CEDRUS
THE JOURNAL OF MCRI

cedrus.akdeniz.edu.tr
Cedrus XIII (2025) 97-113
DOI: 10.13113/CEDRUS.2025.06

An Inkwell from the Neapolis Necropolis in the Light of Historical and Cultural Data

Tarihsel ve Kültürel Veriler Işığında Neapolis Nekropolisi'nden Bir Mürekkep Hokkası

Ayşe AVLİ * Zerrin AYDIN TAVUKÇU **

Abstract: Ink is a long-established and important material that has been used to transfer words, pictures and drawings since antiquity. Inkwells, which are part of writing sets, were originally made of shellfish, and later of materials such as terracotta, glass, faience or metal. A terracotta inkwell was recovered from a chamber tomb unearthed during a rescue excavation in the necropolis of the ancient city of Neapolis in 2010. The artifact is an impressive proof of the grave owner's literacy and possible importance in the society. The inkwell has a cavity in the center of the rim (*melandokhe*) and the sides are grooved. Remains of ink are also clearly visible on the artifact. It is important that this rare artifact was recovered from Neapolis. Based on analogical evaluations of the artifact with its glass, bronze, faience and terracotta counterparts and period characteristics, it is concluded that it can be dated to the 1st-2nd century CE.

Keywords: Neapolis • Necropolis • Roman Period • Writing Instruments • Inkwell

Öz: Mürekkep, antikçağdan itibaren kelimelerin, resim ve çizimlerin aktarılması için kullanılan, köklü ve önemli bir malzemedir. Yazı takımlarının bir parçası olan mürekkep hokkaları" ise, önceleri deniz kabuklularından, sonraları pişmiş toprak, cam, fayans veya metal gibi malzemelerden imal edilmiştir. Neapolis antik kenti nekropolisinde, 2010 yılında yapılan kurtarma kazısı ile gün yüzüne çıkartılan oda mezardan, bir adet pişmiş toprak mürekkep hokkası ele geçmiştir. Eser, mezar sahibinin okuryazar bir kişi olduğunu ve toplumdaki olası önemine dair etkiyici bir kanıttır. Hokkanın ağız tablasının ortasında bir boşluk bulunmaktadır (*melandokhe*) ve kenarları yivlidir. Eser üzerinde mürekkep kalıntıları da oldukça net bir şekilde izlenmektedir. Nadir bulunan bu eserin, Neapolis'ten ele geçmesi önemlidir. Eserin cam, bronz, fayans ve pişmiş topraktan yapılmış benzerleri ve dönemsel özellikleri de dikkate alınarak yapılan analojik değerlendirmeler sonucunda, MS 1-2. yüzyıla tarihlendirilebileceği sonucuna varılmıştır.

Anahtar Kelimeler: Neapolis • Nekropolis • Roma Dönemi • Yazı Araç-Gereçleri • Mürekkep Hokkası

* Res. Assist. Atatürk University, Faculty of Literaure, Department of Archaeology, Erzurum. 0000-0001-5714-5460| ayse.avli@atauni.edu.tr

** Assoc. Prof., Atatürk University, Faculty of Literaure, Department of Archaeology, Erzurum. 0000-0003-2402-7788 | ztavukcu@atauni.edu.tr

This study was produced from the Master's Thesis titled *"Neapolis Nekropolünden İki Oda Mezar ve Buluntuları"* conducted in 2020 at Atatürk University, Institute of Social Sciences, Department of Classical Archaeology.

Article Type: Research | Received Date: 15/10/2024 | Acceptance Date: 19/03/2025; Avli A. & Aydın Tavukçu Z. 2025, "An Inkwell from the Neapolis Necropolis in the Light of Historical and Cultural Data". *Cedrus* XIII 97-113.

Introduction

The discovery of writing tools and equipment in archaeological contexts holds significant value in understanding the prevalence of literacy within ancient societies. These artifacts, often more abundant than written documents themselves, find their way into museums and collections through various means, including excavation and private acquisition[1]. Unearthed writing implements found in situ, particularly within necropoleis, offer valuable insights into the cultural identity, profession, social status, and literacy of the deceased[2]. This study focuses on a rare, terracotta inkwell recovered from the necropolis excavations of the ancient city of Neapolis.

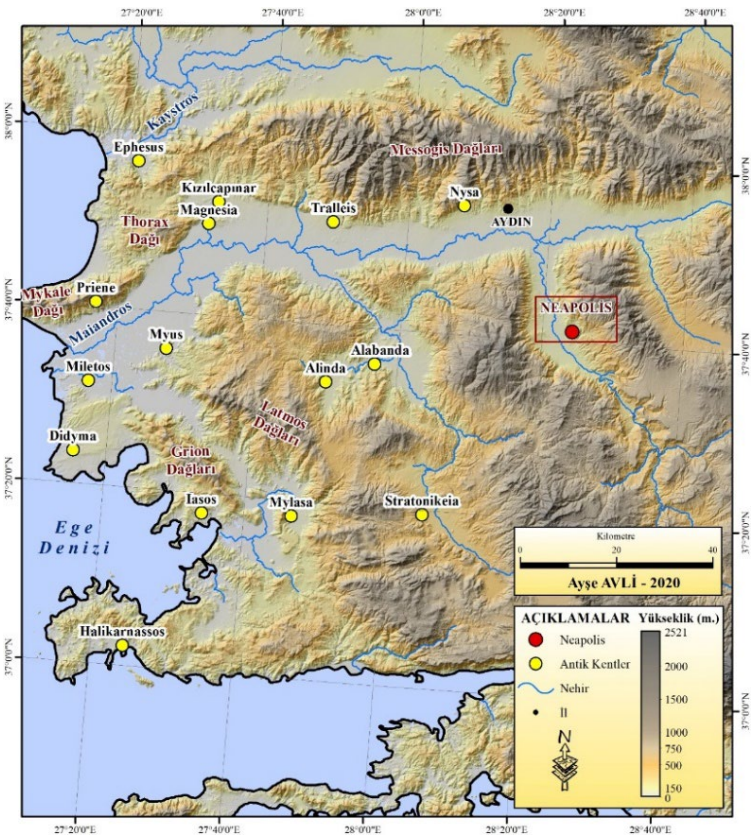

Fig.1 Neapolis Ancient City (Avli 2020, 291)

The River Maiandros (Büyük Menderes)[3] played a pivotal role in facilitating trade and communication between the ancient Ionian, Lydian, and Carian regions. Its fertile plains, fed by numerous mountain tributaries and their alluvial valleys, provided a vital habitat/ for human societies. The rich valleys formed by the Morsynos (Vandalas/Karacasu), Harpasos (Akçay/Bozdoğan), and Marsyas (Akçay/Çine) streams, all tributaries of the Maiandros, enabled the establishment of numerous settlements[4]. The Harpasos Valley, in particular, served as a natural route connecting the Maiandros Plain with southern Caria, further solidifying its importance as a key north-south passage within Caria[5]. Today, the Harpasos River defines the natural border between the Bozdoğan district of Aydın province and the town of Yazıkent[6]. Recent research has revealed that the Yazıkent region served as the necropolis for the

[1] Demirel Gökalp 2021, 101.

