





Maciej Kokoszko (Łódź)

 <https://orcid.org/0000-0002-9563-2902>

Zofia Rzeźnicka (Łódź)

 <https://orcid.org/0000-0001-8566-4946>

## HOW TO GLOW AND STAY FRESH: SOME ADVICE ON DEODORANTS PENNED BY AETIUS OF AMIDA

**Abstract.** As far as women's wellbeing is concerned, ancient and Byzantine physicians took great care not only of their patients' health *sensu stricto* but also of their appearance. A testimony of the approach is given, for instance, by Aetius of Amida's (6<sup>th</sup> cent. AD) *Libri medicinales*, where he devotes much attention to cosmetics, including a group of deodorising antiperspirants called *καταψματα*. In our study we analyse one prescription, taken by Aetius from Criton of Heraclea's (1<sup>st</sup>/2<sup>nd</sup> cent. AD) treatise, trying to prove that it is very informative of medical (especially pharmaceutical) theory as well as practice in the social context of the 6<sup>th</sup> century AD.

In order to achieve our goal, first, we analyse ancient and Byzantine *materia medica*, scrutinizing the medical properties ascribed to each component of the cosmetic in the light of the theory in force between the 1<sup>st</sup> and the 6<sup>th</sup> centuries AD. Next, we determine the method of preparation of the antiperspirant, its form, the mode and place of its application. Finally, we proceed to assess its market value as a marker exposing the group of the cosmetic's addressees. As a result, we conclude that the recipe was competently worked out on the basis of a theory commonly accepted by medical authorities, and that the preparation was designed for women (but also for men) of a high social status.

**Keywords:** History of medical literature, history of medicine, history of cosmetology, ancient/ Byzantine cosmetics, antiperspirants, deodorants, aromatics, Aetius of Amida, Criton of Heraclea

Though Graeco-Roman and Byzantine medicine was generally shaped by men<sup>1</sup>, the analysis of extant medical treatises clearly proves that the physicians took great care of women's wellbeing – both their health and appearance.

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<sup>1</sup> Among medical treatises composed in Antiquity and the Byzantine period, we come across a few works which appear to have been penned by women known by the name of Metrodora, Cleopatra and Aspasia; on the issue, for instance, see R. FLEMMING, *Women, Writing and Medicine in the Classical World*, CQ 57.1, 2007, p. 257–279; L. TOTELIN, *The Third Way. Galen, Pseudo-Galen, Metrodora, Cleopatra and the Gynaecological Pharmacology of Byzantium*, [in:] *Collecting Recipes. Byzantine and*

A fine example of such a holistic approach to women is Aetius of Amida's treatise entitled *Libri medicinales* (6<sup>th</sup> cent. AD), which is one of the key medical works from the early Byzantine period. Despite the life and professional career of Aetius himself still requiring further research, scholars agree that he studied medicine in Alexandria and may have worked in Egypt for a period of time<sup>2</sup>. As far as his competence is concerned, the contents of the treatise prove that he was interested in pharmacology, dietetics, surgery, prognostics, general pathology, fever and urine lore, ophthalmology, cosmetology, dentistry, toxicology, gynaecology, and obstetrics. Due to the fact that the doctor extensively discussed the two latter issues<sup>3</sup> (including numerous contraceptive and abortifacient preparations), John Scarborough makes the supposition that Aetius was a court physician of Justinian I, and that he personally attended to empress Theodora's health<sup>4</sup>, thus implying he was a doctor of the rich rather than of the poor. Despite there being no direct evidence confirming Scarborough's premise<sup>5</sup>, the fact that when discussing cosmetics in Book VIII Aetius lists a number of care products<sup>6</sup> based on expensive components<sup>7</sup> at least allows us to suppose that he was professionally active in aristocratic circles. With reference to that suggestion, we will examine a recipe for

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*Jewish Pharmacology in Dialogue*, ed. L. LEHMHAUS, M. MARTELLI, Boston–Berlin 2017 [= BCCR, 4], p. 103–122; G. STORTI, *Metrodora's Work on the Diseases of Women and their Cures*, EstB 6, 2018, p. 89–110, etc.

<sup>2</sup> On the physician and his output, for instance, see J. SCARBOROUGH, *Aëtius of Amida (500–550 CE)*, [in:] *The Encyclopedia of Ancient Natural Scientists. The Greek Tradition and its Many Heirs*, ed. P.T. KEYSER, G.L. IRBY-MASSIE, London–New York 2008, p. 38–39; P. BOURAS-VALLIANATOS, *Galen in Late Antique Medical Handbooks*, [in:] *Brill's Companion to the Reception of Galen*, ed. IDEM, B. ZIPSER, Leiden–Boston 2019 [= BCCR, 17], p. 41–42.

<sup>3</sup> Both questions were examined by the physician in Book XVI of his treatise, see *Gynaekologie des Aëtios sive sermo sextus decimus et ultimus. Zum erstenmale aus Handschriften veröffentlicht*, ed. S. ZERVOS, Leipzig 1901, *passim*.

<sup>4</sup> J. SCARBOROUGH, *Aëtius of Amida (500–550 CE)*..., p. 38; IDEM, *Theodora, Aetius of Amida, and Procopius: Some Possible Connections*, GRBS 53, 2013, p. 742–762.

<sup>5</sup> For instance, see P. BOURAS-VALLIANATOS, *Galen in Late Antique Medical Handbooks*..., p. 41.

