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Purple and its Various Kinds in Documentary Papyri

Ines Bogensperger

“Not all purples were equal, and not all purple was purple.”¹

The colour purple evokes an inestimable, priceless luxury in our understanding. It almost belongs in a legendary world along with other exquisite goods. Purple is seen as example *par excellence* for a symbol of social status, a token of prestige. A significant study on the importance of purple has brought to light the persistent desire for this colour throughout the Greek and Roman world.²

Literary sources from Roman times provide us quite comprehensive information on the colour and its sources. The most often quoted author is doubtlessly Caius Plinius Secundus, known as Pliny the Elder, who compiled specialist knowledge in 37 books on various topics. In the chapter on sea animals of his *Naturalis Historia* Pliny covers shellfish, amongst them the purple snails (Plin. NH 9.124–141). At this point Pliny gives a description of the purple dyestuff obtained from the animal and describes the dyeing process (Plin. NH 9.133–135). His excursus is the most detailed ancient description of the dyeing method with mollusc-purple upon which modern experiments in dyeing are based.³ However, the actual reason, why Pliny describes purple dyeing, is

not that he is interested in dyeing fabrics in the first place. He describes maritime creatures, in particular the sea snails, and as such he pays some tribute to its characteristic feature: the colourfast dyestuff purple.

The Roman author Vitruvius and his work *De architectura* provides further information. Unlike Pliny, Vitruvius focuses on colours used as pigments for painting (*decorae picturae*, as in Vit. De arch. 7.13–14). Already in his description diverse terms for ‘purple’ are used and it shows quite obviously, that different kinds of purple were produced, even from various species of molluscs. For a quick and convenient reference for the reader, the Latin text with an English translation of chapter 13 is presented in the following:⁴

1. Incipiam nunc de ostro dicere, quod et carissimam et excellentissimam habet praeter hos colores aspectus suavitatem. Id autem excipitur e conchylio marino, e quo purpura efficitur, cuius non minores sunt quam ceterarum <rerum> naturae considerantibus admirationes, quod habet

1. Cleland *et al.* 2009, 155 s. v. purple.

2. Reinhold 1970.

3. *E.g.* Koren 2005, Boesken Kanold 2005 and 2011, Meiers 2013.

4. Text and translation: Granger 1970, 126–127.

non in omnibus locis, quibus nascitur, unius generis colorem, sed solis cursu naturaliter temperatur. 2. Itaque quod lexitur Ponto et Gallia, quod hae regiones sunt proximae ad septentrionem, est atrum; progredientibus inter septentrionem et occidentem invenitur lividum; quod autem legitur ad aequinoctialem orientem et occidentem, invenitur violacio colore; quod vero meridianis regionibus excipitur, rubra procreatur potestate, et ideo hoc Rhodo etiam insula creatur ceterisque eiusmodi regionibus, quae proximae sunt solis cursui. 3. Ea chonchylia, cum sunt lecta, feramentis circa scinduntur, e quibus plagis purpurea sanies, uti lacrima profluens, excussa in mortariis terendo comparatur. Et quod ex concharum marinarum testis eximitur, ideo ostrum est vocitatum. Id autem propter salsuginem cito fit siticulosum, nisi mel habeat circa fustum.

1. We now turn to purple, which of all is most prized and has a most delightful colour excellent above all these. It is obtained from sea shells which yield the purple dye, and inspires in students of nature as much wonder as any other material. For it does not yield the same colour everywhere, but is modified naturally by the course of the sun. 2. What is collected in Pontus and Gaul is black because these regions are nearest to the north. As we proceed between the north and west it becomes a leaden blue. What is gathered in the equinoctial regions, east and west is of a violet

colour. But in the southern regions it has a red character; for example, in Rhodes and other similar regions which are nearest the sun's course. 3. When the shells have been collected, they are broken up with iron tools. Owing to these beatings a purple ooze like a liquid teardrop is collected by bruising in a mortar. And because it is gathered from the fragments of sea shells it is called *ostrum* [*Gk. ostreon = oyster*]. On account of its saltness it soon dries unless it is mixed with honey.

Literature and in particular poetry use the effects and ambiance created by colours. The richness and the outstanding importance of the red colours, especially purple, has long been recognized.⁵

Apart from literary sources, epigraphical and papyrological documents reveal additional evidence on an era, where purple played a significant role. Papyrus texts from Egypt reflect the daily life and therefore represent valuable and unique evidence for our understanding. However, the main reason of writing these documents was not to record information on dyestuffs or dyeing-methods, but often a different one, which takes effort to evaluate the information contained and occasionally leaves the modern reader in the dark.

In a specific papyrological study Greek papyri were examined in terms of the meaning of πορφύρα and its related forms.⁷ The aim was to determine, whether the documents refer to purple wool or to purple dye. By comparing the indicated weight small amounts of weight were contributed to purple dyestuff rather than purple-dyed wool. A conclusion, which was later on questioned.⁸

5. E.g., Blümner 1892, 184-199.

6. Monica Guilimi, personal communication by e-mail (27.08.2014), based on non-invasive analysis of the textile (FORS) supervised by Maurizio Aceto; these tests confirmed previous VIS-spectroscopy results of Robert Fuchs and Doris Oltrogge in September 2012. Analyses using UHPLC are planned for 2017.

7. Worp 1997.

8. Experiments based on ancient archaeological textiles found in the Eastern Desert of Egypt aimed to question, if one stater of wool is sufficient to spin the weft yarn needed for the ornaments (Cardon *et al.* 2011). Considering the fineness of the yarns used, the possible length of yarn was calculated based on 1 stater (c. 13.5 g.) of spun wool. The result is surprisingly quite clear and contradicts the previously mentioned study. "Indeed, 1 stater of purple-dyed wool may often have been enough to decorate one set of garments (*synthesis*) consisting of a tunic with thin purple *clavi* plus a matching mantle with purple gammas of average size [...]" (Cardon *et al.* 2011, 212).



