

# Gold, Goldsmiths and Goldsmithing in Byzantium

»Look, what new miracle and wonderful grace; behold the gold outside, but Christ inside!<sup>1</sup>«. This inscription is placed on the four medallions at the end of the bars of a cross, which is set in a silver-gilt triptych (most likely 12<sup>th</sup>-century) from St Peter's in Rome<sup>2</sup>. Though the beholder is asked to look at the golden appearance of the object, the more urgent exhortation is to behold Christ inside, who is represented by a particle of the True Cross in the inner part of the cross. The statement made by the text is that the outer matter is valuable, but although it is golden, it is contrasted with the interior to imply that it is the interior content which is of greater value.

The same *topos* is employed in the three-verse epigram on a 10<sup>th</sup>-century reliquary cross kept in the Tesoro of Monte Cassino. The text states that the cross was donated by a certain Romanos, perhaps Emperor Romanos II (959-963), who adorned it with gold. The last verse, however, reads: »Christ is adornment for him (i. e., Romanos), not the gold!<sup>3</sup>«.

An impressive example of a text in which gold and other precious materials are presented as being inferior to the divine is preserved in the codex Princeton, Garrett 16, a manuscript of the Scala Paradisi of John Klimax dated to the year 1082<sup>4</sup>. On f. 194<sup>r</sup> there is *inter alia* a depiction of the cross, which is accompanied by an epigram. The verses read: »For others gold is a great gift, and silver and purple are great possessions – flowing matter and full of perishability. For the worshippers and friends of Christ, however, the greatest gift is the cross alone and wealth and pride and divine power«<sup>5</sup>.

A comparison to gold and other precious materials is also spectacularly employed in a hymn to Emperor Justin II (565-578) that is preserved in the archive of Dioskoros of Aphrodito. Among other impressive epithets, which are reminiscent of words coined by the ancient comedian Aristophanes (or later by the 9<sup>th</sup>/10<sup>th</sup>-century author Constantine of Rhodes)<sup>6</sup>, the emperor is addressed as χρυσαργυροπιναροσμαραγδομαρ-

γαριτοβελτίων (»better than gold, silver, nacre, emerald and pearls«)<sup>7</sup>. In one of his poems, Manuel Philes, an author from the late 13<sup>th</sup> and the first half of the 14<sup>th</sup> century, designates his addressee as »a friend better than gold«<sup>8</sup>. Philes sometimes describes his patrons as »golden« (χρυσούς) to solicit their liberality in an attempt to obtain greater recompense<sup>9</sup>.

This *tour des textes* of the Byzantine millennium clearly testifies to the enormous prestige of gold. This is, of course, not restricted to Byzantium, but is a general cultural phenomenon in premodern and modern societies. As Margarete's saying goes in Goethe's *Faust*: »Nach Golde drängt, / am Golde hängt / doch alles. / Ach, wir Armen« (»Gold all doth lure, / gold doth secure / all things. / Alas, we poor«)<sup>10</sup>.

However, gold is not just regarded as the most intriguing material and the most persuasive reference for highlighting something special. It may also have a dangerous meaning and a negative connotation. Again, this is not a Byzantine invention: for example, one may think of the golden calf made by the Israelites during Moses' absence, when he went up to Mount Sinai. In the Byzantine context, one may cite a hymn on Saint Longinos, in which the Jews are accused of being χρυσολάτραι (»worshippers of gold«) whereas Longinos is praised as χριστολάτρης (»worshipper of Christ«) – one should note the pun χρυσολάτρης-χριστολάτρης<sup>11</sup>. The same juxtaposition is also employed in an early 13<sup>th</sup>-century letter by Michael Choniates, the former archbishop of Athens, which was sent from his exile on the island of Keos to a certain Manuel Beriboes. At the end of his epistle<sup>12</sup>, Choniates tells his addressee, who is a resident of Latin-dominated Chalcis, that he should let the barbaric Latins, who have transferred their worship of God to the worship of gold (τὴν τοῦ Χριστοῦ λατρείαν εἰς χρυσολατρείαν μεταθεμένους), perish<sup>13</sup>. Choniates also compares them to gold digging ants, which is a reference to Herodotus' account (3, 102) of gold digging μύρμηκες (ants or perhaps »marmots«) in India.

1 Unless otherwise indicated, the English translations are mine. – I deeply thank Cecile Morisson for suggestions and corrections on this chapter.

2 Rhoby, Epigramme II, no. Me110: Ὅρα τί καινὸν θαῦμα καὶ ξένην χάριν / χρυσὸν μὲν ἔξω Χριστὸν ἐν<δόν> δὲ σκόπει. Two more verses are attached on the medallions' reverses, cf. Rhoby, Interactive Inscriptions 324-325.

3 Rhoby, Epigramme II, no. Me70: Χριστὸς γὰρ αὐτῷ κόσμος, οὐ τὸ χρυσίον.

4 Cf. Kotzabassi/Patterson Ševčenko, Manuscripts at Princeton 112-125.

5 Hörandner, Epigramm und das heilige Kreuz 114 (fig. 5). 116 and Rhoby, Epigramme IV, no. US23 (with fig. CLXVIII): Ἄλλοις μὲν ἔστι δῶρον ὁ χρυσὸς μέγα / καὶ κτήμα σεπτὸν ἄργυρος καὶ πορφύρα / ὕλη βέουσα καὶ φθορᾶς πεπλησμένη / τοῖς τοῦ Χριστοῦ δὲ καὶ λατρευταῖς καὶ φίλοις / δῶρον μέγιστον ἔστιν ὁ σταυρὸς μόνος / πλοῦτος τε καὶ καύχημα καὶ θεῖον κράτος.

6 Anecdota Graeca 624-632. On Constantine of Rhodes cf. now Constantine of Rhodes, Constantinople.

7 Fournet, Hellenisme dans l'Égypte du VI<sup>e</sup> siècle I 444-445; II 648-650.

8 Manuel Philes, Carmina I 440 (F 239, v. 9).

9 Manuel Philes, A Poem 63.

10 Goethe, *Faust* I 2521-2523 (translated by A. Swanwick).

11 *Analecta Hymnica Graeca* II 179.

