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RESEARCH ARTICLE

A Perforated Coin of Gordian III from Dehlorān Plain, South-Western Iran

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Abstract

The assemblage of our archaeological data and findings regarding the early Roman-Sasanian interactions is very limited. During the recent survey of the Dehlorān Plain, an accidental coin find (discovered by a passerby, Mr. A. Hosseini) was handed over to the members of the expedition. The highly corroded and perforated coin belongs to the Singara issues of Gordian III (238-244 AD), the young Roman emperor whose reign coincided with the first series of Sasanian incursions led by Ardashir I and his successor, Shapur I. Not only it is one of the few known findings that relate to this tumultuous era, it has been discovered in the vicinity of Roman Mesopotamia, where most of the fighting took place. In this article, in addition to describing the coin, the authors have discussed the historical context of this period and the possible entry scenarios of this coin into the territory of the Sasanian Empire.

Keywords: Perforated Coin; Gordian III; Singara; Nisibis; Dehlorān.

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Introduction

Following the archaeological surveys and excavations conducted by the American expedition led by Frank Hole in the 1960s and 1970s, archaeological studies of the Dehlorān Plain came to a prolonged halt due to various reasons, primarily the political upheaval and the Iraq-Iran War. During the last decade, however, researchers have vigorously resumed the archaeological studies of Dehlorān Plain (Darabi, 2018; Darabi et al., 2018; Hourshid and Abbasnejhad Saresti, 2018; Hourshid et al., 2018; Zeynivand, 2019, 2020; Hourshid, 2023). In 2019, this plain was subjected to a systematic archaeological survey and study. In this survey, an effort was made to include the less-visited areas of the previous field research (Rafiei-Alavi et al., 2019, 2021).

During the survey, a man interested in the cultural heritage of the region (A. Hosseini) gave a heavily corroded and perforated coin (Fig. 1) that he had discovered during a family excursion in Dehlorān Plain to one of the members of the archaeological expedition.[1] After initial cleaning and restoration (Fig. 2), it was found that the item is a Roman coin of Gordian III (238-244 AD). Such a discovery, related to the formative years of the Sasanian Empire and a tumultuous phase of the Roman-Persian Wars, has rarely been reported within the current borders of Iran.[2] Therefore, the examination of this coin may lead to a better understanding of the early Roman-Sasanian interactions. In this paper, we will try to describe and examine this coin and also provide explanations regarding its presence in Dehlorān Plain.

The Coin

As discussed above, the perforated coin is in a deplorable state of preservation. Therefore, at the first glance, the legible parts of the legend and the depicted figures led us to conclude that it is either a provincial bronze of Singara (Fig. 3) or Nisibis (Fig. 4). As seen on similar coinage of Singara and Nisibis (see Hill, 1922: 135, Nos. 7-13, Pl. XIX, Fig. 3; Sear, 2001: 365, Nos. 3803-3804; Mairat and Butcher, 2022: Nos. 3468-74, Pls. 229-30), the confronted busts of Gordian III and his wife Tranquillina are depicted on the obverse. Many of the figures' details are not visible on the Dehlorān coin, but the overall face shapes and contour lines, especially Gordian's laureate and cuirassed bust, can be seen. On the reverse of the Dehlorān coin, which is inverted, a turreted city-goddess seated on a rock holding a branch or ears of corn is depicted, but other details of her figure cannot be observed. Out of the swimming river-god, only the upper part of his body and his outstretched hand have remained visi-

[1] The authors assume that the coin may have been discovered in the Bartash Plain, Dehlorān. The survey team has identified two large sites in that plain, DL034 and DL119 (Rafiei-Alavi et al., 2021: 232-235, 843-851). Since the two sites are dated to the Sasanian era -[II]th century AD, the authors propose that the coin may have been originally deposited in either of them. At any rate, since the authors do not know the exact finding spot of the coin, any further comments would be implausible.

[2] The authors remind us that even Byzantine coinage is considered a unique archaeological discovery in Iran (see Kazem Nezhand Asl et al., 2019; Zallaghi and Maziar, 2020).

Fig. 1. The Initial Condition of the Coin, Shortly after Its Discovery. Note that the Reverse Engravings Are Inverted (Left).

ble. Only a very faint trace of the Centaur Sagittarius or the ram (the sign of Aries) is observable on the Dehlorān coin. This Æ coin is 28 mm and 17 g, although the large hole (at 12 o'clock) and corrosion process have definitely contributed to its weight loss (perhaps 3-5 g).