Fig. 1. P. Vindob. Stoff 284; © Austrian National Library, Vienna. According to non-invasive analyses the purple coloured wool of the decoration was obtained from mollusc-dyestuffs.⁶

One additional observation of this study were the various kinds and varieties of purple attested in the Greek papyri throughout the times. That various kinds of purple were available on the market may be best seen in chapter 24 of the *Edictum Diocletiani de pretiis rerum venalium* (AD 301).⁹ The heading *περὶ πορφύρας* implies that all items listed were generally seen as ‘purple’ in ancient times. A study was able to demonstrate, that different dyestuffs and different dyeing methods were employed in order to produce ‘purple’.¹⁰

This is an attempt to compile various kinds of purple attested in Greek documentary papyri and to amplify the previous mentioned study. The Greek term *πορφύρα* and its related forms are attested over 200 times between the 3rd century BC and 7th century AD in papyrological databases. Firstly, various compositions with *πορφύρα*, *πορφύρεος* respectively *πορφυροῦς* denoting different purples were collected. Secondly, other terms with the meaning of purple were identified. Thirdly, the content of the texts was carefully examined and compared in order to gain a better understanding.

True and false purple

Today we tend to speak of ‘true’ purple whenever referring to mollusc-dyestuff. This might be connected with the well-known and often quoted literary sources on dyeing with purple-snails as previously mentioned. So far, remains of three snail species have been found by archaeologists in deposits within the Mediterranean region:¹¹ *Hexaplex trunculus* L. (also known as *Murex trunculus* L.), *Bilorus brandaris* L. (often quoted as *Murex brandaris* L.) and *Stramonita haemastoma* L. (or known as *Thais haemostoma* L. and actually a rockshell).¹²

9. Lauffer 1971, 167-168; Steigerwald 1990.

10. Steigerwald 1990, but also Steigerwald 1986 and K. Droß-Krüpe & C. Brøns, forthcoming.

11. Reese 2010; Steigerwald 1986, 5.

12. Koren 2005, 137; Cardon 2007, 566-586.

The question arises, if there was something like a *terminus technicus* for the use of true, mollusc-purple in ancient times. Indeed, one could see such a distinctive meaning in SB XII 11075.11 (1st half of 4th or 5th century AD; Oxyrhynchos). Unfortunately, the letters, which would have contained the exact type of garment mentioned, are lost. The unknown garment is described as [...] πλουμαρικὸν ἀληθινοπόρφυρον, which for the sake of convenience we shall simply translate as “decorated with true purple”.¹³

In the same document we read of a ἄλ[λο δε] λμ[ατ]ικομαφόρι[ο]ν Μωτωνήσιον [ἀλ]ηθινῆς μικτῆς πορφύρας (l. 8), a garment called ‘Delmatikomaphorion’ made of mixed true purple, that is carefully distinguished from the before mentioned garment (l. 7: ἄλλο δελματικομαφόριον ὀνύχινον ἀχαοπόρφυρον).

Within documentary papyri the adjective ἀληθινοπόφυρος has already been attested in earlier times. This can be seen in the letter P.Oxy. I 114 = Sel.Pap. I 131 (2nd–3rd century AD; Oxyrhynchos), in which the sender called Eunoia deals with pawned goods. Amongst them we find a χιτῶν καὶ μαφόρτιν λευκὸν ἀληθινοπόρφυρον (l. 7), “a tunic and a white hooded cape with true purple border”.¹⁴ Similar to previously mentioned SB XII 11075, the writer lists another garment described as λινούδιον ἐμπόρφυρον (l. 8), “a linen shirt inclining to purple” (according to LSJ).¹⁵

It might be possible to amend SPP XX 245. 9, an account on clothes from the 6th century AD, mentioning ἀλ[η]θινῆς — with a *lacuna* right before — once more to “true purple” similar to SB XII 11075.¹⁶

In Diocletian’s Edict a kind of purple is also designated by πορφύρα [...] ἀληθινή. The adjective specifies a purple from Miletus, of which two grades are recorded in total (§ 24.6-7).¹⁷ The difference between

these two grades possibly was the use of true mollusc-purple in the dyeing process.

The dyestuffs, the combination, the mixture as well as other ingredients, necessary in order to dye fabrics, have been compiled in dyeing recipes. Fortunately for Late Antiquity, at least two papyri were preserved containing unique information on the ancient knowledge of dyeing and other handicrafts: the Papyrus Leidensis X (P.Leid. X) and Papyrus Graecus Holmiensis (P.Holm.).¹⁸ In the beginning scholars saw the texts as material for forgers, but thanks to further experiments they are nowadays understood as sources for the enhanced knowledge and technology of ancient craftsmanship.¹⁹ Several dyeing recipes concern the production of purple from vegetable dyestuffs. Amongst them we find one text, where the preparation and dyeing of true purple, is literally captured as Πορφύρας ἀληθινῆς στῦψις καὶ βαφή (P.Holm. 100).²⁰ However, in this recipe no mollusc dyestuff is used at all. We might wonder, if the meaning of true purple necessarily implied the use of sea snails, was colourfast or if the result just looked like real purple.

The existence of the term ‘true purple’ raises the question, if there is something on the contrary, *i.e.*, ‘false purple’. The corresponding antonym is most likely found in ψευδοπόρφυρος, “false” or even “fake purple”, in P.Oxy. VII 1051.15 (3rd century AD; Oxyrhynchos). In this inventory of a woman’s property “one women’s shirt of false purple” is listed among other textiles and textile-related items.

A similar kind of false purple may be identified in P.Oxy. XLII 3080.5 (2nd century AD; Oxyrhynchos): this is an order, an ἐντολή, for ten staters of counterfeit purple (παράτυπος).²¹ In this document, stater functions as a unit of weight (c. 13.5 g), so unfortunately we cannot deduce any information on the price

13. Regarding the meaning of πλουμαρικὸς *et varia* see J. P. Wild in this volume, or Prunetti 1998.

14. Translated by Bagnall & Cribiore 2006, 295.

15. The translation of this item as “a garment of purple linen” does not seem correct (Bagnall & Cribiore 2006, 295).

16. P.Leid.Inst.13, note to l. 29 (= BL IX, 349). Moreover, we find ‘true purple’ in the 2nd century papyrus P.Strasb. IV 222.14 from Oxyrhynchos.

17. Steigerwald 1990, 258-261.

18. Halleux 1981 with a french translation.

19. *E.g.*, Martínez García 2013; Kreuzner 2013.

20. Halleux 1981, 135-136.

21. Worp 1997, 57, 59.

of fake purple. We only learn that ca. 135 g of such dyed material were needed.