12 Michael Choniates, *Epistulae* 148, 30-34 (p. 241).

13 Cf. Homer, *Iliad* 2, 346.

A long *psogos* («blame») of gold's dangerous features is embedded in the mid-12<sup>th</sup> century verse chronicle by Constantine Manasses. Among many other criticism, gold is called an «acropolis of all evil» (πάντων κακῶν ἀκρόπολις) and a «citadel of destruction» (φρούριον ἀπωλείας) because its beautiful colour poisons like a snake (τὸ καλλίχροον ὡς ἔχιδνα φαρμάσσει)<sup>14</sup>.

The climax of χρυσολατρεία is χρυσομανία («greed for gold» / «obsession with gold»). In an encomium for John Chrysostom (also a popular source for expressions connected with gold), the author, Constantine VII Porphyrogenetos, addresses the church father with the plea that the metaphoric weeds in the crops that grow out of the greed for gold may not destroy the crop of his teaching<sup>15</sup>. The prototype χρυσομανής («obsessed with gold») is the legendary king Midas, as stated in the lexicon of Pseudo-Zonaras, for example: Μίδας. Κύριον. ὁ χρυσομανής<sup>16</sup>. In the chronicle by Manasses cited above, it is the iconoclast Emperor Nikephoros I who is called a «a slave of gold obsessed with gold like Midas the former Phrygian ruler»<sup>17</sup>.

In spite of its negative connotation the word χρυσοτζεφούδης (literally, «greedy for gold») is attested as a family name in the 11<sup>th</sup> and 12<sup>th</sup> centuries<sup>18</sup>. The modest approach, rejecting gold, is stressed by a term used by the anonymous so-called Manganeios Prodomos in the middle of the 12<sup>th</sup> century. In a poem addressed to his patron, the *sebastokratorissa* Eirene, the author praises his addressee rhetorically for having a «golden soul» (ψυχή χρυσή) but being indeed μισόχρυσος – «someone who despises gold», which serves as a synonym for wealth and splendour<sup>19</sup>.

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Byzantine Greek vocabulary is full of hundreds of terms with χρυσο- as the initial sound (especially adjectives), many of them coined in the Middle and Late Byzantine periods for rhetorical texts and poems<sup>20</sup>.

The following examples may illustrate this practice: there are many terms to describe the golden adornment of liturgical objects (crosses, reliquaries, vestments) that were donated by members of the imperial court and the aristocracy, both in Byzantium and beyond. In some houses there was *σηρικὰ καὶ χρυσίπαστα ἔπιπλα* («furniture with golden inlay-

ings and pieces of silk»<sup>21</sup>, and in the long verse inscription once preserved in the 6<sup>th</sup>-century church of St Polyuktos at Constantinople, a foundation of the Juliana Anicia, one reads about the «golden roofed covering» (χρυσόροφος καλύπτρα)<sup>22</sup>. Theodore Prodromos also tells us of χρυσόστεγοι οἴκοι («houses with golden roofs»), which refers to the imperial palace at the time of Manuel I Komnenos<sup>23</sup>; the same Prodromos also mentions the golden floors in the palace (χρυσοβατῆς δῶμα)<sup>24</sup>. Interestingly enough, these golden floors are also mentioned in a short, but vivid Chinese report of an embassy to Constantinople in the 7<sup>th</sup> century, which was compiled in the 9<sup>th</sup> century<sup>25</sup>. So far the substance of this passage has not been taken literally because it was interpreted as a reference to the impression of marble shimmering like gold<sup>26</sup>. Prodromos' evidence, however, may indicate that some (or some parts) of the palace's floors were indeed made of gold. In addition, the golden splendour of the imperial palace's interior is also mentioned by the Jewish traveller Benjamin of Tudela, also in the 12<sup>th</sup> century<sup>27</sup>. Gold leaf was also applied on mosaics tesserae, as archaeological evidence reveals<sup>28</sup>.

Compounds of χρυσ- were also used for specifying distinctive scripts in manuscripts: while the scribe of golden letters is a χρυσογράφος<sup>29</sup>, golden ink is called χρυσογραφία, and golden letters go under the name of χρυσογραμμία. Byzantine ink recipes are full of instructions for the fabrication of χρυσογραφία and χρυσογραμμία<sup>30</sup>. The term χρυσογραμμία is, for example, also employed in the Vatican version of the Libistros and Rhodamne romance from the 14<sup>th</sup> century, namely in the description of Libistros' dream of his sojourn in the realm of Eros (Ἐρωτοκρατεία): τὸ στέγος εἶχεν φοβερὰν χρυσογραμμίαν ὄλον («the roof was full of golden writing»)<sup>31</sup> which perhaps refers to the well-known technique of producing inscriptions with inlaid golden letters<sup>32</sup>.

The presence of and need for gold is also testified to by technical treatises, among them alchemist recipes on χρυσοποιία («making of gold»), some of them attributable to known authors, such as Michael Psellos (11<sup>th</sup> century) and Nikephoros Blemmydes (13<sup>th</sup> century)<sup>33</sup>. The latter describes how gold can be fabricated from an egg (ὠοχρυσοποιία)<sup>34</sup>. Instruction on gold- and silversmithing also exist, including 56 such recipes, as in a probably 11<sup>th</sup>-century discourse in the codex Par. gr. 2327<sup>35</sup>.

14 Constantine Manasses, *Chronicum* vv. 3497-3515. The passage is perhaps motivated by Constantine Manasses' own fortune and struggle for income and recognition at the Byzantine court. Similar words are to be found in vv. 3890, 4222.

15 Constantine Porphyrogenitus, *Logos* 318.

16 Ps.-John Zonaras, *Lexicon* s. v.

17 Constantine Manasses, *Chronicum* vv. 4478-4479: δούλον χρυσοῦ χρυσομανή ... / ἄντικρυς Μίδαν τὸν ποτε κατάρξαντα Φρυγίας.

18 Seibt, *Probleme* 6.

19 Manganeios Prodomos, *De Manganiis* I 43.

20 Cf. LBG s. v. χρυσ-.

21 Mavromatis, *Fondation* 103 (l. 525-526).

22 *Anthologia Graeca* I 10, 57 (l. p. 110).

23 Theodore Prodromos, *Historische Gedichte* XXX 395.

24 *Ibidem* VI 220. δῶμα is a poetic side-form of δῶμα.

