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Tel: +90 (242) 243 42 74 • Fax: +90 (242) 243 80 13
https://akmed.ku.edu.tr

E-mail address adalya@ku.edu.tr

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Contents

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Weights of Alexandria in the Troad: Forms, Types, Units, and Chronology

OĞUZ TEKİN*

Abstract

As part of the Corpus Ponderum Antiquorum et Islamicorum project, this article aims to provide a general overview of the weights of Alexandria in the Troad and discusses the 51 surviving balance weights that have come down to our present day. Most of the weights feature a depiction of a grazing horse along with the city's abbreviated ethnikon inscribed (i.e., ΑΛΕ or ΑΛΕΞΑΝ). Sometimes there are symbols (bunch of grapes, ear of corn, small circle) in a field but rather between a horse's legs. In Alexandria, both on coins and weights, the horse was used as a state emblem (parasemon) due to its importance for the city, and it is generally depicted facing to the right. On a few weights, there is a depiction of a kithara instead of a horse. The city's coins dating to the Hellenistic period also depict a kithara, which is similar in form to those found on the weights. The units of the 51 weights in the table vary from five-mna to distateron. The largest unit known today is the five-mna, which also bears the magistrate's name. The examples in the table provide insight into the weight of the Alexandrian mna. Since most weights include unit names (or rather a unit mark), understanding their units is easy. However, the variation in mass of those bearing the same unit name creates difficulty in identification, indicating that the standard of the Alexandrian mna was increased over time. The weights of Alexandria date to the period of 301-12 BC.

Keywords: Alexandria, Troas, horse, kithara, weights

Öz

Corpus Ponderum Antiquorum et Islamicorum projesinin bir parçası olan bu makale, Troas'taki Aleksandreia ağırlıklarına genel bir bakış sunmayı amaçlamaktadır ve günümüze kadar ulaşmış olan 51 terazi ağırlığını ele almaktadır. Ağırlıkların çoğunda, kentin kısaltılmış ethnikon'unun eşlik ettiği (yani ΑΛΕ veya ΑΛΕΞΑΝ) otlayan bir at tasviri yer alır; bazen ana sahnenin bir yerinde ama daha ziyade atın bacakları arasında semboller bulunur (üzüm salkımı, buğday veya arpa tanesi, "o" şeklinde küçük bir yuvarlak). Aleksandreia'da, hem sikkelerde hem de ağırlıklarda at, şehir için önemli olduğundan devlet arması (parasemon) gibi kullanılmış ve genellikle sağa dönük olarak tasvir edilmiştir. Birkaç ağırlıkta ise at değil, bir kithara tasviri yer alır. Kentin Hellenistik Dönem sikkelerinde de kithara tasviri vardır ve ağırlıklardakiyle benzer formdadır. Makaledeki tabloda yer alan 51 ağırlığın birimleri, beş-mna'dan distateron'a kadar değişmektedir. Bugün bilinen en büyük birim beş-mna'dır ve üzerinde magistrat adı yer alır. Tablo'daki örnekler, Aleksandreia mna'sının ağırlığı hakkında bir fikir vermektedir. Çoğu ağırlık, birim adlarını (veya daha doğrusu birim işaretini) taşıdığından, birimlerini anlamak kolaydır. Ancak, aynı birim adı taşıyanların ağırlıklarındaki değişkenlik, teşhiste zorluk yaratır ve Aleksandreia mna'sı standardının zaman içinde yükseltildiğini işaret eder. Aleksandreia ağırlıkları MÖ 301 ile 12 arasındaki döneme tarihlenir.

Anahtar Kelimeler: Aleksandreia, Troas, at, kithara, ağırlık

* Prof. Dr. Oğuz Tekin, Koç Üniversitesi, Department of Archaeology and History of Art, İstanbul, Türkiye. E-mail: ogtekin@ku.edu.tr ; https://orcid.org/0000-0002-5081-1448

Alexandria (present-day Dalyan village) is situated at a strategic point where the Sea of Marmara connects the Aegean Sea to the Black Sea (map).[1] Before Alexandria, there was another settlement called Sigia located here.[2] In the late fourth century BC, Antigonus I Monophthalmus, one of Alexander the Great's successors, established a new city named Antigoneia here by bringing together the populations of neighboring cities through synoecism, symbolically under his name. The city was also a member of the Ilion League, which was founded by Antigonus. In 301 BC, Lysimachus, another successor of Alexander the Great, changed the city's name to Alexandria in honor of Alexander's memory,[3] following his victory over the Seleucid kingdom. After the defeat of the Seleucid kingdom by the Romans, Alexandria became an independent city. The city's status as a Roman colony was established in the late first century BC (somewhere between 30-12 BC) during the Augustan period, and its official name became Colonia Alexandria Augusta Troas or Troadensis. The colonial city of Alexandria Troas was one of the most significant centers that facilitated communication between the Roman Empire and the Eastern provinces.