In inventories, the colours of the textiles were meticulously registered as distinguishing features. A circumstance that might be useful for our further considerations. In P.Oxy. VII 1051, before the term fake purple, we read of πορφύρας ῥιζίου (l. 13–14), which is translated in the *editio princeps* as “vegetable purple” and probably refers to madder as dyestuff (ῥιζίου: little root).²² It is noteworthy that in this inventory madder-purple differs from false purple. Scholars sometimes describe madder-purple as imitation of ‘true purple’, a point of view that is not far away from seeing madder-purple as counterfeit. In light of the clear terminology in P.Oxy. VII 1051, more caution is perhaps needed in our modern view. Often, we encounter a lack of evidence. Another, yet unsolvable question is what dyestuff was used for producing ‘false purple’.

Sea-purple

Less ambiguity may be seen in the term ‘purple from the sea’ which is attested in a letter of Tetos to her father: BGU VI 1300 = C.Ptol.Sklav. II 237 (4th May 210 BC or alternatively 29th April 193 BC; unknown provenance). A most appropriate modern title was chosen for the English translation: A shopping list of luxuries.²³

Tetos to her father greetings. If you are well and things are otherwise according to your wish, it would be as we wish. I myself am well, and so are my mother and everyone in our household. When you sail upriver, please bring ...and 2 shuttles, 2

medium-sized boxes and 3 smaller ones, 2 caskets, a case for alabaster ornaments, 2 tubes, 2 probes, an unguent box with a ring base and a Sikyonian goblet, 5 stater’s weight of myrrh, 3 of nard oil, myrrh oil, oil for the girl for the head....of purple and 2 rings, a golden mirrorbox, medium-white linen cloths with purple; and with respect to the slave girl, who was on the other side at Oxyrhyncha, take care that you manage matters concerning her securely and that nothing thus gets in your way. And bring up also 2 combs, 2 hairnets, 2 scarlet ones, 2 hair clasps, earrings (?) for the girl, a stater of sea-purple dye. Farewell, Year 12, Phamenoth 22.

In her letter Tetos explicitly asks her father — apart from many other requests for luxury items — for one stater of πορφύρα θαλάσσια, *i.e.*, sea-purple. The term ‘sea’ most probably indicates the provenance of the purple rather than any specific hue resembling the sea.²⁴

The fact that Tetos knew exactly, what she wanted, can be seen in her clear use of colour-terms: Besides πορφύρα (l. 18) an alternative expression is used for purple, ὀστρεῖνος (l. 16), which also refers to shellfish-purple and shall be discussed later. Moreover, Tetos requests two κόκκινα hairnets (l. 24). The adjective κόκκινος is translated as scarlet (LSJ), and literally implies the use of the scale insect kermes *coccus* (*Kermes vermilio* P.), *i.e.*, the Polish cochineal or the Armenian cochineal, another high-quality dyestuff used.²⁵ The dyestuff of the scale insect is as well considered by Pliny (Plin. NH 21.45–46) or even by Dioskurides (Mat. med. 4.48).

22. On Dyer’s and wild madder see: Cardon 2007, 107–124.

23. Bagnall & Cribiore 2006, 106.

24. Cardon 2006, 56.

25. Hofmann-de Keijzer *et al.* 2007, 214; Cardon 2007, 609–619; Froschauer 2007, 704. Regarding the terminology of insect dyes, two doctrines can be seen amongst scholarship at present: one that denotes all insects from the ancient Old World as ‘kermes’, in other words follows a historic approach; the other doctrine distinguishes coccid insects according to the ratio of their major or minor components, *i.e.* kermesic acid or carminic acid. As carminic acid is the main component detected in the New World Mexican cochineal, but is also found in other kinds of scale insects from Europe and the Mediterranean, the terminology Polish and Armenian ‘cochineal’ is used in analogy. As this paper aims to discuss dyestuffs, I decided to follow the terminology based on chemical composition according to analytical UHPLC-analyses. For further reading see Serrano *et al.* 2015.

It cannot be determined if indeed purple-dye was meant in BGU VI 1300 = C.Ptol.Sklav. II 237, as it was suggested in the English translation. In experiments based on the evidence from archaeological textiles, one stater (c. 13.5 g.) of purple-dyed wool proved to be enough to weave the ornaments of a tunic and a mantle.²⁶ Hence the question, whether one stater of purple dyestuff or purple-dyed wool was requested by Tetos, has to be left unanswered for the time being.

As equivalent to θαλασσοπόρφυρος, the adjective ἀλιπόρφυρος is listed in Kretschmer & Locher's *Rückläufiges Wörterbuch*, "of sea-purple, of true purple dye".²⁷ It derives from ἀλουργά which is attested in the Byzantine encyclopaedia Suda and is a synonym.²⁸ A related expression may possibly be seen in SPP XX 85.1 by restoring ἀ[λικ]ή.²⁹

Common purple

The colour purple includes various hues and shades depending on the dyestuffs and dyeing recipes used. The colour spectrum reaches from reddish to a bluish purple. Such diversity is pictured in different terms, as we have seen already. Sometimes we encounter a specific kind of purple, but it is impossible to visualize the actual colour hue. This is the case for a garment of common purple (κοινοπόρφυρος³⁰), which is mentioned in the marriage contract SPP XX 31.17 = CPR I 21.17 (AD 13th of August 230; Ptolemais Euergetis).

Rose-coloured and splendid bright purple

A kind of purple, of which we get at least an impression of its hue, may be described as ῥοδινοπόρφυρος,

rose-coloured purple.³¹ The term is well known from Roman literature: in the famous *carmen* 64 on the marriage of Peleus and Thetis, Catullus describes the purple coverlet on the marriage couch (Catullus c. 64.47–49):

*Pulvinar vero divae geniale locatur
sedibus in mediis, Indo quod dente
politum tinctorum tegit roseo chonchylī
purpura fuco.*³²

Catullus uses colours and their striking characteristics for creating his unique dramatic effects, especially in this ekphrasis being very important for the plot.³³ With *roseus fucus* (φῦκος) a reference to the plant orchil, a species of lichen, may be given.³⁴

In documentary papyri, a kind of purple designated as rose-coloured is attested and clearly distinguished from other colours, especially other reds. The γνῶσις ἱματίων SPP XX 245, an account of clothes from the 6th century of unknown provenance, lists various clothes (Fig. 2). Many are ticked off, which can be seen by the 'x' on the left serving as a checkmark.³⁵ One rose-coloured purple shirt, καμῖσ(ιον) ῥοδινοπόρφ(υρον), is registered (l. 11). This account, yet difficult to decipher and to understand due to its preservation, names particularly outstanding garments and textiles. Even three καμῖσια βλάττια were registered, shirts made of a high quality purple, which will be discussed below. Yet, Catullus and our papyrus are separated by six centuries in chronology. Assuming that orchil lichen as dyestuff was implied by this kind of purple, it seems plausible to distinguish it from other purple coloured textiles, particularly in an account.