25 Schreiner, *Eine chinesische Beschreibung Konstantinopels* 494.

26 Schreiner, *Byzanz – die Brücke zum Osten* 18; Schreiner, *Eine chinesische Beschreibung* 499-500.

27 *Ibidem*.

28 Neri/Verità, *Glass and Metal Analyses*; Neri et al., *Glass and Gold*.

29 Rhoby, *Inscriptions and Manuscripts* 18.

30 Schreiner/Oltrogge, *Rezepte*; Benedetti, *Ricette bizantine*.

31 Livistros and Rodamne 152 (v. 318).

32 On this technique in Antiquity cf. Niquet, *Inchriften als Medium von »Propaganda« und Selbstdarstellung*, especially 158.

33 Cf. Hunger, *Hochsprachliche profane Literatur* II 279-282.

34 *Collection II* 452-457.

35 *Collection II* 321-337; cf. Wolters, *Traktat*; Wolters, *Goldschmiedekunst*. A new edition with translation and commentary is currently being prepared in a project led by Antje Bosselmann-Ruickbie and Susanne Greiff at the Wis-

However, after the reign of Michael IV (1034-1041), a first noticeable shortage of noble metals (gold, silver) is documented: it was only until then that gold coins of almost 100 % purity existed<sup>36</sup>. By the beginning of the reign of Alexios I Komnenos (1081-1118), the *solidus* contained only 30 % gold<sup>37</sup>. Evidence for the scarcity of noble metals is also provided by Anna Komnene's famous account of the melting down of golden and silver objects in order to finance military campaigns<sup>38</sup>. Alexios, however, introduced a new gold coin, the *hyperpyron*, only 20.5 carats fine, which remained in use under his successors. In addition, Alexios also created the so-called *nomisma trachy*, a gold coin blended with silver and copper<sup>39</sup>. By contrast, during the 11<sup>th</sup> to 13<sup>th</sup> centuries, the percentage of gold in jewellery was slightly higher since alloys contained more than 90 % gold<sup>40</sup>. By the mid-14<sup>th</sup> century, however, the crown jewels had to be pawned to the Venetians. On the occasion of the imperial coronation, gold and silver dishes were no longer available, and at the second coronation of John VI Kantakuzenos the emperor had to settle for a crown crafted from gilt leather<sup>41</sup>. The last gold coins were minted under the Emperor Manuel II Palaiologos (1391-1425)<sup>42</sup>, after the gold coinage had undergone several stages of debasement<sup>43</sup>.

## The Origin of Byzantine Gold

Despite the shortage of gold from the Middle Byzantine period onwards, the need for this precious metal continued unabated. But where did the Byzantine gold come from<sup>44</sup>? And how did they cope with the shortage of it? Did they just melt and reuse the gold already in circulation? These are long-standing questions that have only been inadequately answered so far<sup>45</sup>.

The well-organised Roman mining system was still functioning in Late Antiquity and the Early Byzantine period<sup>46</sup>.

Up to the 7<sup>th</sup> century, the empire benefitted from mines in the Balkans<sup>47</sup>. This is proven by archaeological evidence that testifies to the existence of gold mines in Macedonia – for example at Arsenkies, Skouries and the so called Axantas mine on the Chalkidikē peninsula<sup>48</sup> –, Thrace and Bulgaria<sup>49</sup>. In Antiquity and Late Antiquity, gold was also washed out from the Hebros River and some of its tributaries<sup>50</sup>. The Balkans, especially Serbia (among others Caričin Grad)<sup>51</sup> and Bosnia<sup>52</sup>, also turned out to be valuable places for (re-activated) gold and silver mines in the late Middle Ages and in the Early Modern period when they were re-activated by the Ottomans<sup>53</sup>. Critobulos of Imbros, one of the four authors on the conquest of Constantinople in 1453, even praises Serbia for its abundance of gold and silver, in which it surpasses other regions. According to Critobulos, Serbia's gold and silver is of higher quality than that of India<sup>54</sup>. This statement can hardly be taken at face value, but it attests to the fame of the gold and silver mines in the Balkans in this period. There is also evidence that the ancient mines on Mount Pangaion in northern Greece continued to yield silver, lead and gold from the 16<sup>th</sup> century onwards while under Ottoman control<sup>55</sup>. Gold from there may have found its way to the Byzantine Empire, or at least to Thessaloniki from where it may have been shipped to other places<sup>56</sup>. In the 14<sup>th</sup> and 15<sup>th</sup> centuries, there was also an attempt to re-establish gold and silver mines on some of the Aegean islands with the help of Western (Saxon) miners, but with only very modest results<sup>57</sup>; these Saxon miners were already attested in the central Balkans as early as in the late 13<sup>th</sup> century<sup>58</sup>. For the Aegean island of Milos, the traveller Reinhold Lubenau reported the existence of gold, silver, iron, copper and sulfur deposits at the end of the 15<sup>th</sup> century<sup>59</sup>.

In addition, in the Early Byzantine Empire one also benefitted to a large extent from gold mines in the East: in Egypt the gold-mining town Bir Umm Fawakhir, situated in the Eastern desert of Egypt, east of Luxor, is supposed to have existed until the 7<sup>th</sup> century. Its gold mines are ancient, but

senschaftsCampus Mainz: <https://www.byzanz-mainz.de/forschung/a/article/der-griechische-traktat-ueber-die-hochgeschaeetzte-und-beruehmte-gold-schmiedekunst-edition-und-inter/> (22.10.2018).