The obverse inscription of Gordian and Tranquillina's Singara coins is "AVTOK. K. M. ANT. ΓOPΔIANON CAB. TPANKYΛΛINA CЄB" (Hill, 1922: 135, Nos. 7-13; Sear, 2001: 365, No. 3804; Goddard, 2007: Nos. 2453-2454; Mairat and Butcher, 2022: Nos. 3468-74). The obverse legend of the Nisibis coins "AVTOK. K. M. ANT. ΓOPΔIANON CAB. TPANKVIΛINAN CEB" (Hill, 1922: 121, No. 14; Bellinger, 1939: 38, No. 123; Sear, 2001: 365, No. 3803), have two variations that reads "AVTOK. K. M. ANT. ΓOPΔIANON CAB. TPANKVIΛINAN CE" (Mionnet, 1811: 627, No. 175), and "AVTOK. K. M. AN. ΓOPΔIANON CAB. TPANKVIΛINA CEB" (Goddard, 2007: No. 2445). Some parts of the Dehlorān coin's inscription appear to be obliterated, and only the "... AVTOK. K. M. AN... P... NKYΛΛINA CЄB" still can be observed (Fig. 5). The reverse inscription of Gordian and Tranquillina's Singara coins is "AVP. CЄΠ. KOΛ. CINΓAPA". The reverse legend of the Nisibis coins "CЄΠ. KOΛON. NECIBI. MHTPO" (Hill, 1922: 121, No. 14; Bellinger, 1939: 38, No. 123) reads "CЄΠ. KOΛO. NECIBI. MHTPO" (Mionnet, 1811: 626-627, Nos. 174-175; Sear, 1982: 365, No. 3803), and "CЄΠ. KOΛO. NECIBI. MHTP" (Goddard, 2007: No. 2445) on its variations. Out of the entire reverse inscription, only "CЄΠ... OΛ..." has remained legible. It must be noted that parts of the legend differ on Singara and Nisibis coins, particularly the "TPANKYΛΛINA CЄB" on Singara coins and "TPANKVIΛINAN CEB" on Nisibis examples. Furthermore, the only instant that "TPANKVIΛINA CEB" (as opposed to "TPANKYΛΛINA CЄB" on Singara coins) appears on a Nisibis coin is the variant that shows the turreted and veiled head of Tyche (Fig. 6). All other Nisibis and Singara coins have the seated goddess on their reverse. Since the "...NKYΛΛINA

Fig. 2. The Condition of the Coin after Minor Cleaning and Restoration.

CƐB" and the seated goddess are visible on the Dehlorān coin, we can surmise that it belongs to the Singara series.

Gordian III and the Outstanding Issue of Singara

In his short reign, the young Gordian III had to face the threats of Ardashir I (r. 224-242 A.D.) and his son Shapur I (r. 240-270 A.D.). Not long after he had taken power at Ctesiphon, Ardashir opened hostilities against Rome. The Romans retaliated in the early 230s, but they were driven back, sustaining heavy casualties. In 235[1] the Sasanians sieged and captured the cities of Nisibis and Carrhae (Potter, 2006: 158). By the end of 238 or the beginning of 239, the Sasanians were about to launch another campaign. They invaded and captured several cities in Syria and Roman Mesopotamia, probably taking Hatra in 240 (Southern, 2004: 234-235). Although Gordian took office in 238, he decided to react in 241. The Roman forces arrived in the east in 242, marking a significant delay in response to the Sasanian annexation of Mesopotamian settlements six years earlier. While the reasons behind the delay remain unclear, it may have partly stemmed from the lack of influence and authority of a teenager emperor (Potter, 2004: 229). In 241, Ardashir turned over the throne (it is not known whether he passed away or stepped down) to Shapur (Potter, 2006: 158). Shapur continued the campaign until the Romans decisively defeated him in the Battle of Resaena in 243 (Tucker, 2011: 147). Although the Romans regained some of the lost territory, including Nisibis and Carrhae, they were ultimately defeated in the battle of Misiche (Brosius, 2006, 144; Matloubkari and Shaikh Baikloo Islam, 2022: 66). Gordian mysteriously perished in the aftermath of the battle, early in 244 (Dodgeon and Lieu, 2002: 2; Potter, 2004: 236).

As an integral part of their grand strategy, the Sasanians used their offensive forces to raid and sometimes occupy and hold Roman territories. Successful

[1] It must be noted that the sources are not in agreement regarding the dates and the timeline of the war.