26. See n. 8.

27. Kretschmer & Locker 1944, 480.

28. Sud. s. v. ἀλουργά alpha 1357 Adler (see also: The Suda on Line: <http://www.stoa.org/sol-entries/alpha/1357>; accessed 12.01.2015).

29. As suggested by Worp 1997, 58, n. 3.

30. Following Johannes Diethart all composita end as -πόρφυρος, see Diethart 1991, 234, No. 46.

31. Regarding the form of the adjective see Diethart 1991, 234, no. 46.

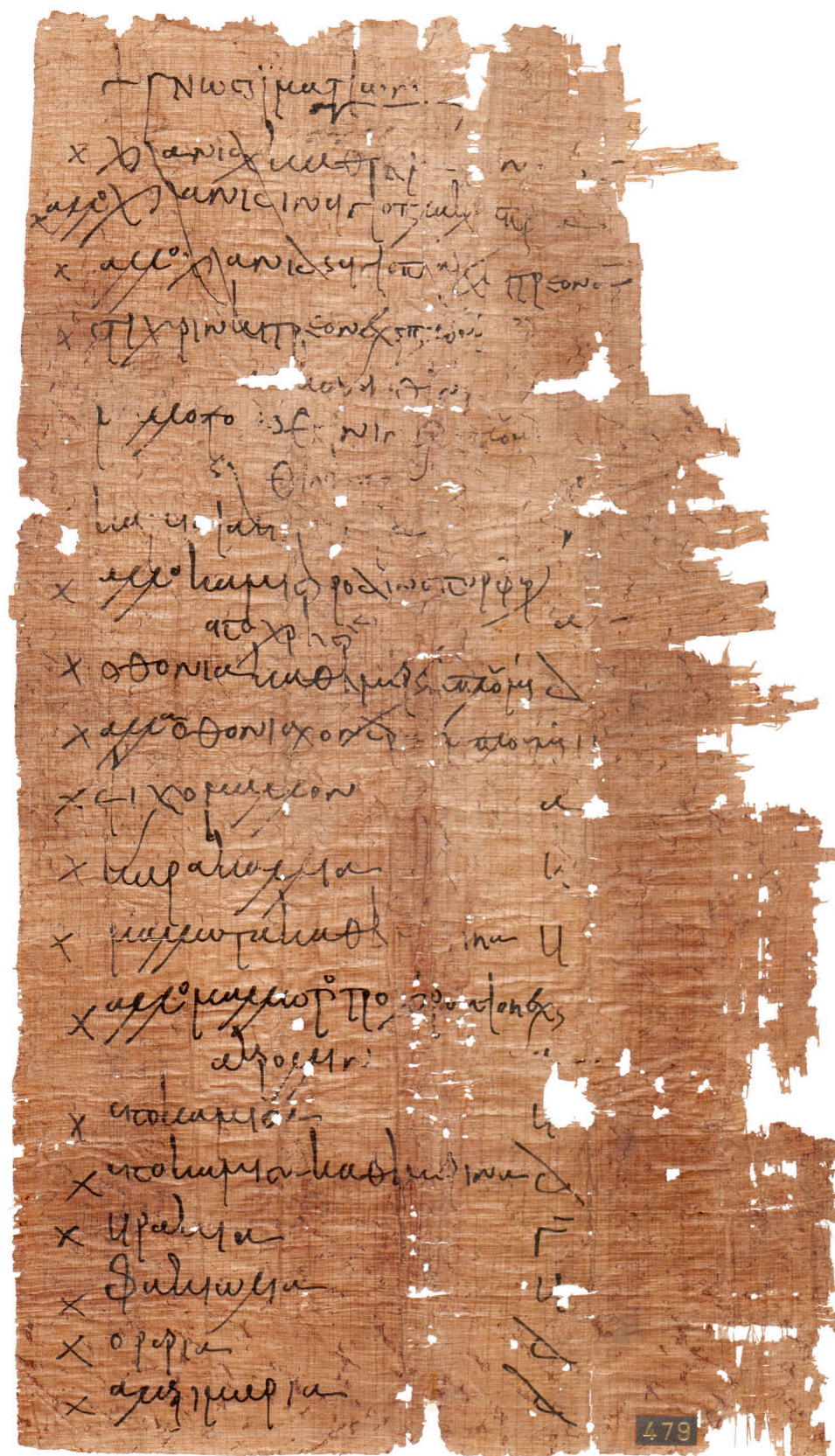
32. "But see, the royal marriage bed is being set for the goddess in the midst of the palace, smoothly fashioned of Indian tusk, covered with purple of the shell tinged with rosy stain" (text and translation: Cornish 1988, 101).

33. Clarke 2004.

34. This was not implied by Blümner 1892, 203. Cf. Plin. NH 26.10; on orchil lichens see Cardon 2007, 495-503: It seems likely, that several species of *Rocella* were used in ancient times, as there are different qualities attested as well.

35. Diethart 1992, 226 (= BL X, 273).

Fig. 2. SPP XX 245
(6th century; unknown
provenance).
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Library.



On an ostrakon, a list of dyes is preserved: O.Ashm. Shelt 197 = SB I 2251 (4th century AD; Oxyrhynchos). The amount of πορφυροῦ | ροδίνου λαμπροῦ, a bright rose coloured purple (ll. 7–8), is clearly differentiated from of previous colour, κοκκίνου (l. 6). The latter implies a red obtained from kermes scale insects, which would have been distinguished from any other dyestuff.

The adjective ὀξυπόρφυρος might refer to a special bright variety of purple, a splendid bright purple.³⁶ In P.Laur. III 82 (late 3rd century AD; unknown provenance), which is the account of Isidor, λόγ(ος) Ἰσι(δώρου), ὀξυπόρφυρος is listed amongst κόγ'κίνα (l. κόκκινα), ρόδινα, σαντύκινα, ποιζίνα and other textile related goods. The *editio princeps* explains it as “di color porpora brillante, splendente”. But is ὀξυπόρφυρος a mere hue or is it even a specific type of purple?