[2] Özer & Doksanaltı 2017, 293

[3] Sarin 2021, 178; Aydın Tavukçu & Avli 2022, 570.

[4] Akdeniz 2002, 1; Çörtük 2007, 37; Aydın Tavukçu 2019, 176; Avli 2020, 4; Akkurnaz & Çorbacıoğlu 2021, 10; Aydın Tavukçu & Avli 2022, 570.

[5] Çörtük 2010, 91.

[6] Aydın Tavukçu 2019, 176; Avli 2020, 4.

ancient city of Neapolis (Aurelia), located east of the Harpasos River[7] (Fig. 1).

The ancient city of Neapolis in Caria [8] has yet to undergo any formal archaeological investigations, including either planned excavations or surface surveys, within the boundaries of the ancient city. However, a rescue excavation conducted by the Aydın Archaeology Museum on October 28th, 2010, targeted the city's necropolis. This limited excavation unearthed two chamber tombs. The analysis of the excavations, which yielded more than 168 artifacts in total, shows that Chamber Tomb 1 was built in the early Hellenistic period and continued to be used until the Late Roman period. On the other hand, it is understood that Chamber Tomb 2 is a structure belonging only to the Roman period [9].

Fig. 2 Inkwell, lagynos and terracotta onion-bodied unguentariums found in situ on the bench (From excavation archive; Avli 2020, 299).

Tomb Chamber 1, where the terracotta inkwell was discovered, features a two-part plan: a front room and a burial chamber. Both sections display high-quality construction techniques, employing large, well-cut stone blocks. The front room contains five terraces, two flanking each sidewall and one central terrace. The tomb chamber similarly has five terraces positioned on the right, left and central walls. Studies suggest that these terraces were constructed from a combination of large and small rectangular or square-cut stones bonded together with mortar. Inhumation graves were found on the terraces and skeletal fragments were found along with *in situ* grave goods and inkwell[10] (Fig. 2).

Writing Tools and Materials in Ancient Times

The invention of writing stands as a critical moment in human history, enabling the transmission of knowledge and events across generations[11]. Archaeological discoveries reveal the utilization of various writing materials throughout antiquity that the most prominent are πάπυρος/papyros[12] and περγαμηνή/pergamene (parchment-pergament)[13]. Papyrus, one of the most important writing materials of antiquity, was

[7] Talbert 2000, 61; Aydın Tavukçu 2019, 176; Avli 2020, 4; Akkurnaz & Çorbacıoğlu 2021, 29, 38; Aydın Tavukçu & Avli 2021, 68; Aydın Tavukçu & Avli 2022, 570.

[8] Ramsay 1960, 473; Küçükören 2010, 121; Birsel 2015, 20; Avli 2020, 4.

[9] Avli 2020, 6-12.

[10] Avli 2020, 77-80.

[11] Soslu 2022, 397.

[12] Liddell & Scott 1882; 1122; Atılgan 2006, 293-312; Tekçam 2007, 164-167; Kidd 2013, 239-252; Hassan 2018, 7-17; Yıldız 2021, 146-194, 206.

[13] Liddell & Scott 1882; 1179; Sağlam 2019, 244-254; Yagi 2019, 283-292; Dağtaş 2019, 293-302;

made from a swamp plant called "cyperus papyrus", which was grown in the Nile valley in Egypt from the 3rd millennium BCE onwards and was about 2.5-3 meters in size[14]. Pergament, on the other hand, is a kind of writing carrier used from the 3rd millennium BCE until the 6th-7th century CE and obtained by processing the skins of animals such as cattle, sheep, goats, pigs and donkeys[15]. Additionally, a diverse range of materials served as writing surfaces[16]: tree leaves[17], tree bark[18], linen cloths[19], clay tablets[20], pottery sherds[21], walls[22], precious metals (bronz/lead sheets)[23] and even wooden tablets with wax coatings[24].

Invented approximately 5000 years ago in ancient Egypt, ink is a well-established

---

Sibilia *et al*. 2021, 1-12; Yıldız 2021, 146-194, 168-194, 206.

[14] Demiriş 1995, 10-11; Atılgan 2006, 293-312; Tekçam 2007, 164-165; Kidd 2013, 239-252; Yıldız 2021, 146-147.

[15] Demiriş 1995, 14-17; Tekçam 2007, 168; Sağlam 2019, 244-254; Yagi 2019, 283-292; Dağtaş 2019, 293-302; Yıldız 2019, 168-194.

[16] Demiriş 1995, 3-19; Yıldız 2021, 88-194; Soslu 2022, 399. Archaeological evidence indicates that writing originated with inscriptions carved on stone, clay, wax tablets, and tree bark between 3500 and 3000 CE, with papyrus, parchment, and paper being introduced in subsequent periods.

[17] Demiriş 1995, 3; Yıldız 2021, 87-88. Since they are readily available in nature, they were easily adopted as writing instruments and especially the leaves of palm trees have been used for centuries. Especially olive tree leaves are known to be used in voting.

[18] Demiriş 1995, 3-4; Yıldız 2021, 88. Bark, which is more useful than tree leaves, continued to be used in various places and periods until the widespread use of papyrus. Beech wood was used in Rome, while the bark and trunk parts of the linden tree continued to be used until the spread of papyrus in Rome and the development of Roman-Egyptian relations in the 2nd century BCE.

[19] Demiriş 1995, 4. Linen cloths, whose use as writing instruments began with the Ancient Egyptians, were also used in Ancient Roman history to write some religious ceremonial rules.

[20] Demiriş 1995, 4. In Assyria and Babylonia, all writing was done on sun-dried or fire-baked bricks and tablets. While the Hittites wrote in cuneiform on these tablets during the Imperial Period, these tablets were also found in Crete and Knossos.

[21] Demiriş 1995, 4; Çelgin 2024, 395. The shards of pottery made of clay or earthenware containing other silicates were also inscribed. Ancient people used these ceramics to make ephemeral documents such as tax and payment slips. Such pottery shards were called "ὄστρακον (ostrakon)".

[22] Demiriş 1995, 5. The oldest examples of graffiti date from the time of Sulla (88-78 BC). The writings on the wall include various announcements, announcements, quotations from poets, trivial sayings, calculations, greetings, words of love, and words and signs containing criticism.

[23] Demiriş 1995, 5-6; Gavrilaki and &Tzifopoulos 1998, 344-347. Precious metals such as gold and silver were rarely used as writing tools and instruments. Various inscriptions were written especially on gold bands used to cover the mouth and eyes of the dead. On the other hand, bronze plates were used to inscribe votive inscriptions, laws, treaties and ceremonies.