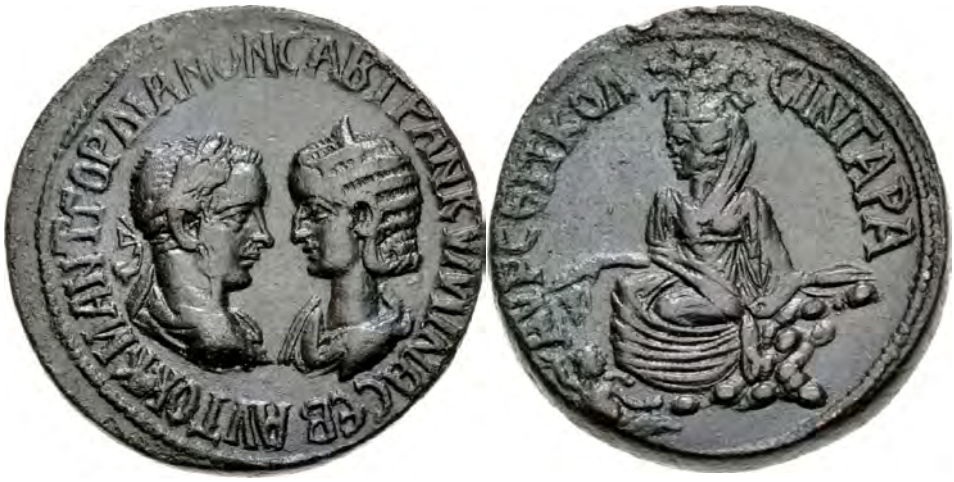

Fig. 3. One of Gordian and Tranquillina's Singara Coins. Obverse: Confronted Busts of Gordian III, Laureate, Draped and Cuirassed and Tranquillina, Diademed and Draped. Reverse: Draped, Veiled and Turreted Tyche, Seated on Rock and Holding Ears of Corn, with Centaur above Her Head, River God Swimming Below (Coin no. 57 of RPC VII.2, 3471, rpc.ashmus.ox.ac.uk/coin/7536).

campaigns against the Romans could also result in the negotiation of financial subsidies, the taking of loot from raids, and the taking of captives. Roman prisoners played prominent roles in the economic development of the Sasanian royal domain, providing skilled artisans and workforce for the construction of infrastructure (Mcdonough, 2013: 688-689). In the Aftermath of Gordian's unsuccessful campaign, his successor, Philip the Arab, had to pay 500,000 denarii to secure a peace treaty with the Sasanians (Harl, 1996: 129, 311; Potter, 2004: 237; Southern, 2004: 235; Brosius, 2006: 144). This is the first known instance of a transfer of financial resources from the Roman emperor to the Sasanian king, marking the first of many payments to follow (Maksymiuk, 2016: 149-154). The Romans also had to give up all claims of controlling Armenia (Maksymiuk, 2021: 93), but they seem to have held the recaptured Osroene and Mesopotamia (Southern, 2004: 71). Furthermore, the Sasanians had brought home much wealth by raiding, looting and sacking Roman territories during the war. This was their preferred method of acquiring large quantities of Roman gold (especially coins), rather than making high financial demands on Rome (Maksymiuk, 2016: 154).

One of the settlements that may have fallen into Sasanian hands was Singara, in 238 or 235/6 (Glas and Hartmann, 2008: 648; Pearson, 2017: 140, 183, 249). Singara was a military outpost on or near the Persian frontier, which evolved into a small city and a Roman colony during the reign of Septimius Severus or possibly as early as that of Marcus Aurelius (Comfort, 2023: 3, 9, 11-12). Singara was the base of Legio I Parthica (Wolff, 2000: 247-248; Luther, 2008: 502; Farnum, 2016: 15, 26; Pearson, 2017: 66; Comfort, 2023: 11). As a result, any survivors from the garrison at Singara would have been enlisted by the Sasanians or sold into slavery (Pearson, 2017:

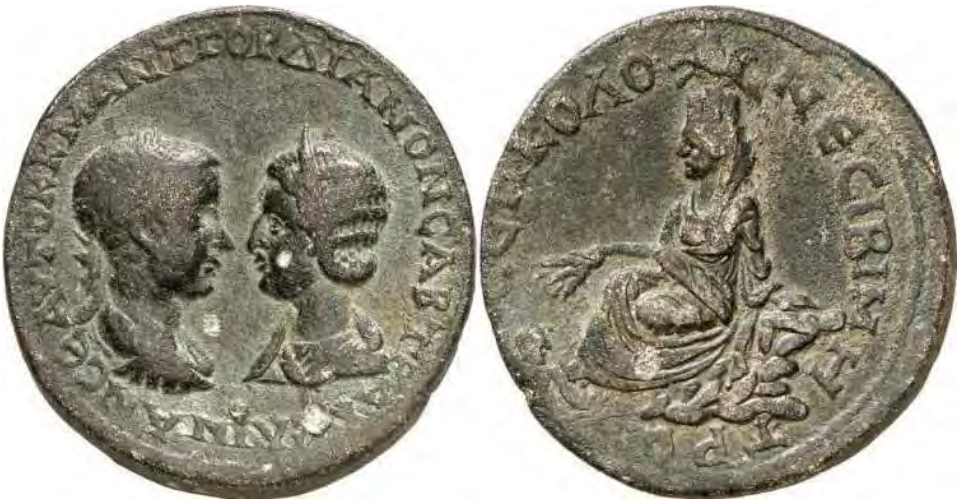

Fig. 4. One of Gordian and Tranquillina's Nisibis Coins. Obverse: Laureate, Draped and Cuirassed Bust of Gordian III Facing Diademed and Draped Bust of Tranquillina. Reverse: Tyche Seated Left on Rock, Holding Grain-ears, River-god Swimming Left at Her Feet, Ram Leaping Right Above (wildwinds.com/coins/ric/gordian_III/_nisibis_BMC_14var.jpg).