<sup>6</sup> On care products in Aetius' treatise, for instance, cf. S. BUZZI, I. CALÀ, *Le ricette cosmetiche nelle enciclopedie mediche tardoantiche*, [in:] *Collecting Recipes*..., p. 128–144; I. CALÀ, *Some Cosmetic Recipes in Medical Texts of Late Antiquity: Treatments for the Face in the Libri medicinales of Aetius Amidenus*, Mer 11, 2020, p. 2–14.

<sup>7</sup> The most representative examples are the prescriptions from Chapters 6 and 7, as many of them require exotic aromatics (e.g. frankincense, myrrh or spikenard) which were imported to Byzantium from distant lands. On cosmetics (from Chapter 6) prepared with the addition of aromatic substances as commodities for the rich, see Z. RZEŹNICKA, M. KOKOSZKO, *On Frankincense-scented Soaps, Peelings and Cleansers or on Cosmetics and Commotics in Antiquity and Early Byzantium*, VP 79, 2021, p. 179–184. On the costliness of selected aromatics listed in Chapter 7, see note 44 of the present study. On Byzantine trade in the vast majority of aromatics specified in both chapters, see F. ROTELLI, *Trade and Exploration*, [in:] *A Cultural History of Plants in the Post-Classical Era*, vol. II, ed. A. TOUWAIDE, London–New York–Oxford–New Delhi–Sydney 2022, p. 63–66.

deodorising antiperspirant, which was taken by the Byzantine physician from the output of Criton of Heraclea (1<sup>st</sup>/2<sup>nd</sup> cent. AD)<sup>8</sup>.

In our analysis, we will first and foremost focus on the way the cosmetic was prepared and then used. In order to achieve our goal, we will scrutinise the medical properties ascribed to each component by medical authors of the time. We will also look at the technical aspects of preparing the antiperspirant and seek their rationale. The scope of our interest also includes Aetius' instructions explaining how and where the preparation was applied. Finally, on the basis of this last piece of information, and by examining each of the ingredients in the context of their market value, we will determinate the social and financial status of the cosmetic's users.

Just like other Byzantine medical works, Aetius' treatise was mainly completed on the basis of the writings of preceding generations of physicians. Nevertheless, it was not a mere compilation of ancient texts, since he tended to subject the output of Antiquity to a careful scrutiny, selecting only a fraction of the heritage (and commenting on it) in order to create a body of knowledge adapted to the challenges of his time<sup>9</sup>. The fact that he borrowed an ancient recipe together with instructions on its preparation and applying as specified by Criton, makes us think that the cosmetic was still prepared and used in Aetius' time. This also means that its ingredients were equally available in the 6<sup>th</sup> century AD. As a result, we can say that the cosmetic itself, the method of its obtaining as well as the mode of its application belong not only to the cosmetology of Antiquity but also to that of early Byzantium.

The fact that the physician of Amida incorporated recipes created by Criton into his book on cosmetics implies that the latter must still have been considered an authority in this field in the Byzantine period. This comes as no surprise, since we have much information that shows Criton's popularity long after his death. For instance, we learn from Galen of Pergamum (2<sup>nd</sup>/3<sup>rd</sup> cent. AD) that Criton authored a treatise entitled Κοσμητικά, which turned out to be a considerable success, with many Romans still owning a copy at the end of the 2<sup>nd</sup> century AD<sup>10</sup>.

<sup>8</sup> On the physician and his output, for instance, see J. SCARBOROUGH, *Criton, Physician to Trajan: Historian and Pharmacist*, [in:] *The Craft of the Ancient Historian. Essays in Honor of Chester G. Starr*, ed. J.W. EADIE, J. OBER, Lanham Maryland–London 1985, p. 387–405; J. SCARBOROUGH, A. TOWWAIDE, *Kritōn of Hērakleia Salbakē, T. Statilius (80–120 CE)*, [in:] *The Encyclopedia...*, p. 494–495.

<sup>9</sup> For instance, see Ph. VAN DER EIJK, *Principles and Practices of Compilation and Abbreviation in the Medical 'Encyclopaedias' of Late Antiquity*, [in:] *Condensing Texts – Condensed Texts*, ed. M. HORSTER, Ch. REITZ, Stuttgart 2010, p. 195–221; E. GOWLING, *Aëtius' Extraction of Galenic Essence: A Comparison Between Book 1 of Aetius' Libri Medicinales and Galen's On Simple Medicines*, [in:] *Collecting Recipes...*, p. 83–101; A. TOWWAIDE, *Medicine and Pharmacy*, [in:] *A Companion to Byzantine Science*, ed. S. LAZARIS, Leiden–Boston 2020 [= BCBW, 6], p. 364–367.

<sup>10</sup> ἔγραψε γὰρ τέτταρα βιβλία κοσμητικῶν, ἃ πάντες ἔχουσιν, see *Galenus De compositione medicamentorum secundum locos*, I, 3, [in:] *Claudii Galeni Opera omnia*, vol. XII, ed. K.G. KÜHN, Leipzig 1826 (cetera: GALENUS, *De compositione medicamentorum secundum locos*), p. 446.

Even though its complete text has not survived to our times, a large part has been preserved in the Pergamene's output<sup>11</sup> as well as in the works of such Byzantine physicians as Oribasius<sup>12</sup> (4<sup>th</sup>/5<sup>th</sup> cent. AD), Aetius<sup>13</sup> and later Paul of Aegina<sup>14</sup> (7<sup>th</sup> cent. AD). It also seems highly likely that they all used his work first hand<sup>15</sup>, which further proves its abiding popularity throughout the ages.