- 36 An updated overview of Byzantine coinage is provided by Morrisson/Schaaf, *Byzance et sa monnaie*.
- 37 Oddy/La Niece, *Byzantine Gold Coins and Jewellery*.
- 38 Anna Komnene, *Alexias* 143, 72-144, 81 (cap. V 2,1); cf. Bosselmann-Ruickbie, *Byzantinischer Schmuck* 75; Grünbart, *Zur Kulturgeschichte des Goldes* 62.
- 39 Grierson, *Catalogue IV* 43-44.
- 40 Bosselmann-Ruickbie, *Byzantinischer Schmuck* 75; Morrisson, *Trade and Markets in Byzantium* 16; Oddy/La Niece, *Byzantine Gold Coins and Jewellery* 25-26.
- 41 Hilsdale, *Byzantine Art and Diplomacy* 199; Hetherington, *The Jewels from the Crown*.
- 42 Wirth, *Das Ende der römisch-byzantinischen Goldwährung*; Grierson, *Byzantine Coins* 294. See also Morrisson et al., *L'or monnayé* I.
- 43 Morrisson, *Monnaie et finances à Byzance*, part XI.
- 44 A very general approach to this subject, primarily focusing on the West (in Antiquity) and on coins, is provided by Blet-Lemarquand/Nieto-Pelletier/Sarah, *L'or et l'argent monnayés*.
- 45 Schreiner, *Byzanz – die Brücke zum Osten* 19: »Die Frage, woher das byzantinische Gold gekommen ist, danach hat die Forschung kaum gefragt und weniger recherchiert«. Cf. also Bryer, *The Question of Byzantine Mines in the Pontos* 134: »But, so far, numismatic metallurgists have been unable to tell us with

certainty where Byzantine gold and silver came from, and how far it was new, imported, or inherited recycled stock«.

- 46 Short overview by Mundell Mango, *Metalwork* 444-445.
- 47 Where they were controlled by the *comes metallorum per Illyricum* and the municipal decurions (later often the bishops) that he chose as mine controllers (*procuratores metallorum*): Laiou/Morrisson, *The Byzantine Economy* 29; Matschke, *Mining* 116.
- 48 Wagner et al., *Archäometallurgische Untersuchungen auf Chalkidiki* 174. 176-177. 181.
- 49 Matschke, *Mining* 116; cf. Grünbart, *Zur Kulturgeschichte des Goldes* 55.
- 50 Soustal, *Thrakien* 152; Külzer, *Ostthrakien* 221.
- 51 Ivanišević, *Caričin Grad* 122-124.
- 52 Vryonis, *Question* 14-15.
- 53 Kolovos/Kotzageorgis, *Halkidiki in the Early Modern Period*; Kolovos, *Mines and the Environment in Halkidiki*.
- 54 Michael Critobulos, *Historiae* 96, 10-14.
- 55 Vryonis, *Question* 16; cf. Wagner et al., *Archäometallurgische Untersuchungen auf Chalkidiki* 180.
- 56 Koder, *Lebensraum* 60; Matschke, *Zum Anteil der Byzantiner an der Bergbauentwicklung* 58-65; Matschke, *Westliche Bergleute* 436-437; Ćirković, *Production of Gold, Silver, and Copper*.
- 57 Matschke, *Westliche Bergleute* 444-445; Matschke, *Mining* 120.
- 58 Ćirković, *Production of Gold, Silver, and Copper* 42.
- 59 Matschke, *Westliche Bergleute* 440.

they seem to have been in use at least until Justinian I's era<sup>60</sup>. There was also a Byzantine interest in gold from Nubia<sup>61</sup> and Arabia<sup>62</sup>, and from regions even further afield, from where it was brought by ship<sup>63</sup>. An important source of gold was also the border regions of Armenia, which were therefore fought over by the Byzantines and Sasanids<sup>64</sup>. According to John Malalas in the 6<sup>th</sup> century, the gold of Armenia was so close to the surface of some mountain slopes that it could be washed out by heavy rain<sup>65</sup>.

But all of this ceased to be by the reign of Emperor Herakleios (610-641) at the latest, mainly for political reasons: invasion by Arabs, Slavs and other peoples<sup>66</sup>. Moreover, there is evidence that some gold mines – and mines in general – had already been exhausted in Antiquity or Late Antiquity<sup>67</sup>. This is especially true for the Anatolian mines, as detailed research has demonstrated<sup>68</sup>. Thus, research suggests that both Byzantium and the Caliphate faced a metal shortage in the 7<sup>th</sup> century; only as the new economic system of the Caliphate took shape, did gold production resume in the southern Negev desert in the 8<sup>th</sup> century<sup>69</sup>, from which Byzantium, however, was unable to benefit. Gold from Western Sudan reached Northern Africa, Spain and Egypt from the 8<sup>th</sup> century onward<sup>70</sup>.

Were there any gold mines in the Byzantine Empire in which mining continued after Late Antiquity? The Greek term for (gold) mines is μέταλλα, already attested in Antiquity<sup>71</sup>, and there is even a place called Μέταλλον<sup>72</sup>, situated in Lydia on the Paktolos River, which was famous for its gold; the abundance of gold in Paktolos even became proverbial<sup>73</sup>. Further terms for gold mines are χρυσωρυχ(ε)ία, χρυσωρυχείον and χρυσώρυχιον, but these terms are rarely attested in Byzantine sources, and, when they do occur, they refer to Antique or Late Antique gold mines. The same is most likely true for a passage from a poem by Leon Choiosphaktes from the beginning of the 10<sup>th</sup> century, addressed to the young co-emperor Constantine VII. In this poem, the author describes the warm baths in Pythia (Bithynia): he not only mentions μέταλλα there (v. 21), but also states that Lydia is rich in μεταλλόχρυσον γαίαν («land possessing gold mines«)

(v. 47)<sup>74</sup>. These remarks, however, are most certainly Antique reminiscences.

But there might also be some positive evidence of functioning gold mines in Byzantium. In the district of Lulon, in the Cappadocian part of the Taurus Mountains, gold, silver, tin and lead mines continued to be in use at least up to the 8<sup>th</sup> century, as is documented archaeologically<sup>75</sup>. In the 10<sup>th</sup> century, gold mines are recorded in Armenian Taron and Caucasian Albania<sup>76</sup>, and the Byzantines might also have had access to these<sup>77</sup>.

There is some evidence that exhausted mines were re-established in Byzantium; such a case being the (gold) mines near Astyra (in the modern province Çanakkale), which were already exhausted in the time of Strabon (1<sup>st</sup> century BC/1<sup>st</sup> century AD), but excavated in the Byzantine period and then again in the 19<sup>th</sup> century<sup>78</sup>. The presence of gold is also attested for rivers in Bulgaria in an anonymous geographical work from 1308 (*Descriptio Europae Orientalis*)<sup>79</sup> without any more detailed specification, but it is impossible to know whether this reflected Medieval circumstances or if it is again an Antique reminiscence.