140). While the course of military operations during the years 241/42 is quite difficult to follow, it appears that the Sasanians remained the masters of most of Mesopotamia, likely including the legionary camps of Rhesaena and Singara (Loriot, 1975: 763). After the battle of Rhesaena, the Romans recaptured Nisibis and probably Singara (Oates, 1968: 75; Loriot, 1975: 769; Palermo, 2014: 462; Pearson, 2017: 186). Numismatic evidence suggests that the cities of Nisibis and Singara once again began to mint coins in Gordian's name (and also Tranquillina's) (Oates and Oates, 1959: 217; Oates, 1968: 89; Pearson, 2017: 186). Prior to these events, Edessa seems to have had a monopoly on issuing bronze coins in Northern Mesopotamia. After 242, Harran, Nisibis, and Singara also received this duty and privilege (Segal, 2005: 15). Singara only issued coins during the last years of Gordian III, between 242 and 244 (Bellinger, 1939: 40; Comfort, 2023: 12). As the easternmost Roman settlement in Mesopotamia, Singara's mint represented the furthest extent of Gordian's campaign and its coinage was chiefly intended to make clear that the Romans were once again in control of the whole region (Bellinger, 1939: 40). Bellinger and Oates, however, believe that the coins were not minted in Singara (Bellinger, 1939: 40-41; Oates, 1968: 75). According to Bellinger:

> "The extreme similarity between the coins of Singara and those of Nesibi is proof that the same hands cut the dies, and the identity of style is strikingly illustrated by the mules of No. 139, where a second obverse is used by mistake for a reverse. They are attributed to Singara only on the grounds that there are more Gordian coins from Singara in this hoard than from Nesibi, but there is no possible way of telling where they were supposed to circulate. It may be that the dies were cut in Nesibi and sent to Singara, but it seems more probable that pieces were minted in the former town."

Fig. 5. The Obverse of the Coin with Faint Traces of the Remaining Inscription.

Although Gordian regained some of the lost territory, the evidence suggests that the area east of Singara was surrendered once more by Philip the Arab two years later, as the price of the truce (Oates, 1968: 89; Comfort, 2023: 12, 23). It seems that Singara fell into Sasanian hands before or at the same time as Nisibis, since neither are listed among the Roman cities captured during Shapur I's 252 and 260 campaigns (Comfort, 2023: 13). Eventually, Singara and presumably also the country to the north and west remained under Roman control, except for comparatively brief intervals, until the mid-fourth century (Oates, 1968: 80). At any rate, the cessation of Gordian III's Singara coins and the closure of Singara's mint cannot be taken as specific evidence that the Romans had lost Singara. In other words, the minting of Singara's bronze coinage seems to be directly correlated to periods of military activity (Oates, 1968: 75; also see Casey, 1986: 14-15, 31-32; Katsari, 2011: 215-220; Kemmers, 2019: 59-60).

Interpretation of the Coin Find

Many of the hoards discovered outside their place of origin may have found their way abroad through expenditure by invading or allied armies, rather than being the fruits of foreign exchange transactions (Einzig, 1979: 13). The frontier zones of the Roman Empire most likely acted as some kind of economic zones in and of themselves (Kemmers, 2019: 63). When Romans mounted expeditions against their Parthian or Sasanian adversaries, Roman forces arriving from Europe spent lots of money (particularly denarii) in eastern markets, escalating the demand for small change (Harl, 1996: 110-111). Therefore, we may assume that the Dehlorān coin entered the Sasanian realm via military activities, either by the Romans or as a result of the aforementioned Sasanian expeditions. The Dehlorān coin, however, is not a prized gold or silver specie, and commercial transactions were the main reason for the use of bronze coins (Katsari, 2011: 219). Nevertheless, it is known that the Roman merchants also mainly used aurei and denarii for their transactions (Harl, 1996: 298-299; Katsari, 2011: 94-95, 186). The increasing quantities of 3rd- and

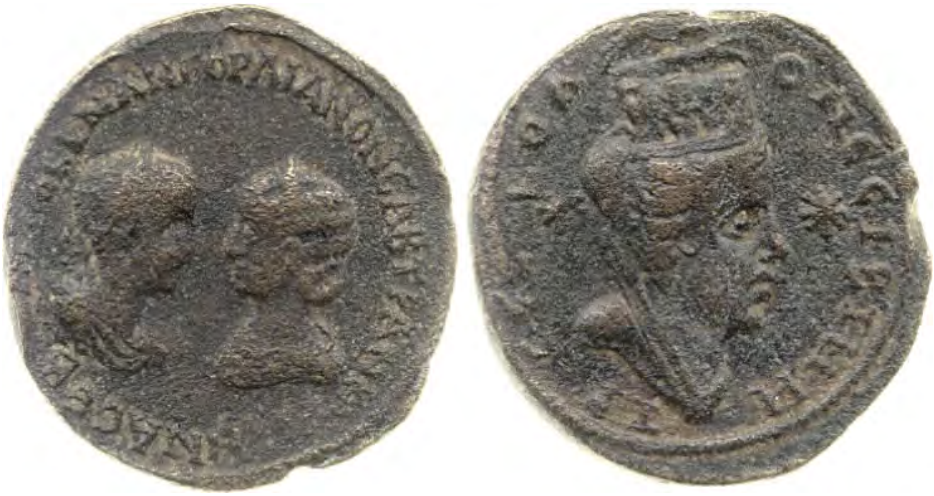

Fig. 6. One of Gordian and Tranquillina's Nisibis Coins. Obverse: Laureate Bust of Gordian III with Cuirass and Paludamentum; Confronting Draped Bust of Tranquillina with Stephane. Reverse: Turreted and Veiled Head of Tyche, Flanked by Stars, Ram (Aries) Leaping Right Above (SNGuk_1202_2445, s391106508.websitehome.co.uk/PHP/SNG_PHP/04_03_Reply.php?Series=SNGuk&AccessionNo=1202_2445).