On the Hellenistic (figs. A-B) and colonial (figs. C-D) coins of Alexandria, a horse is depicted facing left or right, and whose head is lowered and grazing.[4] In fact, the depiction of the horse on the coins of Alexandria is not coincidental. The horse on the city's coins most likely signifies the presence of horse breeding in the city and its surrounding areas, highlighting the importance given to horses. The significance of horses in the Troas region is also known from ancient sources and mythological stories. According to Homer,[5] King Erichthonius, ruling over Troas, had thousands of horses grazing in his pastures. Another legend[6] states that Zeus abducted King Tros' son, Ganymedes, and took him to Mount Olympus to serve him drinks, leaving the king with an immortal pair of horses in return. Troas derives its name from King Tros, who was the son of King Erichthonius and the father of Ganymedes. Just as on the coins, the balance weights of Alexandria also feature a depiction of a grazing horse alongside the abbreviated ethnic of the city, ΑΛΕ, and variations.[7] It seems that the horse, as depicted, served as the city's emblem (parasemon) and was a distinguishing element in identifying Alexandria's weights. The depiction of the grazing horse is believed to have been copied from Neandria, another city in the Troad (figs. E-F).[8]

On the coins from the imperial period, variations of COL AVG TRO indicating its colonial status are seen (figs. C-D). However, on the pre-colonial coins, there is naturally only an abbreviated or full ethnic (ie Α, ΑΛΕ, ΑΛΕΞ, ΑΛΕΞΑΝ, ΑΛΕΞΑΝΔΡΕΩΝ (figs. A-B).[9] The surviving Alexandrian weights typically bear only the abbreviation ΑΛΕ or rarely ΑΛΕΞΑΝ, which necessitates their dating to the pre-colonial era; however, we cannot always be certain about this.

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1 For the foundation and development of the city see Cook 1973, 198-204; Cohen 1995, 145-48; Ricl 1997; Meadows 2004, 47-49.

2 Strabo 13.1.47.

3 Strabo 13.1.26.

4 Bellinger 1961, A28-A46; A53-A72; A104-A124; A171; A201-A202; A224-A225; A236; A243; A251; A261; A283; A300; A315; A322; A324; A326; A339-A341; A349-A351; A355-A356; A363-A367; A377-A379; A396; A398; A405-A406; A421-A422; A436-A438; A451-A453-A454; A462-A463; A486-A489.

5 Hom., *Iliad*, 20.219-230.

6 Hom., *Iliad*, 5.265-66.

7 Tekin 2016, 93-97; Killen 2017, 215-17; Pondera, search "Alexandria Troas".

8 Weiss 2008, 721; Wroth 1894, 73-74, nos. 1, 8-11.

9 Wroth 1894, 9, nos. 4-21; 12, no. 37; 14-15, nos. 45-57; Bellinger 1961, nos. A21-A179.

When we examine the surviving weights from the city, it becomes evident that the mna, a fundamental standard used by other city-states in the Aegean region, serves as the fundamental standard in Alexandria. What piques our curiosity about Alexandria is that, although the mna standard was prevalent during the Hellenistic period, its continuity during the Roman Imperial period remains uncertain, or at least remains unknown to us. In other words, despite the use of weights over nearly three-centuries that were linked to the mna standard, the specific type of weights that succeeded them during the Roman Imperial era remains a mystery. However, considering that shopping without weighing is inconceivable, it is logical to assume that a weight standard and corresponding weights were in use. Today, many weights survive without symbols or ethnic that define the city's identity, but only indicate the name of the unit and, in some cases, not even that. While some of these weights, based on their measurements, can be attributed to the mna standard, the majority adhere to the Roman-specific libra standard. These kinds of weights without symbols or ethnic were likely used in Alexandria's market as well. However, this article only addresses the Hellenistic-period weights of Alexandria. Nonetheless, the anticipation remains that one day we might also encounter Alexandria's balance weights adorned with horse depictions accompanied by COL AVG TROAS / TROAD in the libra standard!

Most of the surviving Alexandrian weights are made of lead, with a small portion being made of bronze.[10] The square shape dominates across various units from large to small; a small number also have suspension holes. The horse, depicted on the majority of the Alexandrian weights, is generally turned to the right, but on quite a few examples it is turned to the left. Indeed, in coins as well, the horse is primarily turned to the right. When looking at the table, it can be observed that the largest known weight within our knowledge is a bronze-coated lead weight with a value of five mna (no. 1).[11] What's interesting is that while the weight's front side is bronze-coated, the back side is left as lead. The weight might have been intentionally manufactured this way, or the bronze coating on the back side could have come off or been removed later. Besides, the horse's tail is depicted over its hind legs in order to fit in the figure.