As for Bulgaria, gold manufacturing is attested between the 12<sup>th</sup> and the 14<sup>th</sup> centuries in the famous city of Tŭrnovo<sup>80</sup>. There is also a place in Bulgaria named Izlate («gold») at the foot of the Haimos Mountains: the toponym is based on the gold in the sand of the River Topolnica; Greek sources (the historian Ducas) therefore also call the place Χρυσή<sup>81</sup>. There are further similar toponyms, such as Chrysopolis at the mouth of the Strymon River, or Chrysopolis in Bithynia on the eastern shore of the Bosphorus, which – interestingly enough – corresponds with Argyropolis on the opposite eastern shore of the Bosphorus<sup>82</sup>, but these are most likely just names and do not reflect any actual gold mining in the Byzantine period.

On the European part of the Bosphorus, however, one must mention the bay of Skletrinas on its Thracian shore, north of Constantinople. According to the report by Evlijā Čelebi, in the early 17<sup>th</sup> century there was a cave there, in which gold reserves were found in Byzantine times. There is some consensus in the secondary literature that this information is reliable<sup>83</sup>. If this is indeed the case, then we have a place

60 Meyer et al., Bir Umm Fawakhir Survey Project 1993; see also the publications listed at <https://oi.uchicago.edu/research/projects/bir-umm-fawakhir-project> (22.10.2018).

61 Cf. Matschke, Mining 115; Grünbart, Zur Kulturgeschichte des Goldes 54-55.

62 Shahid, Byzantium and the Arabs 2/2, 47-58.

63 Boyle, Gold 638; Blanchard, Mining, Metallurgy and Minting 27; cf. Grünbart, Zur Kulturgeschichte des Goldes 60.

64 Vryonis, Question 5; Koder, Lebensraum 60; Savvides, Observations on Mines and Quarries 136; Matschke, Mining 116.

65 John Malalas, Chronographia 383, 65-66 (cf. Theophanes, Chronographia I 179, 7); cf. Vryonis, Question 5-6; Matschke, Mining 116; Grünbart, Zur Kulturgeschichte des Goldes 55-56.

66 Matschke, Mining 117.

67 Savvides, Observations on Mines and Quarries 133.

68 Pitarakis, Mines anatoliennes exploités par les Byzantins; more general de Jesus, Prehistoric Mining.

69 McCormick, Origins of the European Economy 52-53.

70 Gondonneau/Guerra, Circulation of Precious Metals.

71 Cf. LSJ s.v.

72 Keil, Metallon (only attested in Nonn. Dionys. XIII 472).

73 Karathanasis, Sprichwörter 52.

74 Gallavotti, Planudea X 86-89. Cf. Leo Magistros Choiosphaktes, Chiliostichos Theologia 12-13.

75 Hild/Hellenkemper, Kilikien und Isaurien 116; Hild/Restle, Kappadokien 223-224 (on Lulon); cf. Matschke, Mining 118; cf. Vryonis, Question 9; Savvides, Observations on Mines and Quarries 135.

76 Vryonis, Question 7; Savvides, Observations on Mines and Quarries 136.

77 Vryonis, Question 7.

78 Pernicka, Archäometallurgische Untersuchungen in Nordwestanatolien 553-556.

79 Soustal, Thrakien 152.

80 Dochev, Tŭrnovo, Sixth-Fourteenth Centuries 676.

81 Soustal, Thrakien 289-290.

82 Külzer, Ostthrakien 263-264; cf. Trapp, Gold und Silber 22.

83 Külzer, Ostthrakien 653-654; Matschke, Zum Anteil der Byzantiner an der Bergbauentwicklung 53-54.

very close to Constantinople in which gold was perhaps still available in the Byzantine period.

Medieval mining up to the 14<sup>th</sup> century is also attested for the island of Thasos<sup>84</sup> and it is probable that they also excavated for gold<sup>85</sup>. Some traces of Byzantine goldsmiths' shops were also found during excavations at Corinth<sup>86</sup>.

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Despite the aforementioned evidence of existing places for gold mining in Byzantium and its neighbourhood, there was a severe scarcity of gold in the Middle and, especially, in the Late Byzantine period, which is also documented by issues of gold coining<sup>87</sup>. This lack of gold was also due to a general impoverishment of the state in this period<sup>88</sup>. To what extent trade in gold from abroad existed is difficult to tell. It is known that the export of gold was prohibited; Michael VIII Palaiologos even tried to enforce this prohibition<sup>89</sup>. Goldsmiths were prohibited from purchasing more than a pound of gold or silver at a time without special authorisation, as stated by the Book of the Eparch of Constantinople in the 10<sup>th</sup> century<sup>90</sup>. This book also states that ordinary goldsmiths were not allowed to work at home, but only at the workshops (ἐργαστήρια) in the Mese<sup>91</sup>. This measure must have been due to the regular theft of the rare and precious material<sup>92</sup>.

Due to the lack of gold, or its cost, one can be sure that not all of what is called χρυσός is »pure« gold, but is rather added to other metals. This is not only true for coins from the 11<sup>th</sup> century onwards<sup>93</sup>. »Gold« is indeed often silver gilt, for which the terms ἀργυρόχρυσος<sup>94</sup> and χρυσάργυρος were used. The latter is attested very often in the poems on objects composed by Manuel Philes in the 14<sup>th</sup> century<sup>95</sup>. The verb χρυσαργυρέω (»to adorn with gold and silver«) is also attested, for example, in an epigram attached to the silver gilt cover of a Theotokos icon of the 13<sup>th</sup>/14<sup>th</sup> century from the Benaki Museum<sup>96</sup>.

Byzantine vocabulary also includes terms such as χρυσόχαλκος (»alloy of gold and copper« = brass)<sup>97</sup>. In his encomiastic vita of Constantine the Great, Constantine Acropolites, an author at the turn of the 13<sup>th</sup> and 14<sup>th</sup> centuries, mentions that the emperor had erected crosses in Constantinople made of χρυσόχαλκος for which he also provides the inscriptions<sup>98</sup>. A στήλη (»column«) in the 14<sup>th</sup>-century allegoric poem by Meliteniotes is called σιδηροχρυσόχαλκευτος (»wrought of iron and gold«)<sup>99</sup>. Gold alloys in general are called χρυσοχείμευτος (also -χύμευτος)<sup>100</sup>.