[24] Demiriş 1995, 7-9; Yıldız 2021, 89-119; Çelgin 2024, 326. Wooden tablets called "λευκόμα (leukoma)" were used for writing in antiquity. They were sometimes written on bare wood, sometimes after being coated with a new compound similar to varnish. In the Greek and Roman world, from ancient times, wooden tablets were coated with wax (which could be of different colors), and writing was also done on them.

and ahead of its time tool for transcribing words used since antiquity[25]. Finds show that different types of ink were used for written documents in antiquity[26]. It is known that black ink was produced in ancient Egypt in 2500 BCE by mixing aqueous gum with carbon black[27]. Vitruvius gave detailed information about the preparation of ink in the 1st century BCE; Dioscorides stated that black ink was produced 75% from carbon black and 25% from gum[28]. In fact, it has been found that when excavations were cleaned to remove the dust on these ink inscriptions, they became more readable instead of deteriorating[29]. This ink production technique remained dominant for a significant period in the Mediterranean world[30]. It has also been determined that black ink is produced by burning resins and mixing them with gum, or from a black substance secreted from the ink bag of the σέπια (cuttlefish-sepia)[31]. Apart from black ink, another ink that has been used since time immemorial is red ink, which was used even in the oldest Egyptian papyri. It is called "μελάνιον κόκκινον (melanion kokkinon)[32]" in Greek and "minium" or "rubrica" in Latin[33]. Unexpectedly, lead is regularly present in both red and black inks and is associated with phosphate, sulfate, chloride and carboxylate. The source of the red ink, apart from the cited claims, was red ochre; alternatively, the red color was obtained from heated yellow ochre rather than from naturally occurring hematite[34]. This ink was also made from zincifre, leech, cinnabaris, coccus and some varieties of red earth[35]. Another type of ink close to black, prepared with different formulas in ancient times, was green. While emperors signed their documents with red ink, the heirs of emperors would sign their documents with green ink. This ink was called "κιννάβαρι πράσινος (green cinabre)"[36] or "βατραχέιον/βάτραχος χρῶμα (batrakheion khroma)"[37]. While it was rare in ancient Greece, it was used extensively in

[25] Christiansen *et al*. 2020, 1.

[26] Yıldız 2021, 206.

[27] Liddell & Scott 1882; 405; Demiriş 1995, 21; Şahin 2010, 61-62; Alova 2013, 48, 345; Hassan 2018, 8; Şahin 2018, 65; Ghigo *et al*. 2019, 2; Yıldız 2021, 206-213; Çelgin 2024, 115, 345. Black ink, historically referred to as "μελαν (melan)", "γραφικόν μέλαν (graphikon melan)", "μελάνιον (melanion)", "atramentum" and "atramentum librarium" has been the most widely used ink for centuries. Over time, it became known as "ἔγκαυστον (enkauston)", or "ἐγκαυστική (enkaustike)" with its color tone varying across different periods and regions.

[28] Ghigo *et al*. 2019, 4-12; Sibilia *et al*. 2021, 1-12; Yıldız 2021, 206-207. A recent archaeometric study in conjunction with an archaeometric study has shown that in situ black ink (in combination with its presence in an earthy environment and the destruction of the bronze inkwell) contains significant amounts of silicates and common clay minerals, cerussite and malachite, and Pb- and Cu-bearing carbonates.

[29] Demiriş 1995, 21.

[30] Şahin 2010, 61-62; Şahin 2018, 65; Yıldız 2021, 206.

[31] Yıldız 2021, 206-207, 212.

[32] Çelgin 2024, 345.

[33] Demiriş 1995, 21; Kelly-Simpson 2003, 6; Alova 2013, 369, 530; Yıldız 2021, 214-217.

[34] Christiansen *et al*. 2020, 1-2.

[35] Demiriş 1995, 21; Kelly-Simpson 2003, 6; Yıldız 2021, 214-217.

[36] Çelgin 2024, 453.

[37] Çelgin 2024, 102; 592.

Latin manuscripts[38]. Inisialler brown thuja ink, made from the branches of the white buckthorn or mountain plum, diluted with wine and a little vitriol, was used less frequently in ancient manuscripts than other colors[39]. In addition to these colors, inks of other colors were also used[40].

The development of writing implements progressed over time, with a shift towards softer materials for finer writing[41]. Early tools included styluses made of hard materials, followed by the κάλαμος (calamus)[42], στύλος (stylus)[43] and eventually, feather pens πτερόν (penna)[44] and brushes[45].

Beyond the fundamental components of paper, ink, and pens, the act of writing in the ancient world necessitated a variety of tools and equipment. These included inkwells for storing and readily accessing ink; σπόγγος - sponges (spongia)[46] or erasing tools such as ξυστήρας (scrapers) (σβήστρον - rasorium, σβήστρον - rasoria, ξυράφι - novacula, ξύστρα - scalpra) for correcting mistakes; lead disks (μόλυβδος - molibdos, plumbus)[47] employed for drawing; πυξίδα (compasses) and κανόνας (rulers) (κανών - canon, νόμος - norma, κανών - regula, γραμμή - linearium) for precise measurements; paperweights to hold writing materials in place; and finally, κουτί (boxes) (θήκη - theca, θήκη καλαμαριού - theca calamaria, γραφή - graphiara, theca cannaum, βιβλιοθήκη - libraria)[48] for organizing and transporting these various writing implements.

In the ancient world, inkwells played a vital role in preserving ink, the lifeblood of writing implements. These containers possessed various designations amongst the Greeks and Romans[49]. The Greek term "ἐνκαυστικόν (enkaustikon)" translating to "burnt baked earth" serves as the etymological root for inkwells[50]. Their Latin counterpart, "μελαντήριον (atramentarium)[51]" denotes a similar function. Additional

[38] Yıldız 2021, 213.

[39] Demiriş 1995, 22; Yıldız 2021, 211.

[40] Demiriş 1995, 21-22; Şahin 2010, 61-62; 2018, 65; Yıldız 2021, 206-218.

[41] Demiriş 1995, 22; Yıldız 2021, 197.

[42] Tekçam 2007, 165; Çelgin 2024, 283. In ancient Greece, writing was done on papyrus with a reed pen called Grek. κάλαμος (kalamos), Lat. calamus or canna.

[43] Demiriş 1995, 22; Božič & Feugère 2004, 21-41; Tekçam 2007, 164-167, 212; Terpstra 2014, 101, Fig. 6; Yıldız 2019, 329; 2021, 197-206; Demirel Gökalp 2021; Gül 2022a; Gül 2022b, 16-28; Soslu 2023, 104; Çelgin 2024, 503.

[44] Demiriş 1995, 20-21; Çelgin 2024, 475. The “penna” made of bird feathers was probably introduced with the emergence of parchment. Feathers of animals such as eagles, geese and crows were used for penna.

[45] Demiriş 1995, 22; Tekçam 2007, 164-167, 212; Yıldız 2019, 329; Yıldız 2021, 197-206; Demirel Gökalp 2021.

[46] Çelgin 2024, 494.

[47] Liddell & Scott 1882, 1020; Alova 2013, 453; Çelgin 2024, 375.

[48] Liddell & Scott 1882; 674; Ignatiadou 2017, 261-266; Yıldız 2021, 218; Amitai-Preiss *et al*. 2023, 213-216; Çelgin 2024, 115.

[49] Demiriş 1995, 22; Yıldız 2021, 218- 222. The aforementioned tools and materials collectively form what is referred to as the "scripturale" and "scriptionale" writing suite. These items could be found either individually or in combination.

[50] Soslu 2022, 399; Liddell & Scott 1882, 603.

[51] Demiriş 1995, 22; Özer & Doksanaltı 2017, 293; Soslu 2022, 399.