Unfortunately, Criton's prescriptions incorporated into *Libri medicinales* can sometimes be difficult to interpret for modern researchers. For instance, the beginning of Aetius' Chapter 7, Book VIII, (as published by Alexander Olivieri), in which the recipe for the analysed preparation is present, reads Καταπλάσματα θερινά εὐωδία ποιῶντα τῷ παντὶ σώματι Κρίτωνος (*Criton's Plasters Providing the Whole Body with a Pleasant Scent in Summer*). Such a title suggests that the chapter concerns cataplasms (καταπλάσματα), i.e., therapeutic plasters or dressings<sup>16</sup>. The term originates from the verb καταπλάσσω, which means 'to put on a plaster/dressing'<sup>17</sup>, however, all detailed prescriptions included in Chapter 7 attributable to Criton<sup>18</sup> refer not to plasters but to powdery substances that were

<sup>11</sup> For instance, see GALENUS, *De compositione medicamentorum secundum locos*, I, 2, vol. XII, p. 401–402 KÜHN (1826); III, 1, vol. XII, p. 659–660 KÜHN (1826); V, 1, vol. XII, p. 817 KÜHN (1826); V, 3, vol. XII, p. 825–826 KÜHN (1826); V, 3, vol. XII, p. 830–831 KÜHN (1826); V, 5, vol. XII, p. 880–881 KÜHN (1826); VI, 6, vol. XII, p. 933–934 KÜHN (1826); VI, 6, vol. XII, p. 934–935 KÜHN (1826); *Galenus De compositione medicamentorum per genera*, II, 11; IV, 6; V, 3, [in:] *Claudii Galeni Opera omnia*, vol. XIII, ed. K.G. KÜHN, Leipzig 1827, p. 515–517; 708–716; 786–787.

<sup>12</sup> *Oribasii Synopsis ad Eustathium*, III, 24, 2–5 (CMG VI 3: 73, 14–24), [in:] *Oribasii Synopsis ad Eustathium, Libri ad Eunapium*, ed. J. RAEDER, Leipzig–Berlin 1926 [= CMG, 6.1].

<sup>13</sup> For instance, see *Aetii Amideni Libri medicinales V–VIII*, VI, 55 (CMG VIII 2: 201, 3–8); VI, 64 (CMG VIII 2: 211, 3–7); VIII, 2 (CMG VIII 2: 405, 8–16); VIII, 13 (CMG VIII 2: 418, 28 – 419, 8); VIII, 16 (CMG VIII 2: 422, 12 – 425, 17); VIII, 49 (CMG VIII 2: 475, 4–6), ed. A. OLIVIERI, Berlin 1950 [= CMG, 8.2] (cetera: AETIUS AMIDENUS, *Libri medicinales*).

<sup>14</sup> For instance, see *Paulus Aegineta. Libri I–IV*, III, 1, 4 (CMG IX 1: 130, 19–25); IV, 7, 1 (CMG IX 1: 328, 23 – 329, 2), ed. J.L. HEIBERG, Leipzig–Berlin 1921 [= CMG, 9.1]; *Paulus Aegineta. Libri V–VII*, VII, 13, 19 (CMG IX 2: 326, 22 – 327, 3), ed. J.L. HEIBERG, Leipzig–Berlin 1924 [= CMG, 9.2]. On Criton's output embedded in early Byzantine medical works, for instance, see A. GUARDASOLE, *Galien de Pergame et la transmission des traités anciens de cosmétique*, [in:] *Le teint de Phryné Thérapeutique et cosmétique dans l'Antiquité*, ed. V. BOUDON-MILLOT, M. PARDON-LABONNELIE, Paris 2018 [= O&M, 27], p. 38–46.

<sup>15</sup> The opinion seems to be shared by Alessia GUARDASOLE (*Galien de Pergame...*, p. 43–46), though she *expressis verbis* attributes the first-hand use of Criton's work to Aetius only, see *ibidem*, p. 43.

<sup>16</sup> However, in the manuscript Vaticanus Palatinus 199 (Px) and Codex Athous Λαύρας 718 Ω 63 (A), the word καταπάσματα is used, see AETIUS AMIDENUS, *Libri medicinales*, VIII, 7, apparatus criticus to verse 23 (CMG VIII 2: 410).

<sup>17</sup> Cf. LSJ, p. 905 (s.v. καταπλάσσω).

<sup>18</sup> Within Chapter 7, Book VIII, Aetius also made use of Archigenes of Apamea's writings. On the basis of the edition by Alexander Olivieri, to which we refer to in the present article, it is difficult to determine how much of the text in Chapter 7 was actually authored by Archigenes. On this issue, see Z. RZEŹNICKA, *The Use of Myrrh in the Antiperspirants and Deodorants Prepared by Criton of Heraclea – a New Reading*, SAR (forthcoming). Nevertheless, we can be quite sure that the first six