## Goldsmiths and Goldsmithing in Byzantium

Goldsmiths and their workshops in the Mese have already been mentioned. In the following some details about their profession, supplemented by some scarce biographical details will be presented, insofar as they are available<sup>101</sup>.

There are several terms, which describe goldsmiths and the art of goldsmithing in Byzantium. The earliest term for a goldsmith is χρυσοχόος, already attested in Homer's *Odyssey* and in Aristophanes' plays<sup>102</sup>. In the apocryphal Acts of Paul, the famous smiths of Ephesos are not silversmiths (as in the Acts of the Apostles) but goldsmiths (χρυσόχοοι)<sup>103</sup>. From this stem χρυσοχοΐα was coined which is attested in the *Souda* dictionary of the 10<sup>th</sup> century<sup>104</sup>. In the 11<sup>th</sup>-century discourse in codex Par. gr. 2327 mentioned above, goldsmithing is called χρυσοχοϊκή (sc. τέχνη)<sup>105</sup>. In a letter dated to the year 801, Theodore Stoudites uses the term χρυσουργία for goldsmithing<sup>106</sup>. His famous Stoudios Monastery even had its own goldsmiths (χρυσόχοοι) as evidence for the time span 800-815 demonstrates<sup>107</sup>. Theodore Lascaris, the later Emperor Theodore II (1254-1258), calls goldsmithing χρυσοποιητική (sc. τέχνη)<sup>108</sup>.

In Late Antiquity, there are some attestations of αὐράριοι, which is a designation borrowed from Latin *aurarius*. The term is found in several inscriptions in Laodikeia Kekau-mene<sup>109</sup>; the αὐράριοι also formed guilds<sup>110</sup>, and they even had their areas reserved in the theatre, as demonstrated by

84 Koder, Aigaion Pelagos 97; cf. Matschke, Mining 118; Babelides, Koitasmata chrysu 50 (fig.).

85 Grünbart, Zur Kulturgeschichte des Goldes 56.

86 Bouras, Master Craftsmen 518.

87 Cf. Hendy, Studies in the Byzantine Monetary Economy 278.

88 Cf. Morrisson, Monnaie et finances, part IV.

89 Matschke, Zum Anteil der Byzantiner an der Bergbauentwicklung 50.

90 Leo VI, Eparchenbuch 86 (2, 8); cf. Dagron, The Urban Economy 435-436; Cutler, Industries of Art 571-572; Morrisson/Cheyne, Prices and Wages 857; Laiou/Morrisson, The Byzantine Economy 54-55; see also Grünbart, Zur Kulturgeschichte des Goldes 57.

91 Leo VI, Eparchenbuch 88 (2, 10).

92 Cf. Dagron, The Urban Economy 435-436.

93 Grünbart, Zur Kulturgeschichte des Goldes 53.

94 LBG s. v.

95 Ibidem s. v.

96 Rhoby, Epigramme III 843-845 (no. AddII24).

97 Cf. Trapp, Gold und Silber 18. One must also mention the term ὀρείχαλκος (Latin *orichalcus*) which is a further designation for brass (materially an alloy of copper and zinc): cf. Halleux, L'orichalque et le laiton.

98 Constantine Acropolites, Panegyric 33.

99 Poème allégorique de Méliténote v. 1817.

100 Cf. ἀργυροχέμευτος in LBG.

101 For those being attested in PmbZ see also Prinzing, Streiflichter auf Goldschmiede.

102 Cf. LSJ s. v.

103 Acta Pauli, fragm. 1,28. In Byzantium the side-form χρυσοχός is also attested (cf. LBG): in the Ptochoprodromos 2, 88 χρυσοχοὶ τεχνῖται are mentioned.

104 Suidae Lexicon α 571.

105 Collection II 321. However, one has to be aware that the title is perhaps not original, but was composed when the codex Par. gr. 2327 was copied by the scribe Theodoros Pelekanos in the year 1478, cf. Gamillscheg/Harfinger, Repertorium II, no. 170. In parenthesis one also has to point at the earliest mention of χρυσοχοϊκός: the term ἡ χρυσοχοϊκή is already attested in the 3<sup>rd</sup> c. BC but as a term for a tax paid by goldsmiths, cf. LSJ s. v. χρυσοχοϊκός 2.

106 Theodore of Stoudios, Epistulae 7, 67 (on the date p. 149\*-150\*).

107 PmbZ 10349; see also Prinzing, Streiflichter auf Goldschmiede 765.

108 PG 140, 1342A.

109 Belke/Mersich, Phrygien und Pisidien 327 and LSSup.

110 Cf. Dagron, The Urban Economy 408. Women were not allowed to participate, ibidem 409.

evidence from Aphrodisias<sup>111</sup> and Miletos<sup>112</sup>. The head of such a guild is called *πρωταυράριος*<sup>113</sup>. This office is still attested in 7<sup>th</sup>-century Egypt<sup>114</sup>. *αυράριος* could also have served as bankers<sup>115</sup>; according to other interpretations they also could have been financial managers of circus games or even clappers (*favisores*) in circuses and theatres<sup>116</sup>.

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The Byzantine goldsmiths' workplaces also bear different names. There is the Palace's *χρυσ(ο)εψητεῖον*<sup>117</sup> (literally the place where gold is boiled), which was even given its own lemma in the Souda dictionary which states: »*χρυσεψητεῖον*: here they cast and smelt the gold«<sup>118</sup>. A description of the Palace's monetary atelier is given by Nicholas Mesarites<sup>119</sup>. The *χρυσεψητής*, the craftsman working there, is the expert engaged in gold purification<sup>120</sup>. The so-called *Χρυσιοπλύσια*, as mentioned by Niketas Choniates, are *grosso modo* identical<sup>121</sup>: it is the place where »gold is washed« and denotes the imperial mint in the palace<sup>122</sup>. The *χρυσοχοεῖον* – literally also the place where gold is melted and cast – is already attested as early as in the 9<sup>th</sup> century<sup>123</sup>: it is the name of the gold and jewellery atelier in the imperial palace<sup>124</sup>. The head of this department is called *ἀρχων τοῦ χρυσοχ(ο)εἰοῦ*: the function is attested on seals and other sources from the 10<sup>th</sup> century<sup>125</sup>. Such an *ἀρχων τοῦ χρυσοχ(ο)εἰοῦ* is a certain sakelarios Anastasios, who participated in a conspiracy in favour of Constantine VII against Romanos I Lakapenos in 922<sup>126</sup>. In book VI of Theophanes Continuatus, he is called *ἀρχων τοῦ χρυσοχέστου*<sup>127</sup>; however, it seems that this is a mistake in the manuscripts for *χρυσοχεῖοῦ*<sup>128</sup>. The office obviously continued to be used, since a *ἀρχων τοῦ χρυσοχ(ο)εἰοῦ* is also attested in the 11<sup>th</sup> century or perhaps even later<sup>129</sup>. In the 9<sup>th</sup> century and later in the 10<sup>th</sup> century, mention is made of the *χρυσίω*