Greek terms employed for inkwells include "άγγος μελανδόχον (angos melandokhon)" "βρόχις (brokhis)", "κάμαριον (kamarion)", "καλαμάριον (kalamarion)" and “καλαμάρι (kalamari)”[52]. Interestingly, ancient Greek inkwells often featured a dedicated opening on their exterior, referred to as "μελανδόχη (melandokhe)", "μελανδοχείον (melandokheion)" or "μελανδόχον (melandokhon)" specifically designed to accommodate the reed pen[53].

Fig. 3 Neapolis Inkwell

Inkwells with narrow mouths and small lids, which are mandatory in writing sets, or atramentariums[54], could be made of mussel and oyster shells[55] at first, and later from terracotta[56], glass[57], tiles[58] or metal[59] materials[60]. Bowl-shaped inkwells are seen in the Hellenistic Period and are especially specific to Phoenicia and Palestine[61]. In the Roman Period, inkwells began to appear as cylindrical, flat-bottomed and single-handled types[62]. In addition, inkwells made of terracotta, metal and lead are seen more in the Hellenistic and Roman Periods[63]. Inkwells, which generally have cylindrical bodies, have a hinged lid, especially in metal ones[64]. They could also be single or double, and could be

[52] Liddell & Scott 1882, 733; Yıldız 2021, 218.

[53] Demiriş 1995, 22; Tekçam 2007, 26; Avli 2020, 77; Yıldız 2021, 219; Çelgin 2024, 345.

[54] Şahin 2018, 65; Yıldız 2019, 330; Soslu 2022, 399.

[55] Baraldi *et al*. 2009, 165, Fig. 3b; Marwan *et al*. 2022, s. 18; Soslu 2022, 398.

[56] Richter 1916, 64, 66, Fig. 3; Eiseman 1975, Fig. 1-3; Baraldi *et al*. 2009, 165, Fig. 3b; Erlich 2017, 50, Fig. 10; Özer & Doksanaltı 2017, Fig. 10; Martini 2018; Streckert & Seevens 2019, 51-52, Fig.1-2; Vrtal 2021; Yıldız 2021, 219; Soslu 2022; https://www.metmuseum.org/art/collection/search/249048?rpp=30&pg=1&ft=inkwell&pos=25; https://www.metmuseum.org/art/collection/search/252501?searchField=All&sortBy=Relevance&what=Inkwells&ft=*&offset=0&rpp=20&pos=7 (Access date: 26.04.2024); https://www.pinterest.ch/pin/410672059753502808/; https://the-past.com/feature/age-of-ink-inkwells-and-writing-in-roman-britain/ (Access date: 25.04.2024).

[57] Lightfoot 2013, 431, Fig. 3-4; Soslu 2024, 104, Kat. No. 263.

[58] Kidd 2013, 243, Fig. 4.

[59] Bar-Yosef *et al*. 1974, Pl. 61, Fig. D; Wise 1986; Kohlert-Németh 1990, 92, Fig. 54; Goranson 1991; Rémazeilles & Conforto 2008; Baraldi *et al*. 2009, 165, Fig. 3a; Şahin 2010, 61-62, Lev. XV, F4-6; Rasmussena 2012, 2957, Fig. 2; Chatterjee 2014/2015 , 210; Çelikbaş 2016, 175-176, Lev. XXXIX, Kat. No. J1-J2; Erlich 2017, 47-48, Fig. 7a, 8; Şahin 2018, 65, Lev. 15. 31, F5-F8; https://the-past.com/feature/age-of-ink-inkwells-and-writing-in-roman-britain/ (Access date: 25.04.2024); Sibilia et al. 2021, 3, Fig.1.

[60] Şahin 2018, 65; Yıldız 2019, 330; Soslu 2022, 399.

[61] Erlich 2017, 49.

[62] Soslu 2022, 398.

[63] Erlich 2017, 49.

[64] Şahin 2018, 65; Yıldız 2019, 330; 2021, 219.

connected to each other by putting red ink in one and black ink in the other[65].

The utilization of inkwells in both daily life and commercial settings can be readily attributed to a variety of writing activities, including the creation of texts, notes, diaries, reports, and similar documents. Given the significant importance placed on writing in the ancient world, as well as its presence in sacred or burial contexts, inkwells likely served functional roles in ritual practices in certain instances. The most important of these rituals was that the followers of Mithras, who identified themselves as the inheritors of antiquity, were marked on their foreheads with ink, and in mystery rituals, especially Mithras rituals, ink was used to write in various places. For magicians in the cult of Mithras, the use of ink and writing has become highly functional for such magical and mysterious rituals[66]. The manner in which writing tools, including inkwells and pens, were employed has been illustrated in numerous archaeological artifacts, particularly on grave steles[67]. Inkwells depicted in reliefs generally fall into two categories. The first type consists of tripod inkwells, which are round in shape and often shown with a pen on their sides and exterior[68]. The second type includes cylindrical inkwells, depicted on some steles, which contain long, thin pens inside. These cylindrical inkwells frequently feature a round component resembling a handle for lifting the lid, located at their openings[69].

Neapolis Inkwell

A terracotta inkwell / atramentarium, discovered in Chamber 1 of the Neapolis Necropolis tomb, forms the basis of our study and suggests that the tomb's owner was a learned individual[70] (Fig. 3). The inkwell was found adjacent to the skeleton, alongside various other artifacts such as a lagynos and bulbous unguentaria, located on the terrace[71] (Fig. 2). This inkwell is among the rare and significant findings, as it was discovered *in situ* within the tomb with black ink spilled from it. This discovery provides valuable insights into the cultural identity, profession, social status, and literacy of the tomb's owner[72].

The Neapolis inkwell, crafted from orange clay with mica features a shiny reddish-brown slip[73]. This inkwell is characterized by a broad, everted rim and a swollen body, tapering to a conical base that narrows towards the bottom. The upper section of the container, marked by double grooves on the rim and middle, has a slightly concave structure designed to prevent ink from leaking. At its center, there is a vertical

[65] Yıldız 2021, 219.

[66] Martini 2018, 35.

[67] Božič & Feugère 2004, 21-41; Yıldız 2021, 219, Pic. 28-32, 36-37.

[68] Amitai-Preiss *et al*. 2023, 213-216; Yıldız 2021, 219, Pic. 28-32, 36 -37.

[69] Yıldız 2021, 219, Pic. 28-32, 36-37.

[70] Museum Inventory No.: 2013-84; Dimension: Height: 4,8 cm; Width: 6,8 cm; Mouth Diameter: 5,4 cm; Base Diameter: 4 cm; Melandoche Hole Diameter: 1,5 cm.

[71] Avli 2020, 57-65, 74-75.

[72] Özer & Doksanaltı 2017, 293; Avli 2020; Aydın Tavukçu & Avli 2021. The architectural features of the chamber tomb, along with the discovery of a diverse range of rare artifacts, including gold, glass, terracotta, metal, bronze, and tiles, provide evidence that it was utilized by individuals of high status.

[73] Munsell Color Catalog. Clay Color: 10 R 7/6; Slip Color: 7.5 R 4/8.

cylindrical cavity, or ink drain, with a very small diameter. This cavity, known as the circular melanokhe hole, has various designations and is intended to hold a reed pen. The artifact, which possesses a thin wall displaying wear, a patina layer, and clear ink residues, is a significant and rare find for Neapolis in archaeological terms (Fig. 4).