The city's ethnikon is longer than the standard: ΑΛΕΞΑΝ. Furthermore, the full name of the agoranomos is inscribed outside the standard: ΔΙΟΚΛΕΙΟΥΣ. Seeing the name of the agoranomos on Alexandria's weights is not a common occurrence so here is an exception. If the symbol preceding the inscription is indeed a herm, it is known that Hermes was the protector god of marketplaces.[12] On the other hand, the Π between the legs of the horse, if indicating a unit,[13] is somewhat intriguing due to its placement. This is because abbreviations for units on Alexandria weights are usually positioned below the groundline (in the exergue). However, considering that the exergue is reserved for the agoranomos' name, the most suitable location would again be between the legs of the horse. If Π refers to the unit mark, it is likely the initial letter of pentemnaion, implying that the weight in question holds a value of five mna. It should

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[10] Tekin 2016, 93-97; Killen 2017, 215-17; Pondera, search "Alexandria Troas". I would like to thank Özkan Arıkantürk, İzak Eskinazi, Altan Tokgöz, Haluk Perk as well as to the curators of Pera Museum, Museum of Troy, Louvre Museum, Athens Numismatic Museum, München Staatliche Münzsammlung who allowed me to work or shared information with the weights in their collections. I also benefited from the Pondera Online database, which contributed to my current work. I'm also grateful to Gültekin Teoman, who facilitated communication with collectors and engaged in discussions.

[11] *DarSag* 4.1, 554, no. 23; Robert 1966, 51; Weiss 1990, 138, 3/a; 2008, 720, 4/A; Tekin 2016, 94, table 35, no. 1; Killen 2017, 215, AlexTr b 1; Pondera, 1381.

[12] Tekin 2016, 30-31.

[13] For the use of Π as a unit symbol on the Aenus weight (but it stands for pentemorion) see Tekin 2016, pl. 7, figs. 43-44.

be the control weight of the magistrate responsible for the marketplace rather than belonging to an ordinary shopkeeper or vendor.

The three-mna weight, no. 2 in the table, was previously attributed to Alabanda in the region of Caria due to its discovery location and the legible first two letters of the legend on the weight being A – Λ by the author of this paper.[14] However, considering the clearer examples found in the excavation of Delos (no. 3),[15] an example in an auction catalog (no. 8),[16] and one in a private collection (no. 33), it is evident that the weight in question belongs to Alexandria.[17] Thus, the number of the weights with kithara attributed to Alexandria is currently four. Although the units of these four weights differ (three-mna, two-mna, mna, and tetarton), their obverse compositions are the same. As for no. 2 in the table, in the center, there is a kithara, and on either side is the divided legend A–Λ–[E–Ξ]–A–N along with a bow symbol in the left field. Both the kithara and the bow are associated with Apollo, the city's main deity.[18] In the early Hellenistic coins of the city, we see coins with the head of Apollo / Apollo Smintheus[19] or the head of Apollo / horse.[20] Additionally, on the obverse of Alexandria's second-century BC bronze coins, the head of Apollo is depicted, and on the reverse, a kithara within a wreath (figs. G-H).[21] The kithara here resembles the one on the weights. Similar to the weights, the ethnikon is divided on both sides of the kithara. In the case of the weight no. 2 in the table, the letters E and Ξ in the second row of the ethnikon are faint, and this also makes it difficult to identify the ethnikon. Regarding the unit of this weight; though the letters are not clear, the ambiguous letters of Γ M are located at the bottom. While Γ is more distinct, M is somewhat difficult to read due to slight deformation on it. Only the upper part of the bow symbol, which should be on the left field, can be seen.

The weight[22] no. 3 with a kithara, due to the unit mark M M on it, corresponds to the two-mna unit. It shares a unit weight that matches the weight of the previously mentioned three-mna unit. In other words, the weights no. 2 and no. 3 with kithara have mna values of 422 g and 412.5 g respectively, indicating that this weight could be dated to the first quarter of the third century BC (or even to the end of the fourth century but not before 301 BC). However, Bellinger[23] dated the bronze coins with kithara to the mid-second century BC (164-135 BC); Wroth,[24] on the other hand, dated them after 189 BC. It is reasonable to date the coins and the weights with a kithara to the same period. However, when considering the weights, the proposed date of the mid or early second century BC for the coins with a kithara appears to be quite late in comparison to the weights featuring kithara. In this case, would it be possible to date both the coins and weights with a kithara to the first quarter of the third century BC or

14 Tekin 2016, 123, table 45, no. 1; pl. 35, fig. 278 (misattributed to Alabanda).

15 Deonna 1938, 147, B 608-7821, pl. 54, 423.J; Henri Seyrig archive, 331; Killen 2017, 183, Del b 1 (misattributed to Delos), pl. 10, 10; Pondera, 2862.

16 Dr. Busso Peus 421, 1235 (misattributed to Kolophon).

17 For the attribution to Alexandria see also Pondera, 13231.

18 Among other cities in Troas which used kithara (or lyre) depiction are Hamaxitus and Abydus.

19 Wroth 1894, 9, nos. 1-3; Bellinger 1961, A21-A24.

20 Wroth 1894, 9-10, nos. 4-21; Bellinger 1961, pl. 14, L, M; A28-A46; A53-A72; A104-124; A171-A172.

21 Bellinger 1961, A138-145. Besides, there are small units bearing lyre depiction (A146-147); Wroth 1894, 12, nos. 29-36.