4th-century gold coinage found in sites beyond the Roman frontiers (in the barbaricum) may point to the preferences of the inhabitants of the Roman Empire, who favored commercial transactions with neighboring regions (Katsari, 2011: 94-95). It appears that the situation was different on the eastern frontier, as few Roman coins have been recovered from beyond the limits of commercial centers (Harl, 1996: 299). In other words, while trade with the East was significant in terms of its value, it was probably always fairly limited in volume (Cherry, 2008: 740). In the east, Roman coins may have been melted down and reminted as local currency or converted into private jewelry and other valuable items. Those that remained in circulation as trade coins may have returned home in payment for goods imported from Roman domains (Harl, 1996: 299). It is no surprise, given that the entire Roman Empire had a closed currency system, and only coins minted in Rome or the provinces were accepted in Roman markets (Katsari, 2011: 186). As a result, moneychangers in commercial centers routinely exchanged various currencies, and incoming Roman coins were redirected back to the Roman world (Harl, 1996: 299). At any rate, Roman merchants had to pay for their daily expenses, along with other payments (Harl, 1996: 299; Katsari, 2011: 186-187), where bronze coins may have been spent. On the whole, we may never know how the coin ended up in Dehlorān Plain, as there are several possibilities.

As discussed in the introduction, the Dehlorān coin is more or less unprovenanced. This issue makes providing further analysis rather difficult. As is the case with other coin finds, a coin's date of loss may only be known if the archaeological context in which it was found is also known (Reece, 1984: 205). Although

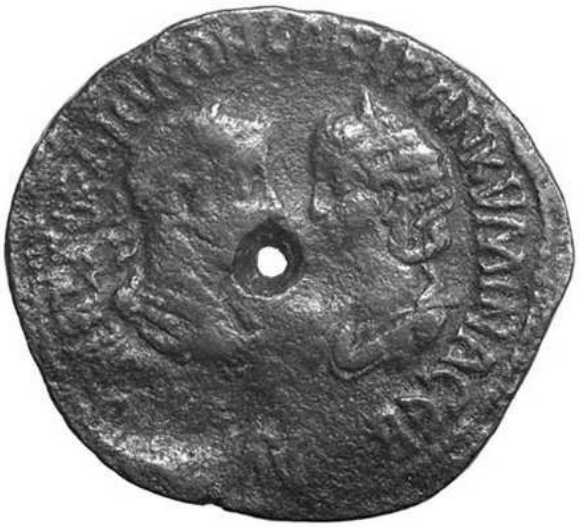

Fig. 7. A Pierced Coin of Gordian and Tranquillina, Issued in Singara (Perassi, 2011: 288, 312, Tav. V, 4).

we are not aware of the Dehlorān coin's archaeological context, we have access to other reliable data, thanks to the relatable archaeological and historical research. The short reign of Gordian III, as a part of the Military Anarchy period, saw a substantial increase in coin production (Katsari, 2011: 12, 43-48, 55, 79, 104-109, 113-132, 141, 145-146, 155-165, 193-196, 235-237). In addition, a preliminary examination of the archaeological findings in the eastern provinces suggests that the number of silver and bronze hoards lost during the 3rd century shows a significant increase after the reign of Gordian III (Katsari, 2011: 109, 111, 115, 117). As Reece has noted (Reece, 1984: 202):

> "The more valuable a lost coin, the greater effort will be put into finding it, so its chances of remaining lost are proportionately smaller. The more of any denomination of coin there is in circulation, the greater the chances of one of them getting lost. So: (a) The number of coins found is proportional to the number of coins in circulation. (b) The number of coins found is inversely proportional to their value."

Since bronze and debased silver coin production was at one of its peaks during the reign of Gordian III, especially in eastern provinces and the Sasanian frontier, it is no surprise that some of them found their way into Iran. Furthermore, the Dehlorān coin is made of bronze, thus increasing the likelihood of its loss. Also, according to Reece, "in periods of high coin-supply there is high coin-loss at the time of original circulation", and "we can judge when a coin was supplied to a site simply by its date of striking... most coins reached the sites on which they were lost roughly during the period when they were struck." (Reece, 1984: 204-205). Therefore, we may have assumed that the Dehlorān coin was also lost during its original date of striking in

242-244 or shortly afterwards during the period of its original circulation.