A detailed look at the inkwells that have been unearthed through archaeological excavations or other means and brought into the literature reveals that there are not many examples in Anatolia. Although the majority of the similar Neapolis inkwells are from outside Anatolia, there are a few similar examples in Anatolia, albeit rare.

One of the earliest examples of terracotta inkwells was recovered during the Porticello Excavation in the Straits of Messina, conducted under the auspices of the University of Pennsylvania Museum[74]. The inkwell, which dates to the Classical or Hellenistic Period, is rough and undecorated and belongs to a much earlier period than the Neapolis example. This artifact features a semi-spherical upper part with a vertical hole of a larger diameter than that of the Neapolis example, and it terminates with a round base.

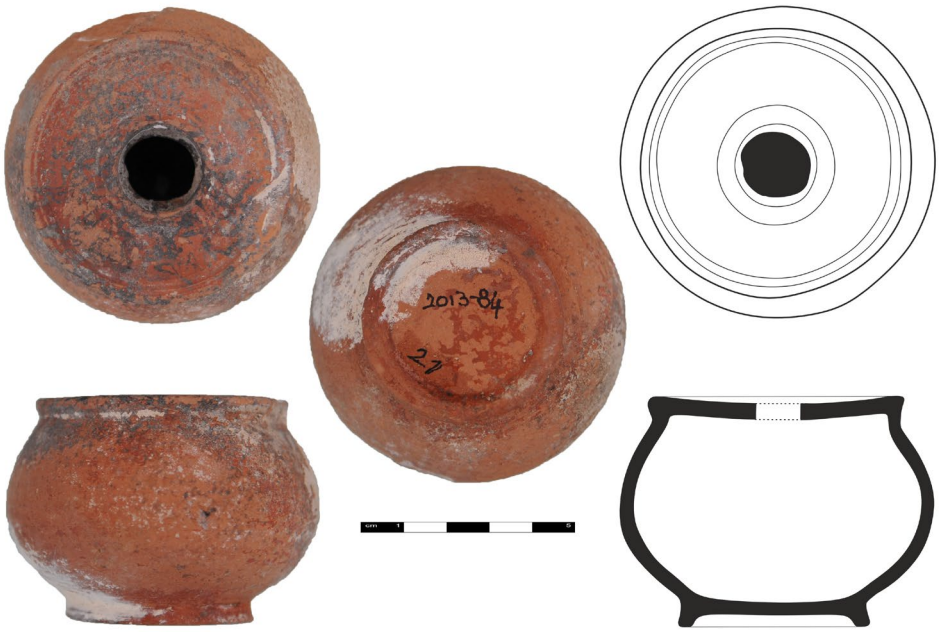

Fig. 4 Photograph and drawing of the Neapolis Inkwell

(Photographed and drawn by Ayşe Avli; Avli 2020, 77-80, Cat. No. 64)

Four bowl-shaped terracotta inkwells[75] from Maresha in southern Israel each feature a melanoché hole. Two of these inkwells have concave tops, while the other two have convex tops, one of which is adorned with a tongue motif decoration. The Israeli examples, examined by Erlich, dated to the Hellenistic Period. Although these artifacts are similar to the Neapolis inkwell in terms of material and size, they differ significantly in form.

[74] Eiseman 1975, 374-375, Pl. 70, Fig. 1-3; Avli 2020, 79.

[75] Erlich 2017, 49-50, Fig. 10.

A strongly similar terracotta atramentarium[76] to the Neapolis example was discovered in the Northern Necropolis of Aizanoi. This artifact, dated to between the 1st century BCE and the 1st century CE based on its grave context, is small, circular, and slightly swollen in form. The primary difference between this conical-based artifact and the Neapolis inkwell is the presence of a handle, used for carrying, which was found broken in half.

Another terracotta inkwell found in the Amanishakhete Palace was shaped with a concave top to prevent the ink from flowing out[77]. This round-shaped artifact, with a small-diameter hole in the middle, features a conical body that narrows towards the bottom and is finished with a high pedestal. Dated between the 1st century BCE and the 1st century CE, the artifact in the National Museum of Sudan is not very compatible with the Neapolis inkwell. Unlike the Neapolis example, the body surface and upper parts of this inkwell were decorated with irregular dotted patterns made with a pointed tool while the clay was still wet. On the top cover two flat vertical handles are placed on both sides and a small hole is drilled.

A inkwell[78] from the Roman Imperial Period found at on the West Side of ancient Shiloh is made of terracotta, similar to the Neapolis example, and features a conical body that narrows towards the base. This crude and undecorated inkwell has a melanoché hole on its upper part. Although this artifact, with its simple craftsmanship, does not share a similar form with the Neapolis example, it is significant for illustrating the form of a terracotta inkwell.

An inkwell on display at the Metropolitan Museum of Art, dated to the Roman Imperial Period[79]. Made of terracotta and covered with green glaze to give the appearance of metal, the piece has two bands in relief on the slightly curved upper part. This artifact features two relief-made bands on its slightly curved upper part. The entire body surface is adorned with vegetal decorations, specifically vine leaves, created using the relief technique. In the center of these leaves is a relief rosette decoration. Although it is not similar in form to the Neapolis example, the fact that it is made of terracotta and its size and melandokhe hole are important for analogical evaluation.

Similar inkwells[80] made of terracotta and(with) glazed that were production waste, were found in the New Testaccio Market Excavation in Rome. They were dated Flavianus- Traianus Period. As in the Metropolitan Museum example mentioned above, there are curved branch/plant and relief dot decorations on the body surfaces.

Apart from these artifacts, Metropolitan inkwell, is dated to the 1st -2nd century CE[81]. In terms of size and form, the piece is parallel to the Neapolis example. The concave

[76] Özer & Doksanaltı 2017, 293, Fig. 10.

[77] Vrtal 2021, 131, Pl. 1; Soslu 2022, 402.

[78] Streckert & Seevens 2019, 51-52, Fig.1-2.

[79] Richter 1916, 64, 66, Fig.3; Avli 2020, 79; https://www.metmuseum.org/art/collection/search/249048?rpp=30&pg=1&ft=inkwell&pos=25 (Access date: 07.05.2024).

[80] Martini 2018, 30-31, Fig. 2.

[81] Thompson 2007, 170-173, Im. 37; Avli 2020, 79; https://www.metmuseum.org/art/collection/search/252501?searchField=All&sortBy=Relevance&what=Inkwells&ft=*&offset=0&rpp=20&pos=7 (Access date:

upper part has a circular melandoche hole. The terracotta artifact with three mask reliefs on this upper part has a conical body and a flat base.

A large number of terracotta inkwells recovered from Pompeii have been dated to the 1st - 4th century CE. Some of the artifacts preserved in the Naples Museum contain traces of ink, as in the Neapolis example[82].

The terracotta artifacts[83] found in different places in Rome and preserved in various museums generally have round or conical forms that narrow downwards, and their edges are slanted outwards. These artifacts have a melanoché hole in their upper middle parts, and their only difference from the Neapolis inkwell is that they have small overflow holes.