obtained by means of pulverising and sieving multi-ingredient pills (τροχίσκοι). Almost every such powder<sup>19</sup> in the chapter was called καταπαστόν, which is, in fact, telling, since it is an adiectivum verbale not of the verb καταπλάσσω but of καταπάσσω (i.e. of a prefixed variant of the verb πάσσω, meaning ‘to sprinkle/to pour/ to powder with’)<sup>20</sup>. Moreover, in the same chapter, the verb πάσσω appears in its alternative prefixed variants such as διαπάσσω<sup>21</sup> and ἐπιπάσσω<sup>22</sup>. Furthermore, a fragment of Antyllus’ (ca. 2<sup>nd</sup>/3<sup>rd</sup> cent. AD) chapter<sup>23</sup> entitled Περί ἐμπασμάτων<sup>24</sup> (*On Dusting Powders*) preserved by Oribasius in his *Collectiones medicae* teaches us that the preparations enumerated in Chapter 7 could also be termed διαπάσματα, as the noun referred to those substances which provided a pleasant smell to the whole body, including the armpits or groin<sup>25</sup>. Bearing in mind the fact that the title of the chapter does not reflect its actual contents, but also that the fragment preserves terminology closely related to the powdery characteristic of the preparations described therein, one should conclude that the chapter heading is erroneous and ought to be restored to the form Καταπάσματα θερινὰ εὐωδιαν ποιοῦντα τῷ παντὶ σώματι Κρίτωνος (*Criton’s Powders Providing the Whole Body with a Pleasant Scent in Summer*)<sup>26</sup>. As terms from πάσσω are preserved both

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prescriptions for powdery deodorants, which open the discussed chapter (AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 [CMG VIII 2: 411, 4–22]) were taken from Criton’s Κοσμητικά. The opinion is shared by A. GUARDASOLE (*Galien de Pergame...*, p. 40–41).

<sup>19</sup> With the exception of AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 412, 9–14). However, the formula cannot be attributed to Criton’s authorship with certainty.

<sup>20</sup> Cf. LSJ, p. 904 (s.v. καταπάσσω).

<sup>21</sup> AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 8).

<sup>22</sup> AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 26 – 412, 1).

<sup>23</sup> A reference to the writings by Antyllus, see *Oribasii Collectionum medicarum reliquiae, libri IX–XVI*, X, 19 (CMG VI 1, 2: 61, 18–19), ed. J. RAEDER, Leipzig–Berlin 1929 [= CMG, 6.1.2] (cetera: ORIBASIIUS, *Collectiones medicae*).

<sup>24</sup> ORIBASIIUS, *Collectiones medicae*, X, 31, 1–3 (CMG VI 1, 2: 72, 28 – 73, 7).

<sup>25</sup> ORIBASIIUS, *Collectiones medicae*, X, 31, 1 (CMG VI 1, 2: 72, 32–33). In the said chapter the author also defines the terms ἐμπάσματα and καταπάσματα. He explains that the substances described by the former were used for excessive perspiration, to counteract the symptoms of another type of diaphoresis and in cases of flesh wounds and pruritus, while the latter were administered to treat more serious wounds and ulcerations (ἔλκος), see ORIBASIIUS, *Collectiones medicae*, X, 31, 1 (CMG VI 1, 2: 72, 29–32). The comparison of the aforementioned information on καταπάσματα and διαπάσματα with the data obtained from the writings by Criton of Heraclea allows us to assume that the nomenclature for cosmetic products was not firmly consolidated at the turn of the 1<sup>st</sup> and 2<sup>nd</sup> centuries AD, i.e., in the times of professional activity of Criton of Heraclea and Antyllus, and thus it was ambiguous. On καταπάσματα (from Antyllus’ output) used in medicine, see ORIBASIIUS, *Collectiones medicae*, X, 32, 1–2 (CMG VI 1, 2: 73, 8–15). Examples of substances that Antyllus described as διαπάσματα, see ORIBASIIUS, *Collectiones medicae*, X, 33 (CMG VI 1, 2: 73, 16–19). On διαπάσματα, for instance, see R. TOUZÉ, *Les matières parfumées employées dans la confection des huelles, onguents et poudres parfumées en Grèce ancienne*, [in:] *Parfums et odeurs dans l’antiquité*, ed. L. BODIQU, D. FRÈRE, V. MEHL, Rennes 2009 [= MiCL, 67], p. 53.

<sup>26</sup> The same conclusion was proposed by A. GUARDASOLE (*Galien de Pergame...*, p. 41–42).

in the fragments taken from Criton as well as being included in the other part of Chapter 7, one can presume that they were also embedded in the works sourced by Aetius. As a result, we can judge that the modifications to the vocabulary of the fragment in question were introduced posterior to the composition of *Libri medicinales*.

From the contents of the analysed text we learn that Aetius classifies the cosmetics by the strength of their effect. The first category is represented by two prescriptions for the so-called *θερινά* – strong agents, which would be most appropriately used during the hottest season of the year<sup>27</sup>. We might conclude from the fragment on *εὐώδες προσηνές*, i.e. a deodorant of mild action belonging to the other group that, in turn, this class was based on ingredients offering a more delicate effect and, thus, the preparations were intended to be used throughout the year. Consequently, they should be called *προσηνή* ([deodorants] of mild action) as a class.

In the present research we will focus exclusively on the prescription for the deodorant called *εὐώδες θερινόν* (a fragrant [deodorant] appropriate for summer), which reads as follows:

[Take] three ounces of dried roses, cassia-cinnamon, two drachms of black cardamom, costus and spikenard, two ounces of [a styptic agent called] liquid *στυπτηρία*, and mix them with fragrant, long-matured wine, [then] shape into pills and leave to dry in a shaded place. Crush [and] sieve prior to the application, and give to the bathers so that they may sprinkle the thus obtained powder over their bodies, rubbing it in carefully prior to rinsing it with cold water<sup>28</sup>.