In order to find an answer, we need to crosscheck the term with other relevant sources. In Diocletian's Edict the 4th kind of purple is called ὀξυτυρία, a Greek term which is only attested there. According to Gerhard Steigerwald, ὀξυτυρία is the equivalent to the Latin *oxyblatta*, a term used in the legislation of the 4th century and obtained by a combination of different purple dyestuffs.³⁷ This can be clearly seen in the Edict, as the purple ὀξυτυρία is followed by ἀπλῖος πόρφυρος, different types of single-dyed purple.

It seems likely that the term ὀξυπόρφυρος in the documentary papyri dating from Late Antiquity,³⁸ implies an explicit kind of purple, which is further attested in the contemporary Imperial legislation.

Purple from specific origin and local purple

In some cases, the colour purple is specified by toponyms. Well known is the Tyrian purple, *color Tyrius*, on which Pliny the Elder and other authors provides

us valuable information (Plin. NH 9.135-137; e.g., Strabo 16.2.22-23). In addition, Pliny links different kinds to their manufacturing centres and lists them according their qualities: “The best Asiatic purple is at Tyre, the best African at Meninx and on the Gaetulian coast of the ocean, the best European in the district of Sparta” (Plin. NH 9.127).³⁹

In his Natural history Pliny the Elder relies on other sources, one is king Juba II, who discovered the almost legendary Gaetulian islands, where he installed dye workshops producing the so-called Gaetulian purple (Plin. NH 6.201). The location of these purple-islands remains unclear: some assume that they lay off the Moroccan coast at Essaouira, c. 350 km southwest of Casablanca.⁴⁰

In the documentary papyri from Egypt there might be an attestation of ‘Tyrianthine’ purple in P.Hamb. I 10.23 (2nd century AD; Theadelphia, Arsinoites;). It is a submission on stolen goods, amongst which clothes are listed. The adjective used is τυριαντίνην (l. τυριάνθινον).

Apart from Tyre, we find a shipment of two ounces of purple from Berenice, διόνκιον (l. διούγκιον) πορφύρας Βερενγ'κησίας, in a private letter P.Oxy. XX 2273.10 of the end of the 3rd century AD (Hermopolites?). The translation of the papyrus according its *editio princeps* is:

To my lady mother Theonis and to my lord brother Ascle ... greetings. Before all things I pray to the gods with whom I am sojourning, that you are well ... I sent to you a cruse of oil, which I had bought for six hundred drachmae, for I have heard that oil is dear with you, also some ..., I also have dried figs; and you will give 150 of them to my brother Cornelianus — and two ounces of purple wool⁴¹ from Berenice in order that you thus make, please,

36. According to Johannes Diethart it is again an adjective: Diethart 1991, 234, No. 47 (= BL X, 93).

37. Cod. Just. 10.21.3 (law of the emperors Gratian, Valentinian II and Theodosius I; promulgated between 383 and 392); Steigerwald 1990, 241-253.

38. Additional attestations of ὀξυπόρφυρος can be found in SB XXVI 16511.7 (6th century AD; Hermopolis).

39. Trans. by Rackham 1956, 249; Steigerwald 1986, 22-24.

40. Roller 2003, 115-116.

41. According to Worp 1997, 59 (= BL XI, 160) two ounces (c. 55 g.) would be rather purple-dye than purple-wool, as translated by the editor. However, we might use some caution in this matter, as already pointed out before (cf. n. 8).

Table 1. Summary of prices declared by a cooperation of goldsmiths: P.Oxy. LIV 3765 (AD 327; Oxyrhynchos)

Νικαῖνῃ[ς] (νικαῖνῃ[ς] papyrus)	λί(τρας) α τάλ(αντα) π	Nicaean (purple)	1 lb. tal. 80
ρίζειν[η]ς (l. ρίζινῃς)	λί(τρας) α τάλ(αντα) γ	Root (purple)	1 lb. tal. 3
πορφύρα[ς ἐ]ντοπ(ίου)	λί(τρας) α τάλ(αντα) β	Local (purple)	1 lb. tal. 2
κοκκίνου α	λί(τρας) α τάλ(αντα) η	Scarlet, 1 st grade	1 lb. tal. 8
β κοκκίνου	λί(τρας) α τάλ(αντα) β	2 nd grade scarlet	1 lb. tal. 2

the frocks and two veils... Be pleased to send me my raven-black veil and my shawl and shake my other dress without fail to prevent it spoiling. I will send you some money if you send back to me the linen cloths which you have made. Let me know what you have received from Dioscorion, Isidorus, and Castor also called Polydeuces, who has once ..., in order that I may know. Receive everything that I send to you

The editor of P.Oxy. XX 2273 was unsure, which Berenice was actually meant. Indeed, in the *Lexicon of the Greek and Roman Cities and Place Names in Antiquity* we find Berenice nine times recorded, four of them are located in Egypt alone.⁴²

Another kind of purple designated by its origin name is mentioned in a summary of prices declared by a cooperation of goldsmiths: P.Oxy. LIV 3765 (AD 327; Oxyrhynchos). In the 3rd column (ll. 16-20) the items listed in Table 1 are shown.

Nicaean purple is also attested in the marriage contract P.Strab. III 131.7 = SB V 8013.7 (AD 363; Arsinoites). Unfortunately, the respective textile is lost, which is designated as being ἀπὸ νικαινῆς πορφύρας.

Besides the papyrological evidence, there is a parallel in Diocletian's Edict, more than 60 years earlier: the eighth item is determined as Νεικανή κοκκηρά (§ 24.8).⁴³ Κοκκηρά from κόκκος means literally the berry from the kermes oak (*Quercus coccifera* L.), but obviously refers to the kermes scale insect, from which a scarlet, crimson red colour was obtained. Therefore, Gerhard Steigerwald interprets the

Nicaean κοκκηρά as purple achieved by the kermes insects as dyestuff.

This interpretation of the Imperial Edict, however, does not apply one-to-one to the previous papyrus text of P.Oxy. LIV 3765, as in ll. 19-20 two qualities of kermes-dye are recorded. It does not seem plausible, that two kinds of kermes-dye are subsequently registered by the name κόκκος, if Nicaean purple was (merely) obtained from kermes insects. Considering all the evidence, we might wonder, if there is another possible explanation for the term Nicaean purple.