22 Deonna 1938, 147, B 608-7821, pl. 54, 423.J; Henri Seyrig archive, 331; Killen 2017, 183, Del b 1 (misattributed to Delos), pl. 10, 10; Pondera, 2862.

23 Bellinger 1961, A138-145.

24 Wroth 1894, 11.

within the broader dating range of the third century BC? On the other hand, if we trust the dating of the coins with kithara, then we would also need to date the weights with kithara to the same period. Consquently, as mentioned above, due to the relatively low mass in terms of mna (422 g, 412.5 g, and 405.6 g) of the weights with a kithara, the third century BC appears to be appropriate for them. This issue arises with the notion that dating the coins and weights with kithara to the same period would be more reasonable and should be examined in more detail in the future.

No. 4 has an unusual mass among all mna units of Alexandria, and in this case, it either has a mass of 1.5 mna (then we can call it as a heavy mna) or maybe two-litra (However, I have doubts about the authenticity of this weight as well as of no. 9 in the Athens Numismatic Museum, especially regarding the posture of the horse's legs and the bunch of grapes, and, of course, the anomalies in their masses). Those between nos. 5 and 9 in the table are the mna units and their (excluding nos. 8 and 9 due to their mass problem) avarage mass is 425.21 g. The hemimnaion units between nos. 10 and 13 (excluding no. 13) have an average mass of 438.19 g and this figure is consistent with the mna values of other units, except for those that are very light and very heavy.

The mna values of the tetartons between nos. 14 and 35 in the table also weigh from 575.08 g to 392.24 g. However, if we exclude some unusually light ones, it seems that they can "roughly" be grouped into three categories, such as 575 g-508 g, 472 g-439 g, 431 g-405 g. "Roughly" because excessively worn and broken ones can disrupt this grouping. And it is clear that over time, there has been an increase in the standard, and the mass of the mna has increased. On the obverse of these tetartons, there is the letter T or TE which signifies the unit. T is generally and primarily used as an abbreviation for tetarton. Some tetartons with high mass may have been referred to as "heavy tetartons", since they surpass the standard tetarton mass.[25]

In this context, the possibility arises that the heavy tetartons, especially nos. 14-17 in the table, might actually be tritons. If the T letter represents the triton, then the avarage mass for them would be 429.20 g. This figure was obtained by multiplying the mass of each tetarton by three and then dividing by four. It is also a normal value for the third century BC Alexandrian mna. On the other hand, in many weights between nos. 20-35 in the table, it is evident that the T letter signifies tetarton. Therefore, it is clear that the T letter was used for tetarton in Alexandrian weights. Otherwise, if TP were used for tetarton instead of T, it might easily lead to the misconception of triton, and such confusion in shopping transactions would be implausible.

In summary, it can be stated that the weights nos. 14-17 in the table are heavy tetartons, but since most of the weights between nos. 14-35 carry the T letter, we can also conclude that all are tetartons (without labeling as 'heavy"). Without a doubt, the heavy tetartons chronologically come later than the lighter tetartons. The high mass of tetartons indicates the existence of a period when there was a mna standard exceeding 500 grams, even approaching 600 grams. This is a significant indication for dating them to the end of the second century BC or the first century BC. What is interesting about the tetarton with kithara (no. 33) is that the engraver has not been able to find a place for the bow symbol in the left or right field for it as it was in the bigger units and has wedged it diagonally in the lower right corner. Additionally, there is a short horizontal line under the kithara. This line should probably be the upper part of the first letter of the unit name, tetarton, which is T, but it is not clear due to a small stroke on the vertical line of T. In fact, this is exactly where the unit mark should be.

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[25] Of course, if the main standard is a high-mass mna, then the subunits, ie tetartons, will also be of high mass!

The letter O positioned below the groundline (in the exergue) on the obverse of the weights between nos. 36 and 45 in the table indicates that they belong to the ogdoon unit. Their mna values vary from 556.8 g to 400.8 g. Given that the masses of the examples between nos. 36-40 in the table are relatively high, it can be suggested that they are dated later to the end of the second century BC or the first quarter of the first century BC.

The weights between nos. 46 and 51 in the table, weighing between approximately 30-40 grams, could possibly be distateron in unit. We best know the distateron and stater units from Cyzicus, as the unit abbreviations are seen on their weights in these units.[26]

As a secondary symbol on the weights, more often between the horse's legs, there is a single corn grain (nos. 7, 11-13, 18, 20-22, 24-28, 30, 32, 35-40, 42-43, 46, 49 in the table), which does not appear on the coins. Besides the corn grain, at times, a small or large circle (nos. 46, 49-51) or a bunch of grapes (nos. 4 and 9) can also be observed. It is evident that the large o-like symbol or circle in the exergue does not correspond to the unit mark since the masses do not match with the units. Therefore, the o-like object or circle should only be considered as a symbol. Perhaps counterfeiters aimed to make the weights in 1/12 (distateron) units seem as if they were 1/8 (ogdoon)! However, the ones in the ogdoon units have that symbol as solid, while the ones in the 1/12 units have it in the form of a small circle, resembling O letter.