The above recipe is the more detailed of the two, and since it is also referred to by the author at the end of the other<sup>29</sup>, it must contain key data concerning the production as well as the application of *θερινά*. As manufacturing details are almost totally absent from Criton's prescriptions for deodorants within the *προσηνή* group (which, apart from their strength of action, did not differ from *θερινά*), it is highly likely that the quoted fragment was intended to provide the general principles of producing and using both types of *καταπάσματα* – which is why it was put at the beginning of the whole chapter on such preparations.

The prescription in question reveals the pattern according to which the cosmetic was prepared. It consisted of carefully selected substances whose characteristics were canonised by a branch of medicine termed *materia medica* (which

<sup>27</sup> AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 4–12).

<sup>28</sup> *ρόδων ξηρῶν κασσίας ἀνά οὐγκίας γ' ἀμώμου κόστου καρδοστάχου ἀνά δραχμάς β' στυπτηρίας ὑγρᾶς οὐγκίαν β', οἶνω παλαιῷ εὐώδει διαλύσας, ἀνάπλασσε τροχίσκους καὶ ξήραινε ἐν σκιᾷ· ἐπὶ δὲ τῆς χρείας κόψας σήσας δίδου διαπάσσεσθαι λουομένους καὶ ἀνατριβέσθωσαν ἐπιμελῶς καὶ τότε ψυχρῷ ὕδατι περιχέισθωσαν*, see AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 5–9).

<sup>29</sup> AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 9–12).

was developed thanks to the competence of such eminent doctors as Dioscurides [1<sup>st</sup> cent. AD]<sup>30</sup>, to name but the most renowned). The formula included ingredients which were described in medical treatises as blocking perspiration and having deodorizing properties. The former included *στυπτηρία* (most probably alum<sup>31</sup>) which, as we ascertain from medical works, had styptic effects<sup>32</sup> (shrinking skin pores), and therefore its use reduced perspiration. Analogous properties were also offered by dried rose flowers, cassia-cinnamon, black cardamom and spikenard. Some of these were also said to have desiccative qualities, which must have been considered to additionally reduce sweating<sup>33</sup>. Due to the fact that all the plant-based ingredients employed in the recipe were renowned for their aromatic properties<sup>34</sup>, they would have been used to cover the unpleasant bodily odour resulting from perspiration.

<sup>30</sup> On Criton's familiarity with Dioscurides' *De materia medica*, see J. SCARBOROUGH, *Criton, Physician to Trajan...*, p. 396; J. SCARBOROUGH, A. TOUWAIDE, *Kritôn of Hērakleia Salbakê...*, p. 494.

<sup>31</sup> Alum was commonly used for medical purposes, for instance, see *Pedanii Dioscuridis Anazarbei De materia medica*, V, 106, 1–3, vol. III, ed. M. WELLMANN, Berlin 1914, p. 75, v. 18 – p. 76, v. 14 (cetera: DIOSCURIDES, *De materia medica*). Cf. R. HALLEUX, *L'alun dans la littérature des recettes du I<sup>er</sup> au XII<sup>e</sup> siècle*, [in:] *L'alun de Méditerranée*, ed. Ph. BORGARD, J.-P. BRUN, M. PICON, Naples 2005 [= CCJB, 23], p. 9–12. The best was mined in Melos (for instance, see A.J. HALL, E. PHOTOS-JONES, *The Nature of Melian Alumen and its Potential for Exploitation in Antiquity*, [in:] *L'alun...*, p. 77–84) and in Egypt (for instance, see M. PICON, M. VICHY, *L'alun des oasis occidentales d'Égypte. Recherches sur le terrain et recherches en laboratoire*, [in:] *L'alun...*, p. 43–58).

<sup>32</sup> DIOSCURIDES, *De materia medica*, V, 106, 4: 3, 76, 15 WELLMANN (1914). In all probability, that is why he recommended it for unpleasant odours in the armpit and groin areas, see DIOSCURIDES, *De materia medica*, V, 106, 6: 3, 77, 7–8 WELLMANN (1914). The practice of applying the substance on those places particularly prone to sweating implies that *στυπτηρία* was known for its strong action, which *expressis verbis* is confirmed by Aetius (*Aetii Amideni Libri medicinales I–IV*, II, 74 [CMG VIII 1: 176, 11], ed. A. OLIVIERI, Leipzig–Berlin 1935 [= CMG, 8.1] [cetera: AETIUS AMIDENUS, *Libri medicinales*]).

<sup>33</sup> For instance, see *Pedanii Dioscuridis Anazarbei De materia medica*, I, 7, 3, vol. I, ed. M. WELLMANN, Berlin 1907, p. 12, v. 11 (the desiccative properties of spikenard); I, 13, 3: 1, 18, 7–8 (the desiccative and styptic properties of cassia-cinnamon); I, 15, 2: 1, 21, 8 (the styptic and desiccative properties of black cardamom); I, 99, 1: 1, 90, 1 (the styptic properties of rose) (cetera: DIOSCURIDES, *De materia medica*). Analogous data were noted down by AETIUS (*Libri medicinales*, I, 33 [CMG VIII 1: 1, 38, 11] [the desiccative properties of black cardamom]; I, 184 [CMG VIII 1: 83, 3] [the desiccative properties of cassia-cinnamon – third degree]; I, 184 [CMG VIII 1: 83, 5] [the styptic properties of cassia-cinnamon]; I, 289 [CMG VIII 1: 113, 13–14] [the desiccative properties of spikenard – second degree]; I, 344 [CMG VIII 1: 128, 13–14] [the styptic and desiccative properties of rose]).