One major obstacle to making that assumption, however, is the fact that the Dehlorān coin is perforated. Piercing of coins, along with various other methods of coin disfigurement, has been an ordinary practice since the invention of coinage (Juhász, 2019: 91). Roman coins were popular objects for disfigurement and usage as ornamental components or many other miscellaneous purposes (especially by piercing), as attested by findings from all over the Mediterranean and European territory (Perassi, 2011: 257-300; Doyen, 2013: 2-30) to India (Tuner, 2016: 11-12, 16, 31-32, 43, 48, 49, 51, 53, 58, 71, 79, 84). Although perforated coins could have been used as pendants, amulets, bracelets, rings, box decoration, brooches, belts, body-chains, etc. (Juhász, 2019: 91; Perassi, 2021: 39-55), in most cases, we have no way of certainly knowing why they are pierced (Fig. 7). This issue stems from the lack of archaeological find context for many disfigured coins and more importantly, the loss of the perishable material that these items were attached to (Juhász, 2019: 91). In addition, Roman coins are known to have remained in use for very long periods (Einzig, 1979: 13; Casey, 1986: 9) and they probably never dropped out of use (Reece, 1984: 198).

The current state of the engravings of the Dehlorān coin also indicates that it was already very worn before its eventual deposition. Judging by its 12 o'clock hole, it may have been used as a personal ornament (e.g., a pendant). Compounds covering the coin are a result of the corrosion processes (patinas) and the deposition of soil encrustations, which are characteristics of coins exposed to subsoil for long periods. Therefore, we can conclude that the coin was dug out of its archaeological context and ended up on the surface.[1] (for more information, see He et al., 2011; Huisman et al., 2023). The heavily corroded and soil-encrusted coin may have surfaced as a result of construction activities or by illegal excavators who lost or discarded it. On the whole, we may never discover its original context as it may have been wandering the surface for an unknown period.

Conclusion

In this paper, the authors introduce and examine a perforated bronze Roman coin discovered in the Dehlorān Plain. Lying on the surface for an unknown period, the heavily corroded and soil-encrusted coin was out of its archaeological context when a passerby found it and handed it over to the members of the archaeological expedition. After the initial cleaning and restoration, the remaining parts of the figures and inscriptions identified the coin as an issue of the Roman emperor Gordian III and his wife, Tranquillina. Since Gordian's Nisibis and Singara coinage are strikingly similar and the words "CINΓAPA" and "NECIBI" have been obliterated on the reverse of the Dehlorān coin (only "CEΠ... OΛ..." has remained), the authors could not attribute the coin to either mint at the onset of the research.

[1] The authors remind that in corrosion and protection studies, the long-term processes occurring in the archaeological soil are hardly reproducible, even in laboratory experiments on aged specimens (see Di Turo et al., 2020).

Fortunately, the visible parts of the obverse inscription, "AVTOK. K. M. AN... P... NKYΛΛINA CЄB" and the presence of the seated goddess on the reverse made it clear that the coin belongs to Gordian's Singara series. According to Bellinger and Oates, however, Singara coins were also probably issued in Nisibis. In either case, both settlements were affected by the first series of Roman-Sasanian wars. It is impossible to know how and when the coin ended up in the Dehlorān Plain, as several scenarios may have been involved. We can, however, point out a few possible scenarios, including border trade, expenditure by Roman merchants, and spoils of war. Since Roman coins are known to have remained in use for long periods, and this perforated coin may have been used as an ornament, it may have entered its discovery location much later than its original issuing and circulation periods. While we know that Roman coins were still available at the antique markets of the Near East as late as the early 20th century, the coin's deplorable condition at the time of discovery dismisses the possibility of its recent deposition. When the authors first saw the coin, it was covered by thick layers of patina and soil encrustations, which are characteristic of coins exposed to subsoil for long periods of time. As a result, the authors believe that the coin was either removed from its archaeological context due to civic construction activities or by illegal excavators who lost or discarded it. On the whole, the authors note that this is an exceptional find, as it was issued in the Roman Mesopotamia (in the vicinity of Dehlorān) during the formative years of the Sasanian Empire. Furthermore, ancient Roman coins have rarely been reported within the current borders of Iran, and ancient coins in secondary use (especially perforated and disfigured examples) have been receiving more scholarly attention recently.

Bibliography

Brosius, M. (2006). *The Persians*. London: Taylor & Francis e-Library.

Bellinger, A. R. (1939). The eighth and ninth Dura hoards. *Numismatic Notes and Monographs* 85, 1-92.

Casey, P. J. (1986). *Understanding ancient coins: An introduction for archaeologists and historians*. Norman, Oklahoma: University of Oklahoma Press.

Cherry, D. (2008). The frontier zones. In W. Scheidel, I. Morris, R. P. Saller (eds.). *The Cambridge economic history of the Greco-Roman world*. Cambridge: Cambridge University Press. 720-740.

Comfort, A. (2023). *The Roman Frontier with Persia in North-Eastern Mesopotamia: Fortresses and Roads Around Singara*. Summertown: Archaeopress Publishing.

Darabi, H. (2018). Revisiting Stratigraphy of Ali Kosh, Deh Luran Plain. *Pazhoheshha-ye Bastanshenasi-ye Iran* 8.16: 27-42 (in Persian).