When examining all the examples in the table, it is evident that the mass of the mna was not constant and that there were at least four different mna standards over time: 1) 420-450 g, 2) 450-500 g, 3) 500-550 g, 4) 550-600 g (and above). Undoubtedly, these mass frequencies are quite relative, and there could be even more varied frequencies. For instance, these four mass / standard periods could also be combined into roughly two periods, such as 1) 420 - 500 g and 2) 500-600 g. Nonetheless, in any case, it is clear that over time, there have been instances indicating that the mass of the mna was increased multiple times, a situation that is true for the weights of other city-states in the Aegean world as well.[27] Furthermore, while the Attic standard is generally considered, could it be conceivable that the initial stages of the city might have been based on the siglos of the Persian standard in terms of mass content?[28] Finally, let's note that bronze weights, which are of higher quality and durability compared to lead weights, are predominantly used by market officials to check the weights of lead weights.

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[26] Tekin 2016, table 29, nos. 64-90.

[27] Tekin 2016, 20-24; IG II2, 1013, II.29-37; Lang 1964,18-20; *New Pauly, Antiquity* 15 s.v. "Weights. III. Greece, IV. Rome".

[28] For the possibility of the use of the Persian standard in the early silver coins of Alexandria see, Meadows 2004, 53.

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TABLE. Weights of Alexandria (asterisks refer to the illustrated weights).

No.	Met.+Mass+ Measure	Main Type	Legend	Secondary Symbol	Unit Mark	Mna in Gram	Note
Five-mna							
1*	Pb+AE 2575 g (2589 g) 122 x 122 x 20 mm	HORSE l.	ΑΛΕΞΑΝ / ΔΙΟΚΛΕΙΟΥΣ	Herm	Π	515 g	Obv. covered with copper alloy while rev. is left lead. Photo: L. Willocx
Ref.: National Museum, Warsaw. *DarSag* 4.1, 554, no. 23; Robert 1966, 51; Weiss 1990, 138, 3/a; 2008, 720,4/A; Tekin 2016, 94, table 35, 1; Killen 2017, 215, AlexTr b 1; Pondera, 1381.							
Three-mna							
2*	Pb 1266 g 92 x 95 mm	KITHARA	A–Λ / [E–Ξ] / A–[N]	Bow	[Γ] M	422 g	_
Ref.: İzak Eskinazi Collection. Tekin 2016, pl. 35, fig. 278a-b (misattr. to Alabanda); Pondera, 13231 (two-mna)							
Two-mna							
3*	Pb 825 g 99 x 99 x 10 mm	KITHARA	A–Λ / E–Ξ / A–N	Bow	M M	412.5 g	_
Ref.: Archaeological Museum of Delos. Deonna 1938, 147, B 608-7821, pl. 54, 423.J; Henri Seyrig archive, 331; Killen 2017, 183, Del b 1 (misattr. to Delos), pl. 10, 10; Pondera, 2862.							
Heavy-mna							
4*	Pb 622 g 85 x 78 x 9 mm	HORSE l.	ΑΛΕ	Bunch of grapes; monogram between legs	_	_	Photo: R. Dylka
Ref.: Archäologische Museum der Universität Münster. Weiss 2008, 719, 4/1; Tekin 2016, table 35, 2; Killen 2017, AlexTr b 2, pl. 20, 2; Pondera, 13182.							
Mna							
5*	Pb 428.23 g 51 x 64 mm	HORSE l.	ΑΛΕ[Ξ]	_	_	_	_
Ref.: München, Staatliche Münzsammlung. Kruse and Stumpf 1998, 7, no. 8; Weiss 2008, 720, C; Tekin 2016, 94, table 35, no. 4; Killen 2017, 215, AlexTr b 3; Pondera -.							
6*	Pb 425 g 77 x 76 x 10 mm	HORSE l.	ΑΛΕΞΑΝ	–	–	_	Pierced on the bottom right corner.
Ref.: Haluk Perk Museum. Perk 2018, 1; Pondera -.							
7*	Pb 422.40 g	HORSE r.	ΑΛΕ	Corn grain between legs	M	_	_
Ref.: CNG Triton 13, 1284; Tekin 2014, 44, fig. 1; 2016, 94, table 35, no. 5; Killen 2017, 216, AlexTr b 8; Pondera -.							
8*	Pb no mass 105 x 91 mm	KITHARA	A–Λ / E–Ξ / [A]	Bow	M	_	The last [A] seems to be on the bottom right corner.
Ref.: Peus 421, 1235 (misattr. to Kolophon).							