<sup>34</sup> DIOSCURIDES, *De materia medica*, I, 7, 1: 1, 11, 12–13 WELLMANN (1907) (the aromatic properties of spikenard); I, 13, 1: 1, 17, 12 WELLMANN (1907); I, 13, 1: 1, 17, 15 WELLMANN (1907) (the aromatic properties of cassia-cinnamon); I, 15, 1: 1, 21, 6 WELLMANN (1907); I, 15, 2: 1, 21, 14–15 WELLMANN (1907) (the aromatic properties of black cardamom); I, 16, 1: 1, 22, 1 WELLMANN (1907) (the aromatic properties of costus); I, 99, 3: 1, 90, 18 – 91, 8 WELLMANN (1907) (the aromatic properties of rose). The aromatic properties of most of the said substances were also mentioned by Aetius, for instance, in the recipe for a medicament which helped make the hair thinner (AETIUS AMIDENUS, *Libri medicinales*, VI, 65 [CMG VIII 2: 211, 22 – 212, 15] [dried roses, spikenard, black cardamom and costus

When it comes to manufacturing the cosmetic, in all likelihood the ingredients were first carefully crushed and then mixed with fragrant wine<sup>35</sup>, the addition of which might have been thought to strengthen the deodorising properties of the preparation. Subsequently, the agent was shaped into τροχίσκοι. Since analogous technological data can also be found in the proceeding chapter devoted to fragrant cleansing preparations<sup>36</sup>, we might conclude that the sphere-like form of the pill was in fact a result of the employment of the solid aromatics in the above preparations. Notably, if they are stored in their powdery form and are not sealed, they lose their qualities over a short time. Moreover, when exposed to humidity in the air, they are prone to forming lumps, and thus require re-pulverisation before using. We might presume that the physicians (in pursuit of the durability of their products) had learnt that pressing the preparation into a semi spherical shape proved to be most effective in preserving the cosmetics' fragrant properties, as only the outer layer of the thus obtained pills was prone to weathering. The doctors' knowledge of the negative impact of atmospheric conditions on such products is also reflected in the recommendation for drying freshly prepared τροχίσκοι in a shaded place<sup>37</sup>. In this way, the preparations were protected from the destructive action of sunlight and high temperature, which could also considerably change the properties of the aromatics. Furthermore, the relatively low temperature maintained in the shade guaranteed slow and equal desiccation of the preparations, which, in consequence, increased their durability, for instance by protecting them against mould-induced deterioration.

From the analysed recipe we learn that the ready-to-use cosmetic was given to "the bathers", which suggests that deodorants were usually applied in a bath house. As the process of bathing was also referred to in the preceding chapter on cleansing

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– VI, 65 [CMG VIII 2: 212, 9–12]). Though cassia-cinnamon is absent from the latter preparation and Aetius attributes a pleasant aroma to it nowhere in his chapter on its properties, the title of the analysed preparation testifies to the fact that he must have considered the plant to contribute to the cosmetic's deodorant action.

<sup>35</sup> For instance, such a recommendation is found in AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 412, 9–10).

<sup>36</sup> AETIUS AMIDENUS, *Libri medicinales*, VIII, 6 (CMG VIII 2: 407, 19–20); VIII, 6 (CMG VIII 2: 408, 7); VIII, 6 (CMG VIII 2: 408, 15–16); VIII, 6 (CMG VIII 2: 409, 3); VIII, 6 (CMG VIII 2: 410, 5–6); VIII, 6 (CMG VIII 2: 410, 10). One should, however, mention that within Chapter 6 we also encounter big and flattened discs called small loaves (ἀπίσκοι) as the final form given to the cosmetics, see AETIUS AMIDENUS, *Libri medicinales*, VIII, 6 (CMG VIII 2: 408, 23–24); VIII, 6 (CMG VIII 2: 410, 22). Nevertheless, the fact that within the chapter there are six recipes for τροχίσκοι and only two for ἀπίσκοι clearly proves that the former were far more popular than the latter.

<sup>37</sup> Such instructions are given both in the chapter on cleansers (AETIUS AMIDENUS, *Libri medicinales*, VIII, 6 [CMG VIII 2: 408, 8]; VIII, 6 [CMG VIII 2: 408, 16]; VIII, 6 [CMG VIII 2: 408, 24]; VIII, 6 [CMG VIII 2: 409, 3]; VIII, 6 [CMG VIII 2: 410, 6]; VIII, 6 [CMG VIII 2: 410, 10]; VIII, 6 [CMG VIII 2: 410, 22]) as well as in the one on deodorants (AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 [CMG VIII 2: 411, 7]; VIII, 7 [CMG VIII 2: 412, 11]).



preparations, it can be concluded that bathers would first thoroughly clean their bodies from dirt and exfoliate the epidermis. Secondly, having unblocked their skin pores (which, in consequence, increased the absorption of the deodorants), they rubbed the deodorising antiperspirants into the skin in order to minimize perspiration and conceal unwanted odours. Thus, the described mode of application of both kinds of cosmetics is little different from that we know today.

It has been already mentioned that Chapter 7 can also be interpreted in the context of social and economic history. As far as the former aspect is concerned, one should comment on the fact that in the introduction to the fragment on *καταπάσματα*, where Aetius specifies the users of the cosmetics, he mentions women first. The fact that the noun ‘women’ is preceded by the phrase ‘not only’<sup>38</sup>, suggests that deodorants in his times were used more commonly by women than by men. The same order of introducing both sexes is present in Galen’s *De compositione medicamentorum secundum locos*, where he maintains that his practical interest in the issue of beautifying the human body stemmed from the pressure exerted on him by women belonging to the imperial family. The emperors are said to have pressurised him as well but definitely not equally hard<sup>39</sup>. Moreover, no man was mentioned by Dioscurides as having used another form of deodorant, namely *ροδίδες*, which were worn as a necklace<sup>40</sup>. All three testimonies allow us to conclude that women in Graeco-Roman and early Byzantine society were more concerned about their bodies and were more vulnerable to the opinions voiced about them.