Darabi, H., Mostafapour, S., Ghaderi, H., & S. Bahramiyan. (2018). An Early Neolithic Flint-Knapping Spot from Ali Kosh, Southwestern Iran. *Neo-Lithics 18, The Newletter of Southwest Asian Neolithic Research*, 34-37.

Di Turo, F., Coletti, F., & C. De Vito. (2020). Investigations on alloy-burial environment interaction of archaeological bronze coins. *Microchemical Journal* 157, 104882, 1-11.

Dodgeon, M. H., & S. N. C. Lieu, (eds.). (2002). *The Roman eastern frontier and the Persian Wars (AD 226-363): A documentary history*. London: Taylor & Francis e-Library.

Doyen, J. M. (2013). The chairman's address. Entre amulettes et talismans, les monnaies trouées:

ce qui se cache sous les apparences. *Journal of Archaeological Numismatics* 3, 1-39.

Einzig, P. (1979). *The history of foreign exchange* (*second edition*). London: The Macmillan Press.

Farnum, J. H. (2016). *The positioning of the Roman imperial legions*. Oxford: BAR Publishing.

Glas, T., & U. Hartmann. (2008). Die Provinzverwaltung. In K. Johne, U. Hartmann, and T. Gerhardt (eds.). *Die Zeit der Soldatenkaiser: Krise und Transformation des Römischen Reiches im 3. Jahrhundert n. Chr.* (*235-284*), *Band I*. Berlin: Akademie Verlag, 641-672.

Goddard, John (ed.). (2007). *Sylloge Nummorum Graecorum, XII, The Hunterian Museum University of Glasgow, Part II, Roman Provincial Coins Cyprus-Egypt*. Oxford: Oxford University Press.

Harl, K. W. (1996). *Coinage in the Roman Economy, 300 BC to AD 700*. Baltimore, Maryland: The Johns Hopkins University Press.

He, L., Liang, J., Zhao, X., & B. Jiang. (2011). Corrosion behavior and morphological features of archeological bronze coins from ancient China. *Microchemical Journal* 99.2, 203-212.

Hill, G. F. (1922). *Catalogue of the Greek Coins of Arabia: Catalogue of the Greek Coins of Arabia Mesopotamia, and Persia* (*Nabataea, Arabia Provincia, S. Arabia, Mesopotamia, Babylonia, Assyria, Persia, Alexandrine Empire of the East, Persis, Elymais, Characene*). London: British Museum.

Hourshid S, & R. Abbasnejhad Saresti. (2018). The Paleolithic Area of Dalpari in Dehloran, Ilam. *Parseh Journal of Archaeological Studies* 2.3, 7-18 (In Persian).

Hourshid, S., Abbasnejad Saresti, R., Fazeli Nashli, H., & H. R. Valipour. (2018). Chronology and Village Periods Process Analysis in Patak Plain, Mousian, Deh Luran, Iran, *Pazhoheshha-ye Bastanshenasi-ye Iran 8*.16: 43-62 (In Persian).

Hourshid, S. (2023). The Chronological Analysis and Process of Evolution of Settlements from The Uruk Period to the End of Neo-Elamite Period, in The Deh Luran Plain (Patak). *Journal of Archaeological Studies 15*.1, 293-324 (In Persian).

Huisman, H., Ackermann, R., Claes, L., van Eijck, L., de Groot, T., Joosten, Kemmers, F., Kerkhoven, N., de Kort, J., Lo Russo, S., Ngan-Tillard, D., van Os, B., Peter, M., Pümpin, C., Vaars, J., & Z. Zhou. (2023). Change lost: Corrosion of Roman copper alloy coins in changing and variable burial environments. *Journal of Archaeological Science: Reports* 47. 103799, 1-21.

Juhász, L. (2019). Perforated Roman coins from the Aquincum-Graphisoft cemetery. *Acta Numismatica Hungarica*, 91-110.

Kazem Nezhand Asl, H., Sadraei, A., Jaleh Aghdam, J., & M. Rahmatpour. (2019). Review of Byzantine coins from Leilan Bakhtak castle. In H. Hashemi Zarjabad, Ghamari Fatideh, M. and M. Ataie (eds.). *Proceedings of the First Biennial National Conference on Archaeology and Art History of Iran, Babolsar*. Tehran: Aryaramna Publications, 2293-2309. (In Persian).

Katsari, C. (2011). *The Roman monetary system: The Eastern provinces from the first to the third century AD*. Cambridge: Cambridge University Press.

Kemmers, F. (2019). The functions and use of Roman coinage: An overview of 21st century scholarship. *Brill Research Perspectives in Ancient History* 2.3, 1-83.

Loriot, X. (1975). Les premières années de la grande crise du IIIe siècle: De l'avènement de Maximin le Thrace (235) à la mort de Gordien III (244). In H. Temporini (ed.). *Principat, Band II* (*Aufstieg und Niedergang der Römischen Welt: Geschichte und Kultur Roms im Spiegel der Neueren Forschung II*). Berlin: Walter De Gruyter, 657-787.