The third column of this declaration is even more interesting for our purpose, as – following the Nicaean purple – the price for so called local purple, πορφύρα ἐντόπιος, is recorded. This kind is attested even from earlier times, *i.e.* in P.Oxy. VIII 1153 (1st century AD; Oxyrhynchos). This papyrus is a private letter from the father Apollonius to his son Apollonius, who was — according to the address on the verso — staying at Alexandria at that particular time. With the letter he attaches some purple as sample for a garment and in the last sentence, he remarks that “We are going to use local purple” (ll. 26–27: ἐντοπία δὲ πορφύρα | χρήσασθ(αι) μέλλομεν).

The price for local purple is once more given in the declaration P.Harr. I 73.40 = SB XVI 12626.40 (AD 329-331; Oxyrhynchos). In the same column, following local purple, two grades of kermes-dye are recorded, as previously in P.Oxy. LIV 3765. As mere suggestion, respectively idea, based on dye-analyses of preserved Roman textiles, local and Nicaean purple may not be dyes derived from kermes insects alone, but it could refer to a mixture of dyestuffs.⁴⁴ Such

42. Zahariade & Bounegru 2013, 1692-1705 s. v. Berenike.

43. Steigerwald 1990, 262–264.

44. The combination of mollusc-purple dyestuff with kermes has been proofed in archaeological textiles from small Roman fortresses, *praesidia*, in the Eastern Desert of Egypt; cf. Cardon 2006, 55-56. Further Zvi Koren demonstrated the clever use of double dyeing with red and blue dyes or even spinning together separately dyed red and blue fibres in Roman textiles from 'En Rahel. As dyestuffs the combination of madder with indigo, or kermes with indigo has been detected: Koren 1999.

combination would also be applicable for Νεικανή κοκκηρά in Diocletian's Edict.

In brief, the toponyms in connection with purple may indicate the origin of the colour and the place where it was manufactured. It also specifies the quality of the colour, as seen in Pliny's text.

Further terms with the meaning 'purple'

Besides πορφύρα other terms are clearly connected with the highly esteemed colour purple. Some of them attested in documentary papyri are listed in the following:

Blatta-purple

The Greek βλάττα is a loanword from Latin *blatta*, purple, which is linked with the shellfish-dyestuff. *Blatta* for purple is used in Diocletian's Edict for the first three kinds of purple as μεταξάβλαττα, βλάττα, and ὑποβλάττα (§24.1–3), which are the top qualities and the far most expensive dyes.

Μεταξάβλαττα is composed of *metaxa* and *blatta*. As *metaxa* in Latin refers from the 2nd century AD onwards to raw silk,⁴⁵ it means the purple-dyed raw silk.

Βλάττα is distinguished from μεταξάβλαττα by the material used, *i.e.* wool. The term *blatta* and its meaning have led to some confusion in academic understanding.⁴⁶ *Blatta* is seen as purple-dyed, unspun wool, similar to metaxablatta.⁴⁷

Gerhard Steigerwald demonstrated that originally *blatta* was used as a term for insects.⁴⁸ But from Late Antiquity onwards, *blatta* meaning a kind of purple is

associated with the image of clotted blood as can be found in glossaries. Of course, it is not blood, which is obtained from the sea snails, but the hypobranchial gland, from which the dyestuff is obtained.⁴⁹ He identifies *blatta* with the color *Tyrius* and the *dibapha Tyria* of Pliny's *Naturalis historia* (Plin. NH 9.135). The ancient city of Tyros is generally seen as point of origin for shellfish-purple.⁵⁰ This does not exclude the use of mollusc-dyestuff elsewhere, and the term Tyrian purple could also refer to the specific quality of the dye.

Considering *blatta* as equivalent for Tyrian purple we might get a description of the hue from Pliny the Elder: *Laus ei summa in colore sanguinis concreti, nigricans aspectu idemque suspectu refulgens* (Plin. NH 9.135).⁵¹

In his study, Gerhard Steigerwald particularly draws attention to Cassiodorus' second letter of Theoderic to Theon, a *vir sublimis*, in his *Variae* (537/538 AD), where the matter of the purple-production from molluscs is discussed (Cassiod. Var. 1.2).⁵² There, clearly the production of *blatta*-purple is the issue, which is obtained from sea snails ("[...] *adorandi muricis pretiosissimam qualitatem. [...] conchyliis* [...]"). The purple hue is described as *obscuritas rubens*, blushing obscurity, and *nigrendo sanguinea*, an ensanguined blackness, a description which meets Pliny's precisely.

In the Edict, the third quality of *blatta*-purple is ὑποβλάττα, which is specified by its prefix ὑπό. In terms of colours the Greek prefix ὑπό as well as the Latin *sub* is used for lighter hues.⁵³ This seems plausible as the various kinds of purple are sorted according to their qualities.

45. Steigerwald 1990, 223–224: μεταξάβλαττη "purple silk"; cf. Aelius Marcianus, Dig. 39.4.16 §7 (c. AD 200); Cod. Theod. 10.20.13 (AD 406); Cod. Theod. 10.20.18 (AD 436).

46. W. A. Schmidt describes it as double-dyed (Schmidt 1842, 128), whereas K. Schneider interprets it as single-dyed purple: RE 23 (1959) 2000–2020, esp. 2013 s. v. purpura (K. Schneider). W. A. Schmidt has written an elaborate commentary on purple dyeing: Schmidt 1842, 96–212.

47. Steigerwald 1990, 232.

48. Steigerwald 1990, 224–237 as βλάττη "purple".

49. Gerhard Steigerwald refers to the passage in Sidonius Apollinaris' *epistulae* (Sid. Apoll. Epist. 9.13.14–19), which shows that purple was obtained from murex and not insects: Steigerwald 1990, 228.

50. Cf., e.g., Sid. Apoll. Carm. 5.48: *Tyros blattam fert*; but also Plin. NH 9.135 or Strabo 16.2.22–23.

51. "Its highest glory consists in the colour of congealed blood, blackish at first glance but gleaming when held up to the light" (Text and translation: Rackham 1956, 255–256).