which is also a gold atelier in the imperial palace<sup>130</sup>, where the *χρυσοκλαβάριοι* (»gold embroiderers«) worked, as the chronicler Theophanes revealed<sup>131</sup>.

A further, so far unknown, profession is executed by a *χρυσολύπτης* attested on two unpublished seals from a private collection<sup>132</sup>. He was probably responsible for engraving golden letters in works of art<sup>133</sup>.

A further duty was that of the *χρυσ(ο)επιλέκτης*, documented on seals from the 10<sup>th</sup> and 11<sup>th</sup> centuries as well as in documents from the archives of Mount Athos from the 14<sup>th</sup> century. This person is, however, not someone involved in working gold, but most probably designated a money-changer or banker, as stated in recent research<sup>134</sup>.

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The duties of the goldsmith were primarily the refining (purifying) and welding of gold and silver<sup>135</sup>. The book by the eparch of Constantinople informs us that a *χρυσοχός* could also be a slave (*δοῦλος*)<sup>136</sup> and that the head of the goldsmiths was called *προεστὴς τῶν χρυσοχόνων*<sup>137</sup>. The mention of slaves leads back to Late Antiquity: slaves also worked in the mines in Late Antiquity and prosecuted Christians were often sentenced to *damnatio ad metallum* (in Greek *μεταλλίζειν*)<sup>138</sup>. Cyprian of Carthage addressed convicted Numidian bishops with the following words that also outline the symbolic meaning of gold: »No wonder that you, being pure gold and silver yourselves, are sent to gold and silver mines! Yet their nature has changed: whereas before they sent gold and silver uphill, now they get it from outside«<sup>139</sup>.

There are some more terms used for goldsmiths. A 6<sup>th</sup>-century tomb inscription from Ankyra mentions a *χρυσοκόπος*<sup>140</sup>, which is a designation for a goldsmith, as is the often-attested equivalent *ἀργυροκόπος* for a silversmith<sup>141</sup>. Andrew

111 Inscriptions of Aphrodisias, no. 10, 21.33; cf. Roueché, »Aurarii in the auditorium«; Roueché, Performers and Partisans at Aphrodisias, cf. Feissel, Chroniques, no. 326.

112 Cf. LSSup s. v.

113 Cf. LSJ s. v., LBG s. v.

114 Cf. LBG s. v.

115 Morriison/Sodini, The Sixth-Century Economy 205-206; cf. Roueché, »Aurarii in the auditorium«.

116 The various opinions on this term were collected by Morriison/Sodini, The Sixth-Century Economy 206, n. 217.

117 Cf. Matschke, Mining 119.

118 Suidae Lexicon χ 576; cf. Morriison, *Moneta, kharagè, zecca* 52.

119 Nicholas Mesarites, Palastrevolution 24-26 (cf. also the recent translation by M. Angold, Nicholas Mesarites, His Life and Works); cf. Morriison/Papadopoulou, L'atelier monétaire (Greek text with French translation).

120 Matschke, Mining 119; Prinzing, Streiflichter auf Goldschmiede 763.

121 Ibidem.

122 Niketas Choniates, Historia 347, 47; cf. Grünbart, Zur Kulturgeschichte des Goldes 57-59. 63; Matschke, Mining 119.

123 Dagron, The Urban Economy 431.

124 Matschke, Mining 119.

125 Cheynet/Gökyıldırım/Bulgurlu, Les sceaux byzantins, no. 2.1; Morriison, *Moneta, kharagè, zecca* 52.

126 PmbZ 20299.

127 Theophanes Continuatus 400, 11: literally »head of the one who shits gold« or »head of the place where gold is being shited«, cf. Diethart, Personen-

namen 197 who translates *ἀρχων τοῦ χρυσοχέστου* as »Gold-/Geldscheiβer (passend für einen Finanzminister)«.

128 The codices Vat. gr. 167 and Barb. gr. 232 transmit *χρυσοχέστου*, whereas other codices of Theoph. Cont. book VI have *χρυσοχεῖοῦ* (I sincerely thank Michael Featherstone [Paris/Oxford] for this information). In all likelihood, the form *χρυσοχέστου* is a copying error by the scribe because the ligatures *εστ* and *ει* look very much alike.

129 PLP 20547.

130 Constantine Porphyrogenitus, De cerimoniis I 583, 4; 586, 12; cf. also Theophanes, Chronographia I 469, 4 v.l.; Lampe s. v.; Psaltes, Grammatik 60, 151, 255.

131 Theophanes, Chronographia I 469, 3-4.

132 Stavrakos/Tsatsoulis, A Rare Lead Seal of a Goldsmith. I sincerely thank the authors for sending me this contribution before publication.

133 Cf. the term *ιερολύπτης* »the one who engraves holy letters« in LBG s. v.

134 Gkoutzioukostas, Paratèreseis gia ton *chrys(o)epilektè*; cf. Matschke, Mining 120; Morriison, *Moneta, kharagè, zecca* 52.