No.	Met.+Mass+ Measure	Main Type	Legend	Secondary Symbol	Unit Mark	Mna in Gram	Note
9*	AE 381.50 g 76 x 69 x 5 mm	HORSE l.	ΑΛΕ	Bunch of grapes; o between legs	–	–	–

Ref.: Numismatic Museum, Athens. Varoucha-Christodoulopoulou 1962, 429, 17; Robert 1966, 51; Weiss 1990, 138, 3/d; 2008, pl. 87, B; Tekin 2013a, fig. 1; 2016, 22, 171; Killen 2017, 215, AlexTr b 4; Pondera, 3172.

Hemimnaion

10*	Pb 230.44 g 51 x 46.6 x 11.8 mm	HORSE l.	[ΑΛΕ]	?	?	460.88 g	Too worn.

Ref.: Haluk Perk Museum. Perk 2018, 2; Pondera-.

11*	Pb 217.05 g 51 x 51 x 6 mm	HORSE r.	ΑΛΕ	Corn grain between legs	H	434.1 g	To the bottom right, TP

Ref.: Private Collection. Weiss 2008, 719, 2, pl. 88, Alexandria Troas 2; Tekin 2016, 94, table 35, 6; Killen 2017, 216, AlexTr b 9; Gorny & Mosch, EA 286, 4815; Pondera, 13183.

12*	Pb 209.80 g 46 x 46 x 9 mm	HORSE r.	ΑΛΕ	Corn grain between legs	H	419.6 g	To the bottom right, TP

Ref.: İzak Eskinazi Collection. Tekin 2019, 72, 61; Pondera 13186.

13*	Pb 197.1 g 47 x 48 x 12 mm	HORSE r.	ΑΛΕ	Corn grain between legs	[H]?	394.2 g	Too worn. Low mass.

Ref.: Özkan Arıkantürk Collection. Unpublished.

Tetarton

14*	Pb 143.77 36 x 38 x 9 mm	HORSE l.	ΑΛΕ	–	T	575.08 g	Countermarked with ear of wheat.

Ref.: Private collection. Weiss 2008, 719, 3; Tekin 2016, 95, table 35, 7; Killen 2017, 215, AlexTr b 5; Pondera -.

15*	Pb 143.70 (H. Perk: 137.5 g) 44 x 40 x 9 mm	HORSE r.	ΑΛΕ	–	[T]	547.8 g	–

Ref.: Haluk Perk Museum. Killen 2016, 216, AlexTr b 10, pl. 20, 3 (tetarton); Perk 2018, 3; Pondera, 13218.

16	Pb 143 No measures	HORSE l.	ΑΛΕ	–	T	572 g	–

Ref.: Gradl und Hinterland 13, 1991; Killen 2017, 215, AlexTr b 6; Pondera, 13194.

17*	Pb 141.8 (H. Perk: 135.5 g) 43 x 43 x 10 mm	HORSE r.	ΑΛΕ	–	T	567.2 g	Pierced; too worn.

Ref.: Haluk Perk Museum; Killen 2017, 216, AlexTr b 11, pl. 20, 4=Perk 2018, 4; Pondera 13219.

18*	Pb 135 g 40 x 42 x 8 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T[E] lig.	540 g	Pierced. Notice the spiky protrusions on the corn grain.

Ref.: Özkan Arıkantürk Collection. Tekin 2019, 72, no. 62; Pondera, 13187.

19*	Pb 134 g 44 x 43 x 10 mm	HORSE r.	ΑΛΕ	Corn grain between legs	–	536 g	

Ref.: Haluk Perk Museum. Perk 2018, 5; Pondera -.

No.	Met.+Mass+ Measure	Main Type	Legend	Secondary Symbol	Unit Mark	Mna in Gram	Note
20*	Pb 127.1 g (H. Perk: 121.5 g) 47 x 47 x 9 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T	508.4 g	Pierced; too worn.

Ref.: Haluk Perk Museum. Killen 2017, 216, AlexTr b 12, pl. 20, 5=Perk 2018, 6; Pondera, 13220.

21*	Pb 118.11 g 41 x 43 x 6 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T	472.44 g	_

Ref.: Weiss 2008, 719, no. 4, pl. 88, 4; Killen 2017, 216, AlexTr b 13; Pondera -.

22*	Pb 114.1 39 x 37 x 10 mm	HORSE r.	ΑΛΕ	Corn grain between legs	[T]	456.4 g	_

Ref.: Özkan Arıkantürk Collection. Unpublished.

23*	Pb 113.3 g 48 x 43 x 8 mm	HORSE l.	ΑΛΕ	_	_	453.2 g	Too worn.

Ref.: Özkan Arıkantürk Collection. Unpublished.

24*	Pb 112.84 g 44 x 46 x 6 mm	HORSE r.	ΑΛΕ	Corn grain between legs	_	451.36 g	On the bottom right corner, crush.

Ref.: Haluk Perk Museum. Perk 2018, 7. Pondera -.

25*	Pb 110.3 g 39 x 39 x 11 mm	HORSE l.	ΑΛΕ	Corn grain between legs	?	441.2 g	Too worn.

Ref.: Özkan Arıkantürk Collection. Unpublished.