There are also terracotta inkwells[84] with similar form features in Ostia, dating back to the 2nd century CE. The upper parts of the materials with truncated conical bodies are left concave. The inkwells that narrow downwards and end with a small flat bottom show features parallel to the Neapolis example.

A similar inkwell[85] made of terracotta with inscriptions is preserved in the British Museum. The artifact, dating back to the 1st - -3rd centuries CE, is painted in a dark brown-black tone and is almost identical in form to the Neapolis inkwell. Just like the Neapolis example, this inkwell has double grooves on the edges of its upper part and a circular hole in the middle of this slightly concave part. It is observed that the body of the artifact, which is almost flat downwards, ends with a protruding ring base.

A terracotta inkwell[86] preserved in the Museum of London has sloping mouth, swollen body on one side, tapering towards the bottom and ending in conical base. The upper part of the inkwell dated to the Roman Period, shows a concave structure to prevent the ink from flowing out, and there is a melandokhe cavity with a very small diameter in the center. The inkwell from Samos is very similar to the Neapolis example due to the aforementioned characteristics.

A glazed inkwell in the G. Asproni National Archaeological Museum, dated to the Roman period[87]. The inkwell, which has a spherical body, a slanted mouth and a slightly concave upper part, ends with a slightly high base that narrows towards the bottom.

The bronze inkwell recovered from Patara, although made of a different material, has similar features in terms of form to the Neapolis example[88]. The Patara example has been dated to the first quarter of the 1st century BCE. The example has a semi-spherical body and a hole in the center of its concave lid. The example with a protruding mouth has a semicircular handle, which is not present in the Neapolis artifact.

In addition to inkwells made of terracotta and bronze, there are also inkwells made

26.04.2024).

[82] Baraldi *et al*. 2009, 165, Fig. 3b; Yıldız 2021, 219.

[83] Martini 2018, 31-33, Fig. 3-5.

[84] Martini 2018, 33, Fig. 6.

[85] Molina 2010, 4; https://www.ateneanike.com/historia-de-roma/arte-ciencia-y-literatura/escritura/ (Access date: 04.01.2025).

[86] https://the-past.com/feature/age-of-ink-inkwells-and-writing-in-roman-britain/ (Access date: 25.04.2024).

[87] Martini 2018, 30-31, Fig. 1.

[88] Şahin 2010, Lev. XV, F4, No: XIII; Şahin 2018, 65, Lev. 15. 31, F5.

of glass, such as those exhibited in the Metropolitan Museum of Art. The advantage of these inkwells is that the writer can see how much ink is left when using the inkwell. However, there are not many inkwells made of glass due to their fragility. The Metropolitan examples dated to the 1st and 2nd centuries CE are distinguished from each other by slight differences in type. In the first example[89], there is a concave circular space in the middle of the domed upper part, while there is a protrusion separating the upper and lower parts. The body narrows downwards and ends with a flat base. The second example[90] has a semi-spherical body, and the domed body of the artifact narrows downwards and ends with a protruding ring base. It has been determined that both inkwells are almost similar in form to the Neapolis example, but the presence of a different shaped handle hole on the upper part of the second example is a dominant distinguishing feature.

Inkwells made of faience are much rarer. One of these examples was found in Fayoum[91]. The material, dated to the Early Roman Period, has a round form and was made with simple workmanship. The upper part of the vessel was left slightly concave so that the ink would not leak out, and this part was surrounded by a groove. The diameter of the hole in the middle is small. The inkwell, which has a thick wall, does not have a handle or any holes for carrying and hanging purposes.

Evaluation and Conclusion

It has been determined that Tomb Chamber 1, where the Neapolis inkwell was found, was built during the Hellenistic Period and continued to be used until the end of the Roman Period, based on the dating of the grave goods found inside. This long period of use makes it difficult to date the inkwell in question. The fact that the inkwell was found *in situ* on the terrace with the black ink inside flowing around it is quite important data. In this sense the artifact, shows that the person lying in the tomb was a literate/wise person in daily life and provides impressive evidence of his status in society.

The inkwell found *in situ* in the grave should have been found with a stylus made of organic or inorganic material, but no such finding was found in the rescue excavation. The Neapolis inkwell with its broad, everted rim is quite striking with its swollen body and its form that narrows towards the bottom and ends with a low conical base. The grooved upper part of the container has a slightly concave structure and there is a circular melanoché hole at its center. The artifact, on which ink residues are clearly seen, is a valuable find for Neapolis and is quite rare in archaeological terms. The black ink found in the Neapolis inkwell was used in a wide variety of compositions and shades throughout antiquity for long periods of time. As mentioned in the text, Vitruvius wrote about black ink in the 1st century BCE, thus clarifying the use of black ink in this period.

A detailed examination of terracotta inkwells obtained from various excavations worldwide and preserved in different museums, as documented in the literature, reveals that none are identical to the example from Neapolis. Inkwells are exceptionally rare when considering the excavations conducted in Anatolia and the collections

[89] Lightfoot 2013, 426, Fig.3; https://www.metmuseum.org/art/collection/search/249364?searchField=All&sortBy=Relevance&ft=inkwell&offset=0&rpp=30&pos=29 (Access date: 07.05.2024).

[90] Lightfoot 2013, 426-427, Fig. 4.

[91] Kidd 2017, 243, Fig. 4.

preserved in museums. While the reason for their scarcity is unclear, it is evident that inkwells are rare objects.

While there are only 2 terracotta examples dated to the Classical and Hellenistic Periods, 12 terracotta inkwells are dated to the Roman Period. The bronze artifact recovered from Patara, the 2 glass specimens in the Metropolitan Museum and the faience inkwell from Fayoum also belong to the Roman Period. Although not identical, inkwells most commonly found during the Roman Period and traceable to the Classical Period have shown little variation in form over time. It has been observed that they generally consist of a conical body, a slightly rising base and a concave or convex profile on the upper part so that the ink does not leak. In the upper middle parts of the form, there is a small melandoche hole so that the ink can be taken with a stylus. While some examples from the Roman Period have plant or geometric motifs on the glazed surface, no decoration other than grooves is included in the Neapolis example. Among the terracotta examples, the masked example in the Metropolitan Museum, dated to the 1st-2nd century CE; the inscribed example in the British Museum, dated to the 1st-3rd century CE; and the glazed example in the Museum of London, dated to the Roman Period, are the most similar to the Neapolis inkwell. In general, these terracotta inkwells, which date to the 1st - 2nd century CE and the Roman Period, have a small projecting base, a conical body, a concave or flat upper profile, and a melandoche hole in the upper center.

Considering the forms and features of similar examples made of glass, bronze, or tiles, as well as similar examples made of terracotta, it has been concluded that the Neapolis atramentarium can be dated to the 1st - 2nd centuries CE. In addition, this date is supported by the unguentaria with onion bodies made of terracotta found on the same terrace in the chamber tomb along with the inkwell.

BIBLIOGRAPHY

Alova E. 2013, *Latince Türkçe Sözlük.* İstanbul.

Akdeniz E. 2002, "Büyük Menderes Havzasında Prehistorik Yerleşim Dokusu". *Belleten* LXVI 245, 1-36.