Finally, the medical treatises allow us to make some assumptions concerning the social status of the users of said cosmetics, the first of which have already been referred to in the above story given by Galen. Secondly, we note that the preparations were used in bath-houses, which implies that they were mostly produced for those with enough leisure time to treat themselves to such relaxation. Thus, it seems that the beauty products were first and foremost targeted at people whose

<sup>38</sup> [...] οὐ μόνον ἐπὶ τῶν γυναικῶν, see AETIUS AMIDENUS, *Libri medicinales*, VIII, 7 (CMG VIII 2: 411, 2–3).

<sup>39</sup> We can read that the pressure went far beyond the medical interventions he approved of and verged on unnaturally beautifying the human body, i.e. on what he termed *commotics*, see GALENUS, *De compositione medicamentorum secundum locos*, I, 2, vol. XII, p. 434–435 KÜHN (1826). On the difference between cosmetics and *commotics*, for instance, see S. BUZZI, I. CALÀ, *Le ricette cosmetiche...*, p. 124–125; Z. RZEŹNICKA, M. KOKOSZKO, *On Frankincense-scented Soaps...*, p. 175–178.

<sup>40</sup> *χρήσις δὲ ἐστὶν αὐτῶν ἐπὶ γυναικῶν περιτιθεμένων τῷ τραχήλῳ ἀντὶ ὄρμου ἡδύπνου, ἀμβλυνοῦσῶν τὴν τῶν ἰδρώτων δυσωδίαν. χρῶνται δὲ αὐτοῖς καὶ λείους ἐν διαπάσμασι μετὰ τὸ λουτρὸν καὶ συγχρίσμασι καὶ μετὰ τὸ ξηρανθῆναι ἐκλούνται ψυχρῶ ([Ροδίδες] are made use of by women, who put them around their neck instead of sweet smelling wreaths [ὄρμος ἡδύπνος] so that they muffle the foul odour of perspiration. Pulverised, they are used as aromatic powders [διαπάσματα] sprinkled after bathing, and in ointments, which are left to dry on the surface of the skin to be subsequently rinsed off by cold water), see DIOSCURIDES, *De materia medica*, I, 99, 3: 1, 91, 7–10 WELLMANN (1907).*

days were not entirely filled with professional duties and who could afford to allocate some time to recreation in the bath-house. As baths were constructed mostly in the cities<sup>41</sup>, we may presume that the *καταπάσματα* recommended in *Libri medicinales* were primarily used by the inhabitants of urban areas. As for εὐὼδες θειρινόν, it is striking that within the plant-based ingredients it was only the rose, with its ubiquity and presumably affordable price, that was easily available to everyone<sup>42</sup>. Other substances were imported from regions located far from the territories of the Greco-Roman civilization<sup>43</sup>, which explains their high prices<sup>44</sup>.

<sup>41</sup> Bath-houses as important public amenities in Byzantine cities, for instance, see W. TREADGOLD, *A History of the Byzantine State and Society*, Stanford California 1997, p. 141, 280, 407; M. ΖΥΤΚΑ, *A Cultural History of Bathing in Late Antiquity and Early Byzantium*, London–New York 2019, p. 51–54.

<sup>42</sup> From Pliny we learn that although roses were commonly available in the ancient Mediterranean, their varieties differed as far as their place of origin, appearance (especially colour) and intensity of scent were concerned, see C. *Plini Secundi Naturalis historiae libri XXXVII*, XXI, 4 (10), 14–21, vol. III, (*Libri XVI–XXII*), ed. K. MAYHOFF, Leipzig 1892 [= BSGR], p. 385, v. 4 – p. 387, v. 14. One can presume that the classification mentioned by the author had its reflection in the price of the flowers, with some varieties being more expensive than others. It is likely that it was the costlier ones that were depicted on the frescoes found in Pompeii, Herculaneum and Stabiae, see E. DE CAROLIS, A. LAGI, G. DI PASQUALE, A. D'AURIA, C. AVVISALI, *The Ancient Rose of Pompeii*, Roma 2016, p. 62–68; B. BERGMANN, *Frescoes in Roman Gardens*, [in:] *Gardens of the Roman Empire*, ed. W.F. JASHEMSKI, K.L. GLEASON, K.J. HARTSWICK, A.-A. MALEK, Cambridge 2017, p. 290, 292, 310. The overall situation seems not to have changed in the Byzantine period, which appears to be confirmed by the contents of the *Libri medicinales*. On the one hand, the analysed recipe for *κατάπασμα* suggests that some of the flowers were costly because they were considered equally valuable as the exotic ingredients used in the prescription (see note 44). On the other hand, AETIUS' formula for the hair thinning preparation (as roses were listed in the group of fragrant substances preceding those affordable exclusively to the rich [*Libri medicinales*, VI, 65 {CMG VIII 2: 212, 9–11}], implies that some varieties were a commonly accessible aromatic.

<sup>43</sup> See F. ROTELLI, *Trade and Exploration...*, p. 64.