26*	Pb 109.8 g 53 x 54 x 6.5 mm	HORSE r.	ΑΛΕ	Corn grain between legs	[TE?]	439.2g	Too worn, broken at below. The unit mark has an H-shaped appearance.

Ref.: Haluk Perk Museum. Perk 2018, 8; Pondera-.

27*	Pb 107.83 g 41 x 39 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T	431.32 g	_

Ref.: Roma Num. E-Sale 56, 306; Pondera -.

28*	Pb 106.72 g 43 x 43 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T	426.88 g	_

Ref.: Leu 14, 904; Pondera, 14242.

29*	Pb 104.60 g (105 g) 43 x 40 x 9 mm	HORSE r.	ΑΛΕ	_	TE	418.4 g	_

Ref.: Özkan Arıkantürk Collection. Tekin 2013a, fig 2; 2016, 95, table 35, 9, fig. 173; 2019, 72, no. 63; Pondera, 3173.

30*	Pb 103.7 g 44 x 44 x 7 mm	HORSE r.	ΑΛΕ	Corn grain between legs	T	414.8 g	_

Ref.: Özkan Arıkantürk Collection. Unpublished.

31*	Pb 102.7 g (H. Perk: 98 g) 42 x 41 x 7 mm	HORSE r.	[A]ΛΕ	_	?	410.8 g	Too worn.

Ref.: Haluk Perk Museum. Killen 2017, 216, AlexTr b 15, pl. 20, 6; Perk 2018, 9; Pondera, 13221.

No.	Met.+Mass+ Measure	Main Type	Legend	Secondary Symbol	Unit Mark	Mna in Gram	Note
32*	Pb 102.7 g 46 x 45 x 7 mm	HORSE r.	AΛE	Corn grain between legs	T	410.8 g	Worn.

Ref.: Özkan Arıkantürk Collection. Unpublished.

33*	Pb 101.40 g 45 x 45 x 6 mm	KITHARA	A–Λ / E–Ξ	Bow on the bottom right corner	T	405.6 g	Small dent on the middle of the bottom edge.

Ref.: Altan Tokgöz Collection. Unpublished.

34*	Pb 98.75 g (broken, originally might be ca. 110 g) 44 x 43 x 7 mm	HORSE r.	AΛE	Corn grain between legs	TA[P]	395 g (incl. missing part ca. 440 g)	Tartemorion (=Tetarton)

Ref.: Pera Museum. Tekin 2013b, 35; 2016, 95, table 35, no. 10; Pondera, 1825.

35*	Pb 98.06 g 46 x 44 x 5 mm	HORSE r.	AΛE	Corn grain between legs	T	392.24 g	Low mass.

Ref.: Louvre Museum. Weiss 1990, 138, 3 b; 2008, 720, 719-720, 4 D and E (Weiss states that these two weights of 99,78 g and 99,06 g may be identical); Tekin 2016, 95, table 35, no. 1, fig. 175; Killen 2017, 216, AlexTr b 14; Pondera -.

Ogdoon

36*	Pb 69.6 g 30.2 x 31.18 x 9.1 mm	HORSE r.	AΛE	Corn grain between legs	O	556.8 g	–

Ref.: Haluk Perk Museum. Perk 2018, no. 10 (incorrectly, hektemorion); Pondera -.

37*	Pb 67.10 g (H. Perk: 64 g) 33 x 32 x 8 mm	HORSE r.	AΛE	Corn grain between legs	O	536.8 g	Pierced.

Ref.: Haluk Perk Museum. Killen 2017, 216, AlexTr b 16, pl. 20, 7=Perk 2018, no. 11 (64 g, incorrectly, hektemorion); Pondera, 13222.

38*	Pb 65.14 g 32 x 32 x 7 mm	HORSE r.	AΛE	Corn grain between legs	O	521.12 g	_

Ref.: Garo Kürkman Collection. Tekin 2013a, fig. 3; 2016, 95, table 35, no. 12; Pondera, 3174.

39*	Pb 57 g 33 x 32 x 8 mm	HORSE r.	AΛE	Corn grain between legs	O	456 g	Pierced.

Ref.: Özkan Arıkantürk Collection. Unpublished.

40*	Pb 56.7 g 32 x 31 x 4 mm	HORSE l.	AΛE	Corn grain between legs	_	453.6 g	Pierced.

Ref.: Museum of Troy. Unpublished.

41*	Pb 54.5 g 31 x 28 x 7 mm	HORSE r.	AΛE	_	O	436 g	_

Ref.: Özkan Arıkantürk Collection. Tekin 2013a, fig. 4; 2016, 95, table 35, no. 13; Pondera, 3175.

No.	Met.+Mass+ Measure	Main Type	Legend	Secondary Symbol	Unit Mark	Mna in Gram	Note
42*	Pb 54.17 g 31 x 31 mm	HORSE r.	ΑΛΕ	O or corn grain between legs	O	433.36 g	Same mold with no. 43.

Ref.: CNG EA 212, 140; Tekin 2014, fig. 2; 2016, 95, table 35, no. 14; Killen 2017, 217, AlexTr b 17; Pondera -.