135 Papatthanassiou, Metallurgy and Metalworking Techniques 122-124.

136 Cf. Kaplan, The Producing Population 161-162.

137 Leo VI, Eparchenbuch 86 (2, 8).

138 Vryonis, Question 2.

139 Translated by Afanas'eva/Ivanov, Unexpected Evidence 138.

140 Mitchell, Inscriptions of Ankyra 97 (no. 39) = French, Inscriptions of Ankara 203-204 (no. 84).

141 Cf. LSJ s. v.; *ἀργυροκόπος* is also the term used in the famous passage about the silversmiths in Ephesos during Paul's visit in the Acts of the Apostles (19, 24).

of Crete (c. 700 AD) calls a goldsmith χρυσοτέχνης<sup>142</sup>; the equivalent ἀργυροτέχνης is also attested<sup>143</sup>. The same is true for so-called χρυσοτεχνίται, who are addressed directly in an alchemistic text attributed to the Late Antique author Olympiodoros<sup>144</sup>. A very rare term is χρυσηλάτης (also χρυσελάτης) which is determined as the equivalent of πεταλουργός in an undated alchemistic treatise<sup>145</sup>.

As for a χρυσοχός – as one can see, the most common term – an interesting story is told by John Tzetzes in a letter dated to the year 1147. It is addressed to the Emperor Manuel I Komnenos in the light of an imminent crusader attack<sup>146</sup>. In this epistle, Tzetzes reported a dream in which he met a goldsmith (χρυσοχός) called Basileios<sup>147</sup>, who was reading Dexippos' *Scythica*. Tzetzes interpreted his dream for the emperor: Basileios is the equivalent of the emperor, who receives the Scythic cavalry (this is the meaning of Dexippos' *Scythica*), i.e., the cavalry of the Cumans. With the help of St Theodore Stratelates and Constantine the Great, and with the gold spent for the recruitment of the Cuman troops, they would overcome the enemy<sup>148</sup>.

There are only a few instances in which we know the name of a goldsmith: an interesting personality must have been a certain Prandion, who worked as a gold- and silversmith in Constantinople in the second half of the 8<sup>th</sup> century. Though confronted daily with precious materials, he is attested as instructing the young Theophanes the Confessor about the vanity of earthly joys<sup>149</sup>.

An interesting story is also told by the Syriac author Bar Hebraeus in the 13<sup>th</sup> century: two jewellers, perhaps goldsmiths, of African origin, who were part of an Arabic embassy to Constantinople in 859/860, refused to return with their mission because they had converted to Christendom<sup>150</sup>.

Despite the fact that goldsmiths could also be slaves, they could also be rich and renowned persons. An anonymous χρυσ(ο)επιτητής was, for example, also attested as σπαθάριος at the imperial court in the Book of Ceremonies<sup>151</sup>, most probably because of his merits. Also in the 10<sup>th</sup> century a χρυσοχός was attested as the founder and patron of a church in the Apulian town of Trani<sup>152</sup>. The high esteem in which gold was held is also clear in a passage in Theophanes Continuatus book VI: the hero-Emperor Constantine VII Porphyrogenetos is praised for his expertise as a gold embroiderer, silversmith and other professions<sup>153</sup>.

## Conclusion

The aforementioned evidence clearly testifies to the presence of gold in Byzantine sources, regardless of its actual circulation and its availability in the Middle and Late Byzantine period. The external perception, at least, was that the Byzantine Empire and especially Constantinople were places full of gold. This is documented in reports – one might recall the previously quoted Chinese document or travellers' reports on Constantinople. This idea also pervaded the perception of Byzantium in the outside world: in the famous letter from Alexios I Komnenos to Robert of Flanders, which was forged in the West, it was stated: »In the city [i.e., Constantinople] you will find more gold than in the whole world.«<sup>154</sup> In creating an image of a golden empire, Byzantium's mission was definitely successful.

142 PG 97, 1293A; cf. Diethart/Grassien/Voigt, *Ausgewählte Lese Früchte* 643.

143 Cf. LSJ s.v. and DGE s.v.

144 Collection II 106, 15. However, the manuscript in which the passage is delivered is post-Byzantine.

145 LSSup s.v.; cf. Papatthanassiou, *Metallurgy and Metalworking Techniques* 124-126; Trapp, *Gold und Silber* 16.

146 John Tzetzes, *Epistulae* 85 (p. 58, 21).

147 PBW 253.

148 Cf. Grünbart, *Prosopographische Beiträge* 200-201.

149 PmbZ 6346; some more details are offered by Prinzing, *Streiflichter auf Goldschmiede* 764-765.

150 PmbZ 10648; cf. also Prinzing, *Streiflichter auf Goldschmiede* 766.

151 Constantine Porphyrogenitus, *De Cerimoniis* I 631, 10.

152 Guillou, *Recueil*, no. 180; PmbZ 22412; Prinzing, *Streiflichter auf Goldschmiede* 767.

153 Theophanes Continuatus 450 (c. 22); cf. PmbZ 23734 (p. 525 with some mistakes).

154 Schreiner, *Byzanz – die Brücke zum Osten* 18.

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## Summary / Zusammenfassung

### Gold, Goldsmiths and Goldsmithing in Byzantium

This chapter deals with the mention of gold, goldsmiths and goldsmithing in Byzantine written sources, primarily, with the addition of archaeological results incorporated in the discussion. At the beginning, the connotation of gold and derivative terms in literary sources is mentioned. Hereafter, the question of the origin of Byzantine gold is discussed. It is not unlikely that, even in Byzantium, gold mines near Constantinople were still in use. At the end, professions and names are mentioned that played a role in Byzantium's gold workmanship. Even though gold was scarce in Byzantium, the empire was able to keep its fame as a »golden realm«.

### Gold, Goldschmiede und Goldschmieden in Byzanz

Der Beitrag beschäftigt sich mit der Erwähnung von Gold, Goldschmieden und Goldschmiedekunst in byzantinischen Schriftquellen. Daneben werden aber auch archäologische Erkenntnisse berücksichtigt. Zunächst wird die Konnotation von Gold und davon abgeleiteten Begriffen in literarischen Quellen untersucht. Daraufhin wird auf die Frage eingegangen, woher die Byzantiner ihr Gold bezogen. Es ist nicht unwahrscheinlich, dass selbst in byzantinischer Zeit Konstantinopel nahegelegene Minen noch über Gold verfügten.

Abschließend werden Berufe und Personen genannt, die in der Goldverarbeitung in Byzanz eine Rolle spielten. Auch wenn Gold in Byzanz knapp war, konnte das Reich, insbesondere Konstantinopel, dennoch seinen Ruf als »goldenes Imperium« behaupten.