show. It opens after seven days in winter, three days in summer.

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 6<sup>th</sup> 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 ἐψησεις 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 μὲν εἰσι τραυματικά, ἅς ἐναίμους τε καὶ κολλητικάς καὶ καταγματικάς καλοῦμεν, διὰ τῶν ξηραίνόν). These desiccants are willow, oak, cypress, pine bark and pitch, myrrh, rosemary, bitumen, aloe, motherwort, vine wood ashes, ceruse, litharge and most metals<sup>82</sup>.

<sup>82</sup> *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* (λύειν 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” (Βαρβάρᾳ ἔναιμοσ- 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:

Ἀσφάλτου Ἰουδαϊκοῦ, πίσης ξηρᾶς, κη-  
ροῦ, ῥητίνης ἀνά λι. <α>, τερεβινθίνης <β>,  
λιθαργύρου <α>, ψιμυθίου <α>, μάννης  
<β>, ὀποπάνακος <β>, σμύρνης <β>, ἐλαίου  
<γ>, ὄξους τὸ ἀρκοῦν.

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

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and moderately desiccants, such as motherwort, thapsia, old oil and oil of radishes, honey, opobalm, fish, turpentine, galbanum, burnt salts and fleur de sel. In relation to emollients, he maintains that they are formed from litharge, fats, marrow, old oil, bee glue, ammonia, storax, galbanum, bdellium, chew, turpentine, marshmallow root and wild cucumber. Desiccants are made of sulfur, natron, salts, ash, bitumen. It also describes the epispastics, formed from salts, natron, bee glue, verdigris, yeast, manure, sulfur, turpentine, and digestives, composed of wax, labdanum, raisins, amomum, saffron, incense, tar, Egyptian putty, storach, myrrh, galbanum, butter, oesypum, fat, verdigris. Finally, mention the suppuratives, formed from water and oil, pollen, wheat bread, chondro, butter, pork and beef fat, frank incense, tar, rosin, the paregoric, made of litharge, ceruse, oil, dill, chamomile, starch, white wax.

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 preserved<sup>83</sup>. The Greek authors that we have studied called Βάρβαρος Ἴηρα (Galen, ed. Kühn, 13.557–560) or Ἄλλη ἔναιμος Ἰουλιανοῦ (Galen, ed. Kühn, 13.557), Βάρβαρος ἔναιμος (Oribasius, ed. Raeder, 6.2.2.264), Ἡρᾶ Καππάδοκος βάρβαρος (Aetius, ed. Zervos, p. 7–138), and Βαρβάρᾳ ἔναιμος (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 ܢܚܘܢ] 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 Arabic<sup>84</sup> and Latin<sup>85</sup> period.

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<sup>83</sup> Cf. G. KESSEL, *Inventory of Galen's Extant Works in Syriac*, [in:] *Hunayn Ibn Ishaq on his Galen Translations*, Provo 2016, p. 168–192.

<sup>84</sup> D. ASADE, *Recepción del Ungüento de los apóstoles en el Formulario de los hospitales de Ibn Abī l-Bayān*, [in:] *Religión, Derecho y Medicina en Egipto Antiguo, Tardoantiguo y Medieval. Actas del Ciclo de Conferencias en la Embajada de la República Árabe de Egipto*, ed. P. DRUILLE, D. ASADE, Santa Rosa 2021 (in press).

<sup>85</sup> Cf. *Antidotarium Romanum, seu Modus componendi medicamenta quae sunt in usu*, Venetiis 1585, p. 93.

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