52. Steigerwald 1990, 230–231.

53. Steigerwald 1990, 237–241 as ὑποβλάττη.

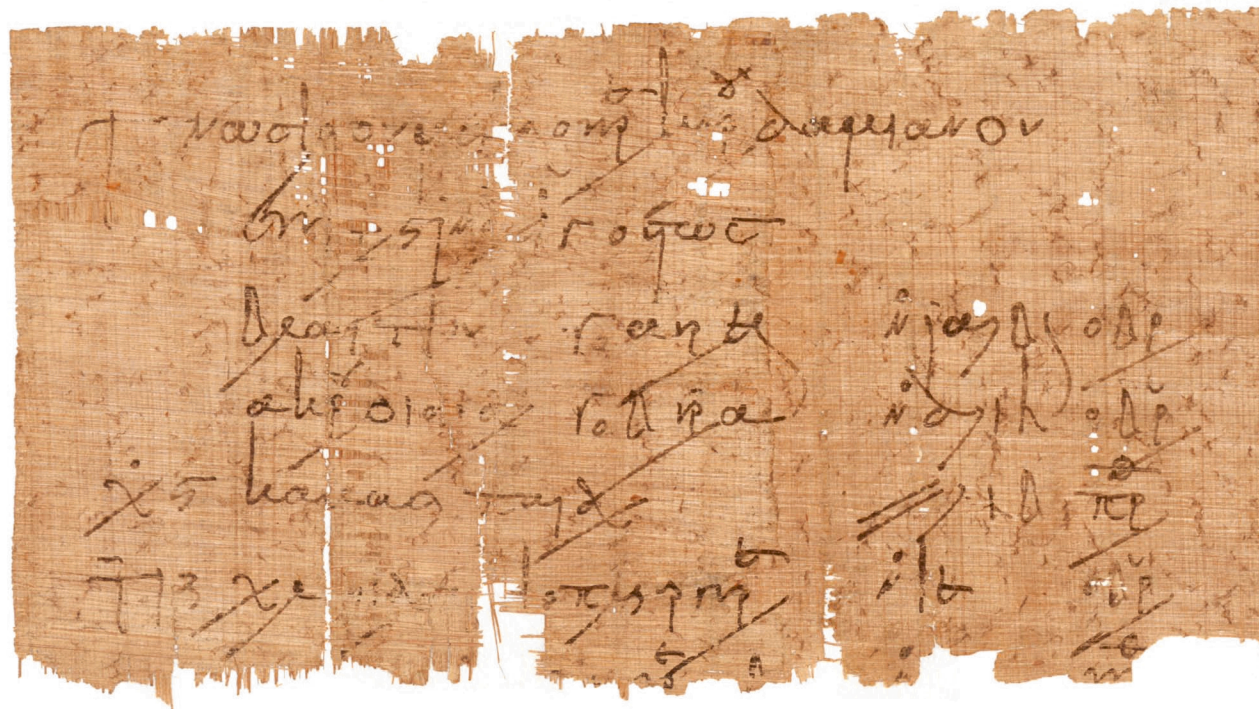


Fig. 3: Detail (left column): account of Damianos (SB XXII 15248); © Austrian National Library

Besides Diocletian's Edict, the term *blatta* is not that often attested in written sources. Much later we find the term *blatta* in documentary papyri from Egypt. In SB XXII 15248.3 (7th century; unknown provenance⁵⁴), the account of the most magnificent lord Damianos (γνώσις τοῦ μεγαλοπρε(πε)στάτου) κυρ(ί)ου Δαμιανοῦ), lists 1 ounce 5 ½ grammata of *blatta*-purple (Fig. 3). In this case the diminutive of *blatta*, *blattion* (βλαττίον) is used. The account SPP XX 245.10 (6th century; unknown provenance) for the already mentioned γνώσις ἱματίων specifies καμίσια βλάττια γ, three shirts with purple decoration⁵⁵ besides other cloths.

A possible third attestation for *blatta*-purple in papyri was suggested for P.Leid.Instr. 13.19 (7th-8th century; unknown provenance), where σκέπασμ(α)

ὀθώνι(νον) (l. ὀθόνι(νον)) λευκοβ(?)λάττι(ον) or even λευκὸν (καὶ) βλάττι(ον) can be read.⁵⁶

So far the papyri confirm clearly the use of the purple kind *blatta* in late antique Egypt, however, they do not yield any specific information on the dyeing-process or on the hue of the colour. All three papyrological documents are much later than Diocletian's Edict, where the term *blatta* marks high-quality dyes. It has to be noted, that SPP XX 245 and P.Leid. Instr. 13 were only possible to decipher because of the clear attestation of *blattion* in SB XXII 15248. This has been achieved by Johannes Diethart, who showed special interest in athesaurista and rarely attested Greek terms.⁵⁷ Therefore a repeated examination of papyri in light of textile production may yield further results.

54. Johannes Diethart suggests as provenance either Arsinoites or Herakleopolites based on a handwritten account of Carl Wessely in the Viennese Collection of Papyri (Diethart 1993, 70).

55. Actually it says three purple-coloured shirts, but as we have seen that *blatta* is a high quality purple obtained by molluscs, I tend to translate it rather as purple-decorated. An idea, how cloths were decorated with purple, might be seen in Fig. 1.

56. Diethart 1993, 73.

57. Diethart 1989, 113-114; Diethart 1993.

ostrum resp. ὄστρεον and conchylia

Besides *blatta* other terms used suggest the use of mollusc-purple as dyestuff. In Vitruvius *De Architectura* we hear of *ostrum*, as seen in the Latin text above. In Greek it is ὄστρεον and its adjective ὀστρίνιος which is used for describing mollusc-purple. This is the case in an inventory P.Oxy. I 109 (end of 3rd or early 4th century AD; Oxyrhynchos), where one purple κολόβιον is registered amongst other textiles and household goods (l. 5).

This term and its related forms were in use for much longer, as it can be seen in the private letter from Ptolemaic times (BGU VI 1300 = C.Ptol. Sklav. II 237). Besides πορφύρα and sea-purple, Tetos used the term ὀστρίνιος in her shopping list of luxury items.

Obviously terms deriving from κόγχη, mussel, indicates the use of mollusc-purple as dyestuff. In the papyri the colour appears in the list PSI Congr. XVII 18 (4th century AD; Oxyrhynchites?) where three oz. of κογχυλίων (FrB I. 26) are recorded.⁵⁸ A remarkable and outstanding contract regarding the work of three κογχισταί, purple-dyers, is preserved as P.Grenf. II 87 = Sel. Pap I 23 (AD 23rd May 602; Hermopolis). The contract regulates the work of the dyers, the κογχιστική | τέχνη (ll. 14-15, 19-20), which was carried out in the contractor's workshop. Such an explicit designation as purple-dyers indicates their specialisation on this colour, *i.e.*, mollusc-dyestuff. This seems plausible, as the supply on dyestuffs and its various uses become larger, as we also may see from the papyrological evidence so far.