Akkurnaz S. & Çorbacıoğlu Y. 2021, "Aydın'daki Antik Yerleşimler". Eds. S. Akkurnaz & Y. Çorbacıoğlu, *Nazilli ve Çevresinin Arkeolojik Zenginlikleri*. İstanbul, 6-54.

Amitai-Preiss N. & Gendelman P. & Chalaf O. & Shapiro A. 2023, "A Terracotta Pen-and-Inkwell Case from Jerusalem". *Atiqot* 110, 209-228.

Atılgan M. 2006, "Antik Çağın En Önemli Yazı Malzemesi: Papirüs". *Bilgi Dünyası* 7/2, 293-312.

Avli A. 2020, *Neapolis Nekropolünden İki Oda Mezar ve Buluntuları.* Yayımlanmamış Yüksek Lisans Tezi, Atatürk Üniversitesi, Erzurum.

Aydın Tavukçu Z. 2019, "Neapolis Nekropolü'nden Bir Bronz Kandil". Eds. O. Çoban *et al*., *Sosyal, Beşeri ve İdari Bilimler Alanında Araştırma ve Değerlendirmeler* 2, 171-180.

Aydın Tavukçu Z. & Avli A. 2021, "Neapolis Nekropolünden Bir Grup Altın Epistomion". Eds. A. Y. Mehme & B. Can & M. Işıklı, *Anadolu Arkeolojisiyle Harmanlanmış Bir Ömür Mehmet Karaosmanoğlu'na Armağan.* Ankara, 67-90.

Aydın Tavukçu Z. & Avli A. 2022, "Neapolis Nekropolü'nden Cam Eserler". *OÜSOBİAD* 12/2, 569-592.

Baraldi P. & Moscardi G. & Bensi P. & Aceto M. & Tassi L. 2009, "An Investigation of the Palette and Techniques of Some High Medieval Codices By Raman Microscopy". *MORANARTD d.o.o.* 6, 163-168.

Bar-Yosef O., Tchernov E., Marks A. E.. Epstein C.. Amiran R.. Yeivin Z.. Kochavi M.. Biran A., Oren E. D., Netzer E., Stern E., Aharoni Y., Kempinski A., Fritz V., Mazar A., Ussishkin D., Meshel Z., Sass B., Van Beek G. W., Eitan A., Dothan M., Vitto F., Meyers E. M., Strange J. F., Bull R., Elgavish J. & Broshi M. 1974, "Notes and News". *Israel Exploration Journal* 24 3/4, 252-286.

Birsel İ. 2015, *Karia Mezar Mimarisi: Klasik Dönem Öncesi.* Izmir.

Božič D. & Feugère M. 2004. "Les instruments de l'écriture". *Gallia* 61, 21-41.

Chatterjee P. 2014-2015, "The gifts of the Gorgon: A close look at a Byzantine inkpot". *RES* 65-66, 210-221.

Christiansen T., Cotte M., Nolf W.d., Mouro E., Reyes-Herera J., Meyer S. d., Vanmeert F., Salvado N., Gonzalez V., Lindelof P. E., Mortensen K., Ryholt K., Janssens K. & Larsen S. 2020, "Insights into the Composition of Ancient Egyptian Red and Black Inks on Papyri Achieved by Synchrotron-Based Microanalyses". *Proceedings of the National Academy of Sciences* 117/45, 27825-27835.

Çelgin G. 2024, *Eski Yunanca Türkçe Sözlük*, Istanbul.

Çörtük U. 2007, "Kuzey Karia Akçay (Harpasos) Vadisi Mimarisi Hakkında Bir Araştırma". Eds. Z. Çizmeli Öğün, A. K. Binici, M. Oral & R. T. Polat, *III-IV. Ulusal Arkeolojik Araştırmalar Sempozyumu*, *Anadolu/Anatolia Ek Dizi No.2/Supplement Series* 2, 37-60.

Dağtaş L. 2019, "Anadolu'da Tabakçılık Karatabak Zanaatı ve Parşömen". Eds. B. Türkmen, F. Kurunaz, N. Ermiş & Y. Ekinci Danışan, *II. Uluslararası Bergama Sempozyumu, 9-10 Mayıs, 2013 Bergama'nın Üstün Evrensel Değerleri, Antik Çağda Sağlık ve Bergamalı Galenos, Kültürlerin Aktarım Aracı Parşömen.* İzmir, 293-302.

Demirel Gökalp Z. 2021, "Amorium Kazılarında Bulunan Styluslar". *TÜBA-KED* 23, 99-117.

Demiriş B. 1995, *Eskiçağ'da Yazı Araç ve Gereçleri*. İstanbul.

Eiseman C. J. 1975, "Classical Inkpots". *American Journal of Archaeology* 79/4, 374-375.

Erlich A. 2017, "Happily Ever After? A Hellenistic Hoard from Tel Kedesh in Israel". *American Journal of Archaeology* 121/1, 39-59.

Gavrilaki I. & Tzifopoulos Y. Z. 1998, "An "Orphic-Dionysiac" Gold Epistomion from Sfakaki near Rethymno". *Bulletin de correspondance hellenique* 122/1, 343-355.

Ghigo T. & Rabin I. & Buzi P. 2019, "Black Egyptian Inks in Late Antiquity: New Insights on their Manufacture and Use". *Archaeological and Anthropological Sciences* 12/70, 1-14.

Goranson S. 1991, "Further Qumran Archaeology Publications in Progress". *The Biblical Archaeologist* 54/2, 110-111.

Gül M. 2022a, "Antik Çağ'da Styloslar ve Nif Dağı Kazısı Örnekleri". *MASROP E-Dergi* 16/1, 16-28.

Gül M. 2022b, *MÖ 1. Binden Roma İmparatorluk Dönemi Sonuna Kadar Anadolu'da Stylus*. Yayımlanmamış Yüksek Lisans Tezi. Trakya Üniversitesi. Edirne.

Hassaan G. A. 2018, "Mechanical engineering in Ancient Egypt, Part 62: Papyrus Industry". *International Journal of Emerging Engineering Research and Technology* 6/1, 7-17.

Ignatiadou D. 2017, "Bronze Medical and Writing Cases in Classical and Hellenistic Macedonia". Eds. J. M. Daehner, K. Lapatin & A. Spinelli, *Artistry in Bronze, The Greeks and Their Legacy XIXth International Congress on Ancient Bronzes.* Los Angeles, Califaornia, 260-267.

Kelly-Simpson W. 2003. *The literature of Ancient Egypt, an anthology of stories, instructions, stelae, autobiographies, and poetry,* Vol. 3. (Translated by R. T Ritner, VA Tobin, E. Wente). New Haven & London.

Kidd S. 2013, "Written Greek but drawn Egyptian: Script changes in a bilingual dream papyrus". Eds. K. E. Piquette *et al*. *Writing as Material Practice - Substance, Surface and Medium.* London, 239-252.

Kohlert-Németh M. 1990, *Archäologische Reihe Römische Bronzen II, aus Nida-Heddernheim Fundsachen aus dem Hausrat, Auswahlkatalog*. 14. Museum für Vor-und Frühgeschichte-Archäologisches Museum-im Auftrag des Dezernats Kultur und Freizeit der Stadt. Frankfurt am Main.