43*	Pb 53.35 g 33 x 31 x 7 mm	HORSE r.	ΑΛΕ	O or corn grain between legs	O	426.8 g	Same mold with no. 42.

Ref.: Haluk Perk Museum. Killen 2017, 217, AlexTr b 18, Pl. 20, 8=Perk 2018, no. 12; Pondera 13223.

44*	AE 52.6 g 33.4 x 32.7 x 8.55 mm	HORSE l.	ΑΛΕ	?	[O]	420.8 g	Pierced; unit mark half visible.

Ref.: Haluk Perk Museum. Perk 2018, 13; Pondera -.

45*	AE 50.1 g 30 x 31 mm	HORSE r.	ΑΛΕ	-	O	400.8 g	At the top, a dent on the ground line. At the bottom, incised with Δ and some irregular incisions.

Ref.: İzak Eskinazi Collection. Pondera -.

Distateron

46*	Pb 40.2 g (H. Perk: 38.3 g) 27 x 29 x 7 mm	HORSE l.	ΑΛΕ	Large globe or corn grain between legs	_	482.4 g	_

Ref.: Haluk Perk Museum. Killen 2017, 216, AlexTr b 7= Perk 2018, no. 15; Pondera, 13217. It is not certain that the weights in Killen and Perk are the same; it is not clear since there is no photo in Killen.

47*	Pb 40.1 (H. Perk: 38.55 g) 27 x 29 x 6 mm	HORSE r.	ΑΛΕ	?	_	481.2 g	Too worn. Heavy?

Ref.: Haluk Perk Museum. Killen 2017, 217, AlexTr b 19, pl 20, 9=Perk 2018, no.14; Pondera, 13224.

48*	Pb 36 g 27 x 26 x 6 mm	HORSE r.	ΑΛΕ	_	_	432 g	Too worn.

Ref.: Pera Museum. Tekin 2013b, no. 36; 2016, 95, table 35, no. 15; Pondera, 1826.

49*	Pb 34.61 g 29 x 29 x 6 mm	HORSE r.	ΑΛΕ	corn grain between legs and O-like symbol in exergue	_	415.32 g	Small dent on the ground line. Same mold with no. 51.

Ref.: Altan Tokgöz Collection. Unpublished.

50*	AE 32.3 g 26 x 24 x 4 mm	HORSE r.	ΑΛΕ	O-like symbol in exergue	_	387.6 g	Pierced. Low mass.

Ref.: Louvre Museum. Weiss 1990, 138, 3/c; 2008, 720, E; Tekin 2016, 95, table 35, no. 16, fig. 177; Killen 2017, 217, AlexTr b 20; Pondera -.

51*	Pb 31.74 g 28 x 28 x 6 mm	HORSE r.	ΑΛΕ	O-like symbol in exergue	_	380.88 g	Broken at the bottom left corner. Same mold with no. 49.

Ref.: Altan Tokgöz Collection. Unpublished.

FIG. A Alexandria. 261-227 BC.
Obv., head of Apollo; rev., horse. AR 2.69 g,
drachm. Gorny & Mosch 240, 218.

FIG. B Alexandria. 261-246 BC.
Obv., head of Apollo; rev., horse. AE 16 mm,
3.25 g. Roma Num. ESale 29, 127.

FIG. C Alexandria Troas. Mid-third cent. AD.
Obv., City Goddess; rev. horse. AE 22 mm,
4.41 g. Leu Num. WA 26, 2205.

FIG. D Alexandria Troas. AD 251-253.
Obv., bust of Volusianus; rev., horse. AE 23 mm,
5.27 g. Gorny & Mosch 282, 3539.

FIG. E Neandria. Late fourth cent. BC.
Obv., head of Apollo; rev., horse. AE 20 mm,
6.47 g. Num. Naumann 122, 274.

FIG. F Neandria. 350-300 BC.
Obv., head of Apollo; rev., horse. AR 1.83 g,
hemidrachm. Gorny & Mosch 265, 367.

FIG. G Alexandria. 164-135 BC.
Obv., head of Apollo; rev., kithara. AE 18.5 mm,
6.45 g. CNG EA 351, 246.

FIG. H Alexandria. 164-135 BC.
Obv., head of Apollo; rev., kithara. AE 20.5 mm,
6.64 g. CNG EA 500, 276.

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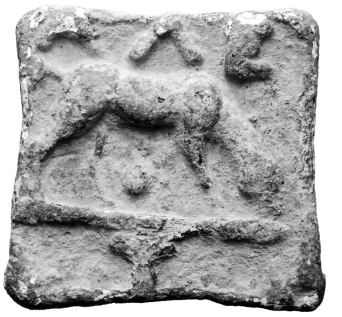

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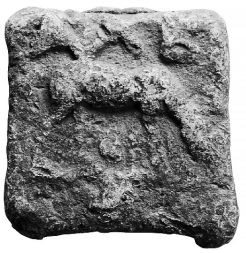

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