Hysginum and madder: purple from plant dyestuffs

As already seen above, the colour purple was obtained from other dyestuffs than molluscs in Antiquity. In ancient literature this is described: *Fiunt etiam purpurei colores infecta creta rubiae radice et hysgino, non minus et ex floribus alii colores* (Vitr. De arch. 7.14.1).⁵⁹

Hysginum (ὑσγίνον) is regarded as equivalent with the biblical *tekhelet*, a bluish violet obtained mainly by the species *Hexaplex* resp. *Murex trunculus*.⁶⁰ But also the mixture of murex-purple with kermes, two most precious dyestuffs, is identified with the ancient term *hysginum*.⁶¹ These two statements show a conflict in the hue of *hysginum*, which could be either a bluish, violet or reddish purple.

Considering written documents, we may not get clear evidence either: in a letter of the caring father Cornelius to his son, P.Oxy. III 531 = W.Chr. 482 = C.Pap. Hengstl 83 (2nd century AD; Oxyrhynchos), one topic concerns clothing. Cornelius writes to his son that he will send τὸ ἄλλο ζεῦγος τῶν ὑσγείνων (l. ὑσγίνων), “the other pair of scarlet clothes” (l. 17). LSJ seems quite misleading by suggesting a vegetable dye, perhaps kermes, which is apparently contradictory.⁶² If we check our other written sources, we find in Pliny's *Naturalis historia* a helpful remark (Plin. NH 9.140): *quin et terrena miscere coccoque tinctum Tyrio tinquere ut fieret hysginum*.⁶³ There we find a combination of *coccus* with *Tyrius*, *i.e.*, kermes scale insects with mollusc-dye.

However, the addition of kermes scale insects seems less meaningful for the four ἰσγίνη-purple listed in Diocletian's Edict (§24.9-12). For these items Gerhard Steigerwald suggests the use of plant dyestuffs, such as sea orchils, as basis for the dyeing.⁶⁴

58. The dyeing recipe P.Leid. X 94 also refers to the production of the κογχυλίων colour as purple (Halleux 1981, 106).

59. “Purple colours are also made by dyeing chalk with madder and hysginum. Other colours also are obtained from flowers.” (text and translation: Granger 1970, 127-128).

60. Ziderman 2004.

61. Cardon 2006, 56.

62. LSJ 1904, s. v. ὑσγίνον.

63. “[...] and also a method to blend minerals, and dye with Tyrian a fabric already dyed with scarlet, to produce hysginue colour” (text and translation: Rackham 1956, 258-259).

64. Steigerwald 1990, 264-274. According to Dominique Cardon, lichens growing by the sea were used in Antiquity; only since the Middle Ages the dyeing “industry” turned more to sea orchils (Cardon 2007, 495).

Despite these contradictory views, we may at least sum up that the term *hysginum* designates a combination of various dyes, in order to obtain purple colour. Whether kermes or plants were used, may come to light in future research.

Madder, as mentioned by Vitruvius as *radix rubiae*, gives another highly esteemed red colour. The plant either refers to the cultivated madder (*Rubia tinctorum* L.) or the wild madder (*Rubia peregrina* L.), both species were used in ancient textiles.⁶⁵ We already came across the term in the inventory list of P.Oxy. VII 1051 in connection with ‘false purple’.

Conclusion

Purple is generally perceived as luxury item, as status token and as prerogative of royalty. The Greek term πορφύρα designates several varieties and qualities of purple. Also the colour purple encompasses various hues ranging from bluish to reddish violet.

As written source papyrological documents reveal further information. Throughout the centuries we find several kinds of purple in use: true and false purple, sea-purple, common purple, rose coloured and splendid bright purple, purple from specific origins including local purple etc. Besides πορφύρα other Greek terms were used for purple, which is not only seen in literary sources, but also in the documentary papyrus texts from Egypt.

Papyrus texts, especially documentary papyri, record the daily life of Egypt and sometimes allow us insights into private communication viz. relations. We learn of a widespread use of the colour purple, regardless of gender and even among private persons. At all times purple was constantly and highly esteemed. Papyrological documents, in particular inventories, show the clear use of Greek terms for colours. The manifold attestations of purple can also be seen in the preserved textiles from Egypt. In other words: the various terms attest the great variety of actual dyed textiles in ancient times. By comparing

the papyrological evidence with other written sources, and by considering preserved textiles from Egypt, we encounter a more sophisticated branch in textile production: the dyeing workshops.

In a few cases we may be able to identify the dyestuff(s) used, but in many cases we still remain unsure and can only make suggestions. This applies further for the dyeing methods used.⁶⁶

Future research may be able to pursue these issues and thereby demonstrate the skilled labour, the profound knowledge as well the highly developed technology of ancient dyers.

Abbreviations

Papyri and ostraca are cited according the Checklist of Editions of Greek, Latin, Demotic and Coptic Papyri, Ostraca and Tablets, Oates, J. F. *et al.* (2001) *Checklist of Editions of Greek Papyri and Ostraca*. BASP Suppl. no. 9, of which the latest edition is found online: http://library.duke.edu/rubenstein/scriptorium/papyrus/texts/clist_papyri.html (12.01.2015).

Other abbreviations used are:

<i>APapyrol</i>	Analecta papyrologica.
<i>ByzF</i>	Byzantinische Forschungen: internationale Zeitschrift für Byzantinistik.
<i>BASP</i>	The Bulletin of the American Society of Papyrologists: American Society of Papyrologists.
<i>LSJ</i>	Liddell, H. G., Scott, R. & Jones, H. S. (1996) <i>A Greek-English Lexicon</i> . With a revised supplement. Oxford.
<i>MBAH</i>	Münstersche Beiträge zur antiken Handelsgeschichte.
<i>RE</i>	Pauly, A., Wissowa, G. & Kroll, W. (1893-) <i>Real-Encyclopädie der klassischen Altertumswissenschaft</i> .
<i>ZPE</i>	Zeitschrift für Papyrologie und Epigraphik.

65. Cardon 2007, 107-124.

66. See the term πενταβάρως, five times dyed, which appears in connection with πορφύρα: P.Coll. Youtie II 85 (6th-7th century AD; unknown provenance).

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