Luther, A. (2008). Nordmesopotamien. In K. Johne, U. Hartmann, and T. Gerhardt (eds.). *Die Zeit der Soldatenkaiser: Krise und Transformation des Römischen Reiches im 3. Jahrhundert n. Chr.* (*235-284*), *Band I*. Berlin: Akademie Verlag, 501-510.

Maksymiuk, K. (2016). Die finanziellen Abrechnungen in den persisch-römischen Kriegen in den Zeiten der Sasaniden. *Historia i Świat* 5, 149-157.

Maksymiuk, K. (2021). Armenia in Political and Military Activities of Ardaxšīr I. *Persica Antiqua 1*.1., 87-96.

Matloubkari, E., & B. Shaikh Baikloo Islam (2022). Climate Change and Challenges of the Last Ancient Dynasty of Iran: The Decline and Fall of the Sassanid Empire. *Persica Antiqua* 2.2, 61-76.

Mcdonough, S. (2013). Part III Military and Society in Sasanian Iran. In J. B. Campbell and L. A. Tritle (eds.). *The Oxford Handbook of Warfare in the Classical World*. New York: Oxford Uni-

versity Press, 680-702.

Mionnet, T. E. (1811). *Description de médailles antiques, grecques et romaines, avec leur degré de rareté et leur estimation; ouvrage servant de catalogue à une suite de plus de vingt mille empreintes en soufre, prises sur les pièces originales, tome cinquieme*. Paris: Testu.

Palermo, R. (2014). Nisibis, capital of the province of Mesopotamia: Some historical and archaeological perspectives. *Journal of Roman Archaeology*, *27*, 457-471.

Pearson, P. N. (2017). *Maximinus Thrax: From common soldier to Emperor of Rome*. New York: Skyhorse Publishing.

Perassi, C. (2011). Monete romane forate: qualche riflessione su un grand thème européen (J.-P. Callu). *Aevum*, 85.2, 257-315.

Perassi, C. (2021). Wearing coins in Roman times: When, how, for whom and why?. *Gemmae: An international journal on Glyptic Studies* 3, 39-60.

Oates, D. (1968). *Studies in the ancient history of northern Iraq*. London: Oxford University Press.

Oates, D., & J. Oates. (1959). Ain Sinu: A Roman frontier post in northern Iraq. *Iraq* 21.2: 207-242.

Potter, D. S. (2004). *The Roman Empire at Bay, AD 180–395*. London: Routledge.

Potter, D. S. (2006). The Transformation of the Empire: 235–337 CE. In Potter, D. S. (ed.). *A companion to the Roman Empire*. Malden, Massachusetts: Blackwell Publishing, 153-173.

Rafiei-Alavi, B., Lorzadeh, Z., Khanmoradi, A., Jayez, M., & B. Pirani. (2019). Archaeological Survey in Deh Luran Plains, Iran. In R. Shirazi (ed.). *18th Proceeding of the international symposium on Iranian archaeology*. Tehran: RICHT, 345-352 (In Persian).

Rafiei-Alavi, B., Lorzadeh, Z, & A. Khanmoradi. (2021). Report on Archaeological Surveys in the Deh Luran plains, 1398. *Report available at the archives of the Iranian Center for Archaeological Research* (unpublished) (In Persian).

Reece, R. (1984). The use of Roman coinage. *Oxford Journal of Archaeology* 3.2, 197-210.

Sear, D. (2001). *Greek Imperial Coins and their values: Local Coinages of the Roman Empire*. London: Seaby Publications.

Segal, J. B. (2005). *Edessa: The blessed city*. Piscataway, New Jersey: Gorgias Press.

Southern, P. (2004). *The Roman Empire from Severus to Constantine*. London: Taylor & Francis e-Library.

Tucker, S. C. (ed.). (2011). *A Global Chronology of Conflict: From the Ancient World to the Modern Middle East: From the Ancient World to the Modern Middle East. Volume I: ca. 3000 BCE–1499 CE*. Santa Barbara, California: ABC-Clio.

Turner, P. J. (2016). *Roman coins from India*. Abingdon: Routledge.

Zeynivand, M. (2019). A Cylinder Seal with an Amorite Name from Tepe Musiyan, Deh Luran Plain. *Journal of Cuneiform Studies* 71.1, 77-83.

Zeynivand, M. (2020). Tappeh Gārān: The First Season of "Deh Luran Archaeological Project". National Museum of Iran. In H. Bahranipoor (ed.). *A Collection of Archaeological Finds from Excavations in 2018-2019 17th Annual Symposium on the Iranian Archaeology 18 & 19 February 2020*. Tehran: National Museum of Iran, 32-37.

Wolff, C. (2000). Legio I Parthica. In Y. Le Bohec and C. Wolff (eds.). *Les légions de Rome sous le Haut-Empire. Actes du Congrès de Lyon (17–19 septembre 1998)*. Paris: Diffusion de Boccard, 247-49.

Zallaghi, A., & S. Maziar. (2020). Byzantine Coin from Kohne Tepesi, Northwestern Iran. *Journal of Iran National Museum* 1, 187-192 (In Persian).