Küçükören C. C. 2010, *Ege'de Bir Anadolu Uygarlığı "Karia".* İstanbul.

Liddell H.G. & Scott R. 1882, *A Greek-English Lexicon*. Oxford.

Lightfoot C. 2013, "Write or Light? Roman Glass Inkwells and Lamps". Eds. M. Tekocak, *K. Levent Zoroğlu'na Armağan/ Studies in Honor of K. Levent Zoroğlu.* İstanbul, 425-432.

Magie D. 2002, *Anadolu'da Romalılar, Batı Anadolu ve Zenginlikleri.* İstanbul.

Martini A. 2018, "Et ecce vir, […] qui habebit atramentarium in dorso suo (Ezechiele, IX, 11)". *Bullettino della Commissione Archeologica Comunale di Roma* 119, 29-38.

Marwan D. & Eldin M. N. & Aboudy E. O. 2022, "The utilization of the bivalve shells as pallets in Ancient Egypt". *Journal of the Faculty of Archeology* 25, 3-25.

Molina A. M. 2010, "Miscellanea Epigraphica Saguntina, Caue Manes". Eds. Oroval X. M. & X. R. Veiga, *Hicine Achilles est? Immo eius frater est! Sagvntına* VI. Sagunto, 4-10.

Özer E. & Doksanaltı E. M. 2017, "Aizanoi Kuzey Nekropolis'te Bulunan Bir Mezarı Anlamak, Okumak ve Yorumlamak: Heraklesli Mezar". *Cedrus* V, 287-300.

Ramsay W. M. (Tran. M. Pektaş). 1960, *Anadolu'nun Tarihi Coğrafyası*. Ankara.

Rasmussena K. L., Tenoriob A. L., Bonaduceb I., Colombinib M. P., Biroloc L., Galanoc E., Amoresanoc A., Doudnad G., Bonda A. D., Palleschie V., Lorenzettie F. G., Legnaiolie G. S. & Plichth J. V. D. & Gunneweg İ. J. 2012, "The constituents of the ink from a Qumran inkwell: new prospects for provenancing the ink on the Dead Sea Scrolls". *Journal of Archaeological Science* 39, 2956-2968.

Rémazeilles C. & Conforto E. 2008, "A Buried Roman Bronze Inkwell: Chemical Interactions

With Agricultural Fertilizers". *Studies in Conservation* 53/2, 110-117.

Richter G. M. A. 1916, "Hellenistic and Roman Glazed Vases". *Bulletin of the Metropolitan Museum of Art* 11/3, 64-66.

Sağlam D. 2019, "Parşömenin Tarihçesi ve Geleneksel Yapım Tekniği". Eds. B. Türkmen, F. Kurunaz, N. Ermiş & Y. Ekinci Danışan, *II. Uluslararası Bergama Sempozyumu*, *9-10 Mayıs 2013, Bergama'nın Üstün Evrensel Değerleri, Antik Çağda Sağlık ve Bergamalı Galenos, Kültürlerin Aktarım Aracı Parşömen*. İzmir, 244-254.

Sarin Ü. 2021, "Harpasa Antik Kenti". Ed. S. Akkurnaz, Y. Çorbacıoğlu, *Nazilli ve Çevresinin Arkeolojik Zenginlikleri.* İstanbul, 171-185.

Sibilia M., Stani C., Gigli L., Pollastri S., Migliori A., D'Amico F., Schmid C., Licen S., Crosera M., Adami G., Barbieri P., Plaisier J. R., Aquilanti G., Vaccari L., Buson S. & Gonzato F. 2021, "A Multidisciplinary Study Unveils The Nature of a Roman Ink of the I Century AD". *Scientific Reports* 11, 7231.

Soslu A. 2022, "Investigation of the Historical Development of the Inkwell from Antiquity to the Present in the Light of Terracotta, Faience, Metal and Glass Artifacts". *Kafkas Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 30, 397-415.

Soslu A. 2023, "On the Use of Roman Imperial Period Glass Rods in Cosmetics: Alternative Approaches to General Understanding in the Light of Archaeological Data". *Stratejik ve Sosyal Araştırmalar Dergisi* 7/1, 97-118.

Soslu A. 2024, *Burdur Müzesi Cam Eserler Kataloğu*, Edirne.

Streckert K. A. & Seevens B. 2019, "A unique Early Roman inkweel from Ancient Shiloh". *Near East Archaeological Society Bulletin* 64, 51-55.

Şahin F. 2010, *Patara Metal Buluntuları*. Yayımlanmamış Yüksek Lisans Tezi, Akdeniz Üniversitesi, Antalya.

Şahin F. 2018, *Patara V.2 Metal Buluntuları.* İstanbul.

Talbert R. J. A. 2000, *Barrington Atlas of the Greek and Roman World*. Princeton.

Tekçam T. 2007, *Arkeoloji Sözlüğü.* İstanbul.

Terpstra T. T. 2014, "The Materiality of Writing in Karanis: Excavating Everyday Writing in a Town in Roman Egypt". *Aegyptus* 94, 89-119.

Thompson N. L. 2007, *Roman Art: Resource for Educators, The Metropolitan Museum of Art*, New York.

Vrtal V. 2021, "Literacy and imitation at the meroitic royal court: A rare case of an inkwell from the palace of Amanishakhete". *Beiträge Zur Sudanforschung* 13, 127-135.

Wise M. 1986, "Literary Sources for the History of Palestine and Syria: The Dead Sea Scrolls: Part 1. Archaeology and Biblical Manuscripts". *The Biblical Archaeologist* 49/3, 140-154.

Yagi K. 2019, "Building a Parchment Culture in the Far East". Eds. B. Türkmen, F. Kurunaz, N. Ermiş & Y. Ekinci Danışan, *II. Uluslararası Bergama Sempozyumu, 9-10 Mayıs 2013, Bergama'nın Üstün Evrensel Değerleri, Antik Çağda Sağlık ve Bergamalı Galenos, Kültürlerin Aktarım Aracı Parşömen.* İzmir, 283-292.

Yıldız N. 2021, *Eskiçağda Yazı Malzemeleri ve Kitabın Oluşumu.* Ankara.

Electronic Sources

Ateneanike. 2025 Writing Tools and technique. Access date: 04.01.2025, https://www.ateneanike.com/historia-de-roma/arte-ciencia-y-literatura/escritura/

The Metropolitan Museum of Art. 2024, Inkwell. Access date: 07.05.2024, https://www.metmuseum.org/art/collection/search/249048?rpp=30&pg=1&ft=inkwell&pos=25.

The Metropolitan Museum of Art. 2024, Inkwell. Access date: 26.04.2024, https://www.metmuseum.org/art/collection/search/252501?searchField=All&sortBy

=Relevance&what=Inkwells&ft=*&offset=0&rpp=20&pos=7.

The Metropolitan Museum of Art. 2024, Inkwell. Access date: 07.05.2024, https://www.metmuseum.org/art/collection/search/249364?searchField=All&sortBy=Relevance&ft=inkwell&offset=0&rpp=30&pos=29.

The Past. 2024, Age of ink: Inkwells and writing in Roman Britain. Access date: 25.04.2024, https://the-past.com/feature/age-of-ink-inkwells-and-writing-in-roman-britain/.