<sup>44</sup> Even though we do not possess any precise data on the prices of either cassia-cinnamon, black cardamom, costus nor spikenard in the time of Aetius' professional activity, extant source material provides us with some premises on this subject. As for the second part of the 1<sup>st</sup> century AD, we are informed by Pliny that top-quality cassia-cinnamon cost as much as 50 *denarii* per pound (328.9 grams), while the same amount of a lower-class product sold for 5 *denarii* (C. *Plini Secundi Naturalis historiae libri XXXVII*, XII, 19 [43], 97, vol. II, (*Libri VII–XV*), ed. K. MAYHOFF, München–Leipzig 2002 [= BSGR] (cetera: PLINIUS, *Naturalis historia*), p. 408, v. 18). The author also mentions a variety of cassia-cinnamon called *Daphnidis* (*Naturalis historia*, XII, 20, 98: 2, 408, 19–20 MAYHOFF [2002]), which cost as much as 300 *denarii* per pound. From Pliny's writings we might assume that the latter was grown not only in exotic lands but also in the northern parts of the Empire (... *in margine imperii, qua Rhenus adluit...*, see *Naturalis historia*, XII, 20, 98: 2, 409, 1–4 MAYHOFF [2002]). Dioscurides' testimony confirms the fact that the ancients knew cassia-cinnamon termed *δαφνίτις* (or *ἄχυν*), which was an exotic substance imported to Rome via Alexandria, see DIOSCURIDES, *De materia medica*, I, 13, 1: 1, 17, 12–14 WELLMANN (1907). On the basis of Dioscurides' information and the fact that the 'Rhenish' *Daphnidis* was evaluated by Pliny as less aromatic than the exotic variety, we may

Obviously, this must have resulted in the costliness of the final cosmetic. And since all Criton's recipes for *καταπάσματα* quoted by Aetius in Chapter 7 consist of prevalingly exotic substances, we may assume that the whole preparation was composed with wealthy recipients in mind.

To conclude, the presented evidence proves that, even though deodorants were used by both women and men, it is likely that it was mainly the fairer sex who inspired and probably urged Aetius to include such prescriptions in his work. One should, however, mention that these preparations were not aimed at the society as a whole but they were rather dedicated to a specific group, i.e. those rich city dwellers who were able to pay for cosmetics whose ingredients comprised of a blend of exotic aromatics. These substances provided the preparation with an exceptional scent, which, must have been an indicator of luxury at that time. The vast majority of the ingredients were not chosen solely due to their beautiful aroma but also because of the antiperspirant properties ascribed to them by experts in *materia medica*. The said body of knowledge is, in turn, evidence of ancient and Byzantine physicians' solid awareness of how various substances impact the human body. As a result, the doctors were able to recommend effective body care preparations to their patients that was adjusted to the financial means of the addressees.

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conclude that the price found in *Naturalis historia* referred exclusively to the variety mentioned in *De materia medica*. When it comes to black cardamom, from Pliny we learn that a pound of its whole seeds cost 60 *denarii*, while the same amount of pounded ones was sold for 48 *denarii*, see *Naturalis historia*, XII, 13 (28), 49: 2, 393, 6–7 MAYHOFF (2002). In his description of costus, the Roman encyclopaedist writes that its better (white) variety was priced at as much as 5.5 *denarii* per pound, see *Naturalis historia*, XII, 12 (25), 41: 2, 390, 19–20 MAYHOFF (2002). As far as spikenard is concerned, in Pliny's times a pound of its spikes cost 100 *denarii*, while the price of its leaves varied: those called *hadrosphaera* cost 40 *denarii*, *mesosphaera* were sold for 60 *denarii*, while the most valued, *micro-sphaera*, for 75 *denarii* (*Naturalis historia*, XII, 10 [26], 43–44: 2, 391, 11–16 MAYHOFF [2002]). As for the 6<sup>th</sup> century AD, AETIUS himself writes that spikenard, black cardamom and costus were classified as ingredients usually included in the medicaments targeted at 'the rich' (οἱ πλοῦστοι), see *Libri medicinales*, VI, 65 (CMG VIII 2: 212, 11–12); as for cassia-cinnamon (and spikenard) also cf. AETIUS AMIDENUS, *Libri medicinales*, VIII, 47 (CMG VIII 2: 467, 21 – 469, 7); cassia-cinnamon and nard – VIII, 47 (CMG VIII 2: 468, 7–8). Further evidence on the price of cassia-cinnamon and costus in the Byzantine period, see M. KOKOSZKO, *Anthimus and his Work, or On Aromatics and Wild-fowl in De Observatione Ciborum*, SPPGL 31.2, 2021, p. 65, 67–68. The presented data clearly shows that cassia-cinnamon, black cardamom, costus and spikenard were expensive in the period between the 1<sup>st</sup> and 6<sup>th</sup> centuries AD.

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**Maciej Kokoszko**

University of Lodz  
Faculty of Philosophy and History  
Institute of History  
Department of Byzantine Studies  
ul. Kamińskiego 27a  
90-219 Łódź, Polska/Poland  
[maciej.kokoszko@uni.lodz.pl](mailto:maciej.kokoszko@uni.lodz.pl)

**Zofia Rzeźnicka**

Waldemar Ceran Research Centre for the History and Culture  
of the Mediterranean Area and South-East Europe, *Ceraneum*  
ul. Matejki 32/38  
90-237 Łódź, Polska/Poland  
[zofia.rzeznicka@uni.lodz.pl](mailto:zofia.rzeznicka@uni.lodz.pl)